

Time inequalities: exploring the relationships with well-being

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1. Introduction

The analysis of multidimensional well-being and inequality can be greatly enriched taking into account the way individuals allocate their time. Despite the lack of a clear trend in total leisure time, some recent studies have shown how the well-documented trends in wage and consumption inequality favouring highly educated individuals in the 1980s and the 1990s, in many industrialised countries, was mirrored by a growing inequality in the distribution of leisure favouring the less educated. In this framework, the time poverty characterising the more privileged in society is often attributed to increased work hours. Furthermore, the proportion of people feeling rushed and pressed for time has grown and complaints about time stress seem to come disproportionately from high-income families. Do they work longer hours and experience more work pressure? Do they have ever-increasing incomes to spend during an ever-decreasing leisure time? Is it “yuppie kvetch” (complaining) as Daniel Hamermesh (Hamermesh and Lee, 2007) suggest?

After introducing the relevance of time in the framework of multidimensional well-being (Section 2), the first goal of the paper is to discuss the distribution of work time (“objective” time) across income classes. To this aim, some descriptive statistics for Italy based on Isfol Plus 2005-2010 panel dataset will be presented (Section 3). The second goal of the paper is to focus on subjective perceptions of time and well-being: evidence from the Italian Istat *Time Use Surveys* will be discussed in Section 4, while two empirical analyses on Isfol-Plus dataset (one on the 2005-2010 and the other on the 2010 cross-section) will be presented. In particular, in Section 5 some empirical models will be put forward in order to investigate the relationship between work hours

and subjective well-being (SWB), making the hypothesis that this relationship is different between bottom- and top- income quintiles. In Section 6, while maintaining the hypothesis of structural differences between the income classes at the extremes of the distribution, the focus will be shifted on the determinants of *work time satisfaction* and its relationship with *financial satisfaction*, two important domains of overall *job satisfaction*. Finally, Section 7 will propose some concluding remarks.

2. Multidimensional well-being and the time dimension

The study of the multidimensional nature of well-being has established as one of the most prolific fields in modern economics, drawing on a multidisciplinary approach and overcoming the traditional identification of *social welfare* with the limited concept of *economic welfare*. In this context, economists have been trying to measure well-being and to study the links between its dimensions and traditional economic variables. Accordingly, measures of well-being can enrich standard welfare analysis and eventually shift attention from monetary to non-monetary dimensions, for long time neglected by economic theory.

Many quantitative analyses of well-being are based on surveys¹ including questions of the following kind: “*How satisfied are you with your financial situation, job, health, life, etc. Please respond on a scale from “very bad” to “very good” or on a numerical scale from 1 to 7 (or 1 to 10)*”. Such questions imply a self-evaluation by individuals: the idea is that *happiness* is perceived by individuals as well-being (*subjective well-being*, SWB). This approach is in sharp contrast with the long-standing preference economists have had for studying individuals’ revealed preferences; nevertheless, direct measurements of individuals’ well-being may be quite useful in the measurement of social welfare, as the bounded rationality of individuals often leads to discrepancies between their “true” preferences (whose fulfilment is linked to their happiness) and their choices (Kahneman and Krueger, 2006). Many economic studies have maintained the reliability of SWB as a measure of individual well-being (see for example, Van Praag and Ferrer-i-Carbonell, 2008; Layard, 2005; Frey and Stutzer, 2002).

With regard to measurement issues, well-being can be considered as made of two fundamental and interrelated components: cognitive and affective (Diener, 1984). The *cognitive*

¹ Some of the most famous surveys are, at the national level, the *British Household Panel Survey* and the *German Socio-Economic Panel*, and, at the international level, the *Eurobarometers*, the *World Value Surveys* and the *Gallup World Poll*.

component regards the processes through which each individual evaluates, in a retrospective way, her/his life (in terms of satisfaction). Such evaluations are carried out with reference to specific individual standards (expectations, ideals, past experiences). As a result, the level of satisfaction depends on the achievement of goals and aspirations and, often, on a comparison with a reference figure/group. The *affective component* stands for the emotions that individuals experience in their every-day life. These emotions can be either pleasant or unpleasant and depend on many variables. Differently from the cognitive component the affective component refers to the present (Kahneman and Krueger, 2006).

The general indicators of *life satisfaction*, which measures how people evaluate overall their life, are based on a cognitive process through which the individual provides a retrospective evaluation of his/her life compared to his/her standard and goals. This approach is defined as “*top-down*”. However, in addition to this synthetic index it is also important to gather information about the different aspects of life, if we assume that the level of satisfaction in the different spheres determines the overall life satisfaction (*bottom-up approach*). In other words, well-being is made of several domains which should be separately measured in order to provide a global evaluation of the welfare of individuals (Stiglitz, Sen, Fitoussi, 2009). In this context, there may be no coincidence between the single evaluations pertaining to the specific domains and the overall evaluation of life.

While maintaining the relevance of subjective well-being, Kahneman and Krueger (2006) pointed out that individual responses to subjective well-being questions may vary with circumstances and other factors; in this sense, such responses provide a measure of individuals’ perceptions of their experiences and this measure will be more precise if questions are close in time to actual experiences². For instance, the availability of data on people’s emotional experiences at various times of the day, while they are engaged in different activities, may offer the opportunity to identify the welfare-enhancing role that time use may have. In this context,

² The best way to measure *experienced utility* should “avoid effects of judgment and of memory as much as possible” (Kahneman and Krueger, 2006, p. 9). This remark is in line with the general approach to the study of happiness the Nobel-prize winner Daniel Kahneman adopts in his works, which is quite in contrast with the so-called *subjective approach*. More specifically, Kahneman refers to a more objective concept of *happiness*, where the “objectiveness” lies in the absence of cognitive errors. Nevertheless, this kind of objectiveness is very different from that characterising the *well-being* approach proposed by another Nobel-Prize winner, Amartya Sen. In Sen’s “capabilities approach”, well-being should not be evaluated drawing on the individual’s self-perceptions but should derive from external judgments. In particular, these judgments have to do with the individual’s *capabilities*, i.e. the vector of possible *functionings* (actions/conditions characterising the individual’s life) between which the individual can choose. Happiness and well-being are often used as synonyms; however, they refer to two different philosophical traditions, respectively *hedonism* and *eudaimonia*.

Krueger (2007) showed that the evaluation (in terms of welfare) of changes in time allocation is very challenging: what is welfare-enhancing and what is not³? In addition, many studies on time allocation may reach conflicting conclusions because they adopt different classifications of activities. The main question is that, starting from the very detailed classification of activities registered through *time use surveys*, the construction of categories of time (e.g. work, leisure, household production, etc.) depends on the external judgement of researchers. In order to solve this problem, Krueger (2007) provides two alternative methods for the categorisation of time, drawing on time use survey accompanied by the affective experiences reported by participants (feeling interested, stressed, happy, sad, pain and tired) and on the “U-index” (Kahneman and Krueger, 2006), which provides a measure of the percentage of time spent in an unpleasant state (episode in which the strongest emotion is negative).

On the ground of the previous considerations, well-being seems to be very much linked both to the “objective” distribution of time between different uses as well as to time perceptions, i.e. to a “subjective” experience of time. The analysis of these two complementary aspects will be put forward in the following sections.

