Trends in commuter and leisure travel in The Netherlands 1991-2001: Mode choice and travel time.

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1. Introduction

The last few decades have seen an increase in complexity in household structures and allocations of household responsibilities and working tasks. Women's increasingly multifaceted role in the household has lead to increases in female mobility. While we know that work participation rates of women increased during the 1990s, we might expect a change in travel behaviour that reflects this shift (Beets, Liefbroer, & de Jong Gierveld, 1997; Harms, 2003; SCP, 1998). Research indicates that women tend to commute less (time and distance) than men (Harms, 2003; Hjorthol, 2000; MacDonald, 1999; Rouwendal, 1999)Grieco, Pickup, & Whipp, 1989). An important spatial trend that has occurred concurrent with the swell of female workforce participation is the increasing polycentrism of cities. Perhaps the changing gender composition of the workforce can partially explain this trend. Women, have significantly lower commuting tolerance than men (Hjorthol, 2000; MacDonald, 1999; Rouwendal, 1999). Likewise, their tendency to migrate for work is very low (Blumen, 2000). As a result, women tend to select work locations closer to home than men do. However, these trends may be shifting as external trends towards a more gender-neutral labor force emerge and as women's positions in households alter (Hjorthol, 2002; Pazy, Salomon, & Pintzov, 1996; Rouwendal, 1999).

A concurrent trend is the decrease in time spent on leisure pursuits in the Netherlands. The increasing importance of, and the decreasing time for, leisure appears to be resulting in increasing leisure travel time, distance and frequency (Breedveld & van den Broek, 2001; Harms, 2003; Knulst & Mommaas, 2000). While we know that women and men have roughly equivalent amounts of leisure time but that women's leisure time tends to be more fragmented and more contaminated by unpaid work tasks such as child-care (Bittman & Wajcman, 2000), there is very little literature available on the difference between the genders in their leisure travel behavior.

Faster means of transport and an extensive highway network, and long-term developments in economics, demography, and information and communication technologies (ICTs) have enabled aggregate commuting and leisure distances to grow in the last few decades. There is a body of literature amassed over the last 30 years looking at the question of whether there are fixed "travel time budgets" (for a review see: Mokhtarian & Chen, 2004). The argument is that as circumstances allow faster travel, distances traveled will increase as the time used on travel is relatively fixed. There is an analogous line of reasoning related specifically to commute time budgets. Levinson and Kumar (1994) used data from Washington D.C. to argue for the existence of commute time budgets (analogous to the travel time budgets discussed above). They noted that while commute distances had increased, average commute times had remained constant at 33 minutes for 3 decades. They argued that increased speeds offset the increases in travel distances and that people re-locate their work and home locations periodically to maintain relatively consistent travel times. However, later Levinson (1997) reported data that indicated that on average (home) movers tend to maintain their commute (time) when relocating (Rouwendal & Rietveld, 1994 found similar results for commute distances in the Netherlands: home moves had no effect on commute distance, job moves increased commute distance). In a more recent paper, Levinson and Wu (2005) repeated the analysis of commute times in the Washington area but this time the study area included the newer suburban extensions to the city. In this (spatially) larger data set they found commute times had increased markedly. On the basis of this the authors concluded that while travel time budgets per se don't seem to exist, individuals may have a fixed commute time

tolerance, a type of threshold of tolerance for work trip length after which they change house or job (Levinson & Wu, 2005). While there is some evidence that appears to support travel/commute time budgets, especially at the most aggregate level, at the individual level the situation appears to be more complicated. Nevertheless there is reason to think that travel distance is likely to be growing faster than travel time even at the individual level as individuals seek to maximize their opportunities and experiences in a limited and increasingly harried time frame. It is likely that travel (and commute) distances are more elastic than travel (and commute) times, however, there does not seem to be strong evidence for travel/commute time budgets *per se*. In this paper we focus on travel time, as this is the most important dimension for the individual traveller.

This paper deals with trends in travel behaviour in the Netherlands during the period 1991 to 2001. We are interested in how travel times and mode use are changing. We assume that changes in travel are related to other changes in the Netherlands during the 1990s. In this paper we focus on gender and on spatial aspects of residential environment, and look at how these are related to the trends evident in travel behaviour. We deal with travel for two motives: commuting and leisure. Commuting is dealt with, as it is central to structuring many people's lives: where they live and work and how they organize their days and weeks. Leisure is of interest as it represents an increasing share of travel undertaken in Western countries, including the Netherlands, and is as yet poorly understood.

Section 2 introduces the existing literature on the trends in the Netherlands, Europe and worldwide in mode use, travel times and travel distances. Section 3 introduces the data. The trends in mode use and travel time are outlined and briefly discussed in sections 4 and 5 respectively. Section 7 concludes.

2. Trends in mode use and travel time

2.1 Mode use

Schwanen (2002) used data from 11 European cities to look at trends in modal share. He reports that between 1960 and 1980 car use grew very fast and public transport and cycling and walking declined, after 1980 car use stabilised but cycling and walking continued to decline, public transport increased during the 1980s. Harms (2003) reports an increase in car trips (48%), and a decrease in walking/cycling (14%) and public transport (20%) trips in the period 1975 to 2000.

Harms (Harms, 2003) reports a shift away from public transport, walking and cycling towards car use for leisure travel over the period 1990 to 2000 in terms of the percentage of trips taken by each mode (58% by car in 1990, 63% in 2000). This shift is likely to partially reflect the general increase in car ownership and use (Harms, 2003), but may also reflect the increasing decentralisation of leisure facilities to areas not easily accessible by public transport (Tetteroo, 2004). Public transport is mainly set up to serve work and education trips, currently public transport systems tend to be too inflexible to cope with the irregular demands of leisure travel (Kiiskila & Kalenoja, 2001).

The specific nature of leisure travel means mode choice for leisure is often quite separate from mode choice for other trips such as commuting, although of course, commute mode is likely to be related to leisure mode if only due to ownership of cars, bikes and/or travel passes (Lanzendorf, 2000).

Compared to commute trips, many more leisure trips have destinations that are not easily accessible from rail stations. Work places are in many cases still concentrated in city centres, whereas friends, shopping centres and dedicated leisure complexes are much more likely to be

found in the suburbs or indeed outside of built up areas. Some traditional leisure facilities such as theatres, concert halls, cinemas and libraries are concentrated in cities (van Dam, 2000) these are relatively accessible, at least for city-dwellers, by public transport. However, theme parks in the Netherlands are mainly located in rural areas, and increasingly new leisure facilities, and especially large multi-purpose complexes and sport facilities are located on city fringes (Schlich et al., 2004; Tetteroo, 2004). These leisure facilities are located so as to be accessible by car and with large car parking facilities, however, they are usually only with difficulty accessible by public transport (Limtanakool, Dijst, & Schwanen, submitted).

