

WORK AT HOME AND TIME USE IN FINLAND

Jouko NÄTTI, Mia TAMMELIN, Timo ANTTILA and Satu OJALA

Department of Social Research, University of Tampere, Finland

FI-33014 University of Tampere, Finland

Tel. +358 3 3551 6340, fax +358 3 3551 6080

Email jouko.natti@uta.fi

ABSTRACT

This study examines home-based work (HBW) in Finland by comparing unpaid (overtime) home workers, paid (agreed) home workers and non-home workers. We study the characteristics of HBW, the duration and timing of HBW, and the relations of HBW and time use by using the Finnish Use of Time data (1999-2000), which includes both interviews and time use diaries. The analysis focuses 15-64 years old employees (n=4590). According to time use diary data, 2.8% of employees were unpaid and 3.6% paid home workers. HBW was typical especially during evenings, particularly among unpaid at-home workers. The average duration of HBW was almost two hours a day. Both paid HBW and especially unpaid HBW were linked to the stretching of working hours and to reduction of free time. Thus, our study indicates that the nature of HBW is important in studying the relationship between HBW and time use.

Key words: home-based work, time use, heterogeneity

1 INTRODUCTION

1.1 Heterogeneity of HBW

Regardless of the recent interest on HBW, it is not a new phenomenon, but rather work has returned home (Raines and Leathers 2001; Pyöriä 2003). Alladi Venkatesh and Nicholas Vitalari (1992) discussed almost twenty years ago, how the emergence of information and communication technologies has radically increased the ability of organizations to distribute their work processes. Particularly their study discussed computer-based work at home. It seems that since early 1990s the HBW has remained relevant because of continuous change in the nature of work, and particularly because of the increase of knowledge intensive work. Our study questions the characteristics of HBW and its relations to the patterns of time use focusing on the heterogeneity of HBW.

HBW is defined with various concepts. These concepts often overlap and sometimes different concepts are used to describe the same phenomenon. At the same time, various concepts and classifications indicate the large heterogeneity of HBW (e.g. Kraut 1989; Pyöriä 2006; Sullivan 2003). First classification has stressed changes over time in HBW. Traditionally HBW, in addition to agricultural work, was work similar to industrial work, monotonous low paid work. This is described as traditional HBW. As contrary to it, modern HBW refers to white-collar work, e.g. planning or consultation work intensified by the possibilities of new information technologies (Felstead et al. 2001).

Second classification stresses the duration of HBW, is it part-time or full-time. Comparative research on the character of HBW (Haddon & Brynin 2005) shows that that home as the sole work location, is a numerically very small category, whereas working partially at home is substantially more common phenomenon (see also Bailey and Kurkland 2002). According to the 2005 European Working Conditions Survey, less than three per cent of European workers reported working all or almost all the time from home. However, 20 percent of European workers reported working at least a quarter of the time from home (Parent-Thirion et al. 2007).

Third classification stresses the role of information technology by separating telework and other HBW (e.g., Kaufman-Scarborough 2006; Raines and Leathers 2001). Telework refers to paid work carried out separately from the premises of the employers, often at home and using modern information technology (e.g., Haddon & Brynin 2005). According to the 2005 European Working Conditions Survey, 8 percent of European workers reported working at least a quarter of the time at home with PC (teleworking), and 12 percent without PC. In Finland the proportion of workers reporting teleworking (13%) was above the European average (8%) (Parent-Thirion et al. 2007).

Fourth classification stresses different labour market statuses of home-based workers (HBWs). Kraut (1989, 23) identified four categories of HBWs. Firstly, workers who substitute home for a business site as a place of work, while being employed by an organization as regular wage earners (such as sales agents, journalists, and teachers). Secondly, 'moonlighters', i.e. workers who perform additional work for secondary employers at home. Thirdly, the self-employed, who work from home, and fourthly those supplementing office based work at home, who typically are white-collar professional workers.

