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Chapter 2

Special Focus: Measuring Leisure in OECD Countries

The amount and quality of leisure time is important for people's well-being for the direct satisfaction it brings. Additionally, leisure, taken in certain ways, is important for physical and mental health. Leisure also contributes to the well-being of people other than the person directly enjoying leisure. When a person engages in leisure, the benefits gained are shared with others in a multitude of ways, including improvements in personal relationships, family functioning, and in terms of creation of social capital networks (at least from some types of shared leisure). Leisure time patterns across the OECD therefore warrant investigation as an important part of social monitoring.

What exactly then is leisure? Leisure may be defined in terms of time, activities, or states of mind. In terms of time, leisure can be seen as time spent free of obligation and necessity. For example, the quantity of leisure has been defined as "all activities that we cannot pay somebody else to do for us and we do not really have to do at all if we do not wish to" (Burda *et al.*, 2006, p. 1). Despite its advantages, this definition does not specifically mention the types of activities that can qualify as leisure. Nor does it describe the extent to which a person is free from obligation. Alternatively, leisure can be defined as specific activities conventionally thought of as "leisurely". A more thorough definition may be based on what the majority of people would list as leisure activities, such as television watching, participating in sports or exercise, reading, seeing movies, and so on. Finally, leisure can be defined as a state of mind, meaning engaging in enjoyable or pleasurable activities. The actual measures of leisure used here draw on all these definitions.

This chapter first provides a short literature review of the economic determinants of leisure time. It then examines leisure across the OECD as the residual time not spent in paid work. This residual approach to the data is not ideal, in particular because it does not allow cross-country or inter-temporal variations in amounts of unpaid work undertaken. However, the residual approach does allow considerations of leisure for the largest possible cross-section/time series of countries across the OECD. A further contextualisation of leisure time is then undertaken, considering a very broad-brush allocation of time over the adult life cycle. This contextualisation is done for an average OECD country in terms of years before compulsory education, years of schooling, years before labour market entry, years not in paid work, years in work, and years in retirement for males and females.

For the smaller subset of 18 OECD countries for which comparable data could be obtained, time-use studies are used to more accurately explore leisure during a typical day and across time (the annex to this chapter provides some comparative details of the 18 time-use surveys used). These time-use surveys precisely measure the time devoted to both market and non-market activities by recording data on people's time allocation when in or away from their jobs. Respondents' descriptions of activities are coded into sets of general categories such as "time spent in work", "time spent doing household chores", or "time spent in leisure activities". While methodologies and approaches vary to a certain

degree, all the time-use surveys used in this chapter define the "leisure" category as the sum of non-compulsory activities such as hobbies, watching television or listening to the radio, socialising with friends and family, attending cultural events, hosting events, and practising a sporting activity. All the surveys aim to closely measure what people actually do with their time, not what they recollect having done with it long after the events. Once adjusted, this data makes it possible to compare cross-national leisure levels and trends. Still employing time-use data, the second part of this chapter focuses on patterns of leisure distribution by categories of both gender and age.[1] This part of the chapter also details the types of leisure activities people engage in and the satisfaction they derive from accomplishing them. Finally some consideration is made of the relationships between leisure and other measures of well-being, and leisure and policy choices about paid holidays.

The economic theory of leisure time

Since Veblen's *Theory of the Leisure Class* at the end of the 19th century, economists and other social scientists have taken a great deal of interest in leisure. Most work on labour supply in the neoclassical tradition focuses theoretical and empirical attention on the labour/leisure choice. However, this approach traditionally ignores other uses of time. It effectively examines the margin between paid work and all other uses of time in aggregate ("residual time"), which of course include leisure time as a sub-set, in terms of the constrained optimisation techniques of neoclassical economics (see Caussa, 2008 for recent OECD work in this vein).

The canonical modern treatment of time-use, explicitly addressing leisure in a more sophisticated fashion, can be attributed to Gronau (1976). Drawing on the earlier work of Mincer, Gronau argues for a need to distinguish between unpaid work (home production) and leisure. He suggests that the justification for focusing only the paid work/residual time choice, a focus with which he disagrees, is based on an assumed stability of the allocation of residual time between competing uses (such as home production, leisure, and sleep) in response to economic changes. Gronau develops a formal model with a three-fold distinction between leisure, home production, and paid work. His model is based on the assumption that marketed goods obtained from paid work and home produced goods are perfect substitutes. An increase in market wages reduces home production. The wage impact on both leisure and market work is indeterminate. An income rise increases leisure, reduces paid work, and leaves home production unchanged. Empirical work by Bloch and Gronau using United States and Israeli data suggests that leisure amongst couples is positively related to the husband's wage income, negatively related to the wife's wage income, and positively related to non-wage income. In addition, higher numbers of children, and especially pre-school children, reduce leisure time (Gronau, 1976, Table 1).

Other extensions of labour supply models to incorporate home production include Chiappori (1997) and Apps and Rees (1996, 1997, and 2002). In addition to market work, home production, and leisure time, Gronau's model has also been extended to cover work-related travel time by Solberg and Wong (1992). Their empirical results do not concur with their model predictions, and the authors suggest that this is mainly due to the violation of their assumption (shared with Gronau) of perfect substitutability between market work and home production.

None of the models presented above include sleep in their consideration of leisure. As Biddle and Hamermesh (1990) point out, many labour supply models assume a fixed amount of time is allocated between paid work and waking leisure. By implication, sleep is a fixed biological constant, yet theory and evidence do not support this. Biddle and Hamermesh theoretically and empirically show that sleep time, as with other forms of time usage, responds to marginal economic incentives. If this is the case, some sleep also becomes a leisure-like activity. As such, several very recent time-use studies have categorised *all* sleep as leisure (see Aguiar and Hurst, 2007; Engler and Staubli, 2008).

Trends in residual of paid work time

The analysis commences by considering maximum leisure time as simply the amount of time that is not spent in paid work. While some immediate limitations of this approach are obvious – it fails to consider unpaid work for example, as well as time spent commuting – its advantage is that data on hours worked are available on a comparable basis for a large number of OECD countries for long time periods. Good comparisons both across countries and across time are possible. From this initial definition of leisure as the residual time-not-worked it is possible to progressively build a more solid conceptual approach which in turn allows a study of leisure levels and trends which is, however, less broad in terms of OECD country coverage.

It is possible to estimate total annual hours of paid work for full-time equivalent workers across a large number of OECD countries and thus calculate the associated residual (see Table 2.1). Of course, an evident limitation of this approach is that it says nothing about leisure, even as a residual value, for large and varying parts of the population of each country that are not actually in employment. There are numerous features of interest in Table 2.1. First there are considerable differences in annual hours of work of all the employed across the countries. The standard deviation of the residual leisure measure across the countries considered is 175 hours or about four weeks of work at forty hours of work a week. The lowest residual leisure is found in the United States, while the highest is in Norway. Other countries with a low amount of residual leisure include Hungary, Poland, and the Slovak Republic. The highest amounts of residual leisure are found in the Nordic countries and western continental Europe: the Netherlands, Denmark, Sweden, and France.

If leisure is considered as nothing more than the time spent away from paid work, then naturally any change in the amount of annual hours worked will be reflected in variations of the amount of available leisure time. Table 2.2 considers average growth rates in hours worked across the OECD from 1970 until 2005. The five-yearly averages chosen remove much of the possible higher frequency business cycle fluctuations. Clearly the data are incomplete, especially for the early period for many countries (1970-85). But the overall pattern shows a declining number of hours worked at a diminishing rate over time for most countries. There are very few countries which have had periods of rising growth in hours of paid work per person. The notion of a general, OECD-wide "time crunch" arising from changing conditions in the paid workforce does not appear to be supported, although a growing time crunch could certainly exist for particular groups.

Figure 2.1 uses the same data to illustrate long-term trends over approximately 30 years in annual hours worked for six selected OECD countries. Canada and the United States follow very similar patterns with comparatively stable hours per person from 1980 onwards. Patterns in the United Kingdom are also quite similar to those in North America.

Table 2.1. **Anatomy of a typical work year for dependent employees, 2006**

Decomposition of average annual hours actually worked by full-year equivalent workers into its components

	Annual hours of work[1]	Annual residual leisure	Average weekly hours on all jobs	Usual weekly hours of work in the main job	Extra hours on main job = Overtime + variable hours (eg. flexible hours) + others	Hours on additional jobs	Annual weeks worked	Holidays and vacation weeks	Full-week absences due to non holiday reasons	Part-week absences due to non holiday reasons	Absences due to sickness and maternity[2]
	(a) = (c)*(g)	(b) = (365*24)-(a)	(c) = (d)+(e)+(f)	(d)	(e)	(f)	(g) = 52 - [(h) + (i) + (j) + (k)]	(h)	(i)	(j)	(k)
	Hours		Weekly hours worked				Weeks worked/not worked				
Australia (2005)	1 733	7 027	36.4	. .	. .	. .	47.6	. .	. .	. .	. .
Austria	1 590	7 170	38.8	37.5	0.7	0.5	41.1	7.4	1.7	0.7	1.2
Belgium	1 461	7 299	36.0	35.4	0.3	0.4	40.5	7.1	2.2	0.4	1.8
Canada (2005)	1 579	7 181	36.3	35.6	. .	0.7	43.5	3.8	2.2	1.0	1.5
Czech republic	1 754	7 006	41.3	40.4	0.7	0.2	42.5	6.3	1.6	0.2	1.5
Denmark	1 367	7 393	36.2	34.6	0.9	0.7	37.8	7.4	3.4	1.1	2.4
Finland	1 517	7 243	38.6	36.9	1.2	0.4	39.4	7.1	2.4	1.6	1.5
France	1 459	7 301	37.3	36.4	0.6	0.3	39.1	7.0	2.2	1.7	2.0
Germany	1 478	7 282	36.1	34.3	1.4	0.3	41.0	7.5	1.7	0.6	1.1
Greece	1 783	6 977	40.0	39.6	0.1	0.3	44.5	6.7	0.3	0.2	0.3
Hungary	1 889	6 872	41.3	40.6	0.3	0.4	42.6	6.2	1.5	0.2	1.4
Iceland (2006)	1 748	7 012	43.9	41.3	1.2	1.4	39.9	6.2	2.4	1.6	2.0
Ireland	1 543	7 217	35.8	35.0	0.5	0.3	43.2	5.7	1.6	0.3	1.3
Italy	1 536	7 224	37.3	36.8	0.3	0.2	41.2	7.9	1.4	0.3	1.2
Luxembourg	1 541	7 219	37.7	36.7	0.8	0.2	41.0	7.4	1.6	0.5	1.6
Netherlands	1 325	7 435	31.6	29.5	1.6	0.5	41.9	5.3	2.2	0.9	1.6
Norway	1 290	7 470	35.7	33.1	1.9	0.7	36.1	6.5	4.4	1.7	3.3
Poland	1 806	6 954	41.5	40.0	0.4	1.1	43.5	6.2	1.3	0.1	1.0
Portugal	1 675	7 085	40.0	39.0	0.2	0.7	41.9	7.3	1.5	0.2	1.1
Slovak Republic	1 775	6 985	40.8	40.3	0.3	0.2	43.5	6.9	0.7	0.1	0.7
Spain	1 601	7 159	39.1	38.2	0.6	0.3	41.0	6.8	1.9	0.5	1.8
Sweden	1 386	7 374	37.5	35.6	1.3	0.6	36.9	6.8	3.3	1.8	3.2
Switzerland	1 618	7 142	37.8	34.3	2.9	0.6	42.9	6.0	1.4	0.9	0.9
United Kingdom	1 530	7 230	37.5	36.6	0.6	0.3	40.8	6.5	2.1	1.3	1.2
United States[3] (2005)	1 896	6 864	41.3	38.5	2.7	. .	45.9	3.8	1.6	. .	0.7
OECD25	**1 595**	**7 165**	**38.2**	**36.9**	**0.9**	**0.5**	**41.6**	**6.5**	**1.9**	**0.8**	**1.5**
Coefficient of variation	0.11	0.02	0.07	0.08	0.81	0.62	0.06	0.16	0.44	0.75	0.47

1. See Annex 2.A1 of *OECD Employment Outlook 2004* for a succinct explanation of the method used by the OECD Secretariat to estimate annual actual hours worked per person in employment for Belgium, Ireland, Luxembourg, the Netherlands and Portugal. The same method is applied to estimate annual working hours per employee for all European countries shown in this table.
2. These weeks are already included in columns h and i, but are included a second time in order to correct for an assumed 50% under-reporting (see Annex 2.A1), except for Australia.
3. The estimates refer to total full-time employment. Total week absences due to non-holiday reasons are reported rather than full-week absences.

