

# **Gender Differences in Individual Time Use patterns and the Interlinkages to Urban Form**

Edeltraud Haselsteiner<sup>1\*</sup>, Barbara Smetschka, Alexander Remesch, Marina Fischer-Kowalski

*<sup>1</sup>Institute of Social Ecology Vienna, Alpen-Adria University Klagenfurt – Graz – Wien,  
Schottenfeldgasse 29, 1070 Vienna, Austria*

*\*edeltraud.haselsteiner@aau.at*

Keywords: Gender, Urban Form; Urban planning; Mobility of care; Time Use

The objective of this paper is to learn about key factors which determine gender gaps in individual time-use preferences and its link to one's neighbourhood. Results will highlight significant aspects that address the question how urban planning can influence time-use patterns and can contribute to changes on the reconciliation of work and family life and enabling gender balance therein.

## **Introduction**

Present contributions to the social-scientific literature on time provide a range of clues about potential connections between city development and the evolution of (Western) time cultures. Beginning in the 1970s first approaches appeared to integrate time aspects in regional and geographical studies. The demand for equal opportunities for men and women and for a better work-life balance marks the beginning of time policy in the 1980s, a young interdisciplinary field aiming to integrate time aspects in urban development planning (f. e. Bonfiglioli 2005; Boccia 2013).

When we talk about gender, we refer to prevailing gender roles of men and women and their impact in the unequal sharing of family responsibilities, the gendered division of the labour market, or socially and culturally formed behavioural patterns. Whereas categories of sex are defined along essential biological differences, gender is about roles that can change over the time. Gender differences are dynamic, constantly in flux (Fainstein and Servon 2005, 3) and are intersecting with age, race, class, etc.. Thus,

it is crucial to reveal unilateral or restrictive gender ascriptions and practices in any fields of action.

The focus of gender is on the relationship between different roles. Thereby, it must be considered that European cities are shaped by a long-term history of hierarchical and patriarchal tradition of social order. The compatibility of family and career is far from being satisfactory solved. Combining private caring with gainful employment is almost solely a female problem. On institutional level women are still primarily excluded from decision-making levels and various forms of *social capital (networks)* (Zibell 2013, 81). OECD promotes the use of two indicators (Ferrant 2014, 3):

- The female to male ratio of average time devoted to household activities as an indicator of gender gaps in unpaid work. This indicator gives an overview of gender disparities in caring responsibilities.
- The female to male ratio of total workload (both paid and unpaid work).

Urban planning still reinforces gender stereotypes in many ways. Mobility requirements or transport planning in general are steered by the idea of male travel-to work patterns. Business trips are seen as masculine while local transport affordances following the notion of female household and caring responsibilities. Monofunctional plannings, with separate spheres for the public (business- or industrial zones and work) and the private (housing and family) perpetuate traditional gendered roles. This separation is one of the reasons that urban spatial structure is dysfunctional to shift toward equal partnership and a better balanced division of primary responsibility for household production and wage labour (Markusen 2005, 174). Historically, urban planning and its neighbouring environmental planning disciplines have been dominated by men (Roberts 2013). In the past years several European cities reflected on gender mainstreaming strategies and actions in public planning practice (Damyanovic 2013). Even though, not yet enough attention is given to a gender perspective in neither the sustainability discourse nor in appropriate changes in urban environments (Buckingham 2013).

Furthermore, mobility and travel behaviour is an essential part and point of discussion in our research. The concept of a “mobility of care” was introduced by Ines

Sánchez de Madariaga (2013). Although care work requires “daily effort, time, ability and dedication” it is not considered similar to paid employment. Even more, it is frequently hidden under headings associated with leisure activities. In mobility surveys travel time for care is often not recognized, f. e. because in many countries short trips of less than 15 minutes or shorter than one kilometre are not counted.

