



Contents lists available at ScienceDirect

Transportation Research Part A

journal homepage: www.elsevier.com/locate/tra

An empirical investigation into the time-use and activity patterns of dual-earner couples with and without young children

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ARTICLE INFO

Article history:

Available online xxxx

Keywords:

Time-use
Dual-earner households
Social exclusion
Time poverty
Work-family balance
Multiple-discrete choices

ABSTRACT

This paper examines the time-use patterns of adults in dual-earner households with and without children as a function of several individual and household socio-demographics and employment characteristics. A disaggregate activity purpose classification including both in-home and out-of-home activity pursuits is used because of the travel demand relevance of out-of-home pursuits, as well as to examine both mobility-related and general time-use related social exclusion and time poverty issues. The study uses the Nested Multiple Discrete Continuous Extreme Value (MDCNEV) model, which recognizes that time-decisions entail the choice of participating in one or more activity purposes along with the amount of time to invest in each chosen activity purpose, and allows generic correlation structures to account for common unobserved factors that might impact the choice of multiple alternatives. The 2010 American Time Use Survey (ATUS) data is used for the empirical analysis. A major finding of the study is that the presence of a child in dual-earner households not only leads to a reduction in in-home non-work activity participation (excluding child care activities) but also a substantially larger decrease in out-of-home non-work activity participation (excluding child care and shopping activities), suggesting a higher level of mobility-related social exclusion relative to overall time-use social exclusion. To summarize, the results in the paper underscore the importance of considering household structure in activity-based travel demand models, as well as re-designing work policies in the United States to facilitate a reduction in work-family conflict in dual-earner families.

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<http://dx.doi.org/10.1016/j.tra.2014.12.006>

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1. Introduction

A fundamental difference between the traditional trip-based approach to travel demand modeling and the increasingly used activity-based approach to travel demand modeling is the way time is conceptualized and represented in the two approaches. In the trip-based approach, time is reduced to being simply a “cost” of making a trip. The activity-based approach, on the other hand, treats time as an all-encompassing continuous “tapestry” in which individuals “weave” their activity-travel participation decisions to form their daily activity-travel patterns. Thus, the basis of the activity-based approach is that individuals’ travel patterns are a result of their time-use decisions. Not surprisingly, therefore, time-use research has taken the center stage in travel demand modeling in recent years. Of course, in addition to travel modeling, time-use research has been an interdisciplinary social science area of research to (a) examine and appreciate different cultures in the anthropology field, (b) understand the impact of urban form on time-use in the community and regional planning field, (c) investigate how much time individuals spend in physically active pursuits in the recreational science and public health fields, (d) explore gender roles and women’s time-use patterns in the feminist economics field, and (e) consider work intensity issues (that is, measure work contribution not just in terms of work time, but also in terms of the number of different tasks handled per unit of time), and analyze the amounts of time individuals spend alone and interact with others (especially parents’ time with children and children’s time with new information technology devices) in the sociology and child development fields. Another field in which time-use has been receiving increasing attention lately is in happiness and well-being research, where the emphasis has been on time poverty (lack of time for leisure, sports, and relaxation activities) and social exclusion (broadly defined as the “inability to participate fully in society”, one aspect of which is not being able to participate in the “normal activities of daily life”; see [Farber et al., 2011](#)).

Recently, attention has been drawn to the unique time-use patterns of, and time pressures faced by, members of households in which both spouses in couple and nuclear family households are employed. Numerous studies indicate that members of these dual-earner households may face challenges in accommodating their many responsibilities into their daily schedules, while maintaining a sense of balance between their work and home lives. As such households become increasingly common in the U.S., Europe, and across the world, there is a need to examine their time-use and activity patterns, as well as associated issues of equity and marital and mental health. Also, from an activity-based travel demand modeling perspective, understanding the behavioral patterns of two-worker household members allows us to more accurately represent the daily decision-making processes of a large and growing segment of the population. Accordingly, the objective of this paper is to contribute to the relatively sparse, but expanding, body of research on examining the time-use patterns in work and non-work activities of individuals in dual-earner couple and nuclear family households (for conciseness, we will refer to such households simply as dual-earner households).⁴

1.1. Literature on time use in dual-earner households

Dual-earner households constitute a significant fraction of households in the U.S. today. In particular, the percentage of households with a single breadwinner and with children (without children) has reduced from 52% (50.8%) in 1970 to 31% (25%) in 2010 ([U.S. Census Bureau, 2011](#)). This trend can primarily be attributed to an increase in the number of women entering the work force in recent years. For example, according to [Boushey and Chapman \(2009\)](#), 35% of married mothers stayed at home (no work outside) in the late 1970s, while this percentage has dropped to about 23% today. Overall, the rise in dual earner households has sparked academic interest in the social sciences regarding potential time poverty, social exclusion, and familial health issues of such households. While many different structuring mechanisms may be used to review the literature on time-use in dual earner households, we discuss this literature in three broad (and not necessarily mutually exclusive) areas: general time-use pattern analysis, gender inequity considerations, and quality of life issues. Each of these strands of research is discussed in turn in the next three paragraphs.

In the area of general time-use pattern analysis, [Allard and Janes \(2008\)](#) descriptively examined patterns of daily time allocated to various activity purposes in dual-earner households, comparing trends in time-use by gender and the age of children in the household. In general, they observed that married men employed full-time (in the age group of 25–54 years of age) spend, on average, about an hour more at work on a workday than married working women employed full-time. Married working men employed full-time also spend, on average, about 0.5 h more time on a workday in leisure and sports activities than married working women. Women, on the other hand, spend more time on childcare and household activities than men in nuclear family households, though the disparity decreases with the age of the children in the household. While reinforcing traditional stereotypical time-use patterns by gender, the study by Allard and Janes does not specifically tie these to gender inequity considerations, as does the second strand of research studies we discuss later. [Voorpostel et al. \(2010\)](#) specifically looked at joint leisure time trends of spouses over the past forty years, observing that, while the lives of individuals may have become busier, spouses do spend more of their social time in each other’s company now than in the past. However, they also noted a decreased percentage of leisure time spent in the company of a spouse for dual-earner households compared to single-earner households. Focusing on dual-earner nuclear families, [Ekert-Jaffé \(2011\)](#) estimated the daily time

⁴ A couple household, as referred to in the current paper, corresponds to two adults in a heterosexual marriage with no children, while a nuclear family household corresponds to two adults in a heterosexual marriage with children.

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