Fifth classification stressed compensation dimension. HBW can be unpaid overtime and supplemental work at home or working at home is agreed with the employee and employer. According to Song (2009), 12.5 % of US employees in 2001 took work home from job without a formal agreement, and only 3.4 % were paid at-home workers. Unpaid at-home workers were older, more often team leaders and with higher hourly wages than other workers. Compensation dimension is also linked to motives of HBW. According to Song (2009) reasons for working at home varied considerably by the pay status. Most (62%) of those who took their work home without formal payment arrangement reported that they worked at home to finish or catch up on work, whereas those people that had formal payment worked at home because it was the nature of work. 'Coordinate work schedule with personal or family needs' was mentioned only 4-8 % of at-home workers. Furthermore, compensation dimension is linked to timing of at-home work. Unpaid overtime work is typically carried in the evenings and weekends, agreed HBW is typically carried out during the normal working hours (Venkatesh & Vitalari 1992; Sullivan 2003). In this article we focus on this contractual dimension of HBW by separating unpaid and paid at-home workers.

1.2 HBW and Time Use

Time is a definite property, we only have 24 hours a day; time spent at work cannot be spent to another activity. The question is where the hours for work come from; is at-home work done at the cost of the leisure time activities. If the work at home substitutes work at the office there should not be any association with the overall time use, while supplementing hours at the office would reduce time for other activities. The novelty of our approach is that we examine the heterogeneity of at-home work by comparing unpaid and paid at-home work from the perspective of time use.

Previous studies have found that HBW is typically linked with *lengthening working time*, as a result of supplementing office hours at home. According to Golden (2008), working longer than standard hours was strongly associated with having work at home. It is also likely that HBW is used to cope with the long hours that work demands (Callister & Dixon 2001). Contrary to findings on lengthening working time, Wight and Raley (2009) found that female home workers spend almost an hour less time in paid work than those who did not work at home. Peters and Lippe (2007) conclude that the new forms of control by positive reinforcement and output management on the other hand enable (tele)homeworking practices, but can also increase risks, especially if work standards are constantly driven up. They found that especially among men heavy home working practices are often accompanied by longer working hours and less enjoyable non-working time.

In the debate on HBW, one of the arguments for HBW is *the reduced time used for travelling*, which both benefits environment and the individual worker (e.g., Hill et al. 2003). However, some studies have suggested that against assumptions amount of time used for travelling is not reduced (Michelson 1998, 2002). Commuting time is not reduced if HBW supplements work at the office. According to Song (2009) only 1-5 % of at-home workers reported 'reduce commuting time or expense' as reason for working at home. In a similar vein, Bailey and Kurkland (2002) in their review of telework conclude, that commute factors do not appear to be the primary motives for telework, and in many cases are absent altogether.

It is often suggested that one of the greatest advantages of HBW gives an possibility to *combine work with the needs and rhythm of the family and other private spheres of life*. This has received lot of attention in research as in public discussion (see Bailey and Kurkland 2002). To some extent HBW seems to allow individual flexibility to meet the needs of the family (see e.g. Roehling et al. 2003; Mirchandani 2000). In UK Sullivan and Smithson (2007) suggest that there is some evidence which supports HBW as means to integrate work and family; according to their literate review women working at home may be more likely to use HBW to accommodate work and family demands, while men may be more likely to use HBW for additional paid work. Still the evidence is mixed (see Felstead et al 2001; Nätti et al. 2006; Peters and van der Lippe 2007; Vittersø et al. 2003).

There are only few studies which particularly analyse the associations of home working to the *leisure time*. Venkatesh and Vitalari's (1992) found that supplemental work at home was not associated with reduction on time spent on leisure activities, watching TV or time spent with family. Michelson's (2000) study looked at Sweden and Canada, using the national time use studies (gathered in 1991 and 1992). The daily mean time of HBW was 250 minutes in Sweden and 272 in Canada. The implications of HBW on everyday routine were similar in both national

surveys, and implications on leisure and socialising time were minor. The total number of work and travelling hours reduced the possibilities to redistribute time to leisure and socialising. Still, HBWs spent more time alone. However they socialized more than average with family members, but less with friends and neighbours.