Trends in commuter travel during the nineties, some shift away from public transport and towards car use in terms of number of trips made (up from 60% of trips in 1990 to 64% of trips in 2000). The relative share of bike and walking trips remained constant, accounting for around a third of commute trips (Harms, 2003). There is no literature available linking the shift in commute modes and commute distances change. As trip lengths increase for commuting, walking and cycling become unviable. At the same time, for long commutes rail travel may become a more attractive option for trips over 50km (Bovy, Baanders, & van der Waard, 1990), so we might expect an increasing or constant share for public transport, and a decreasing share for walking and cycling when analysed by distance travelled.

Car use decreases as population density of residential area increase, due to good public transport, walking and cycling options available in urban areas and problems with congestion and parking in these areas (Polk, 2003; Schwanen, Dieleman et al., 2004). For commuting, many workplaces are located in highly urbanised areas well served by public transport, bike- and footpaths and with limited car parking facilities. Increasingly, however, decentralisation processes mean workplaces are located in areas that tend to encourage car use, for example clustered around highway exits. The growth of car use in the Netherlands has been somewhat curbed in the Netherlands by spatial planning policies to encourage walking, cycling and public transport use. For example residential growth areas are well served by public transport networks and retail developments face strict zoning policies preventing the development of out of town megaplexes surrounded by car parks (Schwanen, Dijst, & Dieleman, 2004). While the polycentric city forms has developed through the widespread ownership of cars, a flexible, individual transport mode, in the Netherlands polycentric cities do not appear to have a high share of car trips (Schwanen, Dijst et al., 2004). This is due to the dense, compact nature of the Randstad, the key polycentric region in the Netherlands. Intercity travel in this region is well served by rail, within cities public transport, cycling and walking are well provided for.

Gender is also of importance in explaining travel mode choice. It has been widely reported that women make (relatively) more use of public transport than men (e.g. Hanson and Johnson, 1985) (Hjorthol, 2000; Polk, 2003). However, this trend appears to be changing, the increase in the number of trips make by women is largely accounted for by car trips, the percentage of trips made by both genders by public transport has decreased. In the period 1975 to 2000 the number of trips made by car increased for both men and women, however this increase was markedly more dramatic for women whose car trips increased 81%, compared to men whose car trips increased 29%. Men decreased the number of cycling/walking trips they made by 25% while women's slow mode trips remained stable. Public transport trips decreased for both genders but most markedly for men (29% decrease compared to a 13% reduction in public transport trips for women) (Harms, 2003).

Increased participation in the work force by women, has, as yet, had only a small impact on the division of household tasks in the home. This has resulted in extreme time pressure for working women who need to accomplish many tasks, some of which have strict time constraints (e.g. collecting children from school). Increased household affluence and time pressure caused by women sharing the paid work role is likely to lead to the purchase of

additional cars (Dijst, 1999; Giuliano, 1997; Golob, 1990). This is especially likely in light of the fact that women's trips tend to be more complex than men's (Bianco & Lawson, 1996; Brewer, 1998; Grieco, Pickup, & Whipp, 1989) due to their combining to a greater extent, home and work responsibilities, and due to women's greater concerns regarding their personal safety when using public transport (Bianco & Lawson, 1996).

2.2 Travel time

Travel time is increasing in the Dutch population. Harms reports an increase in the average travel time from 67.5 minutes per person per day in 1990 to 72.2 minutes per person per day in 2000, a 7% rise in travel time in 10 years. While men still spend more time on travel per week than women, the gender gap in travel time has narrowed over recent years. In the period 1975 to 2000 men increased their travel from 7.5 hours a week to 8.8 hours, women increased from 5.9 hours to 8.0 hours (Harms, 2003).

Leisure travel is relatively non-systematic and has been relatively neglected in the literature despite its growing importance both in terms of travel time and distance. Nevertheless, leisure travel constitutes a substantial share of passenger travel, more than a third (36%) of the time spent travelling per week is for leisure in the Netherlands (Harms, 2003). For the nineties Harms (Harms, 2003) reports a 3% increase in travel time for leisure which represented 2.9 travel hours per person per week in 1990 and 3 hours per week in 2000.

Just under a quarter (24%) of travel time is spent on commuting in the Netherlands (Harms, 2003). During the nineties travel time for commuting increased by a dramatic 35% (from 2 hours, to 2.7 hours per person per week). Commute trip frequency increased 19% over the same period (Harms, 2003). The share of the increase not explained by the increased frequency is likely to be due to increased commute distances travelled.

Little is known about the effects of urban form on leisure travel however. Tillberg (2001) reports that those living in rural areas (in Sweden) travel more for leisure through the week, and urbanites make long leisure trips on the weekends leading to a balance across residential areas in terms of leisure travel behaviour.

Levinson and Wu (2005) draw attention to the importance of metropolitan structure in determining commute times. The found that those living in the new suburbs of Washington had longer commutes than those who lived in the highly urbanised centre. For the Dutch situation Schwanen, Dieleman and Dijst (2004) found comparable results for the "growth centres" (areas set aside for new residential development, outside, but within commuting distance of the major employment centres). In addition, for the period 1990-2000, Levison and Wu (2005) found that commute times had grown more rapidly in the bi-centric Minneapolis-Saint Paul twin cities than in the essentially mono-centric Washington region. Cervero and Wu (1998) found similar result for the San Francisco Bay area: an increase in commute times (and distances) following an increase in polycentrism in the region. For the Netherlands, it is still unclear how the various regions with their varying city forms, and levels of interconnection between cities (we distinguish the highly urbanised polycentric Randstad, the less urbanised and interconnected provinces immediately surrounding the Randstad, and the relatively low-urbanised, weakly interconnected peripheral provinces in the North and South of the country) relate to the travel behaviour of their residents.