3. “Objective” time: the distribution of work and leisure time

With regard to time allocation, despite the lack of a clear trend in total leisure and work time, many recent studies (Aguiar and Hurst, 2007; Aguiar and Hurst, 2008; Aguiar and Hurst, 2009; Gershuny, 2000; Gershuny, 2005; Gershuny, 2011; McGrattan and Rogerson, 2008; Gimenez-Nadal and Sevilla, 2012) have shown evidence of changes in the distribution of market and non-market time across income classes or education groups. Furthermore, some of these studies (see for example Aguiar and Hurst, 2008, Gimenez-Nadal and Gershuny, 2012; Gimenez-Nadal and Sevilla, 2012) have pointed out how the well-documented trends in wage and consumption inequality favouring highly educated individuals in the 1980s and the 1990s (see Katz and Autor, 1999, Attanasio and Davis, 1996; Krueger and Perri, 2002) in many industrialised countries, was mirrored by a growing inequality in the distribution of leisure time favouring the less educated. In addition to the widespread increase in leisure inequality across educational groups, Gimenez-Nadal and Sevilla (2012), drawing on the time use surveys of seven industrialised countries from the 1970s, showed evidence of a general decrease in men’s market work together

³“ Not all leisure activities are equally enjoyable, nor are all home production tasks equally taxing” (Krueger, 2007, p.194).

with an increase in men's unpaid work and child-care and of an increase in women's paid work and child care coupled with a decrease in unpaid work. Furthermore, in a study of 2008, McGrattan and Rogerson, providing an overview of trends in family labour supply between 1950 and 2005 in the US, found that "high-skilled households" (compared to households with different skill mixes) have had the largest increase in work hours and married women with the largest increase in paid work have been those with high-skilled husbands. Another point raised by Gershuny (2009) is that the so-called "status/leisure gradient reversal", i.e. the increase in the work time for both men and women of the financially privileged classes may be linked to the women's "dual burden" phenomenon. Specifically, despite the differences in men's and women's paid and unpaid work time, when taken separately, the fact that men's and women's *total* work hardly differs may reflect the intention of maintaining gender equity within the households.

Most of the studies on the evolution in the allocation of time regards the US and other few industrialised countries for which time use data are available for a long time-span. For Italy, the availability of detailed time use data is quite limited, especially for longitudinal data. Nevertheless, information on work hours in Italy may be obtained from the Isfol-Plus panel survey, which provides an idea of recent trends, even if for a very short time span (2005-2010).

Fig.1 shows the distribution of work hours⁴ across income quintiles⁵ in Italy in the period 2005-2010. The first income quintile experienced the sharpest decline in average work hours, with a reduction of about 24% between 2005 and 2010; while being slightly above the third and fourth quintiles in 2005, it ends up with the lowest value of average work hours, compared to the other four quintiles, at the end of the period. The trends for the other quintiles are quite homogenous: they almost stick to the same average value for the whole period, except for a 10% and a 5% decrease respectively for the second and the fifth quintile between 2008 and 2010. At the end of the period we observe a 10-hour differential in the average work hours of the bottom and the top quintiles. Table 1 summarises the trends in average work hours across income quintiles respectively for men and for women.

As regards men, a stable trend for the three central quintiles is confirmed, while for the first quintile (whose average work hours were higher than those of the second, third and forth quintile in 2005) and the fifth quintile there is a reduction respectively of about 17% and 7% between 2005 and 2010. Furthermore, while at the beginning of the period there was a 2-hour

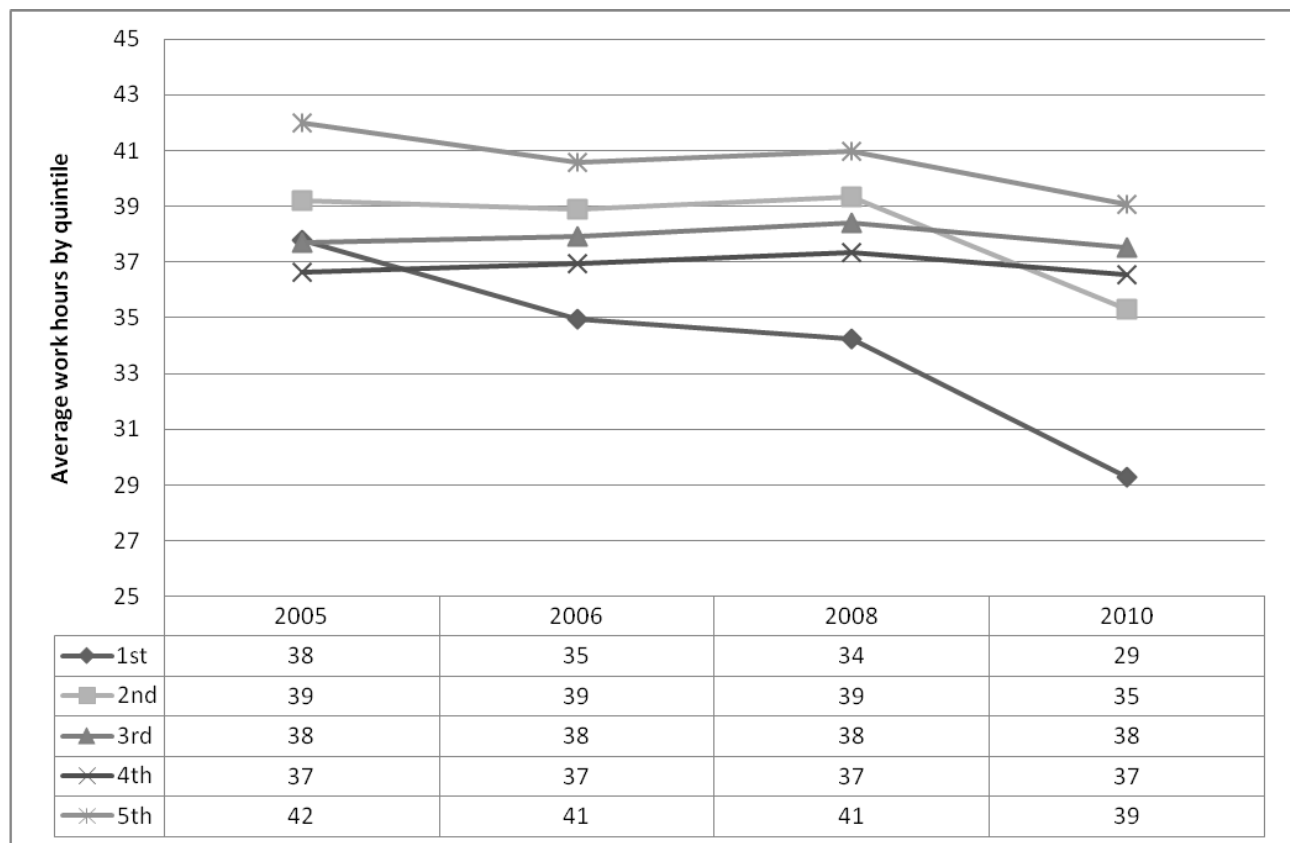
⁴ All figures refer to average *market* work hours per week.

⁵ We are not considering average work hours per capita, but average work hours per employed worker.

differential between the first and the fifth quintile (respectively the average work hours were 42 and 44), at the end of the period such differential widens up to 6 hours. Similarly to what happens in Fig.1, the average hours worked by individuals in the top quintiles are higher than those of the other quintiles for the whole period.

With reference to women, the first quintile shows a decreasing trend in average work hours, with a reduction of about 26% (average work hours are always lower than those of the other quintiles, except for 2005) between 2005 and 2010. Differently from what emerges for men, women in the second quintile show the highest values for average work hours, for the whole period but 2010, when a 13% decrease (compared to 2008) takes place, shifting the second quintile average work hours below those of the other three higher quintiles.