In socio-ecological research time use can be classified according to its function in different systems. Time is used by individuals to produce and reproduce the personal system, the household system, the economic system and the community system (Fischer-Kowalski et al. 2010). Personal system, household system, economic system and community system are represented by different spatial dimensions (Markusen 2005). The spatial dimension of production (economic and community) is connected with places and time-use activities of employment and employment related tasks (public sphere: f. e. work, travel to work). Time used for personal care, care for others or household activities is anchored in the spatial dimension of reproduction (private sphere: f. e. home, household). This spatial segregation between production sphere and reproduction sphere is rooted in a traditional understanding of the division of labour between man and women and a patriarchal family structures. Spatial planning has incorporated and pursued this by the local segregation between residences and workplaces. As a result, contemporary urban structures hide numerous obstacles for an efficient functional overlapping between activities for the social reproduction and those of paid employment or productive work.

### **Objectives**

While sustainable urban form on the one hand and time use statistics on the other have been analyzed in a number of empirical studies the question about interdependencies among both has not yet received appropriate scientific attention. Even more, gender aspects or questions how caring responsibilities are responded by sustainable urban form parameters are missing.

In a case study in the city of Vienna we focus on daily routines of persons and examine gender gaps and links to urban planning by means of questions dealing with time use and mobility. The goal is to analyze people’s perception of the factors supporting or hindering to cope successfully their everyday life. A central issue is caring

activities in and out-doors against the background of the three sustainable urban form dimensions: density, mixed land-use and sustainable transport. To explore preferences and constrains in urban infrastructure and time use, our research is guided by the following assumptions:

- Influencing variables of sustainable urban form parameters differ when regarding caring activities / responsibilities and the gender dimension.
- Time spent for household and caring activities is influenced by availability, accessibility, time schedules and locations of urban infrastructure.
- Time use patterns of women and men differ regarding the time spent with caring activities and are individually constrained by urban infrastructure.
- Urban planning and / or time policies can help to lessen the burden of reconciling work and family life and enable a better gender balance.

In line with the above, our case study focused on the following research questions:

- How are caring responsibilities responded by sustainable urban form parameters of density, mixed use and sustainable transport?
- What are people's perception of the factors supporting or hindering their sovereign time and their daily routines?
- Is the location of the residence and the prevailing urban infrastructure reflected in activity patterns, attitudinal and behavioral characteristics or travel behavior of the residents?
- How does activity patterns, attitudinal and behavioral characteristics or travel behavior differ when taking in consideration socio-economic characteristics as well as individual perceptions, capabilities or constraints?

## **Methodology**

In this paper we analyse significant gender gaps by focusing on drivers of time-use patterns and decision-making processes of citizens in relation to their urban environment. We base our work on existing time-use data from Austria (2009) and a case study with qualitative interviews in Vienna.

Time-use surveys are a regular part of the United Nations Statistical Division (UNSD) surveys. A number of European nations conduct time-use surveys on a regular basis. These data are widely used to analyse changes in gender relations (Eurostat

2003; Statistisches Bundesamt 2004; Döge 2006; Sellach, Enders-Dragässer, and Libuda-Köster 2005; Ghassemi and Kronsteiner-Mann 2009) and socioeconomic changes like family and household structures, working hours, recreational behaviour and consumption patterns (Schor 2010; Hartard, Schaffer, and Stahmer 2006; Stahmer and Schaffer 2004; Gershuny 2000).

Statistics Austria finalized a new time-use survey for Austria in 2009 (Statistik Austria 2011). In this survey, 8.234 respondents living in 4.757 households have been asked to record all activities for a full day in slots of 15 min between 5 a.m. and 11 p.m. and of 30 min during the rest of the day. Aside from their time use, respondents were asked to take down information on the presence of other people and the location. No pre-defined activity categories were provided, but activities were recorded in the respondents' own words. The resulting survey sheets were then transformed into 427 activity categories by trained coders.

For the purpose of this study we group time-use activities according to places outside of home, and build six clusters, following the systematic of time-use activities by HETUS and the Austrian Time-use survey. Corresponding activities are linked with locations and indicators of urban form (*Table 1*).

