

Is travel time wasted?

Evidence from the MOTUS time use survey in Flanders, Belgium

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Wardman and Lyons (2016) suggest that the decreasing disutility of travel time provides arguments for the re-evaluation of current transport planning practice and resources could be reallocated to projects that improve our abilities to spend travel time with worthwhile activities.

Mokhtarian and Salomon (2001) argue that travel may have a positive utility due to three elements: activities carried out at the destination, activities during travelling, and travelling as an activity itself. An affinity towards travelling may be influenced by a combination of these factors. The way travel time is spent is determined by the type of activities we have to or we can carry out while travelling. *Active* activities require cognitive attention (e.g., reading, writing an email, driving a car), while *passive* activities require less cognitive attention. Therefore, two or more activities – that is, one active and one or more passive activities – are compatible with each other or one another (Kenyon, 2008). Whereas recent research has focused on the *productive* use of travel time – that is, multitasking for work and school activities during travelling, activities that do not at first appear worthwhile (e.g., window gazing, sleeping, watching other people) can be beneficial to both employees and employers. These *time-outs* can provide breaks that can help us to remain creative and to solve problems (Holley et al., 2008).

Recently, an increasing number of studies have provided empirical evidence about travel time use. For a comprehensive overview of the empirical evidence on travel-based multitasking see the review of Keseru and Macharis (2018). Collecting information about what people are doing while travelling requires additional efforts compared to standard travel behaviour surveys and travel diaries in terms of the depth of information that is required from respondents. Previous research addressed this issue by tailor-made survey

instruments combining questions on travel satisfaction and travel time use (Ettema et al., 2012; Singleton, 2018), web-based intercept surveys (Krueger et al., 2019), observation of public transport passengers (Groenesteijn et al., 2014; Keseru et al., 2020; Russell et al., 2011), specially tailored questions from national travel surveys in France (Mokhtarian et al., 2014) and in Hungary (Munkácsy et al., 2022), focus group interviews (Jain & Lyons, 2008), a combination of observation and on-board surveys (Ohmori & Harata, 2008) or a dedicated smartphone application (Malichová et al., 2022). Since activities during travelling are closely linked to the daily activity chains of people and the duration of both the main and auxiliary activities during travelling are important, several researchers applied different variations of time use surveys. These included activity-based time use surveys on smaller samples of public transport passengers (Gripsrud & Hjorthol, 2012; Vilhelmson et al., 2011), a combination of qualitative interviews and a two-day time use diary (Holley et al., 2008), a specially designed *accessibility diary* recording the use of information and communication technologies during travel activities (Kenyon, 2006) or an online time use survey (Teodorovicz et al., 2022). This indicates an increasing interest in using time use data for activity-based travel demand analysis since they provide a much more detailed account of one's activities than conventional travel diaries (Axhausen, 2008). Using existing, regular time use surveys to study multitasking can significantly reduce the data-collection efforts, provide larger sample sizes and an extensive array of contextual information to activities during travelling. This chapter demonstrates how a large-scale time use survey can be used for collecting data on activities during travelling. For this purpose, we have analysed data from a large-scale, online time use survey carried out in Flanders (the Dutch-speaking part of Belgium) in 2013-2014. In this chapter, we show what information can be extracted from the time use survey that can provide additional empirical evidence for the worthwhile use of travel time. In addition, we also highlight potential attributes of trips and travellers that can influence the choice of activities while travelling. At the same time, the limitations of non-tailor-made time use surveys will also be shown that can assist in designing better surveys in the future. The novelty of this chapter lies in the coverage of all transport modes whereas previous research mostly focused on time use during trips on public transport.

This chapter is structured as follows: the first section describes the methodology of the data collection; the next section shows how relevant data on multitasking has been extracted and analysed from the survey database; then follows a section that presents the results of the data analysis, and a final section concludes the chapter with a description of further analysis steps and recommendations for better survey design based on the limitations of this data analysis.