Fig. 1 Average work hours per week across income quintiles, Italy 2005-2010



Source: Isfol Plus panel dataset 2005-2010

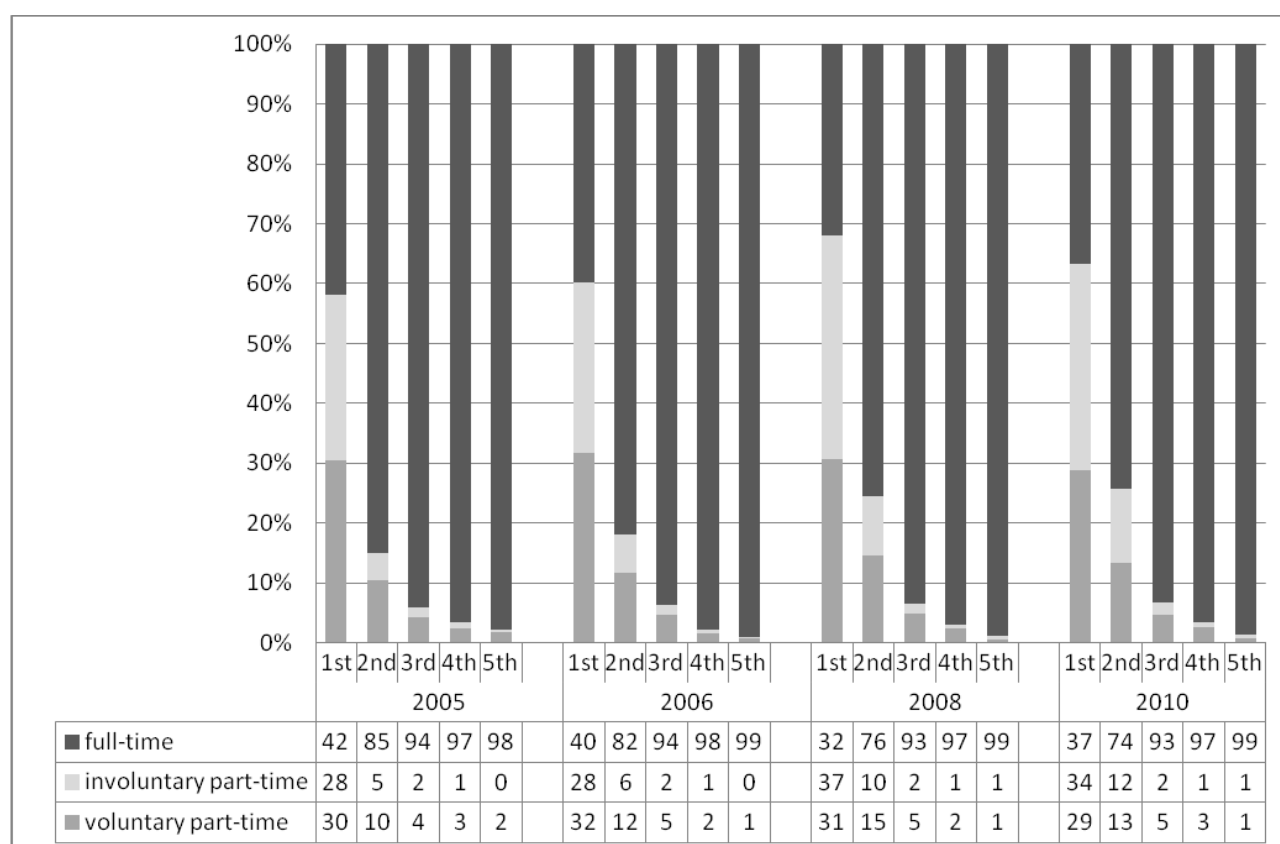
Table 1. Average work hours per week across income quintiles for men and women, Italy 2005-2010

	Men						women					
	1st	2nd	3rd	4th	5th	total	1st	2nd	3rd	4th	5th	total
2005	42	41	40	39	44	41	35	38	35	33	37	36
2006	40	41	40	39	42	41	32	37	35	34	36	35
2008	39	41	40	40	43	41	32	38	36	34	36	35
2010	35	38	40	39	41	39	26	33	35	34	34	32

Source: Isfol Plus panel dataset 2005-2010

The previous figures do not differentiate between full-time and part-time workers; however, looking at the percentage of part-time and full-time contractual arrangements across income quintiles could add further information about how work hours distribute between the “rich” and the “poor”.

Fig.2 Percentage of full-time, involuntary and voluntary part-time arrangements across income quintiles (Italy 2005-2010)



Source: Isfol Plus panel dataset 2005-2010

According to Fig.2 on average more than 60% of workers in the first quintile have a part-time contractual arrangement in the period considered; in addition, the share of involuntary part-time workers seems to increase between 2005 and 2010⁶. The share of full-time workers more than double when comparing the first and second income quintile and is progressively higher up to the fifth quintile. In addition to the previous descriptive analysis, it is interesting to look at the characteristics of workers lying at the “extremes” of the distribution of work hours, i.e. individuals working less than 20 hours and individuals working more than 60 hours per week (see Table 2).

On the one hand, about 70% of “less-than-20-hour” workers are women and the two age-classes characterised by the highest percentages are 25-34 and 45-54. Furthermore, most individuals working less than 20 hours hold a degree up to 2008; in 2010 the highest percentage of individuals working less than 20 hours hold an upper-secondary education level (43.9%). As regards contractual arrangements most individuals working less than 20 hours are employees with a permanent or fixed-term contract; most of them work in the public sector up to 2008, but this is no longer true in 2010, when the percentage goes down to 36%. With reference to the “skill match⁷”, i.e. the adequacy of workers’ education level with their work tasks, 71% declare that their education level is necessary for the job they have. Finally, a very high percentage of “less-than-20-hour” workers seems to have a rigid work schedule (though such percentage decreases from almost 80% in the period 2005-2008 to 60 % in 2010) and most of them work during unsocial hours (i.e. at night or during holidays) in the period 2005-2008, while this is no longer true in 2010 (the percentage of such workers goes down to 39%). Overall, it seems that no big changes occurred in the period considered, except for those mentioned above for 2010 and for what emerges looking at occupations. More specifically, comparing 2005 and 2006 the percentage of “less-than-20-hour” workers classified as medium-skilled largely increases, while the opposite occurs for high-skilled workers; in 2008 the picture is again reversed and - despite there is a reduction for high-skilled workers and an increase for medium-skilled workers – it is maintained in 2010.

On the other hand, “more-than-60-hour” workers are for the most part men, while the distribution across age-classes is more homogenous (despite higher percentages for workers between 25 and 34 in 200 and 2010). As expected, most of such workers are self-employed, for

⁶ These percentages are even higher for women; on average 70% of women in the first quintile have a part-time contractual arrangement (figures upon request).

⁷ In the Isfol plus 2005-2010 panel, the skill match can be derived from a question in which individuals are asked to evaluate if the level of education they hold is necessary for the work they do. In this sense, it is only possible to measure the skill mismatch in terms of “overeducation” and not in terms of “undereducation” (...).

whom it is, in general, difficult to identify a clear and stable working time (this is also coherent with the high percentage of workers having up to an upper-secondary education level). Furthermore, on account of the large amount of work hours characterising the week of such workers, a very high percentage of them declare to work during unsocial hours.

Table 2. The extremes of the distribution of work hours: the characteristics of people working less than 20 hours and more than 60 hours per week⁸ (Isfol Plus, Italy 2005-2010).