Source: Secretariat estimates for European countries based on European Labour Force Surveys results and EIRO (2005). Estimates for Australia, Canada, United States based on ECO/CPE/WP1(2007)11/ANN2.

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Hours worked in Japan by employed people have been falling steeply, converging to United States, Canadian, and United Kingdom levels. French and Norwegian data show no levelling off during the 1980s and the 1990s, but some stabilisation after the millennium.

Table 2.2. **Average annual growth in hours worked per full-time equivalent employee for five-year periods**

	1970-75	1975-80	1980-85	1985-90	1990-95	1995-2000	2000-05
Australia	–0.2	–0.2	–0.1	–0.1	0.0	0.0	–0.7
Austria	..	. .	. .	. .	. .	–0.2	0.3
Belgium	. .	. .	. .	–0.5	–0.9	–1.5	0.1
Canada	–0.6	–0.7	–0.1	0.0	–0.1	–0.1	–0.3
Czech Republic	. .	. .	. .	. .	. .	0.3	–0.9
Denmark	–2.4	–0.3	–0.5	–1.1	–0.2	0.7	0.3
Finland	–0.9	–0.5	–0.4	–0.5	0.1	–0.3	–0.4
France	–1.0	–0.7	–1.2	–0.3	–0.6	–0.7	–0.4
Germany	. .	. .	. .	. .	. .	–0.8	–0.5
Greece	. .	. .	. .	–0.4	0.1	0.0	–0.3
Hungary	. .	. .	. .	–0.4	0.6	0.2	–0.7
Iceland	–1.5	–1.5	–0.1	–0.2	–0.1	0.6	–1.0
Ireland	. .	. .	. .	0.2	–1.2	–1.7	–0.8
Italy	–1.3	–0.6	–0.6	0.1	–0.5	0.0	–0.5
Japan	–1.2	0.1	–0.3	–0.6	–1.5	–0.7	–0.5
Korea	. .	. .	0.1	–1.5	–0.2	–1.1	–1.4
Luxembourg	. .	. .	. .	0.0	–0.5	–0.7	–1.1
Mexico	. .	. .	. .	. .	. .	0.3	0.2
Netherlands	. .	. .	. .	. .	–1.6	–0.3	0.0
New Zealand	. .	. .	. .	. .	0.3	–0.1	–0.2
Norway	–1.2	–1.8	–0.5	–0.5	–0.2	–0.4	–0.5
Poland	. .	. .	. .	. .	. .	. .	0.1
Portugal	. .	. .	. .	. .	–0.7	–1.4	–0.1
Slovak Republic	. .	. .	. .	. .	. .	–0.7	–0.8
Spain	. .	. .	–1.5	–0.3	–0.1	0.0	–0.5
Sweden	–1.6	–1.1	0.3	0.3	0.8	0.0	–0.5
Switzerland	–1.0	–0.8	–0.8	–0.4	0.0	–0.2	–0.3
Turkey	. .	. .	. .	. .	. .	. .	. .
United Kingdom	–0.6	–1.2	–0.1	0.1	–0.3	–0.4	–0.4
United States	–0.7	–0.3	0.2	–0.1	0.1	–0.1	–0.4
OECD	**–1.1**	**–0.7**	**–0.4**	**–0.3**	**–0.3**	**–0.3**	**–0.4**

.. Not available.

Source: Secretariat estimates based on *OECD Employment Outlook 2006*.

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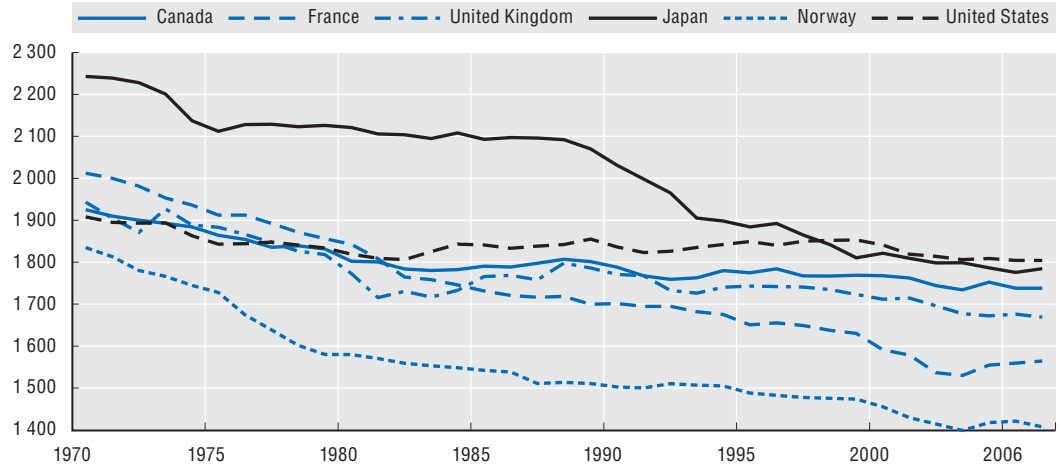
Figure 2.1. **1970-2006: long-term decline in annual hours worked**

Annual hours worked by the total employed population in selected OECD countries



Source: Secretariat estimates based on *OECD Employment Outlook 2006*.

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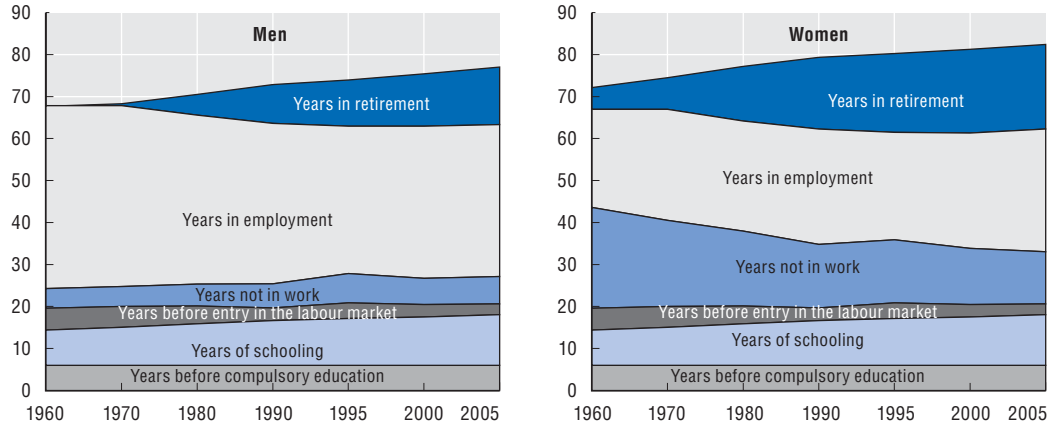
Allocation of time over the life course

A second contextualisation for consideration of patterns of leisure from time-use surveys is a consideration of the number of years that people with different characteristics devote to their "main activity" across different life phases. While based on cross-sectional data, the contextualisation can however shed some light on life-cycle patterns of time-use under the very strong assumption that the pattern of experience in terms of labour market outcomes and fertility of a person of a given age (*e.g.* 15) over a particular age range of his or her future life course (*e.g.* 15-64) can be proxied by today's behaviour of the population in that age range (15-64). The underlying assumption is the same as that underlying the calculation of life expectancy or total fertility rates.

Key results are shown in Figure 2.2, which shows how a person's life course can be disaggregated into years spent in different main activities. These data, shown separately for men and women based on averages from those OECD countries for which sufficient data are available, highlight several well-established patterns. Perhaps the best known pattern illustrated is the continuous decline in the number of years in paid work for men and its concomitant rise for women. The rising period in retirement as a consequence of rising life expectancy is shown. Women's earlier retirement age and their longer period in retirement, due both to earlier retirement age and longer life expectancy, are also shown. The likely rise in levels for women's time in education is not shown here. Further work is intended to isolate female educational catch-up in this area.

Figure 2.2. **Years spent in different activities by men and women in a typical OECD country**



Source: Secretariat estimates based on *OECD Employment Outlook 2006*.

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Leisure across the average day

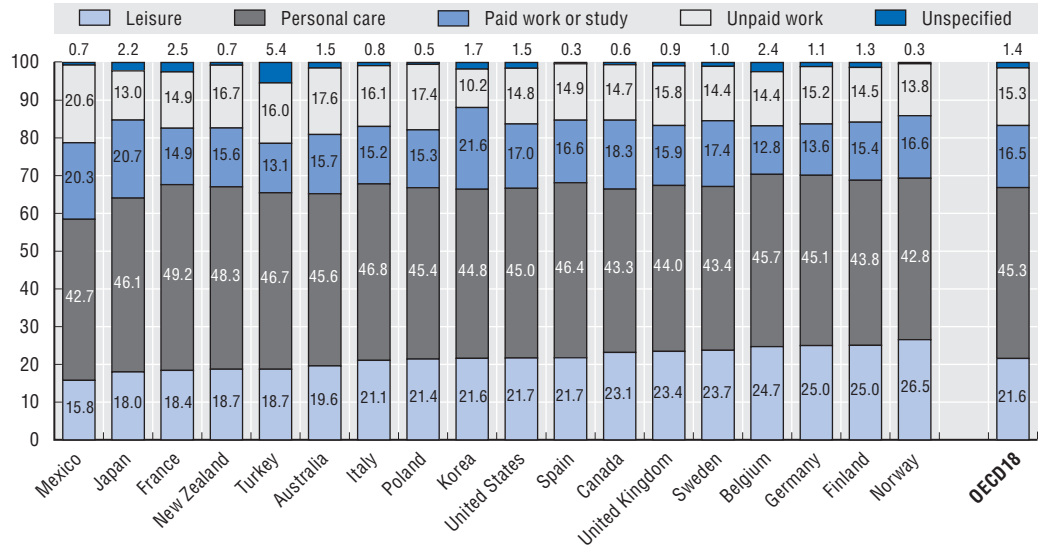
The above analysis shows considerable differences in average amounts of paid work across OECD countries over a year. Furthermore, the average annual time spent working has typically declined over the last 30 years. But does a general decline in annual working hours necessarily mean a symmetrical upsurge of available leisure time? The answer is no. The weaknesses of the residual approach in terms of coverage of the population and in assuming that all residual time is spent on leisure are evident. Ultimately this breakdown only offers a partial insight into the elements that have gradually shaped a typical year. Assessing a tangible estimate of the time people specifically allocate to leisure requires the data that only time-use surveys can provide.

In order to better comprehend the share of time dedicated to leisure in a person's average day over an average year, it is important to first see how adults divide their 24 hours among other main activities. The approach taken here is to divide time during the day into five main categories. These five-time categories are 1) Leisure, narrowly defined, 2) Paid work, 3) Unpaid work, 4) Personal care, and 5) Other time (uses of time which are either unaccounted for or undefined). Insofar as complete methodological standardisation and comparability can be attained in time-use surveys, noteworthy cross-national differences *can* be observed in the way people divide their time during an average day. It must be kept in mind that, to varying degrees, time-use surveys' results cannot be regarded as completely accurate in terms of measuring time allocation trends during periods of sickness and/or holidays. Up to date time-use surveys with sufficient information for this study are also only available for 60% of OECD countries (the 18 countries analysed in this chapter) and their methodologies are quite varied. Unfortunately, insufficient information was available to include existing time-use surveys from Hungary, Iceland, and the Netherlands.