Survey methodology

Data were collected as part of a large-scale time use survey (Modular Online Time Use Survey – MOTUS) carried out among the Dutch-speaking population of Flanders, Belgium. It is based on a seven-day diary registration method with a pre- and a post-questionnaire. The pre-questionnaire included questions on socio-economic and demographic attributes and social networks, whereas the post-questionnaire posed questions about any irregularities that had happened in the registration week compared to a regular week. The complete research process was administered through a webtool using the MOTUS online time use survey software (Minnen et al., 2014).

The fieldwork started in January 2013 and ended in February 2014. A sample of 39,756 persons between 18 and 75 years of age was drawn randomly from the National Population Register. An invitation letter and at most two reminders were sent by post. About 35 % of all persons approached logged in to the webtool. The remainder included a large number of non-responses, but also contained a substantial percentage of people without sufficient access to a computer and an internet connection (at least for seven consecutive days). In 2013, 13 % of the Flemish population said that they had previously never used the internet (Eurostat, 2015). They were therefore unable to participate in the survey.

The MOTUS software facilitates the fieldwork setup and process using four important features: Direct Data Storage (DDS), Respondent Management System (RMS), Respondent Tracking System (RTS), and Customised Survey System (CSS). The DDS directly stores any input respondents make. The RMS includes an algorithm that assigns respondents over the survey period and over different survey days of the week and handles automatic e-mails accordingly. The RTS manages notifications or reminders via e-mail or text messages in case respondents pass predefined *states* of the survey. Such states might be “not having registered any activity for the past 24 hours” or “having completed the time diary but not the post-questionnaire”. In addition, the RTS stores the respondents’ paradata such as logging times, browser type, and time lapse of completing certain aspects of the time use survey. Finally, the CSS allows the creation of several unique survey setups since every parameter of the software is adjustable in order to capture the best detail in relation to the research question.

Once logged in to the system more than 90 % of the respondents completed the pre-questionnaire (n=11,978) and about 52 % started using the time diary. For this analysis we selected only the 3,260 respondents who filled in the pre-questionnaire, the seven consecutive diary days (168 hours) and a post-questionnaire and met strict cleaning criteria (e.g., a certain number of activities, a limited amount of non-registered time).

The data are weighted based on a post-stratification weighting procedure. The basic underlying principle is that a weight is assigned to each case in the dataset. This weight is based on a comparison to a reference database for the population and takes into account the age, sex and educational level of the respondents. For 2013, the most reliable population data available was the 2013 edition of the Labour Force Survey (LFS13). The highest weighting factor was 2.93 for women older than 54 years with no formal educational qualification. The lowest factor was for women younger than 34 years with a higher degree of education (weighting factor = 0.5).

Data extraction from the time use survey

Since the time use survey was not tailor-made for the purposes of this research, several transformations had to be carried out. The diary module registered “main” and “auxiliary” activities. The respondents were able to indicate one main and one auxiliary activity for each time slot they selected. For both activity types, the same list of possible activities was selectable grouped at three levels: the first level is the most general with ten activity types (e.g., paid work, shopping and visiting services, travel), the second level has 42 activity types while the third and most detailed level has 225 activity types (e.g., listening to the radio, filling in crossword puzzles, reading a book). While it was mandatory to indicate the main activity at the lowest level, the indication of the secondary activity was optional.

The database contains 371,991 main activities in total: 159,399 auxiliary activities were registered, which is 42.9 % of all the main activities. The most frequent auxiliary activities were having a conversation (13.6 %), listening to the radio (11.9 %), personal hygiene (4 %), watching TV (3.7 %), and listening to music (3.5 %). Our focus was on activities where the main activity was travel: 61,230 travel activities were carried out during the registration period (16 % of all activities).

We analysed the distribution of the auxiliary activities linked to travel as a main activity. Originally, respondents reported an auxiliary activity while travelling in 23,636 cases. In many cases, however, the auxiliary activity was not a *typical* auxiliary activity. For example, 7.4 % of the responses indicated *shopping*, 2.2 % *visiting* and 1.3 % *waiting before and between trips* as auxiliary activities. Apparently, many respondents indicated either the purpose of the trip or activities carried out while travelling from a main origin to a main destination (trip chaining: e.g., shopping on the way home). We did not include these 7,169 responses in our final dataset, because these activity indications cannot be classified as multitasking activities *while* travelling. We also discarded

activities which are not normally possible on certain transport modes (e.g., reading a book while driving a car). This way, we dropped a further 895 cases. The final dataset contains 15,572 activities (25.4 % of all travel activities); 2,166 respondents carried out an auxiliary activity while travelling.