*Table 1: Time-use activity Clusters, Locations and Urban Form*

Time-use category	Activities (e. g.)	Location (e. g.)	Urban Form indicators
Employment and Study (outside of home)	Main & second job, study, activities related to employment or study	Places of work or study; places of employment or study-related activities	Availability of supply infrastructure, services and public transport
Personal Care (at home and outside of home)	Shopping and personal services	Place of residence; Bank, post office, clothing, drugstore, doctors, health & pharmacy (own	

		requirements), hair dresser, car repair service, library	Accessibility of supply infrastructure, services and public transport
Household & Food / Family, Care and Support (outside of home)	Food management & shopping for household needs, help to a child or an adult family member (f. e. dropping off, picking up or accompanying children)	Grocery store and fruit market, bakery, kindergarten, school, administration, doctors and healthcare facilities (accompaniment), parking lot, public transport stops	
Society & Politics (outside of home)	Social life, voluntary work & meetings	Church, clubhouse, meeting places, residences of friends or relative	
Leisure & Culture (outside of home)	Cultural events, entertainment, sports & outdoor activities	Cafés, restaurants and pubs, locations of cultural events (cinema, theater ...), sports facilities, parks, shops for leisure goods	
			Mode of transport and routing

In order to link the before mentioned time-use statistics with influencing parameters of urban form and time-use patterns we performed a case study in the city of Vienna. The case study area was specified by a multi-stage selection process and a cluster analysis (Haselsteiner et al. 2015). Defined urban parameters were: inner city, densely built up urban renewal area, with mixed population and good accessibility to public transport. As a results of the cluster analysis and together with local experts from one of Vienna´s Urban Renewal offices, we decided to select the *Fasanviertel*, a

small area in the inner city. This neighbourhood on the one hand represents all parameters of the defined urban form dimensions and is on the other just at the beginning of a revitalization process.

Substantive results are based on a participative process with local representatives and a series of qualitative semi-structured interviews on individual time-use, time-use preferences and mobility behaviour in relation to the case study area. Three workshops with local experts and stakeholders were conducted, in order to formulate first assumption on the relationship between urban form and time use. Subsequently, fourteen semi-structured qualitative interviews on individual time-use and mobility were conducted.

The interview sample comprises a set of persons living in urbanized city areas of Vienna. They were supposed to either live or work in the surveyed geographical area. A number of main socio-economic characteristics were defined, namely: sex, age, employment status, children and societal function in the observed area. The sample was supposed to be balanced concerning these characteristics, but it was mostly women who were willing to spend their time for an interview. Finally eleven women and three men have been interviewed. Nevertheless, we can show in this paper individual time use patterns of (mainly) women with different life contexts, and how they cope their daily routines by focusing on accessibility and availability of urban infrastructure. Their perceptions of links between their time use and urban infrastructure was analyzed according to four topics of the interviews:

1. Factors supporting / hindering Time Sovereignty: narrative
2. Time preferences and possible changes: time-use diary
3. Mobility in the city: map
4. Time policy measures: ideas, connotation

In this paper results of topic three: mobility in the city, are presented. On a map places that are important for the everyday life of the participants were marked accompanied by information about the transport modes.

The interviews were transcribed and analysed according to the method of qualitative content analyses (Mayring 2014; Froschauer and Lueger 2008) which includes the analytical steps of reduction, explication and structuring the texts.

Preferences and constraints of the respondents were examined in light of influencing parameters of urban form dimensions: density, mixed land use and sustainable transport (availability, accessibility, mode of transport).

### **Main Results**

The Austrian time use survey that was conducted on behalf of the Federal Chancellery/Minister for Women and Public Services has revealed that there is still a gender specific division of unpaid housework, the everyday work of care and the remaining leisure time. We have expand this results by concentrating on recorded activities outside the home, like shopping and services, or travel time for care and support. In our in-depth analysis we link individual time use patterns with the existing urban service infrastructure in an inner city, densely built up urban renewal area, with mixed population and good accessibility to public transport.