	2005		2006		2008		2010	
	20 or less	more than 60	20 or less	more than 60	20 or less	more than 60	20 or less	more than 60
Area								
North	35.0	42.9	36.5	40.3	35.6	44.8	40.9	43.2
Centre	20.6	23.2	19.7	15.8	19.3	16.6	19.7	18.8
South	44.5	33.9	43.8	43.9	45.1	38.6	39.4	38.0
Personal characteristics								
<i>Men</i>	30.3	76.3	33.7	75.9	32.0	72.4	26.5	73.4
<i>Women</i>	69.7	23.7	66.3	24.1	68.0	27.6	73.5	26.6
<i>Good health</i>	97.8	96.1	97.9	97.5	96.0	96.2	1.4	1.7
Age class								
<25	10.1	8.2	11.8	6.8	13.9	9.0	17.2	10.0
25-34	24.5	23.9	26.4	23.0	27.7	27.6	33.4	31.9
35-44	18.3	16.6	19.1	19.1	16.9	15.5	20.9	17.9
45-54	25.1	28.2	21.9	28.1	19.1	21.4	13.6	17.9
55-64	22.0	23.2	20.7	23.0	22.4	26.6	15.0	22.3
Education								
Lower secondary	12.6	35.5	12.7	32.4	10.4	29.3	16.7	23.1
Upper secondary	30.1	46.1	34.3	47.1	32.4	49.7	43.9	54.6
Degree	57.3	18.4	53.1	20.5	57.2	21.0	39.4	22.3
Job characteristics								
Occupation								
High-skilled	69.5	49.2	45.0	47.5	73.5	50.0	53.4	53.7
Medium-skilled	26.8	46.3	49.6	46.4	20.3	37.2	37.2	35.4
Low-skilled	3.7	4.5	5.4	6.1	6.2	12.8	9.4	10.9
Contractual arrangement								
Permanent	43.1	21.1	36.1	15.8	36.5	22.4	50.5	19.7
Fixed-term	21.0	11.1	19.2	7.6	16.8	6.2	26.4	14.0
Atypical	16.4	1.8	27.3	4.0	29.5	6.2	13.5	3.9
Self-employed	19.5	66.1	17.4	72.7	17.2	65.2	9.7	62.4
<i>Mean income</i>	20403.2	32165.6	17778	32260	19047.8	31455.1	16753.7	26839.7
<i>In public sector</i>	55.1	13.0	55.0	24.4	58.2	21.3	36.3	24.7
<i>With adequate skills</i>	71.4	45.0	65.3	45.3	69.6	45.9	53.4	43.7

⁸ Observations with values of work hours per week higher than 112 were dropped (this means that individuals have at least a sleeping time of 8 hours per night) .

<i>Having a second job</i>	9.1	11.8	8.2	10.2	6.7	6.7	8.7	8.2
<i>Overtime</i>								
Paid overtime	30.7	27.3	32.6	30.0	35.3	34.9	25.2	26.0
Unpaid overtime	11.5	24.5	10.1	30.0	8.7	34.9	6.2	27.3
No overtime	57.9	48.2	57.3	40.0	56.0	30.1	68.7	46.8
<i>Working during unsocial hours</i>	56.3	90.9	52.9	91.7	52.1	88.0	38.9	77.9
<i>Having a rigid schedule</i>	78.1	38.2	79.9	38.3	78.9	27.7	60.4	41.6

Source: Isfol Plus panel dataset 2005-2010

Note: all values are percentages, with the only exception of income, expressed in euro.

Although a much longer time-span would be necessary in order to prove that a process of redistribution of working hours from “the poor” to “the rich” has taken place also in Italy in the last decades, overall, the previous figures seem to be quite in line with the evidence found for other countries according to which modern capitalist economies are characterised by a “rich working class” and a “poor leisure class”: we observe lower average work hours for the bottom income quintile (compared to other quintiles) together with a decreasing trend⁹ in the period 2005-2010.

Even though it would be interesting to investigate what makes for such distribution in work hours, the main focus of this paper is to analyse the link between time allocation and well-being. Accordingly, it is relevant to understand what perception of time individuals have and if they are satisfied with the allocation of their time, in particular between work and leisure. The following sections are devoted to the analysis of these topics.

4. “Subjective time”: time perceptions and well-being

Nobody will deny the deep-seated idea that people are always in a rush and feel pressed for time in modern economies. The reduced availability of free time has been at the centre of a lively debate in the United States since the 1990s (Schor, 1992; see also Linder, 1970): people perceive an increasing time scarcity and decreasing control over their time, independently of the objective trend of time availability (Robinson and Godbey, 1997). Putnam (2000) suggests that “pervasive busyness” is one of the most important explanations of social disengagement in the US showing evidence that high-skilled full-time workers are among the most affected category, while also being the people historically active in community life. However, as there is no clear evidence of a reduction in total leisure time in the US in the last decades, civic disengagement may also be a

⁹ As already mentioned, the average work hours of the top quintile are the highest compared to the other quintiles; nevertheless, a slight reduction in hours worked has been observed for this quintile, especially between 2008 and 2010.

result of other factors. One of them is, according to the author, the already mentioned redistribution of leisure time from college-educated Americans to their less educated counterparts (see also Scitovsky, 1976 [1992]; Robinson and Godbey, 1997)¹⁰.

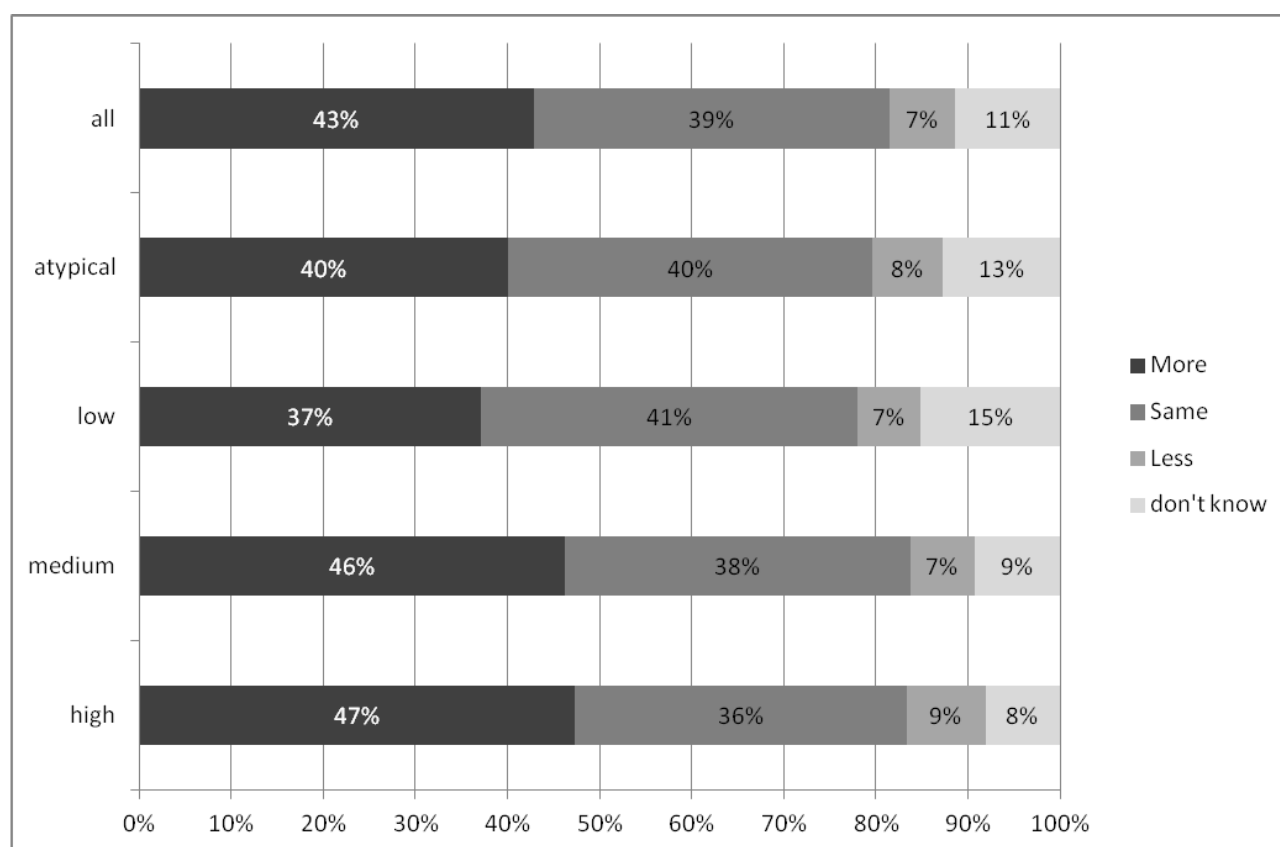
As suggested by Bianchi (2008), the increased time crunch of modern economies has to do with the speeding-up and increased goods-intensity both of work and leisure time. Becker (1965) provided the theoretical framework to model time allocation among market and non-market activities, while more recently Hamermesh and Lee (2007), drawing on Becker's household *production function approach*, have addressed the issue of "time stress" proposing a theoretical model – corroborated by empirical evidence for some countries - in which time stress reflects the degree with which households are bound by time constraints. In their framework, time stress reflects the fact that, in a growing economy, the goods constraint can progressively be relaxed over time, while this is not possible for the time constraint. As a consequence, greater time stress may be the result of an increasing abundance of goods to be consumed during an invariant amount of time. In particular, they show that additional hours of market work increase perceived time stress, but additional earnings - holding market and non-market work hours constant - lead to the same results in terms of perceived time stress. Hence, at least a part of the perceived time crunch is "yuppie kvetch" (i.e. complaint) deriving from the fact that individuals are endowed with too much money compared to the quantity of time they have left over from market work. In this way, Hamermesh and Lee (2007), provide an economic explanation of why complaints about time crunch disproportionately come from high-income households.

