



time-pieces

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TRAVEL SURVEY DATA TO ESTIMATE TIME SPENT AT IMPORTANT SETTINGS

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The Housing and Health Research Programme at the University of Otago, Wellington looks at the effects of housing on people's health. Many of the exposures in the home to conditions that affect health would not have serious consequences for health if the duration of exposure were short, but we spend a lot of time in our homes, so these exposures become important for health because of their long duration. In general, accurate population level data on time spent in particularly settings (sometimes called microenvironments) and activities is an essential requirement for many forms of environmental risk assessment. Time use surveys are ideal for this purpose (McCurdy et al, 2000; Schweizer et al, 2007), but are expensive to conduct and tend to be carried out infrequently. Few have surveyed children, who are particularly vulnerable to harmful exposures. It is therefore important to try to identify other sources of population exposure data.

Travel surveys offer an alternative source for estimating time spent in settings. However, there are important differences in the way that travel survey and time use survey data are collected and organised: time use studies focus on the type, time and duration, and setting of activity; travel surveys focus on the type, time and duration, and mode of travel. These differences are illustrated in Table 1, which compares notional diaries for the same person for the two different surveys. Travel surveys have no information about what occurs between trips, as shown by the relative sparseness of the right hand side. However, each trip does have a *purpose* recorded, from which general classes of settings can be imputed. The travel survey questionnaire also normally records where the person was at the start of the day, providing the setting for the pe-

rior to the first trip of the day. These derived settings are shown italicised in brackets on the right hand side of Table 1. This method of deriving settings effectively focuses on the composite of the travel activity: a change in setting is normally signalled by a trip, and the composite of the trip information provides the data on the type and duration of time in given settings.

Table 1
Example of a time use diary and a travel survey diary for the same person and activities

Time use diary activities (setting in brackets)	Travel survey diary (imputed setting in brackets)
4.00 AM sleep (at home)	<i>(home)</i>
6.00 AM breakfast (at home)	
6.40 AM trip car (in car)	6:40-6:50 car driver purpose: work – main job
6.50 AM work (at work)	<i>(work – main job)</i>
9.00 AM coffee break (at work)	
9.30 AM work (at work)	
12.30 PM trip car (in car)	12:30-12:40 car driver purpose: shopping
12.40 PM shopping (at shops)	<i>(shops)</i>

The italicised bracketed information for the travel survey is imputed from information provided by the travel survey trip diary

Although deriving duration in settings from travel data appears conceptually straightforward, in practice there is a lot of data processing and data checking required. For example, there may be trips that overlap with other trips according to the times recorded, or trips that were too long or too short in duration due to errors in recording departure and arrival times. We created filters that identified errors of this sort. To validate the use of travel survey data to estimate the time spent in important settings, we compared estimated time spent in the main settings for the New Zealand population aged 12 plus, using a restricted age range to allow comparison between the time use survey, which was restricted to respondents aged 12 and over, and the travel survey, which covered the whole population (Povey and Keall, 2000; Statistics New Zealand, 2001). This population was estimated to spend 71.8% of its time in their homes according to the Time Use data (1998-99) and 72.5% according to the imputed data from the Travel Survey (1997-98). The proportion of time in other settings, such as work and study (12.6% and 12.2% for time use and travel survey data respectively), recreation (5.1% and 8.1% respectively) and using transport (5.8% and 4.7% respectively) had quite good agreement, supporting the validity of this form of use of travel survey data.

This use of travel survey data to estimate time spent in settings has great potential, particularly for researchers who are studying the way that children spend their time and are frustrated by children's lack of representation in most time use surveys worldwide. For researchers who are

interested in studying time spent in settings, the fact that travel surveys are more commonly carried out than time use surveys means that their potential data sources are expanded. For us in New Zealand, we have the benefit of an ongoing travel survey¹, which will soon be supplemented by a new time use survey². This is a fortunate situation as the travel survey can fill in some of the gaps between surveys and gaps in age coverage of the time use surveys, even though the information we can derive on time spent in settings from travel surveys is very limited

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¹ <http://www.transport.govt.nz/ongoing-travel-survey-index/>

² <http://www.stats.govt.nz/developments/time-use-survey-2009-10.htm>

Book notes

by Kimberly Fisher

**Alcser, K.H., Belli, R.F., Stafford, F.P.,
and D.F. Alwin**
**Calendar and time diary methods in life
course research (2008)**