1.3 Aims

In our study we distinct unpaid home workers, who supplement office based work at home as an unpaid overtime work, and paid home workers, who have agreed to work at home with the employer. Thus, we examine HBW in Finland by comparing three groups: unpaid (overtime) home workers, paid (agreed home work) and non-home workers. We have three specific research questions: Firstly, we examine the characteristics of HBW. Secondly, we examine the duration and timing of HBW. Thirdly, we examine the relations of HBW and time use.

2 DATA AND METHODS

2.1 Data

The analysis is based on the Finnish Use of Time data (1999-2000), collected by Statistics Finland. The data includes interviews and use of time diaries covering 10,561 days and 5332 individuals, which constitute over 3000 households. All individuals in the household aged 10 years and over are included in the data. Our analysis focuses 15-64 year old employees (n=4587).

2.2 Comparison Groups

We use both the interview data and diary data to investigate the proportion of employees who work at home. In the *interviews* respondents were asked 'Do you sometimes do work connected with your main job at home?' The response alternatives were: 'Works occasionally or partially at home' (34%); Works at home only (2%); Does not work at home at all (65%).

In addition, in the interviews those employees working sometimes or partially at home were also asked 'Is this work mainly: Overtime work without compensation' (40 % of home workers; 13.6 % of all employees); 'Or has it been agreed that you work some of your normal working hours at home' (44%; 15.0 % of all employees) 'Or both' (13%; 5.3 % of all employees).

In the *diary* data, HBW is calculated in ten minutes time period by combining main activity and place of work. On average, nine percent of employees have worked during the diary period (24 hours) at least partly at home. The methodological difference is vivid when cross tabulating the interview data with the time use diary data: among those who reported in the interview that they at least sometimes work at home, only 19 % actually had worked at home during the diary period. The extent of HBW varies depending on the measure and data source. Because we are particularly interested on the timing of the HBW and relationships between homework and overall time use we focus only on diary-based home working.

When combining the information on the extent and nature of HBW from the interview-data and the reported working at home during the diary days, we get three comparison groups: unpaid home workers (overtime or both, n=130, 2.8 %), paid (agreed, n=165, 3.6 %), non-home workers (n=4295, 93.6 % of employees). Paid home workers include also those who worked only at home.

2.3 Time Use

In examining overall time use we apply Robinson and Godbey's (1997) classification of the main categories of primary activities. This classification separates (a) time for paid work, (b) committed time for household maintenance, (c) personal time devoted for self and (d) time of free time activities.

2.4 Control Variables

Control variables include individual-level, work and infrastructure factors. The individual variables include gender (men, women), age of the respondent, information on the family and living area. Age was classified into three

groups (15–34, 35–49, and 50–64 years old). Living with a partner or without a partner was indicated by family status. Having children was classified into two groups: no children at home, or at least one child less than 18 years old at home. Living area was classified as urban or rural. Work-related variables include information on the socio-economic status of the employee and industry. Industry was based on the NACE classification (Classification of Economic Activities in the European Community). Infrastructure related variables include computer, internet connection and number of rooms at home. Information on computer (no, yes), internet connection (no, yes) and number of rooms at home was based on the household interview.

2.5 Analysis Methods

In the study we use cross tabulation and covariate analysis. In examining the extent, timing and duration of home working we use cross tabulation. For controlling the background factors covariate analysis is used. The results indicate estimated time use.

3 RESULTS

3.1 Characteristics of Comparison Groups

The characteristics of comparison groups differ (Table 1). Both unpaid and paid home workers were more often older, upper-white collar employees, earned more and had better home infrastructure - more often computer, internet connection and more rooms at home - compared to non-home workers. Furthermore, unpaid home workers were more often men, had a partner, and worked in financing and business services, while paid home workers were more often women, and worked in education. However, there are no differences in the presence of children in the household or in the urbanisation rate of the living area.