McGinnity and Calvert (2009), while exploring the relationship between work-life tension and social inequality, found that work-life conflict is higher among professionals than non-professionals, but they are against Hamermesh and Lee's argument that this is, for a large part, a mere consequence of "yuppie kvetch". By contrast, they show evidence of the fact that the greater time stress of professionals is due to longer work hours and higher work pressure, compared to other social classes. However, after controlling for these two elements, professionals still show higher work-life conflict; the authors suggest that arguments other than "yuppie kvetch" can make for this phenomenon (higher involvement in their jobs, promotion perspectives, task-based jobs implying fluctuations in workload and overtime, etc.).

¹⁰ Other reasons for a reduction in civic engagement is linked to the high fragmentation of the "new" leisure time, the spreading of dual-career families etc. (Putnam, 2000).

Despite the growing availability of data on subjective well-being and time allocation (e.g. the Multinational Time Use Study, the Euro-barometer Survey Series, the German longitudinal data on life satisfaction, the British Household Panel Study, the World Values Survey) it is not always easy to carry out economic analysis with data on time perceptions and satisfaction and on time allocation and use. As regards Italy, Istat *Time Use Surveys* provide the best data as to time allocation, even if they present shortcomings as regards the availability of socio-economic variables. However, they contain some specific questions on time crunch and satisfaction with leisure and work time. First of all, in Fig.3, time crunch - defined as the feeling to be more or less pressed with time compared to five years before the interview - across occupations¹¹ (intended as *proxies* of income classes) is represented.

Fig.3 *Time crunch by occupation*: “Compared to 5 years ago, do you feel more or less pressed with time?” (Italy, 2008-2009)

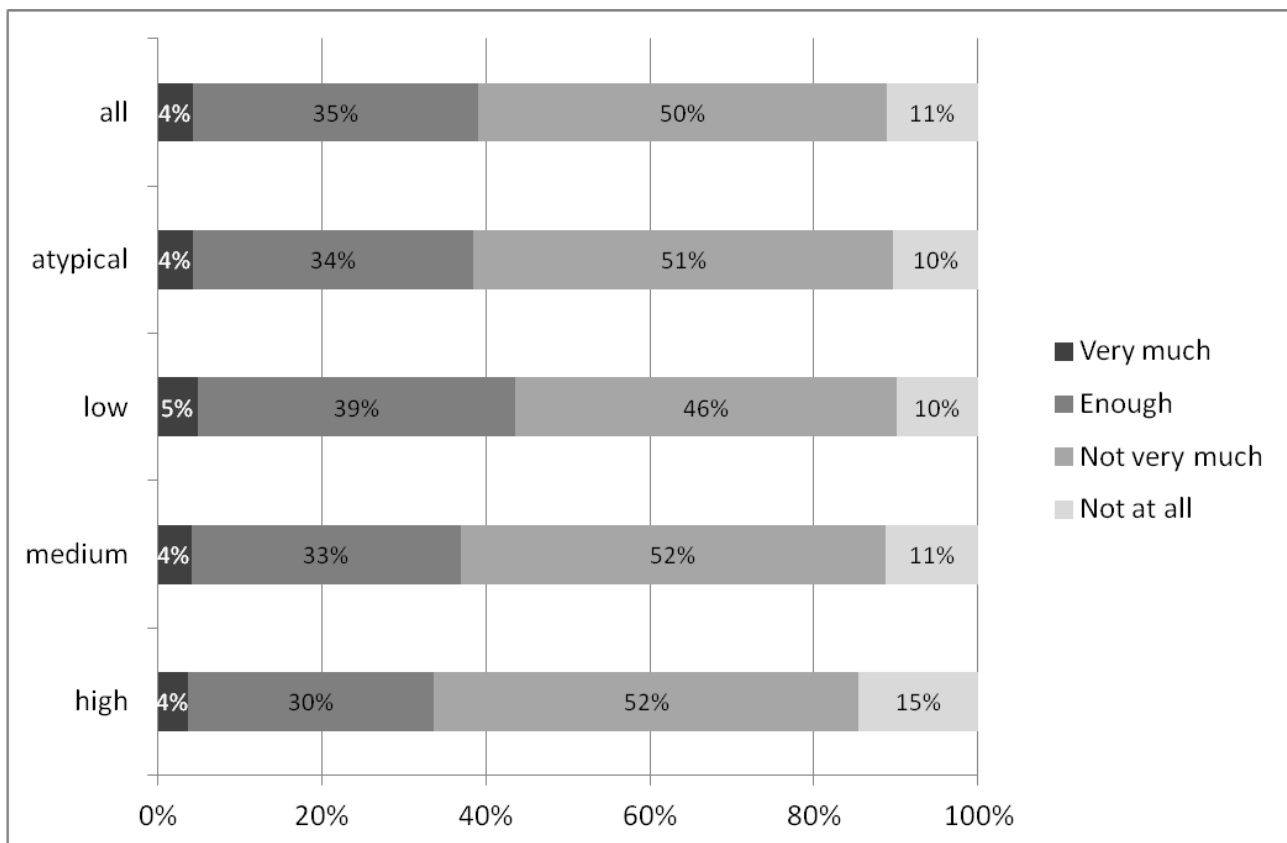


Source: *Usa del tempo 2008-2009*, Istat (2012)

¹¹ Category “high” includes high-level employees (managers), professionals and entrepreneurs; category “medium” includes medium-level employees (white-collar) and self-employed (small traders, craftsmen, etc.); category “low” includes low-level-employees (blue-collar); finally, the category “atypical” refers to “pseudo self-employed” workers, cooperators, assistants in family enterprises. Atypical workers are by definition a very heterogeneous category with reference to their position in the income ladder.

In line with what previous studies suggests for other countries, 47% of workers belonging to category “high” (and 46% for “medium”) declare to suffer more from time crunch compared to five years before the interview; such percentage is lower for the “low” and “atypical” categories (respectively, 37% and 40%). By contrast, almost equally low percentages of workers (about 7-9%) declare to feel less pressed with time. Secondly, Fig.4 provides workers’ degree of satisfaction with the quantity of leisure time they have at their disposal. On average, most workers are not satisfied with the quantity of leisure time (“Not at all” and “Not very much” responses) and those in the “high” category show the highest percentage of unsatisfied workers (67%).

Fig.4 Leisure quantity satisfaction by occupation: “Are you satisfied with the quantity of leisure time you have?”