Contributing Authors: Agrawal, S.,
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Hoewyk, J., Vernon, M.K., Wethington, E.,
Xu, J. and Yoshihama, M *Publisher:* Sage
Publications, London

Website: <http://www.sagepub.com/>
Languages Available: English

This book provides an overview of the development of diary and calendar data collection and analysis. The book considers applications of such methods to a number of specific topics, including substance abuse, health among adolescent and older populations, exposure to stressful events, domestic violence and risk of experience of violence, hedonic/pleasurable experiences, and instruction in schools. The book also covers the validity and reliability of such methods as the data have been collected, and considers how these issues and techniques for

analysis may change with the option of real-time data collection. The volume concludes with speculation on the future directions of this field.

**Goodin, R.E., Rice, J.M, Parpo, A. and
L. Eriksson**
**Discretionary time: a new measure of
freedom (2008)**

Publisher: Cambridge University Press,
Cambridge
Website:
<http://www.cambridge.org/catalogue/catalogue.asp?isbn=9780521709514>
Languages Available: English

This book advances the argument that has been fashionable in the time use community for the last few years that time resources are as important as financial resources for quality of life and balancing work and personal life. The authors develop novel algorithms for measuring discretionary time which accounts not only for categories traditionally classed as "leisure" but also for activities traditionally classed as personal care, housework, and paid work which fall outside the range of time requirements similarly positioned people devote to the same categories of activities. The authors aim to measure the proportion of time over which

people exercise a level of discretionary control, then compare how different welfare regimes influence levels of discretionary time. The authors also consider how the organisation of households may influence the level of discretionary time enjoyed by members. The book compares trends in Australia, Finland, France, Germany, Sweden and the USA.

Korabik, K., Lero, D.S. and D.Whitehead
Handbook of work-family integration
(2008)

Publisher: Elsevier Academic Press, Amsterdam

Website:

http://www.elsevier.com/wps/find/homepage.cws_home

Languages Available: English

This edited collection brings together multidisciplinary research into issues and problems contemporary families face carving out time together in the changing work environment. The book begins with a historical overview, then moves on to theoretical and modelling issues and the practical application of models to policy. Later chapters assess the impact of family policies in comparative perspective. Middle chapters consider factors that contribute to the conflict between family and work roles, impacts for organisations of promoting balance for workers, health (physical and emotional) well-being, gender roles, and coping strategies for individuals. The book concludes with speculation of future directions for research in this field.

Odih, P.

Gender and work in capitalist economies
(2007)

Publisher: Open University Press, Berkshire

Website: <http://mcgraw-hill.co.uk/openup/>

Languages Available: English

This book examines how Capitalist economic rhythms organise work time, in particular creating pressures for just in time production and delivery across many sectors of the economy. The author undertakes a sociological investigation of the gender politics generated by the industrial organisation of work time (and its spill-over effects into other dimensions of daily activities). While the book initially concentrates on British examples, the scope is broad, beginning with the 19th Century and tracking changes through the present Post-Fordist and globalised economic environment. The author considers the impacts of the 24 hour economy and pressures of production schedules on women's use of space and time.

You, W.

Time well spent: how watching time can reduce the chances of having overweight children
(2008)

Publisher: VDM Verlag Dr. Muller, Saarbrücken

Website: <http://www.vdm-publishing.com/>

Languages Available: English

This published PhD thesis was awarded the 2006 American Agricultural Economics Association Dissertation Award. The author

uses a two-stage Stackleberg game structure model to examine the impact of household characteristics, personal characteristics, and the daily activities on the risk that children will be overweight (measured by body mass index or BMI) in households with two parents and one child. All three members are treated as separate actors with individual preferences. The model accounts for household expenditure on food, time use of both the parents and the children (including parent's time with children and time on food preparation), individual and household income, spill-over of work into the household, the BMI of parents, and self-reports of stress and coping strategies. The thesis draws on data from the Texas A&M University multi-disciplinary "Parental Time, Role Strains, Coping and Children's Diet and Nutrition" study. The thesis finds that some variables associated with the stress of the mother, mother's BMI and mother's time with children have greater effects than some variables associated with fathers, though the book also reveals the complexity of tracking the causes of obesity.

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