Women travel less in general, and for commuting specifically (Hjorthol, 2000; MacDonald, 1999; Rouwendal, 1999). A number of explanations have been offered for the shorter commutes of women, these distil down to spatial explanations: female-dominated jobs tend to be spread throughout the metropolitan area, whereas many male-dominated jobs are concentrated either in the CBD or in industrial zones (MacDonald, 1999); job market explanations: Women's jobs tend to be more poorly paid and have less variation within a

given occupation than men's jobs so there is little incentive to travel (MacDonald, 1999); household responsibility explanations: women's short commutes reflect the disproportionately heavy share of the household responsibilities assigned to them (Turner & Niemeier, 1997) and combination explanations: employers may seek out employees for whom long commutes are impossible or provide very low returns (such as women with household responsibilities) and locate their work place in areas where they will have access to a supply of these workers (Hanson & Pratt, 1988; MacDonald, 1999).

As might be expected from the above explanations women in different household types also show different patterns to each other in terms of travel time, with mothers making shorter trips than single women and women in couples with no children. Men have much more uniform travel times across household type groups (Schwanen, 2003).

Some initial evidence for the closing of the gender gap in terms of commuter behaviour comes from research conducted in the US by Kwan (1999) who found that for her relatively affluent sample, women employed full time commuted longer distances than men employed full time.

The focus of this paper is on travel mode and time (because these are the elements relevant to the individual traveller). However, as travel time is a function of distance travelled and mode used we review some of the literature on distances travelled for work and leisure below.

Changing gender relations, urban forms, household structures and lifestyles in this period are likely to be being reflected in the changing travel behaviour of individuals. This research focuses on the trends in travel behaviour in the Netherlands over the period 1991 to 2001. We focus on trends in commute and leisure travel in terms of travel time and mode choice and look at the impact of gender and spatial factors during this period. Following this review of the literature we advance the following hypotheses regarding the trends to be observed in travel in the Netherlands over the ten-year study period (1991-2001):

1. While commuting has a substantial modal share for public transport (rail), this trend is not expected for leisure travel.
2. Over the study period, mode use has remained fairly constant (in terms no of trips) in the Randstad, which is well served by public transport and bike paths. Car use has increased outside the Randstad (where there are less public transport services) to enable residents to travel longer distances.
3. Women's car use has increased faster than men's have.
4. Travel time for commuting and leisure is expected to have increased over the study period.
5. Commuting and leisure times have increased in the Randstad. Travel outside the Randstad (where cities are relatively far apart and urban systems largely mono-centric so inter-city travel is less attractive) has experienced a more modest increase due to the low expected returns for increased travel in these areas.
6. Increases in commute times are expected to be more dramatic for women than for men. Increases in leisure travel times and distances are expected to be equal for the genders.
7. Increasing travel distance over the study period is expected to co-occur with increasing travel times and increasing use of private cars (rather than public transport and non-motorised travel modes).

3. Data

The data used in this study is from the Dutch National Transport Survey (NTS, in Dutch OVG). This data is collected regularly in the form of a repeated cross-sectional survey by a

local research organisation in a mixed method format: a telephone interview precedes the filling out of a one-day household travel diary. The data collection is spread over the year.

Data manipulations included the deletion of individuals who did not travel at all on the study day (as it is impossible to distinguish cases of no travel from cases of non-response) and deletion of individuals who travelled outside the Netherlands borders on the study day. Individuals aged less than 18 years were deleted due to the focus on commuting of the research program. Further data manipulations were necessary to allow the comparison of the data sets across the 10 year period – weighting and correction factors included in the data were used for this purpose.

Travel behaviour is looked at across gender split into household types. We use the categories "single", "couple" (without children), and "family" (couple with children), for couples and families a distinction is made between single (at most one of the partners has paid work) and double income (both partners have either part or full time work) households. Households that do not fall into these categories were excluded from these analyses.

Following previous transport research in the Netherlands (e.g. Schwanen, Dijst & Dieleman, 2005) we used the following categories of the residential municipalities of respondents: "Randstad – 3 major cities", "Randstad – medium cities", "Randstad – suburbs", "Randstad – growth centres", "Non-Randstad – more urbanised" and "Non-Randstad – less urbanised". The Randstad is the economic centre of the Netherlands in the West of the country. It is a densely populated ring of interconnected cities around a "green heart". It is well serviced by public transport – buses and metros within cities and a comprehensive rail network between cities. It is also well connected by highways. The growth centres are areas outside the large cities allocated for new residential growth by policy makers in the 1970s and 1980s. These are well connected to the adjacent large cities by highways and rail. In the 1990s policy makers focused less on these settlements in their attempts to curb sprawling residential and economic functions. Attention shifted to brownfield sites within urban areas and greenfield locations directly adjacent to major cities when the compact city policy was implemented (Dieleman et al, 1999). The former growth centres continued to attract firms and households however, and their inhabitants exhibited travel patterns that deviate from their counterparts elsewhere in the Randstad (Dieleman et al, 2002; Schwanen et. al, 2005).

In splitting trips by mode we divide travel into car driver travel, public transport, walking and cycling and other modes (including travel as a car passenger). Aeroplane and boat trips were excluded from the analysis. Travel motives looked at are commuting and leisure. Commuting is considered to be travel to and from work, excluding business trips, it does not include trips to education facilities for students. Leisure includes social visits, recreational and hobby outings, and recreational travel such as walking, cycling or scenic drives for recreation.

4. Trends in Mode Use

4.1 Commute mode use

Insert Table 1 about here

Modal share for commuting has shown a number of shifts over the nineteen-nineties.
As can be seen in Table 1, car use (as the car driver) has shown an increase for both women and men. Most of the increase in commute trips by car occurred in the late nineties. This co-occurs with a time of economic growth in the Netherlands, which may explain the increased car trips either with reference to household's ability to afford to travel by car, or with reference to the greater need of households to have access to fast, flexible modes to travel to

new employment opportunities perhaps further from home or less easily accessible by public transport.

Men have a greater car commute share than women both overall and in every household category. Contrary to our hypothesis (hypothesis 3) the increase in car use has been more dramatic for men than for women. Thus the nineties saw further divergence between the genders with regard to car use for commuting.

For men the increase in commute trips by car is constant across all household types and most pronounced in families. For women the overall increase is more modest. Women in different household types show a more varied pattern also. Single women, show an increase in the share of commute trips made by car; and in the case of female commutes in single income families there is a marked decrease in car use across the decade; more modest decreases are evident for women in single an dual income couples and dual income families. It seems that women who are the sole earner in families are decreasing their reliance on the car (perhaps allowing their partner, who may be responsible for the more complex trips related to household maintenance and childcare to make use of the household car), we do not see this trend among sole earner men.