Table 1. Characteristics of comparison groups (%)

	Unpaid home workers (n=130)	Paid home workers (n=165)	Non-home workers (n=4295)	Sig.
Gender				.001
- Men	61	40	49	
- Women	39	60	51	
Age				.000
- 15-34	29	17	32	
- 35-49	44	44	43	
- 50-64	28	39	25	
Mean age (years)	43	46	41	.000
Has a partner	87	75	74	.004
Has a child	45	44	41	.356
Socio-economic status				.000
- Upper level white-collar.	57	67	23	
- Lower level white-collar	36	28	39	
- Manual worker	8	5	38	
Living in an urban area	71	58	62	.091
Economic sector				.000
- Agriculture and forestry	2	5	2	
- Manufacturing, construction	14	10	30	
- Retail and whole sale trade	7	5	13	
- Transport, communication	4	2	8	

- Financing, business services	35	7	13	
- Public administration	8	1	5	
- Education and research	12	50	7	
- Social and health care	9	16	17	
- Other services	9	5	5	
Computer at home	85	79	57	.000
Internet connection at home	64	56	33	.000
Number of rooms at home	3,9	4,2	3,6	.000
Annual income (from tax register) (Euros)	35.366	34.614	24.284	.000

3.2 Duration and Timing of HBW

Unpaid home workers spent daily over one hour (76 minutes) and paid home workers almost three hours (156 minutes) working at home. Typically unpaid home workers spent 10-50 minutes at work while paid home workers typically spent 1-2 hours working at home.

Prevalence of HBW varies also during different clock times and between comparison groups (Figure 1). Among unpaid home workers, prevalence of HBW (participation rate) increases after 6 pm to reach the peak between 8 pm and 10 pm. Among paid home workers, HBW is common also during daytime. Overall, even during the peak times, only 2% of employed persons do HBW at certain time moment. This is much less compared to those who during the 24 hour period work at least partly at home (9 %).