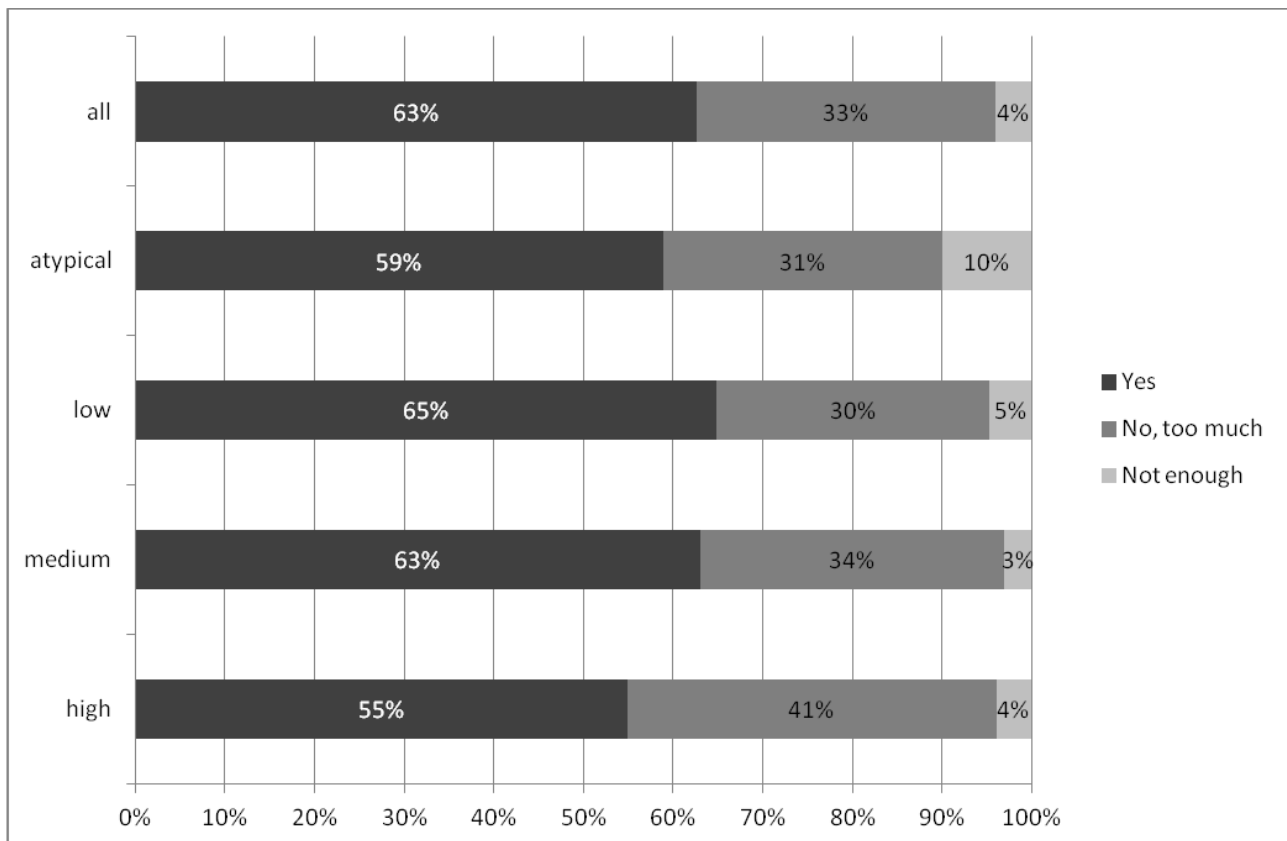


Source: *Usa del tempo 2008-2009, Istat(2012)*

Finally, in Fig.5, we can see how workers in the different categories evaluate the quantity of time they devote to work. In line with the previous figures, 41% of workers in the “high” category declare that they devote too much time to work, while for other categories of workers

such percentage is much lower (on average is 33%). Furthermore, the “high” category shows the lowest percentage of workers satisfied with the quantity of time devoted to work; by contrast, 10% of atypical workers declare that the time they devote to work is not enough¹².

Fig.5 Work time satisfaction by occupation: “Are you satisfied with the quantity of time you devote to work?”



Source: *Uso del tempo 2008-2009*, Istat (2012)

Despite the widespread concern for the effects of work hours on different aspects of well-being (health, stress, work-to-family conflict etc.), no consensus has been established about the relationship between subjective well-being and work hours. Some studies suggest a negative association (e.g. Clark and Oswald, 1996; Scollon and King, 2004), while others find evidence of a negative or non significant relationship (Clark, 2010; Boye, 2009; Sousa-Pozaa and Sousa-Pozab, 2000). For this reason Pereira and Coelho (2013) tried to foster the understanding of such

¹² This seems to be linked to the fact that 37% of atypical workers work part-time and only 23% of them declare to work part-time because they don't want to work full-time (while 46% cannot find a full-time job, 30% work part-time for other reasons and 1% do not know).

relationship (on the European Social Survey data) through the investigation of what they call “moderator effects”, i.e. the variables that may intervene in the relationship between subjective well-being and work hours, relying on “social identity theory” as for the choice of variables to take account of¹³. In this way, they contributed to the explanation of previous contradictory findings, pointing out that work hours per se do not have a significant relationship with subjective well-being; by contrast, the effects of work hours on well-being seem to be mediated by a number of other variables concerning individual objective characteristics and their social identity.

In Section 5 and 6 two different empirical analysis on time and well-being in Italy are presented. The first analysis investigates into the relationship between work hours and well-being, drawing on Pereira and Coelho (2013) and using the 2010 cross-section wave of Isfol-Plus, the only one for which a specific question on overall life-satisfaction is available. The second analysis proposes the estimation of a model for *work time satisfaction*, making use of the Probit-Adapted OLS methodology by Van-Praag and Ferrer-i-Carbonell (2006) for the Isfol-Plus 2005-2010 panel dataset.

5. First empirical analysis: the relationship between work hours and well-being

Drawing on the Italian Isfol-Plus 2010 cross-section, I study the relationship between work hours and subjective well-being (life satisfaction on a scale from 1 to 5), checking for the role played by variables referring to individuals’ personal and family characteristics as well as to occupational characteristics. According to social identity theory (e.g. Howard, 2000; Jones and Volpe, 2011) individuals define their identity in terms of the *reference groups* they belong to. More specifically, individuals may have multiple social identities, according to the different reference groups (e.g. family identity, occupational identity, etc.). In this framework, the effect work hours have on individual subjective well-being may pass through the social role of the individual within her/his reference groups.

As mentioned in the previous sections, some studies have suggested that in many developed countries there has been a redistribution of leisure time from the bottom of the income scale to the top of the income scale. While in *The theory of the leisure class* Veblen (1965, [1899]) had talked about the availability of leisure time as a symbol of high social status (*badge of*

¹³ A “moderating effect” refers to the fact that a third variable may affect the strength or directionality of the relationship between an independent variable and a dependent variable; in this sense, controlling for the effects of other variables, a moderator effect indicates if *work hours* are more strongly or more weakly related to *subjective well-being* (Pereira and Coelho, 2013).

honour), Gershuny (2005) pointed out that, in contemporary societies, being “busy with work” while lacking leisure time is a symbol of social prestige. In other words, work has completely substituted leisure in its function of *badge of honour*. In addition, the greater pleasantness of work for high-income earners¹⁴ (Gershuny, 2011) may reinforce their incentive to work long hours. On account of these factors high income earners may derive higher subjective well-being from working longer hours because of the effects that work hours have on their social and occupational identity. However, given the totally rigid nature of the time constraint, on the one hand, and the time resources required to satisfy multiple social identities, on the other hand, a “time competition race” between such identities may take place. As a result, it is not easy to predict what the overall relationship between work hours and subjective well-being will be.