The final results are illustrated by six individual maps of “activity patterns”, each of them demonstrating a specific age and employment group: female students, female young urban dweller, female urban dweller with family responsibilities, male urban dweller with family responsibilities, female senior urban dweller, male senior urban dweller. In the following section the particularities of each group are briefly shown: Students perceive very little constraints of their everyday daily life. The mentioned places for main activities belong for the most part to the categories leisure and society (44 %), less than half of the places are for household and personal care (36 %) and the rest are study related locations (20 %). Their average activity patterns cover medium mobility values, compared to the five other respondent groups. They show the highest mobility value for social and political activities, followed by activities for leisure and culture, and only in third place study related activities.

Young female urban dwellers organize their everyday life on the principle of the greatest possible economy of time. They use the infrastructure on the way to work or close to their place of residence. Employment takes place at a fixed location with medium distance from home. The totality of mobility values is compared to the other respondent groups less than half, and after female family respondents the lowest mobility score. Longer travels are only accepted to reach places that meet special requirements (aesthetic and individual values). Society & politics has with 10 % a very



small share. The greatest distances are accepted for leisure & culture, the shortest distances for household.

The female urban dwellers with family obligations see the city with the lens of necessities and compatibility. They perceive very little freedom of choice for themselves, rather they have to choose options because they are available with a minimum spending of time. The most important aspect is to find ways and offers for multifunctional use of time, f. e. use travels with public transport as recreational time, or spatially cluster activities at one location. The functional aspect is dominating over individual preferences. Female urban dwellers are spatially and temporarily fixed by their different personal and professional tasks. Additionally, the economic constraints determine their choices, f. e. to use public transport as an economic necessity.

The activity pattern of our male respondent with family responsibilities is strongly determined by employment. With the total number of distances he has the highest mobility values of all respondents for job-related activities, as well as the majority of the mentioned activities (38 %) belong to employment. The permanent challenge of the economic necessity leaves little room to pursue individual preferences. If considering the distances for household activities they are higher than those of other interviewees. For example females of this group have an average of 268 meters while here for the male respondent 1.058 meter per household activity are recorded. Out of sixteen mentioned activities only three are located close to his residence.

Female senior urban dwellers primarily perceive the city's large pool of opportunities. They have widely settled their economic and professional situation, their children are autonomous and no longer require care, and new options for action can be experienced. The total number for the distances of activities per person demonstrates that the group of female senior urban dwellers recognizes itself the greatest radius of mobility. The focus of interests has shifted from household activities to leisure and personal care. A large number of different interests causes a spatially wide spread network of attractive locations. If special needs can be satisfied, for example to buy organic food or go for a walk in a park on the outskirts, there is sufficient time for longer travel distances. The respondents have a balanced distribution of activity categories. The lowest share have social or political activities with 9 %. The

two highest categories with each 28 % are personal care and leisure & cultural activities.

Male senior urban dwellers are similarly mobile as their female counterpart, but the distribution between the time use categories is less balanced. The perception of the city is local, with some scattered more distant locations. Although their locations of activities are spaciouly distributed over the city, for the everyday supply and leisure activities they prefer places close to their residence (201 and 101 meters average distance per activity). They express a strong identification and relationship with “their neighbourhood” and appreciate a communicative (working) atmosphere.

### **Conclusions**

Departing from the sustainable urban form of our case study area and our assumptions that influencing variables differ when regarding caring activities / responsibilities and the gender dimension we clearly could demonstrate that women once they have children to care are facing greater limitations than younger or older women, but also their male counterpart. For example the mode of transport and routing of public transport is for women with care responsibilities a big issue. To use public transport is seen as an economic necessity, but none of them sees it as their preferred means of transport. Living in peripheral districts, on the other hand, implies long travel time to workplaces, a limited selection of fast public transport and frequently to change vehicle.