"Paid work" includes full-time and part-time jobs, breaks in the workplace, commuting to the workplace, time spent looking for work, time spent in school, commuting to and from school, and time spent in paid work at home. "Unpaid work" includes all household work (chores, cooking, cleaning, caring for children and other family and non-family members, volunteering, shopping, etc.). "Personal care" includes sleep, eating and drinking, and other household, medical, and personal services (hygiene, grooming, visits to the doctor, hairdresser etc.). "Leisure" includes hobbies, games, television viewing, computer use, recreational gardening, sports, socialising with friends and family, attending events, and so on. "Other time" includes all activities not elsewhere mentioned

Figure 2.3 shows that across all 18 OECD countries people spend most time in personal care activities. Variation in the share of time spent in personal care across these countries is comparatively small at 6 percentage points, ranging from a low of 43% of total time in Canada, Sweden, Mexico and Norway to a high of 49% in France.

Figure 2.3. **Share of time taken by leisure and other activities across an average day**
24-hour breakdown of time spent in main activities for all respondents aged 15 and over in 18 OECD countries



Source: Secretariat estimates based on national and multinational time-use surveys (2006 where available).

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What activities mainly make up personal care? The primary component of personal care across all countries is in fact sleep. Across the OECD, people sleep an average of 8 hours and 22 minutes per day. Sleep thus accounts for about 77% of average cross-OECD personal care time. The second major component is eating, which accounts for a further 14% of personal care time or 1 hour 37 minutes per day on average across the OECD (Turkey is excluded from this and the following calculations since eating time cannot be separated from other personal care time). Thus sleeping and eating on average make up over 90% of personal care time. The remainder of personal care time covers "Personal, medical and household services". This last category covers various activities such as personal hygiene, going to the doctor, getting a haircut, getting the car repaired, and so on. As some sleeping, eating and drinking, and personal hygiene time could alternatively be classified as leisure (for example, respectively sleeping in, having a long lunch with friends or family, or having one's hair shampooed and cut), there is a considerable element of arbitrariness in the division between personal care and leisure.

Following personal care, leisure is typically the next largest time category, being 22% of time on average across the OECD18. Leisure is highest in Norway at 27% of time and lowest in Mexico at 16% of time. Amounts of leisure are also high in Belgium, Germany, and Finland. At the other end of the spectrum, leisure is also comparatively low in Japan, France, and New Zealand.

Japan and Mexico are the only two countries where paid work represents a higher share of time than leisure, while paid work and leisure represent equal shares in Korea. All 15 other countries report more leisure time than paid work time. On average across the OECD18, paid work time follows in importance after leisure, but the margin is fine. In many countries, for example Mexico, New Zealand, Australia, Italy, Poland, Belgium, and Germany, unpaid work actually absorbs more time than paid work. Mexico is the only country where unpaid work takes up more time than leisure as well.

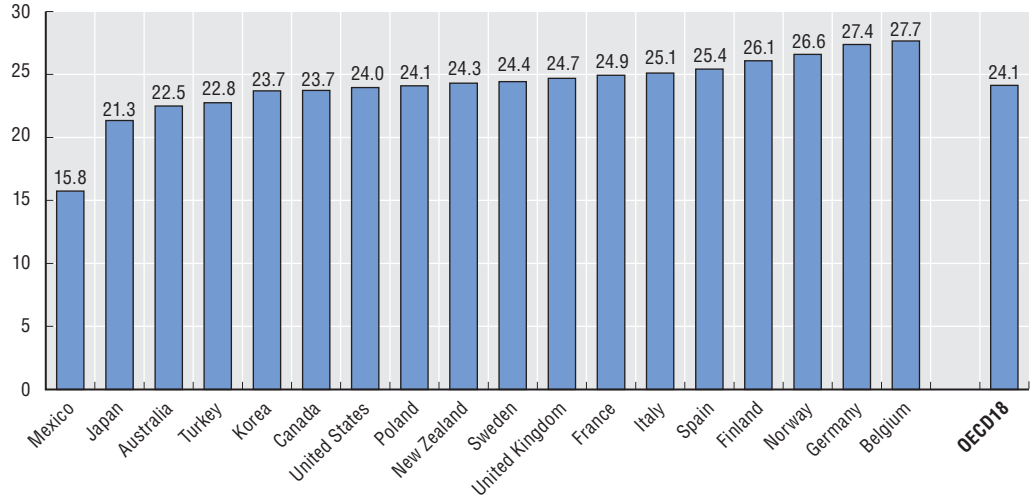
Of the four largest time categories (leisure, personal care, paid work, and unpaid work), the share of leisure time varies the most between countries, with 11 percentage points difference between Mexico and Norway. The variation in unpaid work time is as great, with an 11 percentage point difference between Korea (low) and Mexico (high). The spread in paid work is smaller, being 9 percentage points between Belgium (low) and Korea (high).

Given the arbitrariness of the personal care-leisure boundary already discussed above, an alternative way of measuring time spent in leisure is to fix personal care at the lowest country rate (42.7% of an average day in Mexico). This lowest country rate of personal care, it could be argued, gives the minimum that might be considered necessary. What is described as a "broad" definition of leisure can then be calculated as the "narrow" leisure already measured and reported above in Figure 2.3 plus the addition of "excess" personal care time over the lowest country rate. The results of this "broad leisure" calculation are reported in Figure 2.4. Average leisure time for the OECD18 rises from 21.6% of time ("narrow" leisure) to 24% of time ("broad" leisure). The range still runs across 11 percentage points from a low of 16% of an average day in Mexico spent in leisure to a high of 27% of an average day in Belgium, but there is more homogeneity of leisure for other countries inside that range.

Some countries gain more leisure time using the broad definition than others. Consequently there are also some considerable changes in country rankings. The biggest upward movers in rankings are France (up nine places), Italy (up six places), and New Zealand (up five places). These three countries move from below average to around or above

Figure 2.4. **A broader definition of leisure raises leisure time and changes country rankings**

Percentage of leisure time in an average day



Note: "Broader leisure" refers to daily levels of personal care normalised to the lowest country level. All excess personal care time is re-allocated to the initial leisure value.

Source: Secretariat estimates based on national and multinational time-use surveys (2006 where available).

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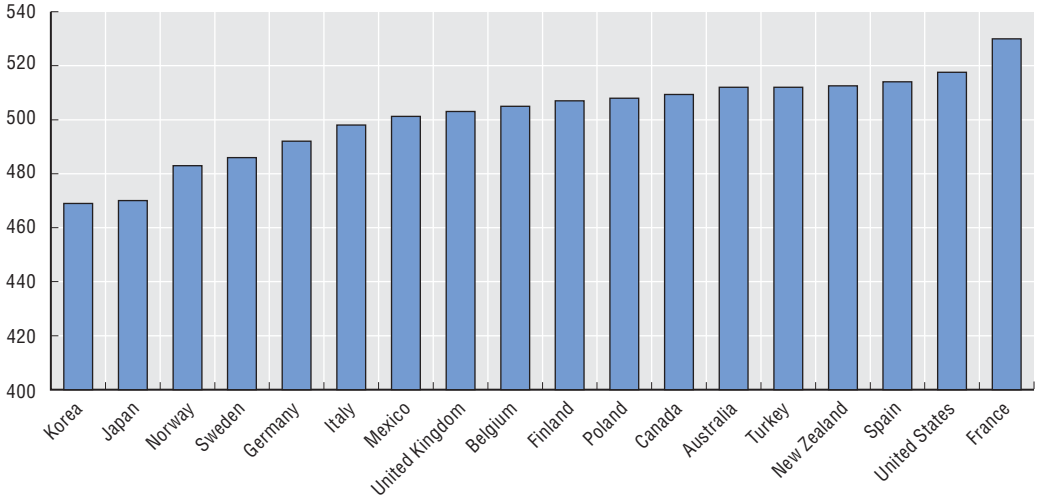
the OECD leisure average. The biggest downward moves in terms of broader leisure time include Canada (down six places), and Sweden and Korea (both down four places). In the case of France, the immediate reason for the large change is the very high share of personal care time – the highest in the OECD at 49% of time – some of which is reallocated to leisure. In terms of composition of this high personal care time, of interest are the high amounts of nightly sleep indulged in by the French (which, as noted above, is classified as personal care). The cross-OECD sleep data are shown in Figure 2.5. The average French person sleeps for over an hour a day longer than the Koreans, who sleep the least in the OECD.

Figure 2.5. **The French spend longer periods sleeping**

Sleep time on an average day in minutes



Source: Secretariat estimates based on national and multinational time-use surveys (2006 where available).

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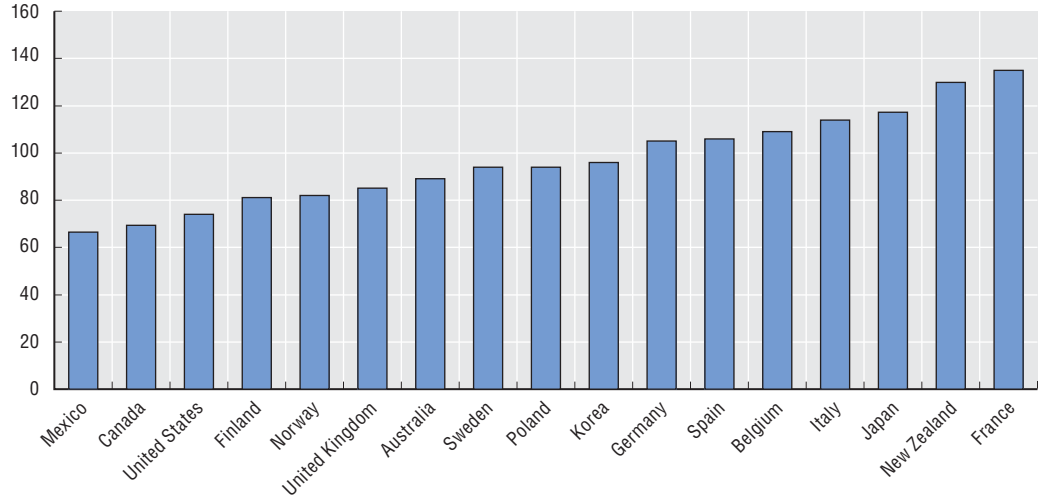
Another important personal care activity which has already been remarked upon as having leisure-like characteristics in many cultures is eating. Figure 2.6 shows that the range of time spent eating varies by nearly an hour and a half per day between the highest and lowest country. The big upward movers in the broad leisure rankings, France and New Zealand, also both spend a lot of time eating. Each day, the French spend nearly double the time eating than do people in Mexico, Canada, and the United States.

Figure 2.6. **The French spend the most time eating and drinking**

Eating time on an average day in minutes



Note: The available time use survey data for Turkey does not separate personal, medical and household care from eating and drinking. The Turkish figure is thus excluded. An *ad hoc* separation out of eating and drinking time based on OECD average shares would give a Turkish figure at around Italian levels.

Source: Secretariat estimates based on national and multinational time-use surveys (2006 where available).