Public transport has remained stable in modal share during the nineties for both genders. However, once the genders are split into household types a more complex pattern is evident. Among men, sole earners in couples and families have shown a substantial drop in their use of PT for commuting, singles and men in dual income couples account for the counterbalancing increase in PT share while men in dual income families have remained relatively stable in their moderate level of PT commuting. For women the increase in PT commuting by singles is counterbalanced by the fact that, all other groups decreased their reliance on public transport.

As for is the case for public transport, the stability of the aggregate figures for walking and cycling commute shares masks divergent patterns in the use of the non-motorised mode for commuting in different households and between the genders. While men's use of non-motorised commute modes has decreased only slightly, some groups of women have shown marked changes in their propensity to use these modes over the study period. Marked increases have occurred in walking and cycling commutes for women in single and double income couples and, to a lesser extent, single income families. This can perhaps be attributed to the increasing availability of work at the edge of residential settlements during the nineties. These workplaces within walking and cycling distance from home may be especially attractive to women. Women in dual income families and singles show a drop in commuting by non-motorised modes.

Insert Table 2 about here

With respect to spatial variation in mode choice for commuting, there are often quite large differences between the commute behaviour of people living in different areas in the Netherlands. In table 2, increases in the reliance on cars for commuting is evident outside the Randstad, and, to some extent, in the suburbs of the Randstad. Both male and female commuters living in these areas show increases in their share of commute trips made by car. The rest of the Randstad shows a decrease in car commuting. This decrease can mostly be attributed to the dropping off of female car commute trips in these areas, men have fairly stable car commute patterns in the large and medium cities of the Randstad and show only a modest decrease in car reliance in the growth centres.

There is more spatial variation in the changes in mode use of the genders when it comes to public transport. While the general trends show an increase in the large and medium cities in the Randstad and a slight decrease in PT commutes from the suburbs, the genders coincide in their trends only in the large cities in the Randstad where both women and men have increased their share of PT commutes. In the medium cities men have increased and women have decreased their PT commutes. Male commuters account for the drop off of PT commutes in the suburbs. Women in the growth centres and higher urbanised areas outside the Randstad have increased their propensity to commute by PT.

There has been a clear decrease in non-motorised commuting outside the Randstad, this applies to both genders and for both men and women the gap seems to have been filled by additional car commuting in these areas as observed above. For the Randstad the picture is more mixed. The large cities show a fairly stable pattern, with a slight decrease in non-motorised travel by male commuters. Medium cities show a decrease in walking and cycling commutes overall which is accounted for by male commuters in these cities switching to PT (and to some extent to "other" commute modes). Females in medium cities show increases in their walking/cycling. In the Suburbs in the increase in non-motorised commutes seems to be complementary to the decrease in public transport use and in the growth centres to the decrease in car use – in both cases these patterns seem to be due to male commuter behaviour. Females in these areas have decreased their non-motorised commutes – opting increasingly for car commutes from the suburbs and public transport commutes from the growth centres.

4.2 Leisure travel mode use

Insert Table 3 about here

Car use for leisure is clearly on the increase for women. Table 3 shows women in all household types increasing their use of car driving for leisure, the most dramatic increase was among women in dual income families who more than doubled the proportion of leisure travel undertaken as a car driver. Despite the increases, women still only drive for leisure around half as often as men, although the gap between the genders has narrowed between 1991 and 2001. We draw the readers attention to the relatively large shares of "other" mode leisure travel for women in couples and families, this probably reflects the social nature of leisure travel, which may often be undertaken as a household, with men driving and women as passengers. Men overall have decreased their share of car trips for leisure purposes. The decrease is reflected in the behaviour of men in couples with no children. Contrary to the general trend, single men and sole earner fathers have increased their share of car travel for leisure.

Public transport appears to be loosing modal share for leisure trips. For men the decreases are among singles and in single income couple. The other groups of men show relative stability in their low levels of public transport use for leisure. Decreases are also evident for most groups of women, the exception being the smallest users: those in dual income couples. There is a pattern of convergence both between and within the gender groups, with, by 2001, no group making more than 10% of their leisure trips by public transport.

The importance of walking and cycling for leisure increased over the study period for men, and decreased for women. Dramatic increases in non-motorised travel are noted among men in couples: by 2001 their share of non-motorised travel was on a par with that of their female counterparts. Females in dual earner couples also increased their share of non-motorised travel, while at the same time mothers and women in single income couples decreased their share of non-motorised travel.

Again, women in couples and families show a relatively large share of "other" mode travel for leisure likely to mostly reflect passenger travel. Women in dual income couples show a dramatic drop in this type of leisure travel perhaps reflecting increasingly separate leisure activities for partners in the household type.

Insert Table 4 about here

Spatial trends in leisure travel show substantial variation between residential areas, as can be seen in Table 4. A decline is evident in most areas for car travel for leisure. The strongest declines at the aggregate level are in the medium cities and growth centres. Men living in the medium cities, growth centres and in the low-urbanised areas outside the Randstad show the largest cut backs in share of car travel for leisure, in other areas car mode share is fairly stable for men. Women have implemented more increases in car mode share for leisure travel, this holds for all areas except the growth centres, but these are relatively small in size. The explanation for the decline in car travel for leisure in the growth centres is not clear. In 1991 the growth centres had the highest level car use for leisure overall and within both gender groups, the decline over the study period means that by 2001 modal share for the car for leisure travel in the growth centres was at a similar level to much of the rest of the Netherlands.

Public transport modal share for leisure shows a decline in all areas for both genders, except for men living in the growth centres, whose level of PT leisure travel was effectively zero in 1991. The strongest declines in PT leisure travel have been in the Randstad where 1991 levels of PT modal share for leisure were relatively high. Despite the decrease, large cities in the Randstad still have relatively large PT modal shares for leisure travel. It is likely that the excellent PT services in these areas, together with constraints relevant to car travel due to related to parking and congestion (The lowest levels of car use for leisure are in the Randstad) contribute to the continued popularity of PT leisure travel for those living in the largest cities in the Netherlands.

Table 4 also shows that non-motorised leisure traveled gained in popularity over the nineties in the medium cities, suburbs and growth centres of the Randstad and in the low urbanised areas outside the Randstad. These same areas have experienced the most increase in non-motorised modal share among men. For women the pattern is a little different with growth in these modes only evident in the medium cities and growth centres, and declines in these modes occurring in the largest cities and the suburbs. The explanation for these patterns is unclear.