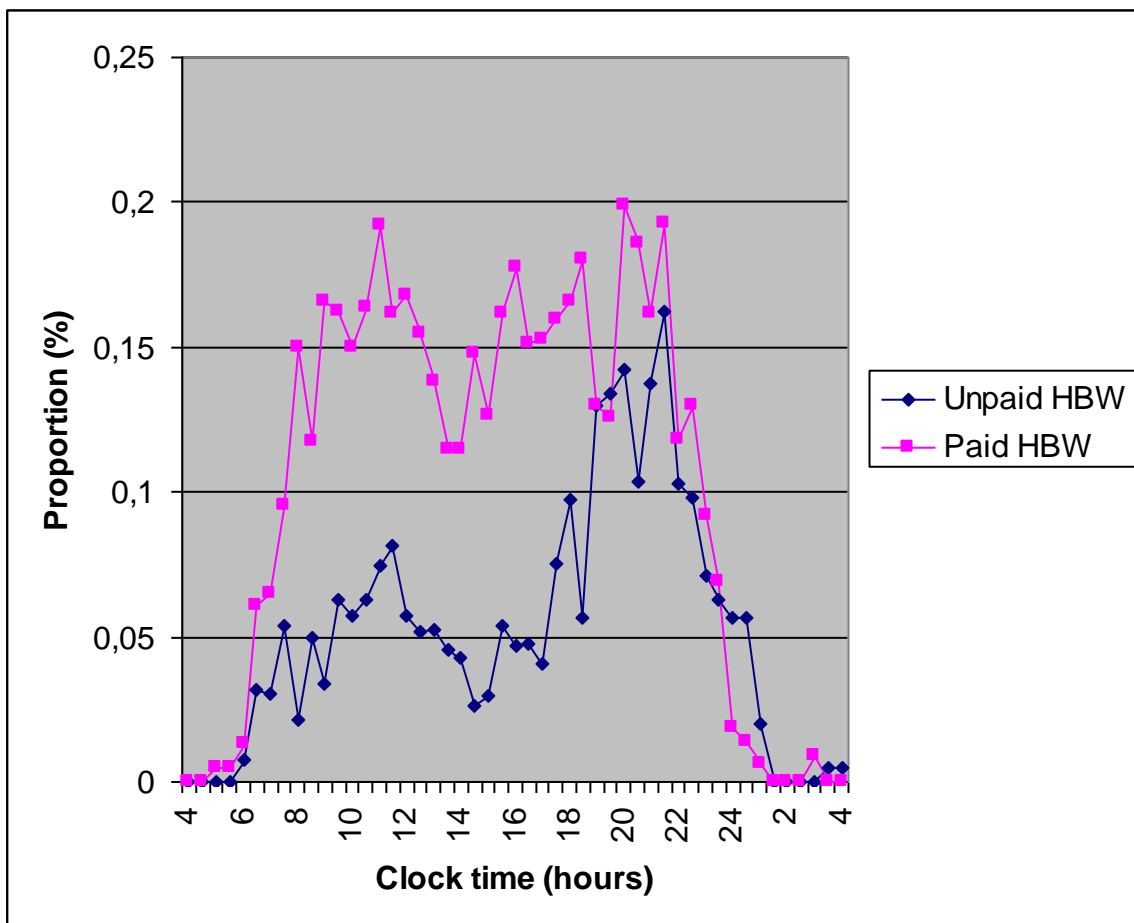


Figure 1. Prevalence of HBW in comparison groups during the day (% , diary data)

3.3 HBW and Time Use

Next we examine the relations of home working and overall time use by comparing paid, unpaid and non-home workers (Table 2). We suppose that time use varies with various background factors, which are controlled by using covariate analysis. Thus, the results indicate estimated time use. In examining overall time use we apply Robinson and Godbey's (1997) classification of the four main categories of primary activities. This classification separates contracted time for paid work, committed time for household maintenance, personal time devoted for self and free time activities.

HBW is linked to longer working hours. Especially unpaid (384 minutes) but also paid (336 minutes) home workers spend more time in paid work compared to non-home workers (304 minutes). On the other hand, paid home workers spend less time in commuting compared to other groups.

On the basis of earlier literature, it could be assumed that home workers would reconcile HBW and family life and also spend more time doing household work and child care. This was not the case in our data. The only minor difference was that unpaid home workers spent slightly more time to construction and repairs compared to paid home workers. The links of HBW on personal time, i.e. in sleeping, meal and grooming times were weak, too.

The amount of free time varied between the groups. Unpaid home workers (250 minutes) had less time compared to and paid (306 minutes) and non-home workers (322 minutes). This was the case with sport and exercise, other free time and free time travelling. On the other hand, unpaid home workers spend more time in socializing with family compared to other groups.

All in all, HBW and especially unpaid home work is linked to the stretching of working hours and to reduction of free time. On the other hand, the links between home working and committed and personal times were minor.

Table 2. Estimated time use by comparison groups (minutes, diary data) (covariate analysis)

	Unpaid home workers (n=130) (1)	Paid home workers (n=165) (2)	Non-home workers (n=4295) (3)	Differences between groups
Contracted time	384	336	304	1>3***, 1>2**, 2>3**
paid work	356	326	278	1, 2>3***
commuting	28	10	27	2<1, 3***
Committed time	197	170	184	-
household work	83	79	83	-
construction and repairs	34	17	24	1>2*
other household work	13	7	12	-
child care	23	20	18	-
shopping	26	29	27	-
household travel	18	19	19	-
Personal time	603	616	619	-
sleep	490	504	496	-
meals	70	72	76	-
groom	40	42	47	-
Education (adult)	6	6	5	-
Free Time	250	306	322	1<2, 3***
organisations	2	10	5	-
sports and exercise	22	24	38	1, 2<3*
culture and entertainment	5	7	5	-
reading	39	42	40	-
radio	2	4	4	-
television	99	110	112	-
socialising with family	13	9	8	1>3*

socialising with friends	30	37	44	-
hobbies	11	23	16	-
other free time	10	13	18	1<3*
free time travel	15	30	32	1<3*

*F-test, *p<0.05, **p<0.01, *** p <0.001*

Controlled for gender, age, family status, children, socio-economic status, type of day, urbanization rate.