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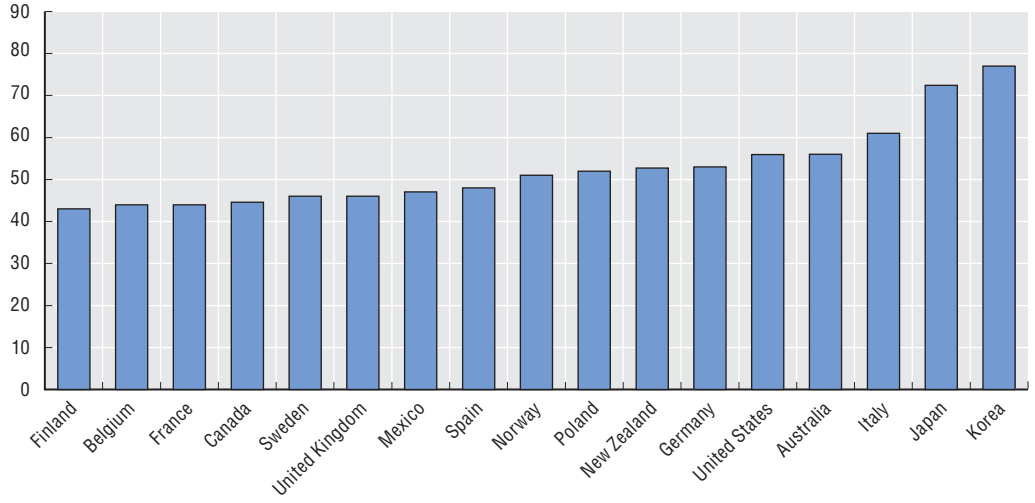
The last and smallest category of personal care is "Personal, medical and household services". Time spent on such activities ranges, again considerably, from 43 minutes per day in Finland to 77 minutes per day in Korea (see Figure 2.7).

Time trends in leisure from time-use surveys

Another interesting question is the patterns of changes in leisure over time for all adults (a narrow measure is used). This question can be addressed for those few countries that have been conducting time-use surveys over a sufficiently long period of time. These countries are Canada, the Netherlands, Norway, the United Kingdom, and the United States.[2] For each country, long term data are available for periods of different maximum length and frequency. In all cases, the frequency is low, so inferences on longitudinal time trends need to be cautiously drawn. Figure 2.8 indicates that over the past 40 years, the aforementioned countries have experienced different evolutions in terms of shares of time allocated to leisure. The share of time spent in leisure seems to have declined in the Netherlands between the mid-1970s and the early part of the 21st century, with a similar but less pronounced pattern of decline in leisure in the United Kingdom. In Norway leisure is broadly unchanged throughout the period for which data are available. Finally, in Canada and the United States, where data are available over the longest time periods, rising amounts of time are spent on leisure, albeit from a much lower base than the European

Figure 2.7. **Japan and Korea spend more time in personal, medical and household services**

Time spent in personal, medical and household services on an average day in minutes



Source: Secretariat estimates based on national and multinational time-use surveys (2006 where available).

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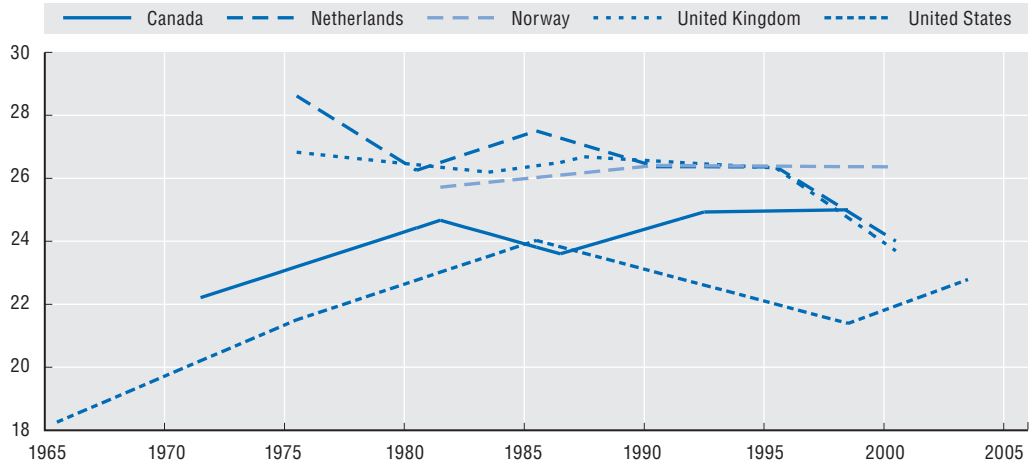
Figure 2.8. **Time trends in leisure from time-use surveys**

Long-term trends in shares of leisure in an average day for five selected OECD countries, in percentage



Source: Secretariat estimates based on national and multinational time-use surveys (2006 where available).

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OECD countries. Unfortunately, the data are not of sufficient number and frequency to consider leisure in the business cycle context, allowing light to be cast on voluntary and involuntary changes in leisure time

Patterns of leisure distribution

Demographic characteristics and leisure

How does time spent in leisure activities differ across different social groups? This section considers patterns of leisure for different social groups divided by gender and age.

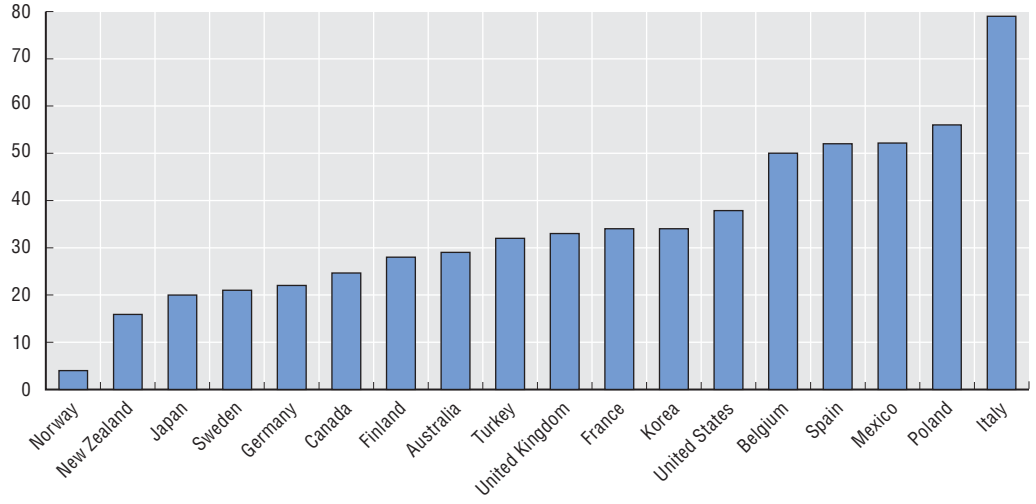
Gender

How does the amount of leisure time differ between men and women across the OECD? There has been a considerable amount of comparative focus on gender differences in paid, unpaid, and total work. But there has been much less focus on gender differences in leisure. Burda *et al.* (2007) use time-use data for Belgium, Denmark, France, Finland, Germany, Italy, the Netherlands, Norway, Sweden, the United Kingdom, and the United States to conclude that "for most rich economies, […] gender differences in the amounts of leisure consumed are tiny" (p. 23). Whether the differences between men and women reported in Burda *et al.*'s study are tiny is a moot point. They report gender gaps in terms of minutes of an average day, chosen to be representative for a year. On a daily basis, the difference in minutes does usually seem small. Annualised, however, it is a different story. The lowest gender gap amounts to 55 annual hours more leisure for men in Norway. It is unlikely that most full time paid workers would consider the equivalent of more than one additional week off work per year as "tiny". Annualising the daily gender leisure gaps – all in favour of men – reported by Burda *et al.* (Tables 1.1 and 1.2) give figures of 116 hours per year in the Netherlands, 128 hours in the United States, 134 hours in Sweden, 170 hours in the United Kingdom, 176 hours in Germany, 195 hours in Denmark, 213 hours in Belgium, 225 hours in Finland, 280 hours in France, and 444 hours in Italy.

Using time-use surveys for 18 OECD countries shown in Figure 2.9 below, men universally report spending more time on activities narrowly classified as leisure than women, an observation consistent with Burda *et al.*'s results. The gender differences here are statistically trivial in Norway (a few minutes a day). By contrast Italian women have nearly 80 daily minutes less leisure time than men. Burda *et al.* (2007, pp. 4-5) have already noted the high amounts of unpaid work of Italian women, and the high levels of time spent watching television for Italian men. As such, much of the additional work of Italian women is apparently spent cleaning the house.

Figure 2.9. **Men have more leisure than women**

Gender differences in leisure time, minutes per day, positive figures show a male advantage



Note: The narrow leisure definition is used.

Source: Secretariat estimates based on national and multinational time-use surveys (2006 where available).

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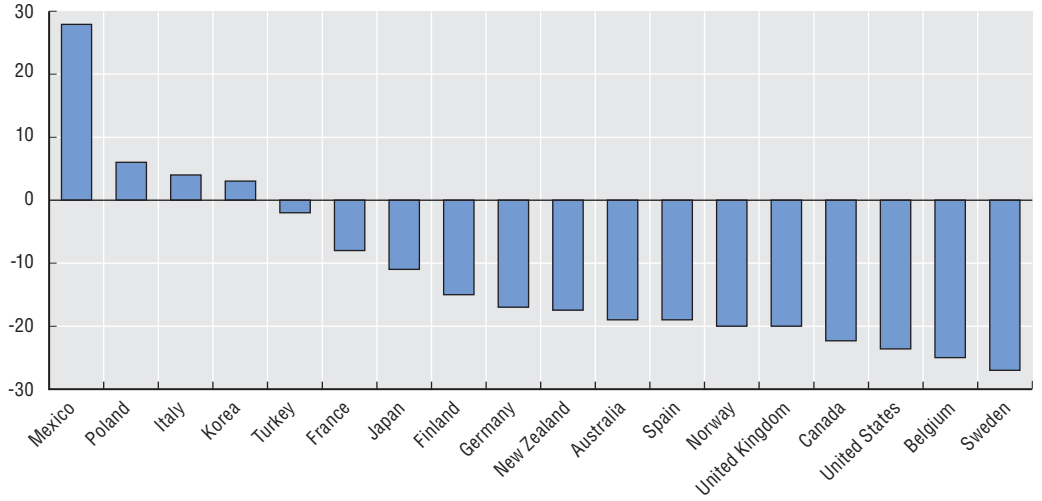
However, these gender differences in leisure time are also subject to variations according to the way time is categorised as either "Leisure" or "Personal care". So how does personal care differ by gender? Figure 2.10 shows that in a majority of OECD countries, women spend more minutes per day on personal care than men, in some cases – such as Sweden, Belgium and the United States – substantially so. The countries where men spend more time than women on personal care are Italy, Poland, Korea, and Mexico. At nearly half an hour per day, the excess amount of male personal care is especially large in the case of Mexico. Most of the Mexican difference is accounted for by men sleeping 25 minutes more per day than women (Mexicans – men and women combined – sleep at a little below the OECD average per day).

Figure 2.10. **Men generally have less personal care time than women**

Gender differences in personal care time, minutes per day, positive figures show a male advantage



Source: Secretariat estimates based on national and multinational time-use surveys (2006 where available).

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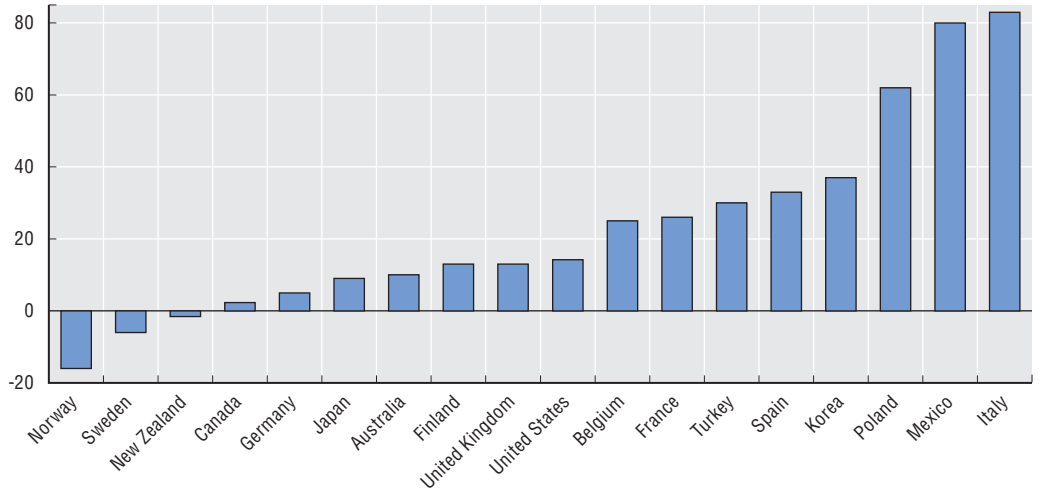
To examine gender differences in a broader definition of leisure, daily amounts of personal care are again normalised to the lowest country (602 minutes for Mexican women). The excess of any male and female personal care time over this amount is then re-allocated to leisure. This readjustment yields a broader and arguably better measurement of leisure differences between men and women (Figure 2.11).

