

RESEARCH INSIGHT

LIGHTENING THE LOAD

CHANGES IN THE TIMING OF LAUNDRY

Key points

- Doing the laundry has been, to some degree, moving out of periods of peak energy demand.
- Between 1974 and 2005, the proportion of laundry done on Sunday mornings has increased significantly. Doing the laundry in the early morning and late at night has decreased for all days.
- When people do the laundry relates to the influence of other trends on the use of their time. Analysing time use data can help reveal these dynamics.

Introduction

There is considerable interest in understanding the activities that contribute to evening peak electricity demand, especially those that may be 'shift-able'. Here we focus on laundry (i.e. washing and drying clothes). 'Doing the laundry' is a routine yet significant component of energy demand, but is also an oft-quoted example of an activity which is, in principle, shift-able in its timing, including through the use of automatic timers. But is a widespread shift in the timing of laundry really plausible?

To find out how patterns of laundry may evolve in the future, we first need to understand how the timing of laundry has changed over recent decades. The research summarised here used UK national time use surveys to map out the 'traces' of doing the laundry over the last thirty years. In these surveys a representative sample of people fill out diaries to record the nature and timing of their main and secondary activities over 24 hours on at least one week and one weekend day.

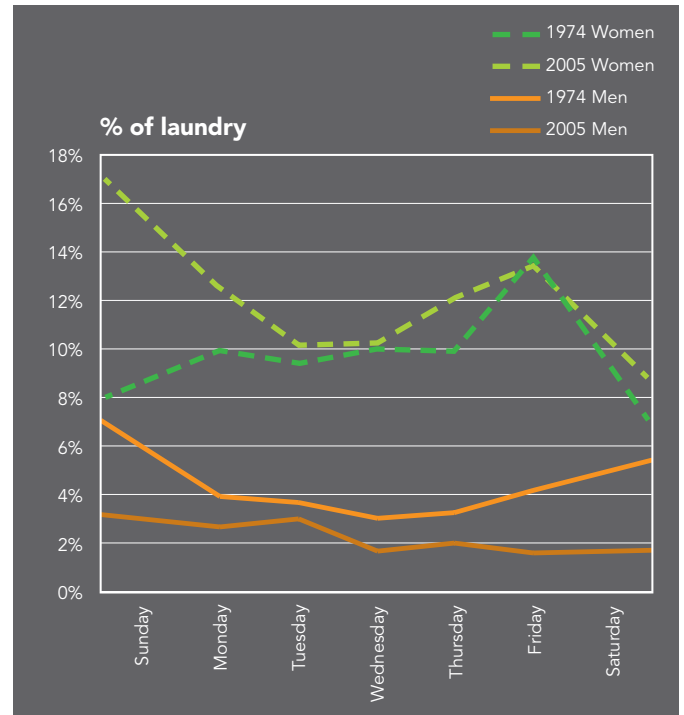
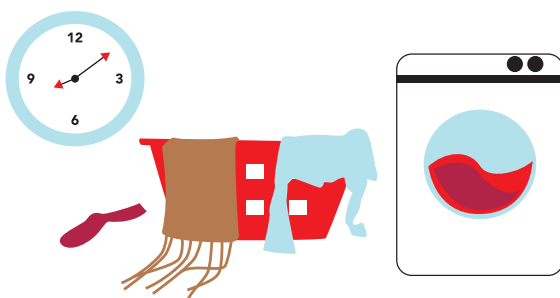


Figure 1 Who does the laundry and when? (Values = % of all laundry reported by gender, day and year)

Questions

- When do people do their laundry? How do patterns of laundering vary across hours of the day and days of the week?
- How does timing vary by gender? What might this indicate about constraints on laundering?
- How have these patterns changed over time?

Findings

- Although there are subtle differences in the coding of 'laundry' in the surveys, Fig. 1 suggests that laundry was as much a gendered practice in the UK in 2005 as it was in 1974. It is therefore the flow of women's social practices that are especially crucial to understanding the timing of laundering.
- Fig. 1 also shows the most popular day for laundry in 1974 was Friday for women and Sunday for men. By 2005 a higher proportion of laundry was done on Sundays with the increase notable amongst women.
- There have also been changes in the times of day at which laundering takes place. Fig. 2 shows a clear decrease in the percentage of early morning laundry (06:00 - 08:30) but an increase between 09:00 and 12:00; changes that are driven by the shift to laundering on Sundays.