4 DISCUSSION

This study has examined HBW in Finland by focusing on the compensation heterogeneity of HBW and comparing three groups: unpaid (overtime) home workers, paid (agreed home work) and non-home workers. The study investigated the characteristics, timing and duration of HBW among employees. Particularly we explored the relations of HBW to time asking if working at home affects the overall time use patterns.

According to the Finnish Time Use Survey (1999-2000) both unpaid (2.8%) and paid (3.6%) at-home work were as common. In Song's (2009) study unpaid at-home work was three times more common among US employees compared to paid at-home work. One explanation maybe the more regulated labour markets and higher union density rate in Finland compared to USA.

Both unpaid and paid home workers were more often older, upper-white collar employees, earned more and had better home infrastructure - more often computer, internet connection and more rooms at home - compared to non-home workers (see also Song 2009). Furthermore, unpaid home workers were more often men, had a partner, and worked in financing and business services, while paid home workers were more often women, and worked in education. However, there was no association between having children and HBW. The lack of association between having children and at-home work has been reported from other countries as well (Callister & Dixon 2001; Felstead et al. 2001; Song 2009), although the findings are mixed (see Sullivan and Smithson 2007).

Unpaid home workers spent daily over one hour and paid home workers almost three hours working at home. Thus, the length of home working averaged around two hours a day, which was similar to findings reported from New Zealand (Callister & Dixon 2001). Prevalence of HBW varied also during different clock times and between comparison groups. Unpaid overtime work was typically carried in the evenings, while agreed HBW was typically carried out during the normal working hours (see also Venkatesh & Vitalari 1992; Sullivan 2003).

HBW was linked to longer working hours. Especially unpaid but also paid home workers worked longer compared to non-home workers. Earlier studies have reported different results. On one hand, and according to Golden (2008), working longer than standard hours was strongly associated with having work at home. On the other hand, and contrary to findings on lengthening working time, Venkatesh and Vitalari (1992) reported that home working was not linked with lengthening working hours.

Paid at-home work reduced time used for commuting. However, in the case of unpaid HBW, there was not such a connection. Thus, commuting time is not reduced if HBW supplements work at the office (see also Michelson 1998, 2002).

On the basis of earlier literature, it could be assumed that home workers would reconcile HBW and family life and also spend more time doing household work and child care (Roehling et al. 2003; Mirchandani 2000). This was not the case in our data (see also Song 2009). The only minor difference was that unpaid home workers spent slightly more time to construction and repairs compared to paid home workers. Thus, also our evidence remains mixed (see also Felstead et al 2001; Peters and van der Lippe 2007).

The amount of free time varied between the groups. Unpaid home workers had less time compared to other groups. This was the case with sport and exercise, other free time and free time travelling. This was in a contrary to Venkatesh and Vitalari's (1992) findings that supplemental work at home was not associated with reduction on time spent on leisure activities. On the other hand, unpaid home workers spend more time in socializing with family compared to other groups (see also Michelson 2000).

All in all, HBW and especially unpaid home work is linked to the stretching of working hours and to reduction of free time. Thus, our study indicates that the nature of HBW is important in studying the relationship between HBW and time use.

Because of the cross-sectional nature of time use data, the relations between at-home work and time use are

essentially pointing out association, not causality. Further research based on longitudinal data would be fruitful in examining causality.

REFERENCES

Bailey, D. and Kurkland, N. (2002). A review of telework research: findings, new directions, and lessons for the study of modern work. *Journal of Organizational Behavior* 23, 383–400.

Callister, P. and S. Dixon (2001b), *New Zealanders' Working Time and Home Work Patterns: Evidence from the Time Use Survey*, New Zealand Department of Labour, Occasional Papers 2001/5.

Felstead, A., N. Jewson, A. Phizacklea, and S. Walters (2001), 'Working at Home: Statistical Evidence for Seven Key Hypotheses', *Work, Employment & Society*, 15, 2, 215–231.

Golden, L. (2008), 'Limited Access: Disparities in Flexible Work Schedules and Work-at-home', *Journal of Family and Economic Issues* (2008) 29:86–109.