Despite this adjustment for leisure-like personal care, in the majority of countries examined men still spend more time in broad leisure activities than women. The difference is particularly strong for both Italy and Mexico. Now, however, there are three countries where women have more broad leisure time than men – New Zealand, Norway, and Sweden. The female advantage is only of practical importance in the case of Norway, where on average women have 16 minutes more daily leisure than men. The leisure gender gap in favour of men however remains very large in several countries, notably in Italy, Mexico, Poland, and Korea, and important in many others. It is noteworthy that Italy, Mexico, Poland, and Korea are countries where the pre-existing gender gap in narrowly-defined leisure time increases with the inclusion of the gender gap for personal care. Thus, regardless of whether one uses a broad or narrow definition of leisure, in most countries men tend to have more leisure than women.[3]

A remaining limitation in considering gender differences in leisure time arises from the possible gendered nature of shopping as a leisure activity. In the above analysis, all shopping is allocated to unpaid work. It thus reduces leisure, all other things being equal. It is also known from time-use surveys that women shop more than men. For example, in the United States men shop for 43 minutes per day, while women shop for 59 minutes per day. The respective figures for Germany are 49 minutes for men and 66 minutes for women, for Italy 33 minutes for men and 53 minutes for women and for the Netherlands 36 minutes for men and 53 minutes for women (Burda *et al.*, 2007, Table 1.1).[4] It is possible that some of this shopping time has a leisure component and this shopping-as-leisure is generally larger for women.

Figure 2.11. **Men generally have more broadly-defined leisure than women**

Gender differences in broadly-defined leisure time, minutes per day, positive figures show a male advantage



Note: "Broadly-defined leisure" refers to daily and gender-specific levels of personal care normalised to the lowest country level and all excess personal care time is re-allocated to the initial leisure value for both genders.

Source: Secretariat estimates based on national and multinational time-use surveys (2006 where available).

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Leisure patterns by age

To obtain a true picture of leisure over the life time, longitudinal data comprising the entire human life cycle would be warranted. However, such data are not available. In their absence, cross-sectional time-use data by age cohorts can give some indication of how leisure might vary during the different parts of a person's life cycle. Not surprisingly, the young and especially the elderly spend more time on leisure than people of working age. Across all 18 OECD countries analysed in Table 2.3, people aged 65 and over on average consistently spend more time on leisure than all other age categories. Percentages of time spent in leisure peak at 39% in Canada, Norway and Poland. At 25% of total time, those over age 65 have the lowest leisure in Mexico.

The share of leisure time for the 15 to 24-year-old population is generally higher than for working-age cohorts. Predictably, leisure time for young people is always higher than for 25 to 44-year-olds. Perhaps more surprisingly, discrepancies are considerably less important compared to those aged 45 to 64, even though most or all of this older age group is not yet at the official retirement age. The greater absence of young children in the

Table 2.3. **The young and the elderly have more broad leisure time than the working-age population**

Shares of leisure time of people by age, percentage shares of total time in a day

	15-24	25-44	45-64	65 and over
Australia	27	17	22	34
Belgium	28	23	29	38
Canada	27	18	23	39
Finland	30	23	27	38
France	27	22	25	37
Germany	29	23	29	37
Italy	30	21	25	37
Japan	21	16	19	34
Korea	24	22	25	33
Mexico	18	11	16	25
New Zealand	30	20	22	35
Norway	29	24	28	39
Poland	28	22	26	39
Spain	28	20	26	35
Sweden	29	21	25	38
Turkey	. .	. .	. .	. .
United Kingdom	27	22	26	36
United States	27	20	23	37
OECD18	**27**	**20**	**25**	**36**

Note: The table uses broad leisure levels obtained by using Norway's level of personal care as a minimum level and allocating any excess personal care above this to leisure.
Source: Secretariat estimates based on national and multinational time-use surveys (2006 where available).

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families of the older working-age group is likely to be a strong factor behind the higher leisure time they enjoy relative to the younger working-age group. Finland, Italy and New Zealand stand out with high shares of leisure for young people, with 30% or more of an average day spent in leisure activities. The lowest share of leisure time for young people is found in Mexico, 9 percentage points below the OECD18 average.

Those aged 25 to 44 have more leisure time in countries where it could be argued that specific public policy arrangements have pushed for a more balanced approach to one's professional life or, alternatively, where marginal tax rates are very high: Norway (24%), Finland, Belgium, and Germany (all three at 23%) lead in this age category (Parnanen *et al.*, 2005).

Types of leisure activities

What are the popular leisure activities? Are there big differences in the leisure activities people undertake across OECD countries? Table 2.4 groups time spent in leisure by five major leisure categories: multimedia entertainment at home (TV or radio at home), other leisure activities (various hobbies, internet use, phone conversations, etc.), visiting and/or entertaining friends (both in private and public venues), participating in and/or attending social events (such as concerts, cinema, museums, etc.), and sports (actively participating in regular physical activities, whether individual or organised).

On average across the OECD18 watching TV or listening to the radio is marginally the most popular leisure activity at nearly 40% of time. Watching TV absorbs a high of 48% of time in Mexico and goes as low as 25% in New Zealand.

Table 2.4. **Watching television is the preferred leisure activity across all surveyed OECD countries**

Prevalence of different types of leisure activities percentage shares of total leisure time

	TV or radio at home	Other leisure activities	Visiting or entertaining friends	Participating / attending events	Sports
Australia	41	47	3	2	6
Belgium	36	42	8	8	5
Canada	34	34	21	2	8
Finland	37	40	7	8	8
France	34	45	6	7	8
Germany	28	46	4	15	7
Italy	28	48	6	10	8
Japan	47	42	4	0	6
Korea	35	41	16	1	7
Mexico	48	33	10	4	5
New Zealand	25	45	24	2	5
Norway	31	33	14	15	8
Poland	41	38	6	8	6
Spain	31	41	4	12	12
Sweden	31	42	7	11	8
Turkey	40	25	34	0	2
United Kingdom	41	39	7	10	4
United States	44	32	16	2	5
OECD18	**36**	**40**	**11**	**6**	**7**

Source: Secretariat estimates based on national and multinational time-use surveys (2006 where available). It is important to point out that conclusions derived from these figures should be tentative: national time-use surveys' methodologies differ in the way they choose to include or exclude the measure of secondary activities.

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"Other leisure activities" are on average also very popular. This popularity is in part due to the fact that this is a catch-all category which includes hobbies, computer games, recreational internet use, telephone conversations, arts and crafts, walking pets, and so on. Other activities take up to 48% of people's leisure time in Italy, but only 25% in Turkey. Given its size as a category, it would have been of a great deal of interest to present the other category by major sub-categories. Unfortunately this sub-categorisation was not possible due to insufficient consistency across countries in terms of definitions of major sub-categories.

Visiting and entertaining friends, which reaches a high of 34% in Turkey and a low of 3% in Australia, is extremely variable between countries.[5] More "active" types of leisure such as attending cultural events and participating in sports are much less prevalent in all surveyed OECD countries. Attending or hosting cultural events is relatively frequent in Germany and Norway while the practice is much rarer in Japan, Korea and Turkey. The same could be said of sports, which take up 12% of people's leisure time in Spain and only 5% in Belgium, Mexico, New Zealand and the United States.

Satisfaction with time spent on different activities

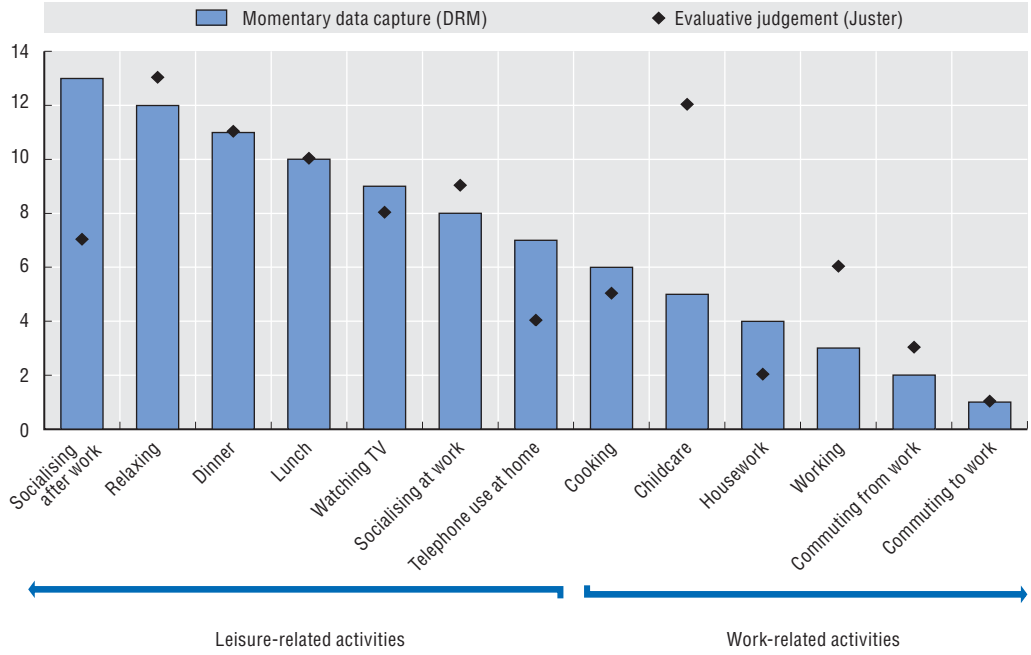
While the various activities mentioned above provide rich insights into the way people choose to spend their time, no conclusion can be directly reached concerning the satisfaction derived from engaging in various activities (*i.e.* the "state of mind" approach to leisure mentioned in the chapter's introduction). Assessing the relationship between well-being and allocation of time towards leisure activities requires the combination of

information taken from two sources; time-use surveys on one hand, and data extracted from satisfaction surveys on the other hand (Krueger *et al.*, 2008). In these surveys respondents rank their levels of satisfaction with the accomplishment of specific activities according to various evaluative criteria. Figure 2.9 illustrates the variations in the ranking of activities depending on whether respondents are asked to describe an objective judgement on an achieved activity ("Evaluative judgement") or to describe their subjective feelings while they are still engaged in the particular activity ("Momentary data capture"). Both the data and the survey focus on the United States, which makes it unclear to which extent other OECD countries follow similar patterns.

It is clear from the measures presented above that some activities like relaxing and socialising after work are much more enjoyed than commuting. Not surprisingly, activities more strongly related to leisure, namely watching television, eating meals (although the time-use approach traditionally categorises eating meals as personal care), relaxing, and

Figure 2.12. **Leisure-related activities are more enjoyed than work-related activities (United States)**

Ranking of activities in decreasing order of average momentary enjoyment



Note: The approach presented above builds on Juster's (1985; p. 333) seminal observation that "an important ingredient in the production and distribution of well-being is the set of satisfactions generated by activities themselves." To assess the satisfactions generated by activities, Juster asked respondents to rate on a scale from 0 to 10 how much they generally enjoyed a type of activity, such as their job or taking care of their children. Later research found that such general enjoyment ratings can deviate in important and theoretically meaningful ways from episodic ratings that pertain to specific instances of the activity. To overcome this problem, Krueger *et al.* use a time diary method more closely connected to the recalled emotional experiences of a day's actual events and circumstances, the DRM. The Day Reconstruction Method (DRM) is a paper-and-pencil questionnaire that first collects time diary information from individuals for the preceding day. For each noted episode, individuals indicate the nature of the activity, who was present, and the extent to which various emotions were present or absent. Individuals describe their emotional state during each episode in terms of intensity ratings on several dimensions of feelings, some of which are positive *(e.g.,* "Happy", "Enjoy myself", "Friendly") and some of which are negative *(e.g.,* "Depressed", "Angry", "Frustrated"). Hence, the DRM combines elements of experience sampling and time diaries, and is designed specifically to facilitate accurate emotional recall.