Results

In this section we present some of the headline results of the data analysis. The types of activity carried out during travelling are determined by multiple interrelated factors. On the one hand, the availability of equipment to the individual (e.g., mobile phone, laptop, tablet, books, games) and socioeconomic status, state of health or age may determine the ability to spend travel time on certain activities. On the other hand, the attributes of the journey such as crowdedness, availability of seating, travel comfort, familiarity, duration and stage of the journey may all influence the nature of time use during travelling (Lyons & Urry, 2005).

We used descriptive statistics and simple inferential statistics (contingency tables, chi-square test, Cramer's V) to highlight potential relationships between different demographic (gender, age) and trip-related (duration, purpose, transport mode) attributes.¹ Then, we tested the relationship between the propensity to multitask and presence of other people during the trip.

Auxiliary activities while travelling

The respondents indicated 48 different types of auxiliary activities that they carried out while travelling. For the easier analysis and display of results we have grouped these activities under seven broad categories. The more detailed list of auxiliary activities is included in Appendix 1. The frequencies of these activity categories are shown in Table 1.

The most frequent auxiliary activity is related to listening to and, to a smaller extent, watching digital media (radio, music, videos). The second most frequent activity is conversation, including chatting, having an argument, helping children with their homework, playing with and talking to children. These two categories cover 92.3 % of all the auxiliary activities. The proportion of reading (including paper and digital newspapers, magazines and books), communication (using the phone, text messages, online chat) and relaxing

1 A confidence interval of 95% has been applied in the analysis.

(doing nothing, thinking, sleeping) is well below the 5 % mark, while working activities represent only 0.7 % of all auxiliary activities.

Table 1. The distribution of auxiliary activities (n=15,209; based on the answers of 2,166 respondents)

| Trip purpose | Number of activities | Percentage (of all auxiliary activities) (%) |
|--|-----------------------------|---|
| Media activities: Listening to radio, music, watching videos | 10,200 | 67.1 |
| Conversation | 3,834 | 25.2 |
| Reading | 575 | 3.8 |
| Communication: calling, text messages, email | 440 | 2.9 |
| Relaxing, sleeping, doing nothing, thinking, | 253 | 1.7 |
| Other | 160 | 1.1 |
| Work, study | 109 | 0.7 |
| Total | 15,209 | 100.0 |

Main transport mode

Transport mode is a major determinant of the type of activities travellers can carry out during their trips. Public transport is suitable for activities that require more attention (i.e., activities that cannot be accomplished while driving a car). Activities during driving, on the other hand, may be more related to the private life (listening to music [immersion in sound], talking to friends and relatives through the speakerphone) (Lyons & Urry, 2005).

Table 2 shows the distribution of auxiliary activities by the main transport mode of the primary travel activity. In this table, we compare it to the modal distribution of trips where no auxiliary activity was carried out. By and large, the distribution of auxiliary activities reflects the overall modal split of trips with a marked majority of trips by car either as a driver or as a passenger. If we compare the distribution of non-multitasking and multitasking trips by transport mode, however, we can see considerably higher proportions for car and public transport and smaller proportions for walking and cycling. This reflects the ability to multitask using different transport modes.