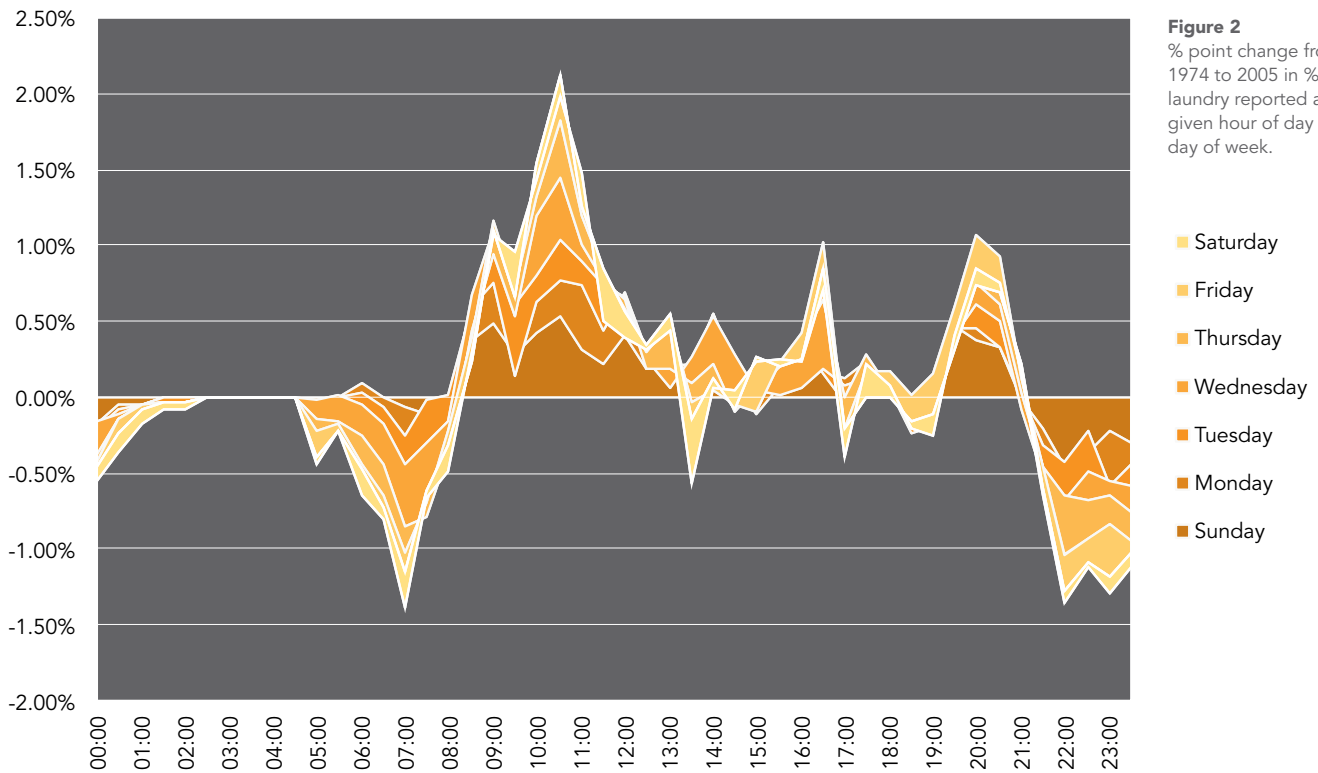


Figure 2
% point change from 1974 to 2005 in % of laundry reported at given hour of day and day of week.

- Fig. 2 also suggests some increase in laundry at around 16:30 and again between 17:30 and 21:00 with Friday and Sunday to the fore. Most notably, laundry is very rarely done at night and there is a trend towards less late evening laundry (after 21:00).

Significance

As far as we are aware this is the first analysis of the changing temporal rhythms and patterns of laundering. The shifts we have observed may be linked to societal trends that influence and constrain the timing of laundry in ways that are not immediately obvious. For example, it is likely that the substantial increase in Sunday laundry is partly driven by increased labour market participation by women which grew from 55% to 67% between 1975 and 2005 and especially for those with children. Other reasons might include the emergence of other week-day practices related to leisure, child care or employment. The small rise in early evening laundry could be driven by 'just-in-time' laundry for work/school (Sundays) and for going out (Fridays).

Implications

- Other than the early (largely Sunday) evening increase, these results suggest that doing the laundry has for some time been shifting more towards non-peak electricity demand periods.

- Tumble or line drying are part of the laundry process but we are unable to distinguish between them in the data. It is possible that the decrease in 'early morning' laundry is linked to the increased use of tumble driers – so that getting the wet laundry out of the machine for a full day's drying is not such an imperative.
- Conversely, the growing availability and use of tumble driers and time-switched appliances is not enabling more 'late night' laundry – indeed quite the opposite trend is seen. Evidently there are other dynamics at work that complicate the relationship between technological change and the routine temporal patterns of laundry practices.
- This work provides an example of the kind of analysis that can inform ambitions to shift energy use out of peak periods. The temporal patterns of many other activities that contribute to energy demand can be analysed using time-use data.
- Above all, these insights remind us that shifts in energy use are already occurring for reasons that have little to do with demand response or price tariffs. Current patterns of demand are only ever a slice through a constantly evolving system – even for something as mundane as laundry.