5. Trends in Travel Time

5.1 Commute time

Insert Table 5 about here

As has been shown in previous studies, commute times show a general upward trend over the period of our study. Table 5 shows that in general car and public transport travel times have increased while walking and cycling times have remained fairly stable. This switch to faster travel modes probably reflects the increasing distances the literature indicates people are travelling for work.

Consistent with previous literature men have longer commute trips than women. As hypothesised women show more dramatic increases in commute time over the study period

and thus there is some convergence between the genders with respect to commute times although women still show markedly shorter commutes than men do in all household types.

For men, household type is fairly immaterial to car commute times; men's commute times are similar across all household types. Women show much more differentiation between household types, for example women with families have shorter commutes. However, these differences appear to be diminishing over time. Thus here we see a convergence between the travel times of the different groups of women over the study period.

Travel times by public transport have seen a substantial increase across all household types (except dual income couples) for women. In light of the finding (reported above) that the trip share for public transport is not increasing for women, this is likely to indicate that women are making longer distance commute trips in 2001 than in 1991. Men show a more differentiated pattern across household types with men in dual income couples and singles showing increasing travel times by public transport and fathers and sole earner men in couples showing decreasing public transport travel times. For men the travel time trends reflect the modal share figures more closely across household groups, and so these changes probably reflect mode choice changes over the study period, rather than changing commute times or distances.

Insert Table 6 about here

There are some substantial differences in the travel behaviour of individuals living in different areas in the Netherlands. The increase in commuting times by car has been relatively uniform across all spatial categories, with slightly more growth in the large and medium cities in the Randstad. Travel times are the longest in growth centres and shortest in the suburbs and outside the Randstad. These trends are relatively consistent over the study period.

Public transport and walking and cycling commute times have increased in all but the least urbanised areas. These low urbanised areas are the least well served by public transport, and there is anecdotal evidence that services have decreased over recent years. As for car, travel times by public transport are converging across areas over time. Walking and cycling commute times show a modest and fairly uniform increase across all areas except the low urbanised areas outside the Randstad. It is likely that the relative benefit of changing from public transport or non-motorised modes to driving to work is most substantial in the least urbanised areas where there is little problem with congestion, traffic jams and parking.

When split by gender further trends can be observed in the spatial domain. For driving to work men show a diverging pattern over residential areas. While car driver commute times were fairly homogenous across areas in the early nineties and all areas show an increase during the study period, by the end of the nineties the men resident outside the Randstad show relatively short commute times compared to those in the Randstad. Women show a converging pattern in car commute time. Those areas with the longest car travel times for women in the early nineties (growth centres and medium cities) show the least growth, and those with the shortest car commute times in 1991 (areas outside the Randstad) show the strongest growth throughout the nineties.

For Public transport commute times men show a flattening out of differences between residential areas over the study period. The long trips in 1991 in the suburbs and low urbanised non-Randstad areas shortened over the study period and the short PT commutes in the large cities and growth centres in 1991 grew over the nineties. Women show increases in PT travel times for all areas but most dramatically outside the Randstad and in the medium cities and suburbs of the Randstad. PT commutes for those women in the growth centres

started at a high level but remained fairly stable during the nineties, following the trend also observed in growth centre women's car commutes. These women may have already been commuting for times at or near their tolerance level at the beginning of the nineties, and therefore did not extend the duration of their commute trips during the nineties, despite this being the trend in other areas.

Walking and cycling commutes for men remained stable except in the growth centres and suburbs, where non-motorised commutes increased substantially. For women the exception to the general trend of stability was in the growth centres and low urbanised non-Randstad areas where there was a substantial decrease in non-motorised commuting in the early nineties. The growth in non-motorised travel for both genders in the growth centres may reflect an increase in the availability of local employment in these areas during the nineties.

5.2 Leisure travel time

Insert Table 7 about here

From table 7 we note a general downward trend in the time spent on leisure travel over the nineties. At the same time, time spent on leisure travel shows a convergence across the genders. Where men spent more time on leisure travel at the beginning of the nineties, travel time for leisure is much the same for men and women in 2001. Different household types show different trends in leisure travel over the study period. There is a polarisation over the nineties between families and those without children for men and even more so for women: while it is not evident in 1991, by 2001 parents spend substantially less time on leisure travel than individuals without children. This polarisation by household type is also evident in leisure travel time by public transport. Again different households show different trends across time, with a general decreasing trend. These trends may indicate an increased focus on in home leisure activities for families. Recent reports (e.g. SCP, 1999) indicate that Dutch parents are spending more time with their children, the trends observed in the travel behaviour of parents may reflect these changes.

Walking and cycling travel times are stable for women but decreasing for men over the study period leading to convergence in the genders' non-motorised leisure travel time over the nineties. Again, as for car and PT, figures for 2001 indicate a polarisation in household types with parents travelling less for leisure than couples and singles.

Insert Table 8 about here

The trend of decreasing time spent on leisure travel is consistent across residential areas of the Netherlands, although the extent of the decrease varies. Residential location trends in leisure travel time show an especially strong decrease in car leisure travel in the growth centres and more modest decreases elsewhere. For leisure travel by car decreases are relatively modest in the large cities and suburbs of the Randstad, while other areas show a drop of around 25% in car travel time spent on leisure over the study period. While for leisure travel by PT the most dramatic decrease is in the medium Randstad cities; the suburbs and growth centres show relative stability; the Randstad large cities and the non-Randstad areas fall between the 2 extremes with constant decreases over the study period. The largest decreases in walking and cycling are in the non-Randstad areas, the big Randstad cities show relative stability in this respect, other Randstad areas show clear, consistent decreases in non-motorised travel over the study period.

6. Conclusion

This paper looks at the development in mode use and travel time for commuting and leisure between 1991 and 2001 in the Netherlands. Particular attention is paid to the disaggregation of groups so we can look at the complexity underlying the changing travel patterns in different areas and among different household types.

It was expected that public transport is able to garner a substantial modal share for commuting travel but not for leisure. While this appears to be the case in the mid and late nineties, the PT shares for the 2 travel motives were closer together in the early nineties. Decreases in leisure travel by public transport have led to the discrepancy evident by 2001 where PT attracts almost double the modal share for commuting as it does for leisure purposes.

Partial support was found for our hypothesis (2a) that, mode use has remained fairly constant (in terms no of trips) in the Randstad. Our hypothesis (2b) that car use has increased outside the Randstad was supported for both commuting and leisure travel.