Table 2. The distribution of auxiliary activities by transport mode of the primary transport activity

| Transport mode | Multitasking trips | | Non-multitasking trips | |
|--------------------------------------|--------------------|------------|------------------------|------------|
| | Frequency | Percentage | Frequency | Percentage |
| Walking | 813 | 5.2 | 5,491 | 12.4 |
| Cycling | 651 | 4.2 | 7,415 | 16.7 |
| Motorbike | 29 | 0.2 | 395 | 0.9 |
| Car as driver | 10,011 | 64.3 | 22,771 | 51.3 |
| Car as passenger | 2,604 | 16.7 | 5,800 | 13.1 |
| Public transport | 1,334 | 8.6 | 2,023 | 4.6 |
| Car as driver + public transport* | 38 | 0.2 | 186 | 0.4 |
| Car as passenger + public transport* | 92 | 0.6 | 221 | 0.5 |
| Other | 0 | 0.0 | 114 | 0.3 |
| Total | 15,572 | 100.0 | 44,415 | 100.0 |

Note: These were combined trips by car and public transport. It was, however, not possible to identify a main transport mode.

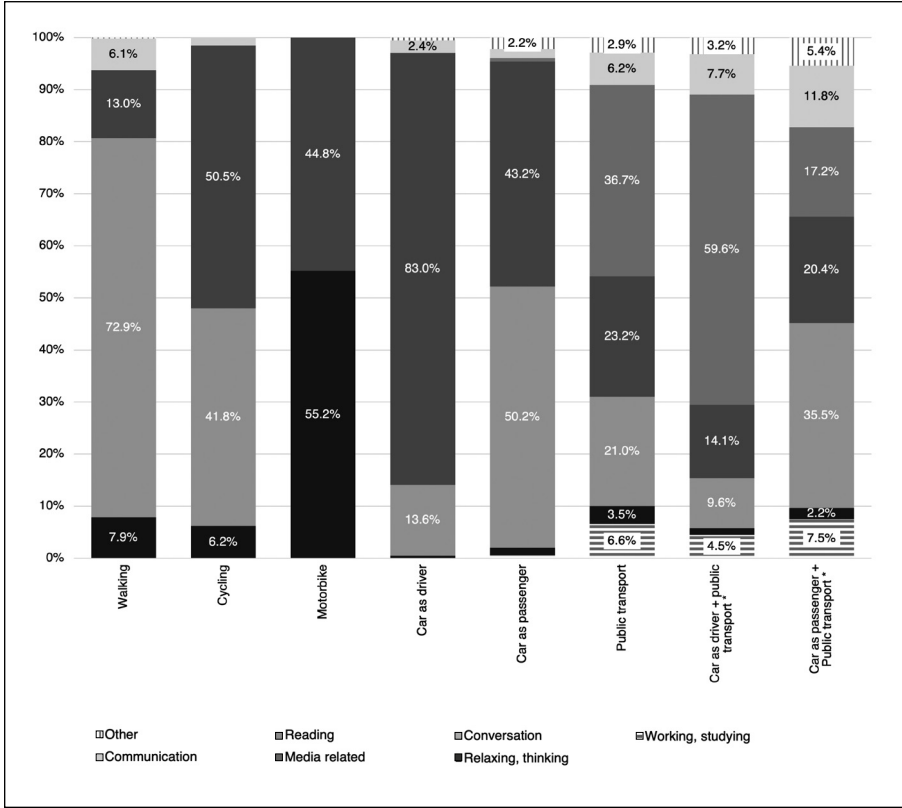
To identify the types of activities that are characteristic as auxiliary activities for each transport mode, we created a cross tabulation of transport mode and activity types (see Figure 1: the chart gives an overview of the propensity of each transport mode for different auxiliary activities). Driving a car is the most limited activity type since it is dominated by background listening (radio and music) and conversation. Working and studying are more frequent on public transport, although car drivers can also make phone calls that can be classified as work activity. It is interesting that 12.7 % of walking trips and 8 % of cycling trips are accompanied by auxiliary activities. For walking, the most frequent activity is conversation (72.9 %) for cyclists listening to music or the radio and conversation dominates.

Gender

There is a significant but weak ($V = 0.093$) relationship between gender and the types of auxiliary activities as it is shown in Table 3. Women engage in conversation in a significantly higher proportion than men. The reason is probably because this activity category also includes activities related to childcare (playing with/talking to children) which are traditionally more often carried out by women.² Women also engage in media related activities less

2 According to the MOTUS survey, men carry out 35.9 % of activities in the category ‘childcare and care for other household members’ whereas women carry out 64.8 % of these same activities.

