Longitudinal time use data: limitations and opportunities. Example of the Russian Longitudinal Monitoring Survey (RLMS)

Session 3: Data availability and gaps: time use and other data and research methods. How to measure unpaid care work

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When do we need a longitudinal dataset?

Longitudinal or panel data sets have both cross-section and time series dimensions that provide repeated observations of the same subjects over time. There are substantial benefits to the use of panel data not least as it allows to control for unobserved heterogeneity (i.e. the omitted variables bias). Importantly, depending on the method, panel data allows one to study the data-based inferences of the causal relationships between the variables of interest. The primary advantage of longitudinal studies is that they measure change.

The choice of data and methods should always be driven by the type of academic inquiry and the formulation of research questions. Longitudinal datasets are a useful source of information particularly if one is interested in studying:

• The pattern in children’s time contribution over the life-course, and specifically transitions of the children, such as child marriage, dropping out of school, transition into employment, etc.

• Behavioural change due to external/internal shocks to family welfare or change in the ‘circumstances’, such as due to the introduction of a new cash transfer, or psychosocial support to the family etc.

Example: The study of parental time use under economic stress. Evidence from the Russian Longitudinal Monitoring Survey

The example presented here illustrates the second case of exploiting longitudinal datasets, i.e. the investigation of behavioural changes due to idiosyncratic shocks. Russia is an interesting case as the Great Recession added new economic challenges to the ‘old’ problems facing children and families, including widening income inequalities and the phenomenon of social orphanage. One question is how the new and existing material pressures affect parent–child relationships. This research contributes to the answer by examining the role poverty plays in the allocation of parental time in this emerging economy. It was investigated in a doctoral study at the University of Oxford.

Research Question: Does idiosyncratic shock measured through a through a drastic and unexpected contraction of household wealth affect parental time allocation?
**Testable hypothesis:** Idiosyncratic shock leads to change in parents’ time allocation in child care and play interaction with children. But change in the parental time allocation will depend on the general level of existing, pre-crisis resources implying higher vulnerability of parents in low-income households.

**What is idiosyncratic shock?**

Two stories\(^1\) illustrate the nature of such events:

“They came to this village three years ago. Husband, wife, and children (boy and a girl). They lived well, husband worked in a timber-cutting cooperative. Had a good income, with money. Boy was seven, girl- nine. But then...the father falls into the wheels of a drunken KAMAZ driver. The family loses a breadwinner forever. The mother cannot come out of this grief, stopped going out at all, started drinking...” (A.K. The story of a social worker)

“The crises hit us hard. My husband lost his business, well there was no business any more...for four months we were struggling. But thanks god, we are good now. He got his wits about him and we are fine” (O.D.)

There are situations when families go through some temporary difficulties. For some it is a life-changing event- like the one described in the first example, for others it is a transitory experience which tests individual and family psychological strength and capacity to cope. Two families described here are clearly from very different backgrounds and have different resources to cope with the situation. To understand the effects of Income shocks is important because it can “disturb family process” Yeung (1998). Since family welfare is interconnected, the extent to which parents can cope or mitigate risks can affect children’s and adolescents’ contribution to the pool of time resources.

**Example of a longitudinal dataset: Russian Longitudinal Monitoring Survey (RLMS)**

The RLMS collects data at child, individual, household and community level. The sample includes around 2000 children 0-14, 11'000 individuals (including 13-18 children), and 5'000 households.

Constructed variables of mother’s and fathers’ time allocation is based on the questions: “Let us talk about things for which you usually spend your time …tell me, which of them you have usually done in the last 30 days:

- **Played, occupied, spent your leisure time with children** or grandchildren who live with you.
- **Cared, looked after children** or grandchildren who live with you –bathed them, fed them, and took them to lessons’ (working week and weekend)

The study empirically tested a number of possible measures of idiosyncratic shocks. to arrive at the most appropriate one in the sense of actual material loss in the family.