Source: OECD calculations from data in Krueger *et al.* (2008).

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socialising with colleagues, are consistently reported as highly enjoyable in terms of momentary data. Conversely, all activities directly or indirectly related to work and family obligations rank very low in the scale of momentary enjoyment.

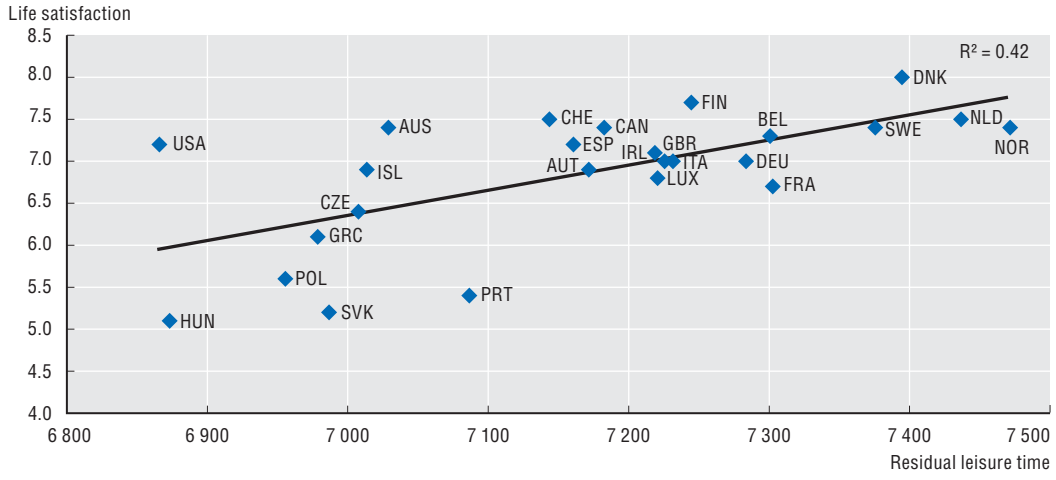
For most activities the rankings vary little when compared to respondents' evaluative judgements. The one which sticks out is childcare, which is more enjoyed as an evaluative judgment than at the time. Work also possesses similar but less pronounced characteristics. Some activities, such as socialising after work or housework, also show large discrepancies. However, they relatively are more enjoyed at the time than in terms of retrospective evaluative judgement.

Leisure time compared to measures of life satisfaction and market income

A further interesting aspect of leisure is the extent to which leisure time correlates with other measures of well-being at a country level. To address this question two proxy measures of global well-being are compared to two measures of leisure time. The two measures of well-being chosen are a traditional market income measure (in this case net national income per capita – NNI) and a subjective well-being measures (the *Gallup World Poll* 2006 life-satisfaction data). The two main measures of leisure considered are the residual measure, calculated by simply subtracting annual hours worked from total annual hours, and the broad time-use measure.

Figures 2.13 and 2.14 show that average country levels of life satisfaction are reasonably positively correlated to leisure time, whether residual or actual. Countries who sustain much lower levels in life satisfaction given their levels of residual leisure include Hungary, Portugal and Slovakia. On the other hand, given their amounts of leisure, the United States and Australia do remarkably well. Concerning time-use measures of leisure, despite relatively low amounts of leisure, Australians (again) seem satisfied with their lives. Given their time-use measure of leisure, Poland, Turkey and Korea have particularly low levels of life satisfaction.

Figure 2.13. **Residual of paid work time is positively correlated with life satisfaction**



Source: Data from the 2006 Gallup Life-satisfaction Survey and other OECD data. Secretariat estimates based on European Labour Force Surveys results and EIRO (2006 where available).

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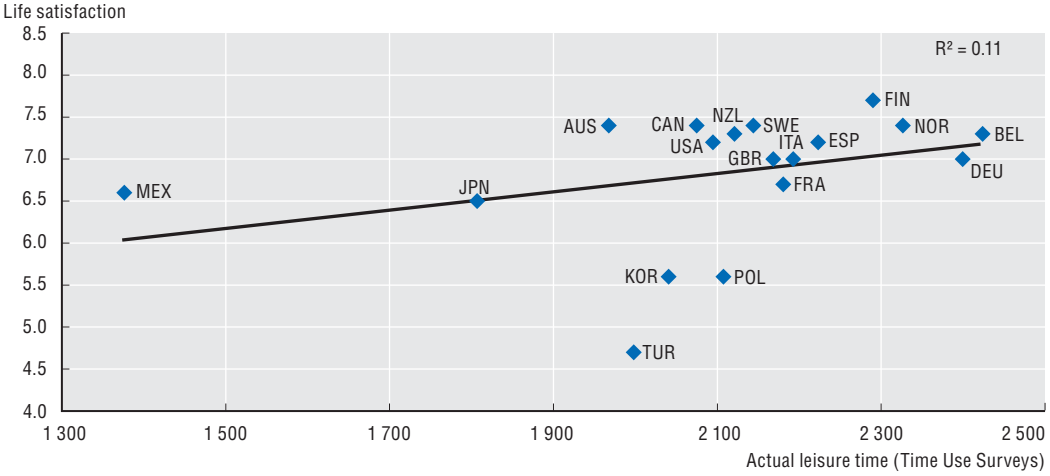
Figure 2.14. **Broad leisure time is positively correlated with life satisfaction**



Source: Data from the 2006 Gallup Life-satisfaction Survey and other OECD data. Secretariat estimates based on national and multinational time-use surveys (2006 where available).

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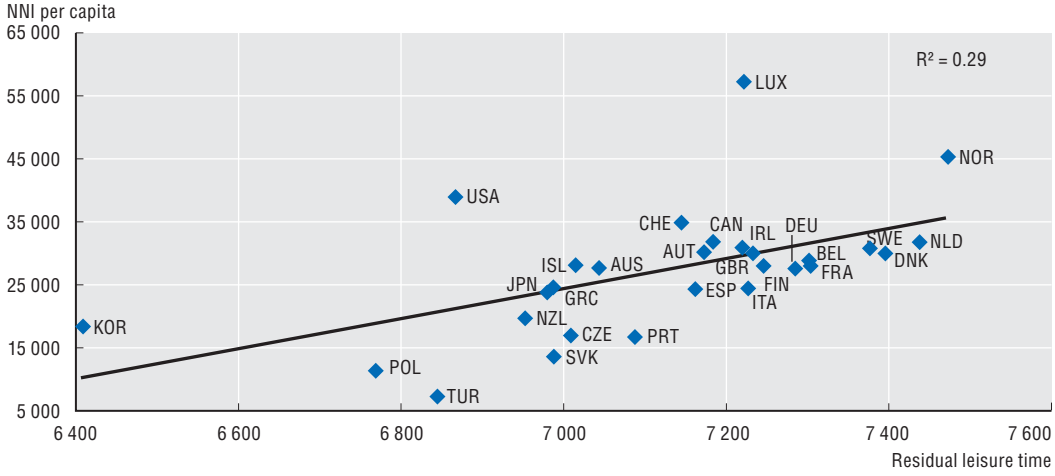
Turning to more traditional market-income based measures of well-being, Figures 2.15 and 2.16 show the positive correlation between leisure time and per capita net national income levels. Again, the correlation is positive for both residual and actual leisure time, a result that suggests that leisure possesses the characteristics of a normal good: more is demanded as incomes rise.

Figure 2.15. **Residual of paid work time is positively correlated to per capita NNI**



Note: Australia, Japan, Korea, New Zealand, Poland, and Turkey use 2005 data.

Source: Secretariat estimates based on *OECD Annual National Accounts* and *Social Expenditure database* (2006 where available), data from the 2006 Gallup Life-satisfaction Survey, the European Labour Force Surveys results, and EIRO (2006 where available).

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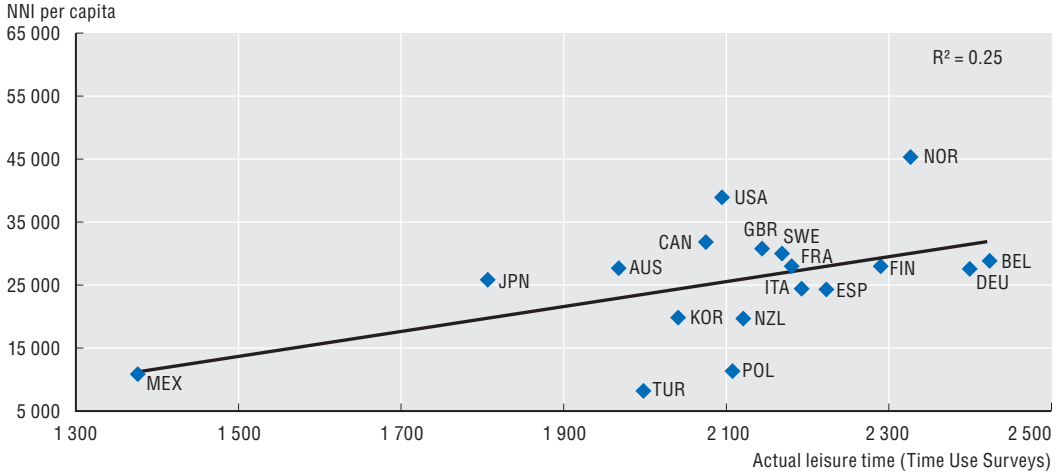
Mandatory holidays and leisure time

Of larger policy interest is the relationship between statutory minimum paid vacations and paid holidays and the amounts of leisure time (whether residual or derived from time-use measures). The primary aim of public regulation of paid holidays is to presumably increase the amount of available leisure time, as well as to coordinate society so families

Figure 2.16. **Broad leisure time is positively correlated with per capita NNI**



Note: Australia, New Zealand, and Poland use 2005 data. NNI data for Mexico is not available from 2005 onwards. It has been estimated for 2006 using the 2006-04 growth on GDP per capita.

Source: Secretariat estimates based on national and multinational time-use surveys (2006 where available). *OECD Annual National Accounts and Social Expenditure database* (2006 where available). Secretariat estimates based on European Labour Force Surveys results and EIRO (2006 where available).