Figure 1. The proportion of auxiliary activities by main travel mode (proportion of all trips within the registration week)



$\chi^2 (42) = 10,913.757; V = 0.342; p = 0.001 n = 15,574$

Note: Shares smaller than 2% are not labelled. * indicates combined trips by car and public transport for which it was not possible to identify a main transport mode.

frequently than men. This may be because most of these activities are actually listening to the radio in a car, and cars are driven by male drivers to a higher proportion.³ There is also a slight difference in reading activities: more males read while travelling than women. A possible explanation is that women are more often accompanied by other people (e.g., children) therefore conversation replaces solitary activities.

3 54.7 % of trips made by car drivers were by males and 45.3 % by females. For trips made as car passengers the percentages are 25.6 % and 74.4 % respectively.

Table 3. Distribution of auxiliary activities by gender.

| Activity | Gender | | |
|--------------------|----------|------------|---------|
| | Male (%) | Female (%) | All (%) |
| Working, studying | 0.7 | 0.7 | 0.7 |
| Relaxing, thinking | 1.3 | 1.9 | 1.6 |
| Conversation | 20.9 | 28.2 | 24.6 |
| Media activities | 69.1 | 62.0 | 65.5 |
| Reading | 4.2 | 3.2 | 3.7 |
| Communication | 2.8 | 2.9 | 2.8 |
| Other | 1.0 | 1.1 | 1.0 |
| Total | 100.0 | 100.0 | 100.0 |

$\chi^2 (6) = 135.076; V = 0.093; p < 0.001 n = 15,573$

Age

Table 4 shows the cross tabulation of age category and types of activities while travelling. There is a significant relationship between age and the auxiliary activity, but the relationship is weak ($V = 0.065$). The most significant differences can be observed for the youngest age group (18-27 years). They have the highest proportion of work and study activities, with a slightly higher-than-average proportion of conversation, lower-than-average media use, and a relatively high number of communication activities. Older adults (between the age of 38 and 67), however, have a higher proportion of activities related to relaxation.

Table 4. The distribution of auxiliary activities by age group

| Activity | Age groups (%) | | | | | | All |
|--------------------|----------------|-------|-------|-------|-------|-------|------|
| | 18-27 | 28-37 | 38-47 | 48-57 | 58-67 | 68-75 | |
| Working, studying | 1.6 | 0.5 | 0.5 | 0.4 | 0.1 | 0.0 | 0.7 |
| Relaxing, thinking | 1.2 | 1.0 | 2.2 | 1.8 | 2.1 | 1.5 | 1.6 |
| Chatting | 28.8 | 26.2 | 21.1 | 21.6 | 25.9 | 22.6 | 24.6 |
| Media activities | 59.8 | 65.8 | 69.1 | 68.8 | 62.8 | 70.9 | 65.5 |
| Reading | 3.2 | 3.5 | 3.4 | 4.5 | 4.4 | 2.5 | 3.7 |
| Communication | 3.3 | 2.6 | 3.4 | 2.4 | 1.9 | 2.0 | 2.8 |
| Other | 2.0 | 0.4 | 0.2 | 0.5 | 2.8 | 0.5 | 1.0 |
| Total | 100 | 100 | 100 | 100 | 100 | 100 | 100 |

$\chi^2 (30) = 327.954; V = 0.065; p < 0.001 n = 15,572$

Trip purpose

We have found a significant, moderately strong ($V = 0.145$) relationship between trip purpose and types of secondary activities (Table 5). Overwhelmingly, irrespective of trip purpose, media related activities and especially listening to the radio or music dominate most trips with a proportion of higher than 50 % for all trip purposes. Working and studying evidently mostly occurs during trips to work and school. It is also not surprising that the proportion of relaxation activities is significantly higher during leisure trips. Conversation rarely occurs during trips to/from work also because 89.8 % of these trips are by car with no other passenger. Conversation is, however, replaced by solitary media activities, primarily listening to the radio or music and reading. Communication activities (text messages, calling) are slightly more frequent on trips to school reflecting our previous finding above for the youngest age group.