Contrary to our hypothesis (3) women's car use (as a driver) has not increased faster than men's. On the contrary, for commuting the reverse is the case. For leisure women's propensity to travel as a car driver has increased somewhat while men have decreased their leisure travel as car drivers.

Travel time for commuting was found to have increase over the study period, for leisure there was a marked drop in travel time. While the trend in commuting echoes that found in the existing literature, that leisure travel time has dropped off in this period is contrary to findings based on the Dutch time use survey. This anomaly requires further investigation.

We hypothesised that commuting and leisure times have increased in the Randstad. The Randstad followed the general trends and thus our hypothesis was supported for commuting and not for leisure. Further we expected travel outside the Randstad had experienced a more modest increase due to the low expected returns for increased travel in these areas. Again, leisure showed no increase, on the whole the increases in commute travel outside the Randstad were comparable in size to that of Randstad residents.

Increases in commute times were expected to be more dramatic for women than for men, the data supports this hypothesis for car and public transport commutes but not for non-motorised commutes. Further we expected increases in leisure travel times and distances are expected to be equal for the genders. We found that men's decrease in leisure travel was larger than the decrease in women's leisure travel leading to fairly similar amounts of time spent on leisure for the genders by the end of the decade.

Increasing travel distance over the study period, is expected to co-occur with increasing travel times and increasing use of private cars (rather than public transport and non-motorised travel modes).

This study has indicated some interesting trends in travel in the Netherlands. There is a clear increase in time spent commuting, and a decrease in time spent on leisure travel. For both travel motives there is some convergence between the genders in the time spent on travel. For commuting this is due to the relatively rapid growth in time spent on commuting by women, for leisure this is due to the more dramatic drop among men in the time spent on leisure travel.

However, these trends vary considerable across household types and residential environments, pointing to the importance of looking more closely at these disaggregations of gender groups to gain a more complex understanding of the trends that are occurring.

Also of note is that gender differences in travel behaviour differ for different trip purposes. The closer resemblance between male and female leisure travel may reflect the joint travel of spouses and families engaging in leisure travel together. Further study is required to understand these relationships better, and to look at travel behaviour for other trip purposes.

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Commute trips. No (share)		Car (driver)			Public Transport			Walking/Cycling			Other		
		1991	1996	2001	1991	1996	2001	1991	1996	2001	1991	1996	2
Male	**Single**	55,7%	49,7%	57,5%	10,7%	11,8%	12,1%	28,0%	30,5%	24,5%	5,5%	8,1%	6,
	Couple dual income	56,1%	58,2%	62,5%	6,4%	9,3%	7,9%	27,3%	24,6%	23,9%	10,2%	7,9%	5,
	couple single income	57,9%	59,1%	61,3%	12,0%	6,8%	4,9%	24,8%	24,7%	26,8%	5,3%	9,3%	7,
	family dual income	54,6%	58,8%	62,6%	7,3%	6,5%	6,6%	29,4%	26,5%	25,6%	8,7%	8,2%	5,
	family single income	55,6%	57,3%	64,1%	6,9%	4,8%	4,2%	28,0%	26,9%	25,3%	9,5%	11,0%	6,
	Total	**55,8%**	**56,8%**	**61,2%**	**7,8%**	**7,2%**	**7,8%**	**27,8%**	**26,7%**	**25,1%**	**8,6%**	**9,3%**	**6,**
Female	**Single**	38,8%	39,9%	43,6%	14,2%	15,2%	18,6%	39,5%	40,0%	29,4%	7,5%	4,9%	8,
	Couple dual income	52,5%	34,9%	46,2%	37,2%	10,8%	11,9%	10,3%	42,9%	20,9%	0,0%	11,4%	21,
	couple single income	33,3%	39,9%	27,2%	29,8%	10,0%	5,7%	37,0%	38,4%	41,5%	0,0%	11,8%	25,
	family dual income	52,2%	46,9%	47,6%	8,6%	6,6%	7,2%	32,7%	37,3%	27,2%	6,5%	9,2%	17,
	family single income	51,5%	35,5%	34,4%	13,2%	5,6%	7,5%	32,9%	51,1%	35,9%	2,4%	7,8%	22,
	Total	**42,2%**	**40,7%**	**43,1%**	**14,7%**	**9,5%**	**14,7%**	**37,0%**	**40,6%**	**29,0%**	**6,1%**	**9,1%**	**13,**
Total		**54,6%**	**50,6%**	**57,2%**	**8,5%**	**8,1%**	**9,3%**	**28,6%**	**32,1%**	**26,0%**	**8,4%**	**9,2%**	**7,**

Table 1 Trends across household types in mode share for commuting.

Commute trips (no and share)		Car (driver)			Public Transport			Walking/Cycling			Other		
		1991	1996	2001	1991	1996	2001	1991	1996	2001	1991	1996	2
Male	Randstad - large cities	48,3%	47,3%	49,0%	16,6%	18,5%	19,6%	27,9%	25,7%	24,7%	7,2%	8,5%	6,
	Randstad - medium cities	53,8%	48,1%	53,2%	11,5%	14,7%	16,3%	30,4%	28,4%	23,4%	4,2%	8,8%	7,
	Randstad - suburbs	64,5%	61,7%	67,6%	7,9%	7,0%	5,2%	18,2%	23,1%	21,1%	9,4%	8,1%	6,
	Randstad - growth centres	66,1%	61,0%	62,0%	14,2%	13,0%	13,1%	14,0%	17,9%	18,0%	5,7%	8,1%	6,
	Non-Randstad - high urbanisation	50,3%	55,1%	58,5%	5,4%	4,7%	4,8%	35,6%	31,7%	29,4%	8,7%	8,5%	7,
	Non-Randstad - low urbanisation	57,8%	64,6%	67,1%	3,5%	2,5%	2,5%	28,0%	22,7%	22,5%	10,7%	10,2%	8,
Female	Randstad - large cities	31,2%	30,2%	26,0%	26,8%	25,3%	33,8%	36,0%	37,1%	36,6%	6,0%	7,4%	3,
	Randstad - medium cities	43,4%	32,9%	37,6%	23,5%	13,1%	18,1%	29,3%	46,6%	38,4%	3,8%	7,4%	6,
	Randstad - suburbs	45,3%	47,4%	54,3%	8,2%	9,2%	9,3%	36,2%	34,1%	29,8%	10,4%	9,3%	6,
	Randstad - growth centres	62,4%	37,1%	56,7%	14,9%	17,8%	21,1%	22,7%	34,7%	16,0%	0,0%	10,4%	6,
	Non-Randstad - high urbanisation	45,4%	41,9%	48,2%	4,1%	6,4%	9,3%	39,8%	43,0%	36,5%	10,7%	8,7%	6,
	Non-Randstad - low urbanisation	53,8%	54,5%	62,0%	6,0%	4,2%	5,7%	32,9%	31,6%	24,8%	7,3%	9,7%	7,
Total	Randstad - large cities	44,5%	44,6%	41,7%	18,8%	12,2%	24,1%	29,7%	34,2%	28,4%	7,0%	9,0%	5,
	Randstad - medium cities	52,2%	45,8%	48,7%	13,4%	5,9%	16,8%	30,3%	39,2%	27,7%	4,2%	9,0%	6,
	Randstad - suburbs	62,3%	58,6%	64,9%	7,9%	3,8%	6,1%	20,2%	28,6%	22,9%	9,5%	8,9%	6,
	Randstad - growth centres	65,7%	56,0%	60,7%	14,2%	7,6%	15,0%	15,0%	26,6%	17,5%	5,0%	9,8%	6,
	Non-Randstad - high urbanisation	49,8%	51,3%	56,0%	5,3%	2,7%	5,9%	36,1%	37,3%	31,2%	8,9%	8,8%	6,
	Non-Randstad - low urbanisation	57,5%	62,0%	66,1%	3,7%	1,5%	3,1%	28,4%	26,3%	22,9%	10,4%	10,2%	7,