Haddon, L. and M. Brynin (2005), 'The Character of Telework and the Characteristics of Teleworkers', *New Technology, Work and Employment* 20, 1, 34–46.

Hill, J., Ferris, M. and Mårtinson, V. (2003), 'Does it matter where you work? A comparison of how three work venues (traditional office, virtual office, and home office) influence aspects of work and personal/family life', *Journal of Vocational Behavior* 63 (2003) 220–241.

Kaufman-Scarborough, C. (2006), 'Time Use and the Impact of Technology: Examining workspaces in the home', *Time & Society* 15, 1, 57–80.

Kraut Robert E. (1989), 'Telecommuting: The Trade-Offs of Home Work,' *Journal of Communication*, 39 (3), Summer. 19- 47

Michelson, W. (1998), 'Time Pressure and Human Agency in Home-based Employment', *Society and Leisure* 21:455-472.

Michelson, W. (2000) 'Home-based Employment and Quality of Life: A Time-use Analysis', in E. Diener and D.R. Rahtz (ed), *Advances in Quality of Life Theory and Research*. Kluwer, 183-203.

Mirchandani, K. (2000), "'The Best of Both Worlds" and "Cutting My Own Throat": Contradictory Images of Home-Based Work', *Qualitative Sociology*, 23, 2, 159-182.

Nätti, J., Väisänen, M. and T. Anttila (2006), 'Paid work at home and work-family relations in knowledge work in Finland', *International Employment Relations Review* 12, 63–76.

Raines, J. and Leathers, C. (2001), 'Telecommuting: The New Wave of Workplace Technology Will Create a Flood of Change in Social Institutions', *Journal of Economic Issues*, 35, 2, 307–313.

Robinson, J. P. and G. Goodbey (1997), *Time for Life: The Surprising Ways Americans Use Their Time*, University Park, Penn: The Pennsylvania State University Press.

Roehling P., P. Moen, and R. Batt (2003), 'Spillover', in P. Moen (ed), *It's About Time. Couples and Careers*, Ithaca and London: Cornell University Press.

Parent-Thirion, A., Fernández Macías, E., Hurley J. and Vermeulen G. (2007). *Fourth European Working Conditions Survey*. European Foundation for the Improvement of Living and Working Conditions, (Luxembourg, Office for Official Publications of the European Communities).

Peters, P. and van der Lippe, T. (2007), 'The time-pressure reducing potential of telehomeworking: the Dutch case', *International Journal of Human Resource Management* 18, 3, 430–447.

Pyöriä, P. (2003), 'Knowledge work in distributed environments: issues and illusions', *New Technology, Work and Employment*, 18, 3, 166- 180.

Pyöriä, P. (2006). *Understanding Work in the Age of Information. Finland in Focus*. Acta Universitatis Tamperensis 1143. Tampere: Tampere University Press.

Song Y. (2009), 'Unpaid Work at Home', *Industrial relations*, 48, 4, 578–588.

Sullivan, C. (2003), 'What's in a name? Definitions and conceptualisations of teleworking and homeworking', *New Technology, Work and Employment*, 18 3, 158 – 165.

Sullivan, C. and Smithson J. (2007) 'Perspectives of homeworkers and their partners on working flexibility and gender equity', *The International Journal of Human Resource Management*, Vol. 18, 3, 2007, 448 - 461

Venkatesh, A. and Vitalari P.N. (1992), 'An Emerging Distributed Work Arrangement: An Investigation of Computer-Based Supplemental Work at Home', *Management Science*, 38, 12 (Dec 1992), 1687- 1706.

Wight, V. and Raley, S. (2009), 'When Home Becomes Work: Work and Family Time among Workers at Home', *Social Indicators Research* 93:197–202.

Vittersø J., S. Akselsen, B. Evjemo, T. Julskrud, B. Yttri and S. Bergvik (2003), 'Impacts of Home-Based Telework on Quality of Life for Employees and their Partners. Quantitative and Qualitative Results from a European Survey', *Journal of Happiness Studies*, 4, 201 – 233.