Table 5. The distribution of auxiliary activities by trip purpose

| Auxiliary activities | Trip purpose | | | | | | | All |
|----------------------|--------------|----------------|-----------------------------|------------|---------|-------------------------------|-------|-------|
| | To/from work | To/from school | Shopping, visiting services | Child-care | Leisure | Social activities with family | Other | |
| Working, studying | 1.2 | 3.8 | 0.1 | 0.0 | 0.2 | 0.3 | 0.0 | 0.7 |
| Relaxing, thinking | 1.5 | 1.9 | 1.6 | 0.8 | 2.3 | 1.0 | 0.9 | 1.6 |
| Conversation | 8.7 | 31.6 | 23.0 | 38.6 | 38.4 | 31.4 | 35.8 | 24.6 |
| Media activities | 75.1 | 51.3 | 71.5 | 58.6 | 54.0 | 63.1 | 57.5 | 65.5 |
| Reading | 8.9 | 3.9 | 0.5 | 0.2 | 1.8 | 0.9 | 0.9 | 3.7 |
| Communication | 3.4 | 6.5 | 2.1 | 1.7 | 2.2 | 2.4 | 4.7 | 2.8 |
| Other | 1.2 | 1.0 | 1.2 | 0.1 | 1.0 | 1.0 | 0.0 | 1.0 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

$\chi^2 (36) = 1,968.935; V = 0.145; p < 0.001 n = 15,572$

Travel companions

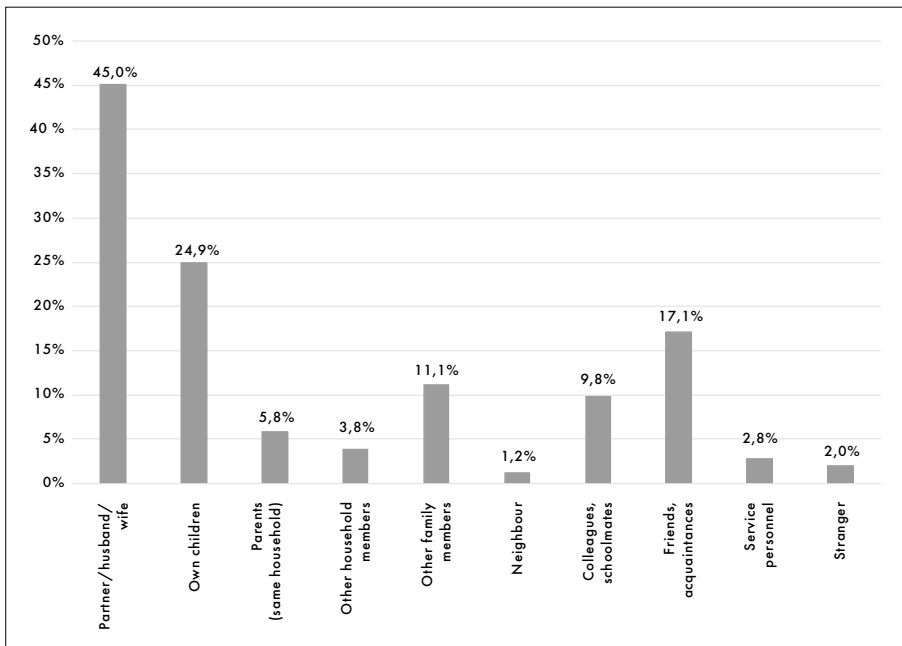
The type of auxiliary activities is also determined by the presence of other people and the relationship of the traveller to these people while travelling. According to Wardman and Lyons (2016), vehicle occupancy might have a positive impact

on the value of travel time because companions might make the journey more interesting.

Respondents were required to indicate if they carried out each activity alone or accompanied by somebody. In the latter case, they also had to indicate who the accompanying person was (e.g., partner, husband/wife, child, parent, friend, neighbour, colleague, schoolmate, stranger): 50.9 % of all multitasking trips were undertaken with someone else.