Respondents living in our densely built, central and well-mixed city area have chosen this area because it allows them combining work and family life. Although this situation has weakened the restrictions, because all childcare facilities, such as Kindergarten, public schools and gymnasium are within walkable distance and everything for the daily shopping is available, a massive temporal constraint is stated by the business hours of childcare facilities (f. e. half-day school without afternoon childcare, beginning and end of school, to be there on time and finish work early enough to pick up the child, no flexibility to finish work as one likes).

In regard to our final assumption, that urban planning and / or time policies can help to lessen the burden of reconciling work and family life and enable a better gender balance, we can conclude that a well-developed infrastructure can be very supportive,

but greater structural changes are necessary if gender balance is the goal. Finally, this is also exactly what our female respondents with caring responsibilities would want from an office for “time policy”: developing new models of working, society and living.

## References

- Boccia, Teresa. 2013. ‘Time Policies and City Time Plans for Women’s Everyday Life: The Italian Experience’. In *Fair Shared Cities: The Impact of Gender Planning in Europe*, edited by Inés Sánchez de Madariaga and Marion Roberts, 65–74. Burlington: Ashgate Pub. Company.
- Bonfiglioli, S. 2005. *Zeitleitplan Für Die Stadt Bozen*. Bozen: ECG European Consulting Group.
- Buckingham, Susan. 2013. ‘Gender, Sustainability and the Urban Environment’. In *Fair Shared Cities: The Impact of Gender Planning in Europe*, edited by Inés Sánchez de Madariaga and Marion Roberts, 21–32. Burlington: Ashgate Pub. Company.
- Damyanovic, Doris. 2013. ‘Gender Mainstreaming as a Strategy for Sustainable Urban Planning’. In *Fair Shared Cities: The Impact of Gender Planning in Europe*, edited by Inés Sánchez de Madariaga and Marion Roberts, 177–92. Burlington: Ashgate Pub. Company.
- Döge, Peter. 2006. *Männer - Paschas Und Nestflüchter? Zeitverwendung von Männern in Der Bundesrepublik Deutschland*. Opladen: Verlag Barbara Budrich.
- Eurostat. 2003. ‘Wie Frauen Und Männer Die Zeit erbringen. Ergebnisse Aus 13 Europäischen Ländern’. *Statistik Kurz Gefasst Bevölkerung und soziale Bedingungen (Thema 3 - 12/2003)*.
- Fainstein, Susan S., and Lisa J. Servon. 2005. ‘Introduction. The Intersection of Gender and Planning’. In *Gender and Planning: A Reader*, edited by Susan S. Fainstein and Lisa J. Servon, 1–12. New Brunswick, N.J: Rutgers University Press.
- Ferrant, Gaelle. 2014. ‘Time Use as a Transformative Indicator for Gender Equality in the Post-2015 Agenda’. OECD. [http://www.oecd.org/dev/poverty/Time%20use%20\\_final\\_2014.pdf](http://www.oecd.org/dev/poverty/Time%20use%20_final_2014.pdf).
- Fischer-Kowalski, Marina, Simron Jit Singh, Lisa Ringhofer, Clemens M. Grünbühel, Christian Lauk, and Alexander Remesch. 2010. *Sociometabolic Regimes in*

Indigenous Communities and the Crucial Role of Working Time: A Comparison of Case Studies. Fischer-Kowalski, M., Singh, S.J., Ringhofer, L., Grünbühel, C.M., Lauk, C., Remesch, A.; Wien (2010) € 9,-. Vol. 121. Social Ecology Working Paper. Vienna: Institute of Social Ecology. [http://www.uniklu.ac.at/socec/downloads/WP121\\_WEB.pdf](http://www.uniklu.ac.at/socec/downloads/WP121_WEB.pdf).