In view of the previous reasoning, I run some ordered logit models to study the relationship between work hours and well-being, taking account of the role played both by personal and occupational characteristics and distinguishing between high-income earners and low-income earners. More specifically, I run four models for the 4th and 5th income quintiles (high-income earners, Table 3) and four models for the 1st and the 2nd income quintiles (low-income earners, Table 4). Such distinction derives from the hypothesis that the position on the income scale is a fundamental variable influencing the effect that work hours have on well-being, because of the role that being busy with work may have in satisfying individuals’ “occupational identity” (Gershuny, 2005) for high-income workers. In particular, *I suppose that the relationship between work hours and subjective well-being is positive only for high-income earners*. In addition to this hypothesis, I check for the role of “moderator effects” that some variables may play, following Pereira and Coelho (2013).

Table 3. Work hours and well-being: the effects of personal and occupational characteristics for the 4th and 5th income quintiles (ordered logit estimations, output results in odds ratios)

	model 1	model 2	model 3	model 4	model 5
Personal characteristics					
<i>North</i>	0.886**	0.885*	0.881*	0.881*	0.881*
<i>South and Islands</i>	1.081	1.068	1.057	1.048	1.048
Woman	1.128**	1.187***	1.197***	1.329	1.198***
Age	0.871***	0.870***	0.874***	0.874***	0.873***
Age squared	1.001***	1.001***	1.001***	1.001***	1.001***

¹⁴ The content of some jobs (managerial, professional, technical) can be compared – in terms of stimuli – to that of the activities that the rich used to engage in during their leisure time in the past.

Family type					
<i>In a couple with children</i>	1.967***	1.968***	1.943***	1.938***	1.942***
<i>In a couple</i>	1.890***	1.954***	1.955***	1.957***	1.958***
<i>Single-parent</i>	1.158	1.07	1.058	1.061	1.061
<i>Child in a family</i>	1.083	1.115	1.089	1.095	1.096
<i>Child of a single-parent</i>	0.572***	0.600**	0.611**	0.614**	0.613**
<i>Other</i>	0.938	1	0.976	0.978	0.977
Education					
<i>Upper secondary</i>	0.773***	0.690***	0.732***	0.755***	0.754***
<i>Degree</i>	0.710***	0.607***	0.647***	0.668***	0.667***
Income	0.999	0.999	0.999	0.999	0.999
Work hours	1.005**	1.008**	1.010***	1.011**	1.011**
Occupational characteristics					
Occupation type					
<i>High-skilled</i>		0.989			
<i>Low-skilled</i>		0.928			
Contractual and time arrangements					
<i>Atypical</i>		1.027			
<i>Unpaid overtime</i>		0.871*	0.912		
<i>No overtime</i>		0.911*	0.929		
<i>Rigid schedule</i>		0.899**	0.903*	0.905*	0.904*
<i>Unsocial hours</i>		1.056			
<i>Public sector</i>		1.163**	1.168**	1.172**	1.31
Other characteristics linked to work					
<i>Perceived health risk at work</i>			0.919		
<i>Commuting time</i>			0.997**	0.997**	0.997**
<i>Skill match</i>			1.073		
<i>Always employed in the last 12 months</i>			1.003		
Interactions					
<i>Woman</i>				0.997	
<i>Public sector</i>					0.997
Number of observations	6628	5624	5001	5001	5001
legend * $p < .1$, ** $p < .05$, *** $p < .01$					

Source: Isfol Plus 2010

Note a): Reference modalities are “Centre” for geographical variables (“North”, “South and Islands”), “Single” for Family Type variables, “Lower secondary” for Education variables, “Medium-skilled” for Occupation type variables, “Paid overtime” for “Unpaid overtime” and “No overtime”. The definition of atypical workers is the one provided by Isfol (2012).

Note b): Income is in thousands, so odds ratios refers to a change of €1000 in income.

In Table 3, I first run a preliminary estimation with the set of basic explanatory variables related to the personal and family identity (model 1); the other models progressively introduce occupational characteristics, referring to the type of occupation and contractual and time arrangements (model 2) and also other characteristics linked to work (model 3), such as perceived health risk at work, commuting time, the adequateness of skills and the work condition stableness (“Always employed in the last 12 months”). Model 4 and 5 include an interaction term, respectively between gender and work hours and public sector and work hours. The relationship between work hours and life satisfaction seems to be positive and highly significant in all models. As regards other variables the following evidence emerges: people living in the North of Italy are, in general, less likely to have a higher SWB than people in the Centre; women are happier than men; age has a U-shaped relationship with life satisfaction. With reference to family characteristics, couples and couples with children seem to be more likely to have higher SWB than singles, while the opposite holds true for children living with a single-parent. As to education, I find a negative and significant relationship with SWB.

While income does not appear significant, few occupational characteristics seem to play a role in determining SWB and the signs of the relationships are those expected. More specifically, workers having a rigid work schedule seem to have a lower SWB, while being in the public sector (compared to the private sector) seem to lead to higher SWB. As expected, commuting time has a negative impact on SWB. The two interactions introduced in the last two models do not appear statistically significant, thus not accounting for any “moderator effects” as those pointed out by Pereira and Coelho (2013). In appendix models with other possible interactions are presented but they all show no significant results. Hence, differently from what Pereira and Coelho (2013) found relying on data from the European Social Survey, the relationship between work hours and SWB does not seem to be mediated by other variables.

Table 4. Work hours and well-being: the effects of personal and occupational characteristics for the 1st and 2nd income quintiles (ordered logit estimations, output results in odds ratios)

	model 6	model 7	model 8	model 9	model 10
Personal characteristics					
North	0.976	0.981	0.962	0.963	0.963
South and Islands	0.95	0.925	0.927	0.925	0.923
Woman	1.111**	1.198***	1.173**	1.25	1.167**
Age	0.891***	0.893***	0.894***	0.897***	0.897***
Age squared	1.001***	1.001***	1.001***	1.001***	1.001***

Family type					
In a couple with children	2.692***	2.504***	2.472***	2.449***	2.452***
In a couple	2.268***	2.030***	2.037***	2.024***	2.024***
Single-parent	1.148	1.133	1.007	1.001	1.004
Child in a family	1.185*	1.184	1.129	1.121	1.12
Child of a single-parent	0.936	0.976	0.931	0.922	0.923
Other	0.824*	0.811	0.746*	0.740**	0.738**
Education					
Upper secondary	0.893*	0.876*	0.868*	0.868*	0.868*
Degree	0.803***	0.731***	0.757***	0.748***	0.753***
Income	1.006	1.009	1.01	1.011	1.011
Work hours	1.005***	1.002	1.004	1.006	1.003
Occupational characteristics					
Occupation type					
High-skilled	0.92				
Low-skilled	0.868				
Contractual and time arrangements					
Atypical	0.91				
Unpaid overtime	0.751***				
No overtime	0.890*				
Rigid schedule	0.874**				
Unsocial hours	1.004				
Public sector	1.176**				
1.176**					
1.170**					
0.982					
Other characteristics linked to work					
Perceived health risk at work	0.852**				
Commuting time	0.995***				
Skill match	1.182***				
Always employed in the last 12 months	1.128				
Interactions					
Woman	0.998				
Public sector	1.006				
Number of observations	6799	4819	4303	4303	4303
legend * p<.1, ** p<.05, *** p<.01					

Source: Isfol Plus 2010

Note a): Reference modalities are “Centre” for geographical variables (“North”, “South and Islands”), “Single” for Family Type variables, “Lower secondary” for Education variables, “Medium-skilled” for Occupation type variables, “Paid overtime” for “Unpaid overtime” and “No overtime”. The definition of atypical workers is the one provided by Isfol (2012).

Note b): Income is in thousands, so odds ratios refers to a change of €1000 in income.

In Table 4, I follow an approach similar to that of Table 3, presenting a first preliminary model with basic explanatory variables dealing with personal and family characteristics (model 6), followed by two models (model 7 and 8) progressively including relevant variables as to occupational characteristics. The last two models (model 9 and 10) also include two interaction terms for work hours. The relationship between work hours and SWB seems to be significant only in model 6, while becoming not significant once other occupational characteristics are accounted for (in the other models).