Figure 2 shows the proportion of multitasking trips that were carried out in the presence of other people. The most frequent travel companion was the husband, wife or partner (45 %), own children (24.9 %), friends and acquaintances (17.1 %), and other family members (11.1 %).

Figure 2. Proportion of trips where an auxiliary activity was carried out and somebody else was present (100 % = all auxiliary activities linked to travel where somebody else was present)



Discussion and conclusion

In this chapter, we have presented some headline results of the analysis of a large-scale time use survey to provide new empirical evidence for the use of travel time for other activities that might have an impact on how travel time is valued. Current evaluation methods such as cost-benefit analysis considers travel time as a key value to assess which project option is considered more useful for the users. Travelling in general is considered as a waste of time and the more time passengers spend travelling, the less benefits are assigned to that project option (e.g., when comparing the costs and benefits of different alternatives for motorways or train lines). This value of travel time (VTT) is usually estimated for leisure and business travellers. The VTT is usually higher for business travellers as they *lose* more in efficiency while travelling due to the time not used for *productive activities*. Nevertheless, if sufficient empirical evidence is collected on the prevalence of travel-based multitasking, this paradigm of *wasteful travel* can be questioned (Cornet et al., 2022).

According to the overall results, our survey found that at least one auxiliary activity is carried out in case of a quarter of all travel activities. This is somewhat lower than the 38.8 % reported by Papon (2012) who carried out a similar analysis based on the French National Travel Survey. We expect that there is a degree of underreporting in our survey compared to face-to-face surveys or observation studies since the original purpose of the survey was not specifically to collect information about multitasking and the reporting happened retrospectively.

Our results show that most auxiliary activities are passive (listening to the radio or music). It is followed by conversation, which may not be viewed as a *productive* activity, but it may have its social relevance in building up and maintaining healthy relationships or training the intellect. According to our results, the proportion of productive activities (working, studying, reading, communication) is quite low. This corresponds to the findings of Vilhelmson, Thulin and Fahlén (2011), who concluded that travel time was used for productive work in relatively few cases and most travellers used travel time for leisure activities. Our result of 6.6 % for public transport trips is similar to the results of Ettema and colleagues (2012), who found that between 6.6 % and 8.5 % of public transport passengers worked or studied, although the percentage went up to 17.5-19.4 % for train travellers. Their results regarding conversation on trains (16.4-20.6 %) are also similar to ours (21 %).

In this chapter, we focused on gender, age, trip purpose, travel mode and the presence of travel companions. We found significant but weak relationships between the types of auxiliary activity and gender, age and travel mode, while

the relationship with trip purpose is significant and moderate. The analysis also pointed out that in regions such as Flanders the importance of productive multitasking activities is very limited since most of the trips are carried out by car, bicycle or walking, which do not provide opportunities for working, studying, or reading. In addition, the quality of the public transport services (crowdedness, vehicle comfort, number of interchanges, duration of trips) may also limit the opportunities to carry out productive multitasking activities. Further research is needed to highlight these aspects in assessing the propensity of multitasking while using public transport.

According to our results, working and studying are more relevant to younger people, since they also take public transport more often. Therefore, it is important to look at the context of multitasking in terms of modal shift and the spatial delimitation of impacts (in urban areas where public transport use is higher, we would expect more multitasking).

It is, however, notable that socially relevant activities such as having a conversation with a family member or friends are very relevant. Further research is needed to identify the extent to which a person's social network, attitude to other people and daily social interactions determine their activities while travelling. In more than half of the cases when people multitask, there is somebody present as a travel companion, which provides an opportunity for spending the journey enjoyably. While this is not considered generally as a productive activity that increases the utility of travel time, we agree with Holley, Jain and Lyons (2008) that relaxation and social contacts may have a positive impact on the productive activities that follow.

Our second objective was to investigate whether our web-based time use survey is a suitable instrument to extract data on multitasking. During the analysis we faced the following difficulties:

- In the basic module of the survey, transport activities were not broken into trip segments. When a journey is multimodal it was not possible to distinguish between the different segments of the trips.
- In the transport module, each segment of a trip chain was registered but the auxiliary activities were only registered for the 'main' travel activity (the whole trip chain). Therefore, it was not possible to indicate multiple activities for a trip chain.
- There was inconsistency in registering secondary activities. The distinction of the activity to be carried out at the destination from the activities exclusively carried out during travelling was not straightforward to respondents. This is a problem that similar surveys (see, e.g., Mokhtarian & Salomon, 2001) encountered.