- ———. 2011. 'Socio-Metabolic Transitions in Indigenous Communities and the Crucial Role of Working Time. A Comparison of Case Studies'. *Human Ecology Review* 18 (2): 147–58.
- Froschauer, Ulrike, and Manfred Lueger. 2008. *Das Qualitative Interview*. Wien: UTB.
- Gershuny, Jonathan. 2000. *Changing Times: Work and Leisure in Post-Industrial Societies*. Oxford: Oxford University Press.
- Ghassemi, Sonja, and Christa Kronsteiner-Mann. 2009. *Zeitverwendung 2008/09. Ein Überblick über Geschlechtsspezifische Unterschiede. Endbericht Der Bundesanstalt Statistik Österreich an Die Bundesministerin Für Frauen Und Öffentlichen Dienst*. Edited by Statistik Austria. Wien: Statistik Austria. [https://www.bmbf.gv.at/frauen/publikationen/zeitverwendung\\_2008\\_09\\_barri\\_25887.pdf?4dz8a1](https://www.bmbf.gv.at/frauen/publikationen/zeitverwendung_2008_09_barri_25887.pdf?4dz8a1).
- Hartard, Susanne, Axel Schaffer, and Carsten Stahmer. 2006. *Die Halbtagsgesellschaft. Konkrete Utopie Für Eine Zukunftsfähige Gesellschaft*. Baden- Baden: Nomos Verlag.
- Haselsteiner, Edeltraud, Barbara Smetschka, Alexander Remesch, and Veronika Gaube. 2015. 'Time-Use Patterns and Sustainable Urban Planning: A Case Study to Explore Potential Links'. *Sustainability* 7 (6): 8022–50. doi:10.3390/su7068022.
- Markusen, Ann R. 2005. 'City Spatial Structure, Women's Household Work, and National Urban Policy'. In *Gender and Planning: A Reader*, edited by Susan S. Fainstein and Lisa J. Servon, 169–90. New Brunswick, N.J: Rutgers University Press.
- Mayring, Philipp. 2014. *Qualitative Content Analysis: Theoretical Foundation, Basic Procedures and Software Solution*. Klagenfurt: AAU. <http://nbn-resolving.de/urn:nbn:de:0168-ssoar-395173>.

- Roberts, Marion. 2013. 'Introduction: Concepts, Themes and Issues in a Gendered Approach to Planning'. In *Fair Shared Cities: The Impact of Gender Planning in Europe*, edited by Inés Sánchez de Madariaga and Marion Roberts, 1–18. Burlington: Ashgate Pub. Company.
- Sánchez de Madariaga, Inés. 2013. 'Mobility of Care: Introducing New Concepts in Urban Transport.' In *Fair Shared Cities: The Impact of Gender Planning in Europe*, edited by Inés Sánchez de Madariaga and Marion Roberts, 33–48. Burlington: Ashgate Pub. Company.
- Schor, Juliet B. 2010. *Plenitude: The New Economics of True Wealth*. New York: Penguin Press.
- Sellach, Brigitte, Uta Enders-Dragässer, and Astrid Libuda-Köster. 2005. 'Besonderheiten Der Zeitverwendung von Frauen Und Männern'. Frankfurt a. Main: Gesellschaft für Sozialwissenschaftliche Frauenforschung e. V.
- Stahmer, Carsten, and Axel Schaffer. 2004. 'Time Pattern in a Social Accounting Framework'.
- Statistik Austria. 2011. 'Time Use Survey 2008/2009'. [http://www.statistik.at/web\\_en/statistics/social\\_statistics/time\\_use/time\\_use\\_survey/index.html](http://www.statistik.at/web_en/statistics/social_statistics/time_use/time_use_survey/index.html).
- Statistisches Bundesamt. 2004. 'Alltag in Deutschland: Analysen Zur Zeitverwendung'. Schriftenreihe Forum der Bundesstatistik 43. Beiträge Zur Ergebniskonferenz Der Zeitbudgeterhebung 2001/02 Am 16./17. Februar 2004 in Wiesbaden. Stuttgart.
- Zibell, Barbara. 2013. 'The Model of the European City in the Light of Gender Planning and Sustainable Development'. In *Fair Shared Cities: The Impact of Gender Planning in Europe*, edited by Inés Sánchez de Madariaga and Marion Roberts, 75–88. Burlington: Ashgate Pub. Company.