- Expenditure shock =>60% reduction in household real consumption

\(^1\) Extracts from the qualitative part of the analysis.
• Income shock => 60% of reduction in household real income
• Involuntary loss of a job by the father in the last year (including hidden unemployment).
• Subjective assessment of the situation compared to last year

**Distribution of childcare responsibilities**

Fig. 1 provides a snapshot of the distribution of time allocation between family members. The graph on the left (A) shows the share of the total sample responding “Yes” to the question on whether they spent time looking after/caring for children or grandchildren in the previous 30 days. In other words, it includes ‘zeros’. The graph shows that informal childcare is a ‘family business’ in Russia with all members contributing their time to caring for younger children. The graph on the right (B) shows the extent of time input (measured in hours) for informal child care among those household members who did participate in the activity. Not surprisingly, mothers are found to be the main carers in the family. But the elder siblings do contribute substantially as well. In fact, they spend slightly more time looking after their younger siblings than the father during the working week. Further analysis (not shown here) revealed that older siblings’ time contribution to care remains sizeable and comparable to the one of fathers’ during the weekend suggesting that fathers choose to reallocate their free time on other activities.

A. Total population with a child ages 0-18 responding "yes"  
B. Those who cared: Working day

![Bar chart A: Cared for child in household](image1)  
![Bar chart B: Hours cared in a workday](image2)

Source: RLMS pooled 2007-2009. Note: Data for children aged 13-18 refers to those who answered the adult questionnaire. It does not include zeros, only for the subsample who responded that they did provide care. As we can clearly see, a lot comparable to fathers’ contribution not only during the working week but also over the weekend.

**Data characteristics – trade offs**

**Limitations**

The RLMS as many other household surveys has some notable limitations.

‘Stylised questionnaire’ format: Time diary surveys, which record the respondent’s activities in a sequential way covering one or more days, are arguably the preferred method of measuring people’s daily activities and life practices (Robinson & Gershuny, 1994, Bianchi, 2000). While time diaries
are highly reliable, they are also a rather expensive way to conduct time allocation surveys. Alternative method, such as used in RLMS, are usually called stylised questionnaire. A number of number of methodological studies pointed to some potential pitfalls of this type of time use data. For example, Gershuny (2011) points to:

a) recall issues – when the respondents have difficulty to remember the activity or its longevity,

b) unclear meaning of time use category and which specific actions are included in the time use category and which are excluded, and

c) uncertainties about the specified period (not sure that the event occurred during this period or not);
d) social desirability effect – higher likelihood compared to other methods to overestimate the time category due to its perceived positive value.

Further, RLMS allows the measurements of participation in specific activity and duration of parenting time rather than sequence or its share in the total daily routine or unpaid work. We cannot distinguish secondary from primary activity and make inferences about the quality of interaction.

Advantages

However, the time use data available in the RLMS, and more generally in other longitudinal data sets, have also significant advantages for the types of research questions we highlighted at the very beginning.

- Firstly, it allows researchers to differentiate between family members’ time allocation.
- Secondly, it includes income and consumption data that can allow to estimate changes in household welfare and/or poverty status etc.
- It offers child-level data which include information on children’s health conditions, activities in school and the community.
- Finally, and as it was already stressed at the beginning of this note, the longitudinal nature of the survey provides opportunity to examine change in time allocation.

Concluding remarks

Research purpose dictates the choice of data and method. We need panel data and longitudinal analysis when our research questions underpin the dynamic nature of children’s time contribution to care. Care is not static over the life-course of the family or a child, it is also affected by changes in the family economic circumstances. Changes in family structure, material circumstances, child’s school status all could have an impact on child care over time. One has to be aware however of the potential trade-off between our ability to study change in time allocation over time and the comprehensiveness of time use information. Stylised time use questions from household panel surveys might lack the details on time allocation decisions, but provide opportunities for the analysis from child and family welfare perspective linking time use data to income and household expenditures. This trade off can be addressed through mixed methods approach in which quantitative analysis is triangulated with qualitative evidence. The latter can substantially enhance our understanding of family time allocations and motives.