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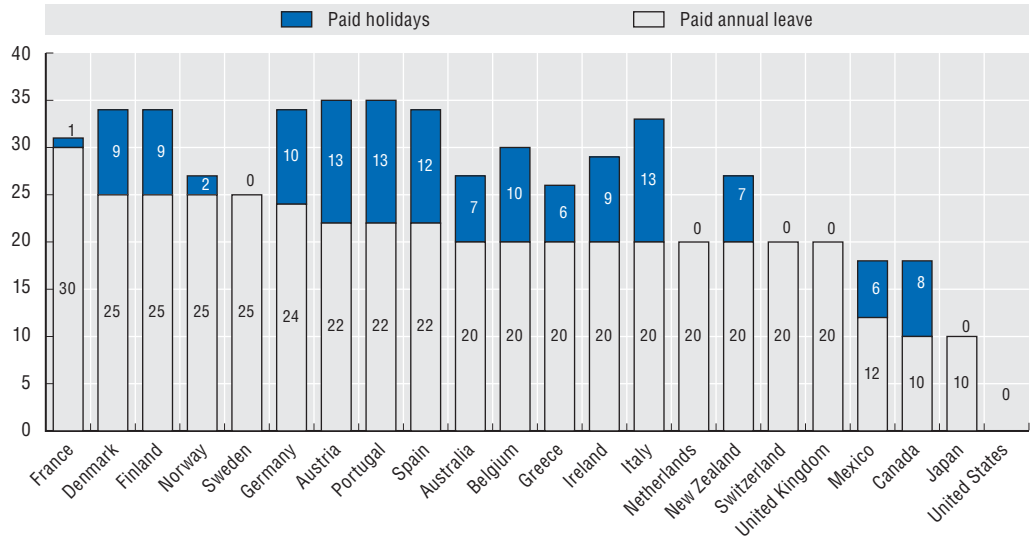
and friends can more readily share their leisure together. Across OECD countries, considerable variations exist in the number of mandatory paid annual leave and paid public holidays; from none in the United States to nearly 10% of the year in Austria, Portugal, and Spain (Figure 2.17).[6]

Figure 2.17. **Paid annual leave and paid public holidays in the OECD**

Annual leave and paid public holidays, days per year



Note: Several nations' laws refer to workdays, while others refer to calendar days or weeks. The comparison assumes a five-day work week. The United States is the only country in the group that does not legally require employers to provide any paid annual leave. Of course, many employers in the countries in Figure 2.17 offer more paid leave and public holidays than the legal minimums described, on the basis of collective and/or individual agreements. This factor is especially important in the United States given that the law does not establish a legal minimum for either kind of benefit. United States law makes no provisions for paid public holidays, as is also the case in Japan, the Netherlands, Sweden, and the United Kingdom. For further information, see source.

Source: Schmitt and Ray (2007), with the exception of Mexico, which is an OECD Secretariat-collected figure.

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While these policy discrepancies may explain differences in national levels of leisure, it is not clear whether people in a country where legislation guarantees a certain minimum of paid leave and/or public holidays automatically enjoy more leisure. Figure 2.18 shows that there *is* a positive correlation between levels of total annual leave (paid annual leave plus paid holidays) and residual leisure, which suggests that policies regulating holidays might be relatively successful. Additionally, when total annual leave is compared to the superior time-use measures of leisure in Figure 2.19 for the OECD18, the positive relationship still exists and indeed is somewhat stronger. Regulatory policy regarding paid holidays may be able to influence the amount of leisure that people have, although there are obvious cautions about necessarily reading a causal effect into the correlation.

Figure 2.18. **The relationship between residual of paid work time and regulated paid leave is reasonably strong**

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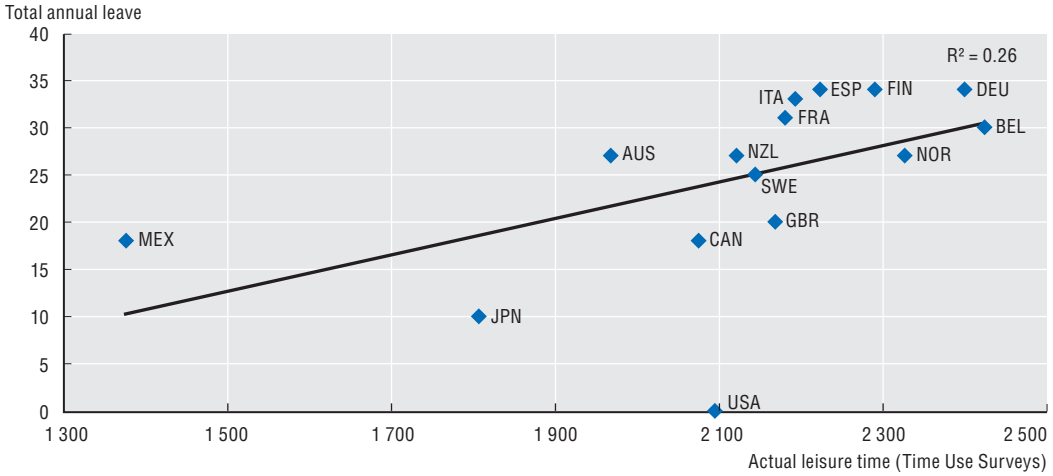
Figure 2.19. **The relationship between broad leisure time and regulated paid leave is stronger**



Note: Several nations' laws refer to workdays, while others refer to calendar days or weeks. The comparison assumes a five-day workweek.

Source: Schmitt and Ray (2007) and Secretariat estimates based on national and multinational time-use surveys (2006 where available).

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Conclusion

This chapter has explored the ways in which leisure differs between and within OECD countries, as well as across time. Attention was paid to the conceptual issues related to the empirical measurement of leisure, opening the analysis with an intentionally simplistic initial definition of leisure as "time not worked" in order to progressively enrich it *via* comparable data extracted from time-use surveys. A particular point of focus was the malleability of leisure levels and trends when using different definitions of "leisure" (broader and narrower definitions). A major conclusion of this chapter is that when it comes to analysing difficult notions such as "leisure", conceptual definitions are extremely important and may change overall country rankings and some socio-demographic patterns.

Data from time-use surveys help monitor the actual living conditions of OECD populations. These statistics make it possible to observe the lifestyles of various groups and their choices of certain activities over others, as well as to improve the interpretation and the understanding of various social and economic phenomena. As such, they can be of great use to government agencies, particularly those involved in advising on, implementing, and monitoring public policy (Callister, 2004).

Policy makers typically consider social policies in terms of efficiency and equity. Leisure-related policies should be no different. Policy choices currently influence leisure time in ways that are both direct and subtle. Most importantly, the work/non-work margin, and thus the maximum amount of time available for leisure is affected by levels of disposable income (through income effects) and marginal effective tax rates (influencing the substitution of work for non-work). More generally the panoply of policies affecting labour supply, ranging from child- and out-of-school care provision to public subsidies to higher education, matters for the paid work/non-work choice. In addition to the tax-benefit system, both labour market and product market regulation are designed to affect the amounts of available leisure in OECD countries. Concerning the labour market, public holidays and minimum annual holidays are frequently regulated. Concerning the product market, shopping hours and trading days are also regulated in order to improve people's leisure opportunities. Whether such policies influence the objectives they were designed for in the desired fashion remains an open question.

International comparisons of leisure time using time use studies covering a wide number of countries are still in their infancy. In this context, some sort of OECD-wide repository of time use surveys may allow researchers to improve their comparisons of leisure time between and within member countries. This may be the next most obvious step in order to better understand leisure at a comparative OECD level, encouraging the members who do not currently have such a survey to consider participating in regular internationally-comparable time use surveys.

Notes

1. A comparison of time-use by income level would have been of considerable interest. There was insufficient standardisation in income measures across countries to attempt such an investigation.
2. See also Engler and Staubli (2008) for a more recent and more detailed analysis of leisure through time, which includes adjustments for changing ages, education distributions of the population, and changes in the numbers of children. The authors use data from the same five countries used

here but over a 25-year time period. A major conclusion of their study is that over this period countries have been converging in their leisure time.

3. This finding is at odds with the results of Burda *et al.* (2007), who emphasise on effective gender leisure equality across rich countries. This conclusion is also at odds with another recently published study by Engler and Staubli (2008) who report gender differences in leisure measured by time-use surveys for Canada, the Netherlands, Norway, the United Kingdom and the United States. They find that in fact there is a female advantage in weekly leisure time for all of these five countries. Their study uses two definitions of the concept of "leisure". The first definition is a residual after both paid work (including commuting time) and unpaid work have been subtracted from total time. The second leisure measure subtracts time in education, receiving personal services, religious/community/voluntary activities, and adds gardening time.
4. Engler and Staubli (2008) report much higher shopping times (in excess of two hours per week more) than Burda *et al.* (2007) for both men and women in the United States compared to other countries.
5. The fact that New Zealand, culturally similar to Australia, has amounts of leisure time spent visiting friends and family more like Turkey, suggests there may be comparability issues with the data on types of leisure activities.
6. The main difference between legally mandated annual leave and public holidays is that there is typically some temporal discretion about when the former can be taken, whereas the dates of public holidays are typically fixed. Additionally, with the cyclicity of the calendar, public holidays may from time to time fall on weekends and then, at least in some countries, do not constitute days off work if weekends are not typically worked.

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ANNEX 2.A1

Main Features of Time-Use Surveys

This annex describes some of the characteristics of time-use surveys identified by the OECD Secretariat as suitable for inclusion in the chapter.

Context

Time-use surveys are the primary statistical vehicle for recording information on how people precisely allocate their time across different day-to-day activities. The surveys consist mainly in a large number of people keeping a diary of activities over one or several representative days for a given period. Respondents describe the activities in which they engaged, and these are then re-coded by national statistical agencies into a set of descriptive categories. A well-designed survey classifies activities across a total duration of 24 hours a day (or 1 440 minutes).

Interest in time-use studies has grown considerably over the last 20 years. A number of national statistical agencies have conducted large-scale time-use surveys in recent decades).

Most time-use data sets are large enough to generate reliable measures of time allocation over the full year, but the accuracy of these estimates varies significantly from country to country. Differences in survey features, number of diary days sampled, and categorisation of activities used may affect the cross-country comparability of results.

The most important dimensions in which time-use surveys differ are the following:

- ***Sample design.*** All time-use surveys included in this chapter are based on nationally-representative samples of resident non-institutionalised populations. National surveys differ, however, in terms of sample design, with some surveys relying on a random sample and others using a pre-established sample taken from other large-scale population surveys. Time-use surveys also differ in terms of sample size (from around 4 000 to about 200 000 people), age of respondents included in the sample (usually those aged 15 and over, but with several exceptions) and response rates (because of the large non-response rates, some surveys reweight the actual number of completed time-use diaries in order to take into account potential non-respondents). Time-use survey also differ in terms of information on the demographic characteristics that are collected, in how these characteristics are defined (*e.g.* labour force status), and in terms of the contextual information provided for each activity (*e.g.* where they were performed, whether additional people were present at that time, etc.).

- ***Activity classification.*** All surveys classify the respondents' verbal and/or written descriptions of their activities into a set of broader categories. While these coding systems vary according to the survey's goals and ambitions, they lead to classifications with different degrees of detail.* Differences in categorisation stem mainly from choices made to allocate certain activities into broader categories. For instance, some surveys regroup all purchasing activities into one "shopping" category, while some differentiate according to the purpose of the purchases (*i.e.* purchasing groceries, office supplies, household objects/services, etc.). Some surveys categorise sports and volunteer activities into a broad "socialising and leisure" category, while others separate individual leisure activities (computer-gaming) from collective leisure activities (participating in a sports match). Some surveys include civic and religious activities under "other activities" while others omit them entirely. Some surveys include the time spent responding to the survey, while others do not. Finally, some surveys include a separate category for time spent travelling, sometimes divided according to the purpose of the travelling (*i.e.* travelling to and from work will be in the "work-related activities" category, and travelling for a holiday will be in the "socialising and leisure" category) while other include such types of travelling time in the broader category to which they pertain.
- ***Number of diary days.*** Different methodological choices are made in order to determine the number of diary days to be completed by each participant. For example, the United States survey (ATUS) asks each respondent to complete a time diary for only one day, but most surveys typically obtain data for two days. Both options have their pros and cons. The time spent on various activities on any particular day may not be representative of how respondents typically spend their time, although such anomalies should average out across the full sample of respondents. Conversely, time-budget information for several days allows addressing issues related to how activities are combined over several days, although this comes at the cost of depressing response rates. In general, the relative value of having multiple reports from each particular respondent as opposed to single reports from a larger number of respondents depends on the general objective of the survey.
- ***Period over which the survey is conducted.*** Time-use responses are generally representative of activities in which people engage on the days of the week for which they complete time budgets. These estimates, however, may not be representative of the full year. As such, time-use surveys differ in terms of the period covered by each survey. For instance the United States survey is spread over the whole year and provides accurate estimates for the full year. Others cover particular periods in the year, which are typically chosen to avoid seasonal biases such as those due to public holidays or annual leave for workers. For some countries, however, the period of field work may not be representative of the full year. The different choices made with respect to the period of field work typically depend on the goals of the survey, on the practical capabilities of statistical institutes, and the availability of financial resources.