Table 2. Trends in residential areas for mode shares for commuting

Leisure trips. No (share)		Car (driver)			Public Transport			Walking/Cycling			Other		
		1991	1996	2001	1991	1996	2001	1991	1996	2001	1991	1996	2
Male	Single	35,4%	42,3%	39,6%	10,3%	9,3%	7,8%	46,4%	40,6%	43,1%	7,9%	7,9%	9,
	Couple dual income	59,8%	49,0%	45,1%	1,3%	4,1%	1,8%	27,0%	37,1%	44,2%	11,9%	9,8%	8,
	couple single income	45,0%	47,4%	42,1%	8,0%	3,7%	2,6%	39,0%	38,8%	47,3%	8,0%	10,0%	7,
	family dual income	53,2%	52,7%	54,0%	1,1%	1,9%	1,3%	36,1%	34,9%	37,3%	9,5%	10,5%	7,
	family single income	52,5%	51,4%	54,2%	2,0%	2,8%	1,3%	36,8%	35,7%	37,3%	8,6%	10,1%	7,
	Total	49,4%	48,5%	45,3%	4,6%	4,1%	3,3%	37,2%	37,6%	43,2%	8,8%	9,8%	8,
Female	Single	20,0%	25,8%	26,1%	17,0%	13,5%	10,3%	46,9%	44,8%	46,7%	16,1%	15,9%	16,
	Couple dual income	20,8%	17,6%	27,7%	0,0%	5,0%	1,8%	35,7%	39,5%	43,6%	43,6%	38,0%	26,
	couple single income	14,0%	20,9%	19,8%	11,3%	4,1%	3,6%	49,9%	40,0%	44,8%	24,8%	35,0%	31,
	family dual income	11,7%	27,8%	24,3%	13,9%	1,6%	1,0%	42,2%	38,1%	40,2%	32,2%	32,5%	34,
	family single income	24,1%	23,4%	28,9%	5,2%	1,9%	2,9%	49,1%	45,0%	44,7%	21,6%	29,7%	23,
	Total	19,6%	22,5%	24,8%	12,8%	4,5%	6,5%	47,4%	42,1%	45,3%	20,2%	30,9%	23,
Total		**41,9%**	**34,1%**	**38,7%**	**6,7%**	**4,3%**	**4,3%**	**39,8%**	**40,1%**	**43,9%**	**11,7%**	**21,5%**	**13,**

Table 3. Trends in household types for mode share for leisure travel.

Leisure trips (no and share)		Car (driver)			Public Transport			Walking/Cycling			Other		
		1991	1996	2001	1991	1996	2001	1991	1996	2001	1991	1996	2
Male	Randstad - large cities	37,3%	38,5%	37,2%	17,0%	11,3%	11,9%	39,9%	40,5%	41,0%	5,8%	9,7%	9,
	Randstad - medium cities	57,7%	41,1%	44,6%	6,3%	6,8%	4,9%	30,8%	42,8%	43,1%	5,2%	9,2%	7,
	Randstad - suburbs	49,8%	51,9%	46,6%	4,3%	3,4%	1,9%	33,8%	35,3%	43,2%	12,1%	9,4%	8,
	Randstad - growth centres	68,7%	54,2%	51,1%	0,7%	4,5%	4,7%	22,9%	32,7%	37,3%	7,7%	8,6%	7,
	Non-Randstad - high urbanisation	44,9%	50,3%	46,6%	3,1%	2,9%	2,7%	42,6%	37,0%	42,0%	9,4%	9,9%	8,
	Non-Randstad - low urbanisation	54,5%	53,3%	47,6%	1,3%	1,5%	0,6%	36,4%	35,5%	44,2%	7,8%	9,8%	7,
Female	Randstad - large cities	11,3%	15,0%	20,6%	24,8%	17,3%	17,0%	50,9%	39,9%	46,8%	12,9%	27,9%	15,
	Randstad - medium cities	20,6%	21,7%	21,2%	20,5%	5,9%	9,6%	44,4%	44,0%	49,6%	14,4%	28,3%	19,
	Randstad - suburbs	23,7%	26,2%	26,2%	6,4%	4,0%	2,8%	52,4%	41,6%	46,7%	17,5%	28,2%	24,
	Randstad - growth centres	30,2%	24,2%	26,7%	9,2%	4,8%	5,2%	31,9%	38,6%	42,5%	28,6%	32,4%	25,
	Non-Randstad - high urbanisation	22,4%	22,9%	26,7%	10,2%	3,6%	5,8%	45,2%	43,2%	45,1%	22,2%	30,3%	22,
	Non-Randstad - low urbanisation	24,3%	26,9%	27,4%	4,8%	1,8%	2,1%	45,7%	41,3%	45,8%	25,1%	30,0%	24,
Total	Randstad - large cities	28,4%	26,1%	30,7%	19,7%	14,5%	13,9%	43,7%	40,1%	43,2%	8,3%	19,3%	12,
	Randstad - medium cities	45,1%	30,7%	35,7%	11,1%	6,4%	6,7%	35,4%	43,5%	45,6%	8,3%	19,5%	12,
	Randstad - suburbs	43,8%	37,0%	39,7%	4,8%	3,7%	2,2%	38,1%	38,9%	44,4%	13,3%	20,3%	13,
	Randstad - growth centres	59,5%	37,5%	43,3%	2,7%	4,7%	4,8%	25,1%	36,0%	38,9%	12,7%	21,8%	12,
	Non-Randstad - high urbanisation	39,1%	35,1%	39,8%	5,0%	3,3%	3,7%	43,2%	40,4%	43,1%	12,7%	21,2%	13,
	Non-Randstad - low urbanisation	47,8%	38,7%	41,3%	2,1%	1,6%	1,1%	38,4%	38,7%	44,7%	11,6%	21,0%	12,