- Only one auxiliary activity could be indicated as the main activity, therefore, in case of multiple auxiliary activities one or more activities were missed.
- It was not possible to indicate different durations for primary and auxiliary activities (e.g., travelling for two hours but working only for 60 minutes and then sleeping for 60 minutes).

These are all issues that can be investigated in further surveys since the MOTUS software is easily configurable. It must also be noted that the survey has a limited reach due to its online nature; therefore it can be considered representative only of the population using the internet regularly (at least once a week).

On the other hand, the extensive time use survey provides information about the frequency and duration of secondary activities for a longer period than previous surveys including weekdays, and weekends since the registration covered a whole week. Another advantage is that, similarly to previous studies (e.g., Kenyon & Lyons, 2007), the participants registered secondary activities in the context of the primary activity, which allowed auxiliary activities to be identified easily.

This chapter demonstrated how a time use survey not specifically designed to capture auxiliary activities while travelling can be applied and adapted to collect data on travel-based multitasking. The MOTUS survey demonstrates best practice for other future time use surveys to include secondary activities in the activity registration process. The fact that the data was collected through an online survey interface made it easier and more feasible for respondents to answer questions about their secondary activities.

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Appendix

Table A1. Correspondence table for aggregate activity groups

| Activity in original survey | Aggregate group |
|---|------------------------|
| Paid work | Work, study |
| Nonpaid overtime (work) | Work, study |
| Doing the homework, studying (school or university) | Work, study |
| Self-study for a course | Work, study |
| Making a shopping list, planning the day/week | Other |
| Other activities related to household administration and organisation | Other |
| Helping children with the homework, talking with children about the school | Conversation |
| Reading aloud, playing and talking to children (not for school) | Conversation |
| Sleeping | Relaxing |
| Conversation, discussion (also argument) | Conversation |
| Smoking | Other |
| Resting, meditating | Relaxing |
| Relaxing, doing nothing | Relaxing |
| Thinking | Relaxing |
| Solving crossword puzzles | Other |
| Playing games | Other |
| Listening to live radio | Media activities |
| Listening to the radio (website, podcast) | Media activities |
| Listening to music/audio (CD, mp3, vinyl, audio books) | Media activities |
| Listening to music on the internet (YouTube, Spotify, Last.fm ...) | Media activities |
| Watching live television | Media activities |
| Watching recorded TV programmes | Media activities |
| Watching films, documentaries series (online, on demand, downloaded or purchased) | Media activities |
| Reading a book (paper or digital) | Reading |
| Reading a periodical (paper or digital) | Reading |
| Reading a daily newspaper (paper or digital) | Reading |
| Reading local newspaper/news (paper or digital) | Reading |
| Reading promotional leaflets, catalogues, (paper or digital) | Reading |
| Other reading | Reading |
| Writing letters or postcards | Communication |
| Phoning (also mobile) | Communication |
| Video calling (Skype, GTalk, Facetime) | Communication |
| Sending, organising and reading e-mails | Communication |
| Sending text messages (SMS, MMS, WhatsApp ...) | Communication |
| Chatting (MSN, Facebook chat, ...) | Communication |

Table A1. Continued

| Activity in original survey | Aggregate group |
|---|------------------------|
| Posting information on blogs, Facebook, Twitter, Instagram, LinkedIn, Netlog, internet forums, zoekertjes ... | Communication |
| Calling, writing to, e-mailing organisations, services, institutes | Communication |
| Other communication | Communication |
| Surfing on social network sites (Facebook, Twitter, Instagram, LinkedIn, Netlog ...) | Communication |
| Surfing on the internet | Other |
| Playing online computer games (also on the smartphone) | Other |
| Playing offline computer games (also Nintendo, Xbox, Playstation, ...) | Other |