* The American Time-use Survey (ATUS), for example, begins with a three-tier six-digit coding system out of which basic codes are aggregated into 17 top-level categories: 1) Personal care activities (mainly sleep); 2) Household activities; 3) Caring for and helping household members; 4) Caring for and helping non-household members; 5) Work and work-related activities; 6) Education; 7) Consumer purchases (*e.g.* food shopping); 8) Purchasing professional and personal care services (*e.g.* doctors' visits); 9) Purchasing household services; 10) Obtaining government services and civic obligations; 11) Eating and drinking; 12) Socializing, relaxing, and leisure; 13) Sports, exercise, and recreation; 14) Religious and spiritual activities; 15) Volunteer activities; 16) Telephone calls; and 17) Travelling.

- ***Recording of secondary activities.*** Surveys also differ in how and if they record activities that are performed simultaneously. Generally, the data are coded as to show people engaged in one activity at a time. In some cases, however, surveys include separate questions designed to learn about simultaneous activities (*i.e.* watching television while cooking, or caring for children while performing other types of occupations), which allows a distinction between "primary" and "secondary" activities. Even when collecting information on simultaneous activities, most statistical institutes ensure uniformity in the coding of respondents' descriptions of their primary activities and then create a more detailed set of basic codes for sub-categories. One limitation of the data produced in this way is that "primary" activities are meticulously tracked while "secondary" ones are usually overlooked. A further element affecting the comparability of estimates for secondary activities is whether activities that typically require only a few minutes of one's time – for instance moving a load of laundry from the washer to the dryer – are reported consistently enough to produce comparable estimates of time devoted to them. Because of the omission of secondary activities, the amount of time devoted to specific tasks that may be performed simultaneously with other tasks is typically under-reported.
- ***Recording of activities by spouses.*** National surveys also differ in the extent to which information is obtained across different members of the same household. While some surveys record data from one person in each household, others (*e.g.* Australia, Germany and Korea) rely on diaries filled by both spouses in married-couples. Diaries from both spouses shed light on some types of interactions between spouses' uses of time (for example in terms of the combined time devoted by parents to the care of their children), although this information is irrelevant for the purpose of measuring how a population allocates its time. As in other cases, the benefits of this additional information have to be offset against potential costs in terms of response rates and data accuracy.

Table 2.A1.1. **Methodological documentation of national time-use surveys**

	Name of the survey	Agency	Year	Website (data and documentation)	Period of assessment	Population covered	Sample size	Number and type of diary days	Other data features
Australia	Time Use Survey	Australian Bureau of Statistics	2006	*www.abs.gov.au/AUSSTATS/abs@.nsf/Latestproducts/4153.0Main%20Features22006?opendocument&tabname=Summary&prodno=4153.0&issue=2006&num=&view=*	Four 13-day periods containing a representative proportion of public holidays and school holidays	People aged 15 years and over living in private dwellings (excluding people living in very remote and non-private dwellings, households containing non-Australians and indigenous communities)	About 3 900 households	Diary for two separate days, with fixed intervals of five minutes	Information obtained partly by interviews and partly by self-completion diary Classification into primary and secondary activities, for whom the activity is done, who else is present and where the activity takes place
Belgium	Harmonised European Time Use Survey (HETUS)	Eurostat and NSO	2005	*www.testh2.scb.se/tus/tus/*	One year	Two survey populations are considered: Individuals aged 12 years old or older belonging to the Belgian population and living in private households	35 000 households in the initial sample (before non-responses)	Each respondent fills in diaries for two diary days each covering 24 hours	Short, random moments in people's lives are studied and thus cannot be regarded as representative
Canada	General Social Survey (special module)	Statistics Canada	2005	*http://cansim2.statcan.ca/cgi-win/cnsmcgi.exe?Lang=E&RootDir=CII/&ResultTemplate=CII/CII_pick&Array_Pick=1&ArrayId=1130001*	11 monthly samples of equal size from January to November (extended to mid-December)	Non-institutionalised persons aged 15 years and over living in Canadian provinces, excluding people without telephones (2% of the population) and owning only a cellular telephone (about 5%)	About 25 000 individuals	Computer assisted telephone interviewing (CATI)	Sub-samples fill special modules on "Culture, Sports and Physical Activity Participation", "Social Network and Trust" and "transportation"
Finland	Harmonised European Time Use Survey (HETUS)	Eurostat and NSO	1998	*www.testh2.scb.se/tus/tus/*	One year	Individuals aged 10 and over living in private households and all household members	4 800 households containing 12 512 individuals of whom 10 978 are aged ten or over	Each respondent fills in diaries for two diary days each covering 24 hours	Short, random moments in people's lives are studied and thus cannot be regarded as representative
France	Harmonised European Time Use Survey (HETUS)	Eurostat and NSO	1998	*www.testh2.scb.se/tus/tus/*	One year	Persons aged 15 and over belonging to the household population, excluding people living in institutions	12 045 dwellings out of which 10 330 are retained in the final sample, representing 16 462 eligible persons	Each respondent fills in diaries for two diary days each covering 24 hours	Short, random moments in people's lives are studied and thus cannot be regarded as representative
Germany	Harmonised European Time Use Survey (HETUS)	Eurostat and NSO	2002	*www.testh2.scb.se/tus/tus/*	One year	All private households including individuals aged 10 and older excluding persons without a fixed abode and individuals living in group quarters and similar institutions (military barracks, institutions for the retired, etc.)	About 5 443 household in the final sample	Each respondent fills in diaries for two diary days each covering 24 hours	Short, random moments in people's lives are studied and thus cannot be regarded as representative
Italy	Harmonised European Time Use Survey (HETUS)	Eurostat and NSO	2003	*www.testh2.scb.se/tus/tus/*	One year	All members of households residing in Italy aged over 3 and including the elderly (no upper age limit)	21 075 households representing 55 760 individuals.	Each respondent fills in diaries for two diary days each covering 24 hours	Short, random moments in people's lives are studied and thus cannot be regarded as representative

Table 2.A1.1. **Methodological documentation of national time-use surveys** *(cont.)*

	Name of the survey	Agency	Year	Website (data and documentation)	Period of assessment	Population covered	Sample size	Number and type of diary days	Other data features
Japan	Survey on Time Use and Leisure Activities	Statistics Bureau and Statistical Research Training Institute	2006	*www.stat.go.jp/English/data/shakai/*	Two consecutive days from 14 to 22 October 2006	All persons aged 10 and over including foreigners living in Japan	80 000 households, representing around 200 000 people	Two questionnaires: Questionnaire A adopts a pre-coding method and Questionnaire B is probes more detailed time use	Schedules for recording time use for each quarter hour are distributed to the respondents
Korea	Time Use Survey	Korea National Statistical Office	2004	*www.nso.go.kr/eng2006/e02___0000/e02c__0000/e02cb_0000/e02cb_0000.html*	12 days from September 2 to September 13	Individuals aged 10 years and over	About 12 750 households	Diary for all household members aged 10 years and over (recording of main and simultaneous activities, structured around 10 minutes intervals for the designated two days)	The sample frame is generated from the multi-purpose household sample (HAF-MP) which is derived from the 2000 Population and Housing Census
Mexico	National Survey on Time Use (*Encuesta Nacional sobre Uso del Tiempo*, ENUT)	Instituto Nacional de Estadística, Geografía e Informática (INEGI)	2002	*www.inegi.gob.mx/est/contenidos/espanol/proyectos/metadatos/encuestas/enut_2310.asp?s=est&c=5440*	28 days comprised of 4 rounds of 7 days each	National households residing regularly in private living quarters in the national territory	5 450 households actually visited and interviewed		ENUT is a module of the National Survey of Household Income and Expenses (*Encuesta Nacional de Ingresos y Gastos de los Hogares*, ENIGH)
New Zealand	Time Use Survey (TUS)	Statistics New Zealand (SNZ)	1999 (one off)	*www2.stats.govt.nz/domino/external/omni/omni.nsf/outputs/Time+Use+Survey*	Between July 1998 and June 1999	All non-institutionalised civilians aged 12 years and over residing in private households	7 200 selected households with a total expected sample size of approximately 8 500 people	Data focuses on the four basic categories of time (contracted time, committed time, necessary time, and free time)	
Norway	Harmonised European Time Use Survey (HETUS)	Eurostat and NSO	2001	*www.testh2.scb.se/tus/tus/*	One year	All individuals aged 9-79 years (with an extra sample of 60-66-year-olds) and registered in Norway	Main sample of 6 470 individuals	Each respondent fills in diaries for two diary days each covering 24 hours	Short, random moments in people's lives are studied and thus cannot be regarded as representative
Poland	Harmonised European Time Use Survey (HETUS)	Eurostat and NSO	2004 (one-off)	*www.testh2.scb.se/tus/tus/*	One year	Individuals aged 15 or over with members of the selected households representing six socio-economic groups	10 256 selected households	Each respondent fills in diaries for two diary days each covering 24 hours	One weekday and one weekend day (Saturday or Sunday), preceding or following the weekday, is assigned on random selection basis to each dwelling in the main sample

Table 2.A1.1. **Methodological documentation of national time-use surveys** *(cont.)*

	Name of the survey	Agency	Year	Website (data and documentation)	Period of assessment	Population covered	Sample size	Number and type of diary days	Other data features
Spain	Harmonised European Time Use Survey (HETUS)	Eurostat and NSO	2003	*www.testh2.scb.se/tus/tus/*	One year	All members aged 10 or older of regular resident households	20 603 households representing 46 774 individuals	Each respondent fills in diaries for two diary days each covering 24 hours	All days of the year are covered
Sweden	Harmonised European Time Use Survey (HETUS)	Eurostat and NSO	2001	*www.testh2.scb.se/tus/tus/*	One year	Individuals aged 20-84 registered in Sweden during the survey period	2 138 households representing 3 980 individuals	Each respondent fills in diaries for two diary days each covering 24 hours	The household sample is constructed by taking a sample of individuals and joining a partner to the selected individual, which means that we do not know how many individuals the household sample contained, only how many individuals there were in the response set
Turkey	Time Use Survey	Turkish Statistical Institute (Turkstat)	2006	*www.turkstat.gov.tr/PreHaberBultenleri.do?id=528*	One year	Members of households aged 15 years and over	5 070 selected households, out of which 11 815 members of households aged 15 years and over are interviewed.	Two diaries: one for a weekday and one for a weekend day, daily activities recorded during 24 hours at ten-minute- slots	
United Kingdom	Harmonised European Time Use Survey (HETUS)	Eurostat and NSO	2001	*www.testh2.scb.se/tus/tus/*	From June 2000 to July 2001	All members aged 8 and over in a selected household (Though the final database includes only persons aged 10 and over)	11 854 sampled households resulting in 20 991 diaries	Each respondent fills wo diary days each covering 24 hours	Short, random moments in people's lives are studied and thus cannot be regarded as representative
United States	American Time Use Survey (ATUS)	Bureau of Labor Statistics (BLS)	2005	*www.bls.gov/tus/*	Full calendar year	People aged 15 and over living in private households	About 13 000 people	Designated persons are pre-assigned a day of the week on which activities are reported. 25 % of the sample is assigned a weekend day	Reporting days are pre-assigned to eliminate biases that might exist if respondents report at their convenience
Multinational	Multinational Time Use Survey (MTUS)	Centre for Time Use Research	2006	*www.timeuse.org/mtus/*	One year	Population aged 20 to 59 years old		Each entry is built around 7-day diaries for which averages are calculated	The MTUS dataset is comprised of some 20 countries and is regularly expanded