Table 4. Trends across residential areas in mode share for leisure travel.

Commute time (mins)		Car (driver)			Public Transport			Walking/Cycling		
		1991	**1996**	**2001**	**1991**	**1996**	**2001**	**1991**	**1996**	**2001**
Male	**Single**	49	50	56	82	83	104	25	27	29
	Couple dual income	49	52	55	92	102	109	26	31	32
	couple single income	53	52	55	110	101	103	31	27	31
	family dual income	50	53	56	114	104	106	29	29	32
	family single income	52	55	57	104	101	96	29	30	33
	Total	**51**	**53**	**56**	**100**	**97**	**104**	**28**	**29**	**31**
Female	**Single**	39	40	45	72	82	83	27	24	26
	Couple dual income	39	39	43	88	86	86	23	24	25
	couple single income	35	41	41	63	81	93	27	24	26
	family dual income	32	34	37	75	79	85	22	22	25
	family single income	30	31	38	57	73	102	27	21	22
	Total	**35**	**37**	**42**	**75**	**81**	**85**	**25**	**23**	**25**
Total		**46**	**49**	**51**	**89**	**99**	**94**	**27**	**26**	**28**

Table 5. Trends across household types in travel time for commuting

Commute time (mins)		Car (driver)			Public Transport			Walking/Cycling		
		1991	1996	2001	1991	1996	2001	1991	1996	2001
Male	**Randstad - large cities**	51	53	58	71	77	89	32	31	34
	Randstad - medium cities	52	53	59	107	103	106	27	28	30
	Randstad - suburbs	52	56	56	121	106	112	27	30	33
	Randstad - growth centres	53	60	62	93	98	103	24	30	35
	Non-Randstad - high urbanisation	48	51	55	108	109	115	28	29	30
	Non-Randstad - low urbanisation	50	53	55	127	112	104	29	28	29
Female	**Randstad - large cities**	39	40	45	70	68	75	27	26	29
	Randstad - medium cities	42	39	44	80	92	94	23	24	27
	Randstad - suburbs	38	40	43	81	86	99	27	23	26
	Randstad - growth centres	46	42	47	85	82	87	29	25	24
	Non-Randstad - high urbanisation	34	36	39	81	92	91	23	23	25
	Non-Randstad - low urbanisation	32	37	40	74	85	82	25	20	21
Total	**Randstad - large cities**	47	49	54	70	73	81	30	29	31
	Randstad - medium cities	47	49	54	93	98	101	25	26	24
	Randstad - suburbs	48	51	52	103	97	105	27	27	29
	Randstad - growth centres	51	54	57	89	91	95	26	26	30
	Non-Randstad - high urbanisation	44	46	49	99	102	103	26	26	28
	Non-Randstad - low urbanisation	45	48	50	104	99	93	27	24	26

Table 6. Trends across residential areas in travel time for commuting

Leisure time (mins)		Car (driver)			Public Transport			Walking/Cycling		
		1991	1996	2001	1991	1996	2001	1991	1996	2001
Male	**Single**	68	61	52	77	65	53	55	55	50
	Couple dual income	51	70	54	52	70	56	65	65	53
	couple single income	72	64	54	75	64	56	59	59	52
	family dual income	56	57	44	58	56	46	52	52	43
	family single income	59	56	44	63	56	46	51	51	43
	Total	**63**	**61**	**50**	**67**	**62**	**52**	**57**	**57**	**49**
Female	**Single**	64	57	54	80	66	55	49	49	51
	Couple dual income	54	64	52	53	67	55	55	55	52
	couple single income	66	60	51	68	62	52	52	52	49
	family dual income	55	54	41	53	52	42	46	46	40
	family single income	54	50	41	55	49	42	42	42	40
	Total	**59**	**56**	**49**	**63**	**58**	**51**	**48**	**48**	**47**
Total		**61**	**59**	**50**	**65**	**60**	**51**	**59**	**52**	**48**

Table 7. Trends across household types in time spent on leisure travel

Leisure time (mins)		Car (driver)			Public Transport			Walking/Cycling		
		1991	1996	2001	1991	1996	2001	1991	1996	2001
Male	Randstad - large cities	62	60	58	68	63	59	60	54	55
	Randstad - medium cities	65	63	53	68	65	55	61	58	51
	Randstad - suburbs	57	60	48	61	60	50	57	55	47
	Randstad - growth centres	70	62	54	73	59	58	68	55	54
	Non-Randstad - high urbanisation	66	61	49	68	61	51	60	56	48
	Non-Randstad - low urbanisation	57	58	44	61	58	45	55	53	43
Female	Randstad - large cities	61	60	58	74	67	60	55	53	55
	Randstad - medium cities	97	57	52	72	60	54	54	49	50
	Randstad - suburbs	54	55	48	58	55	49	48	45	46
	Randstad - growth centres	63	58	54	54	56	56	50	48	51
	Non-Randstad - high urbanisation	58	56	48	63	58	49	52	48	46
	Non-Randstad - low urbanisation	55	52	42	56	52	43	47	44	41
Total	Randstad - large cities	62	60	58	71	65	60	58	54	55
	Randstad - medium cities	66	60	53	70	62	54	57	53	50
	Randstad - suburbs	56	58	48	54	57	50	53	50	46
	Randstad - growth centres	66	60	54	63	57	57	58	51	53
	Non-Randstad - high urbanisation	62	59	48	66	60	50	57	52	47
	Non-Randstad - low urbanisation	56	55	43	59	55	44	51	49	42

Table 8. Trends across residential areas in time spent on leisure travel.