While geographical position does not seem to be significant, women seem to be happier than men and a U-shaped relationship between age and SWB is confirmed also in the case of low-income earners. Similarly to Table 3, individuals in a couple or in a couple with children seem to be happier than singles (while the opposite holds true for individuals in family situations other than those listed compared to singles). The negative relationship between education and SWB is also confirmed. Differently from what emerged for high-income earners, several variables linked to occupational characteristics are significant. On the one hand, workers doing unpaid or no overtime seem to have lower SWB than workers doing paid overtime; a negative relationship holds true also for workers having a rigid work schedule and perceiving health risks at work¹⁵. Similarly to what happens for high-income earners commuting time has a negative impact on SWB. Instead, two positive relationships seem to hold between SWB and working in the public sector, as well as doing a job for which the skills an individual is endowed with are necessary. Finally, interactions do not appear statistically significant, as in the case of high-income earners¹⁶.

6. The second empirical analysis: the determinants of *work time satisfaction* and the relationship with *financial satisfaction*

A second way to study the relationship between work time and well-being and link it to income variables relying on Isfol-Plus data is to focus on the sub-domains of job satisfaction, available in the 2005-2010 (unbalanced) panel. In particular, two relevant sub-domains of job

¹⁵ Please not that, as expected, this variable was not significant for high-income earners while is significant for low-wage income earners in all models where it is included.

¹⁶ Models presenting other interactions are not presented, given the non-significant relationship between work hours and SWB for low-income earners.

satisfaction are *work time satisfaction* and *financial satisfaction*¹⁷. The question from which these variables are obtained are of the following type: “How satisfied are you with your work time/financial arrangement in a scale from 1 to 4?”

First of all, it is interesting to check whether individuals with high (low) *work time satisfaction* have high (low) *financial satisfaction* or, more in general, if there are compensation mechanisms between these two aspects of job satisfaction. According to Table 5, on the one hand, the majority of workers (both with low and high financial satisfaction) have high work time satisfaction; however mean percentages of high levels of work time satisfaction are lower for workers with high financial satisfaction than those of workers with low financial satisfaction. On the other hand, the majority of workers with high work time satisfaction have low financial satisfaction (except for 2006); at the same time, the majority of workers with low work time satisfaction have high financial satisfaction. The correlation of the two variables is negative and is reported in Table 6.

Table 5. Work time satisfaction vs. Financial satisfaction (percentage values)

		2005			2006			2008			2010		
		Financial satisfaction											
Work time satisfaction		low	high	total	low	high	total	low	high	total	low	high	total
	low	15.6	35.0	25.2	10.5	23.3	17.1	10.9	23.8	17.9	10.2	26.0	17.6
	high	84.4	65.1	74.8	89.5	76.7	82.9	89.1	76.2	82.1	89.8	74.0	82.4
		low	high		low	high		low	high		low	high	
	low	31.3	68.7		29.9	70.1		27.8	72.2		30.6	69.4	
	high	56.9	43.1		52.7	47.3		49.4	50.6		57.8	42.2	
	total	50.5	49.5		48.8	51.2		45.5	54.5		53.0	47.0	

Source: *Isfol Plus panel dataset 2005-2010*

Note: Percentage values refer to voluntary part-time workers and full-time workers.

Table 6. Correlation between work time satisfaction and financial satisfaction

	2005		2006		2008		2010	
	work time	financial	work time	financial	work time	financial	work time	financial
work time	1		1		1		1	
financial	-0.3112	1	-0.2633	1	-0.2268	1	-0.2896	1

Source: *Isfol Plus panel dataset 2005-2010*

¹⁷ The other sub-domains of job satisfaction available in Isfol Plus refer to: working environment (e.g. relationships with colleagues), daily work-load, tasks and responsibilities, job safety, career perspectives, skills and professional development, job security.

Drawing on this first raw statistics, a regression analysis on work time satisfaction is carried out in order to establish what is the relationship between work time satisfaction (ordinal dependent variable) and financial satisfaction and if there are differences in work time satisfaction determinants between high-income earners and low-income earners. In order to do that I apply the Probit-Adapted OLS (POLS) methodology, proposed by Van Praag and Ferrer-i-Carbonell (2004), which provides an alternative approach to traditional ordered probit response models for categorically and naturally ordered dependent variables. More in detail, I obtain a transformation of the ordinal dependent variable (4 categories) into the discrete version of the latent continuous variable (partitioned in 4 intervals) of work time satisfaction. In other words, the new four values correspond to the conditional expectations of the latent continuous variable of *work time satisfaction*, deriving from the properties of the normal distribution (Maddala, 1983). Subsequently, I run random effects estimates on the *transformed work time satisfaction* variable¹⁸, drawing on the model structure proposed by Van Praag and Ferrer-i-Carbonell (2008) for the study of the determinants of satisfaction domains. In particular, I am not only interested in studying what variables have a role in determining work time satisfaction, but also in establishing if the sign of the relationship between work time satisfaction and financial satisfaction is negative (*first hypothesis*). In addition, a check for eventual differences between low-income earners and high-income earners as to the determinants of work time satisfaction (*second hypothesis*) is carried out, by running different estimates for the 1st and 2nd income quintile, on the one hand, and for the 4th and 5th quintile, on the other hand. Estimates results are summarised in Table 7.

Table 7. *Work time satisfaction* by quintile, Probit-Adapted OLS

	1st and 2nd income quintile			4th and 5th income quintile		
	model I	model II	model III	model IV	model V	model VI
Dummy for 2005	-0.092***	-0.064**	-0.064**	-0.173***	-0.186***	-0.186***
Dummy for 2006	0.025	0.037	0.037	0.022	0.014	0.014
Dummy for 2008	0.068***	0.098***	0.098***	0.079***	0.078***	0.078***
North	0.062***	0.062***	0.061***	0.040**	0.057***	0.057***
South and Islands	-0.031	-0.013	-0.013	-0.008	-0.014	-0.014

¹⁸ Van Praag and Ferrer-i-Carbonell (2004, 2006) show that POLS estimates are coherent with Ordered Probit estimates and reduce computational time, while allowing better handling of endogeneity problems and panel data management.

Woman	0.012	-0.012	-0.012	-0.024	-0.061***	-0.061***
Some health problems	-0.014	-0.018	-0.018	-0.090*	-0.066	-0.066
Serious health problems	0.058	0.067	0.067	-0.105*	-0.085	-0.085
ln(Age)	-1.652***	-1.479**	-1.478**	-3.406***	-2.373***	-2.373***
ln(Age2)	0.230***	0.204**	0.204**	0.462***	0.310***	0.310***
Minimum age	36	37	37	40	46	46
Children	-0.007	-0.029	-0.03	0.087***	0.079***	0.079***
Lower secondary	-0.084***	0.01	0.01	-0.070***	0.051*	0.051*
Upper secondary	-0.036	0	0	-0.013	0.033*	0.033*
ln(Income)	0.01	0.02	0.02	-0.007	-0.027	-0.027
Mean(ln(Income))	0.009**	0.011**	0.011**	0.006	0.003	0.003
ln(Work hours)	-0.164***	-0.103***	-0.096***	-0.251***	-0.215***	-0.215***
voluntary part-time	0.397***	0.338***	0.338***	0.276*	0.243	0.243
full-time	0.147***	0.082**	0.081**	0.13	0.148	0.148
Financial satisfaction	-0.469***	-0.432***	-0.387**	-0.335***	-0.335***	-0.337**
High-skilled		0.038*	0.038*		0.006	0.006
Low-skilled		-0.033	-0.033		-0.074**	-0.074**
Public sector		0.156***	0.156***		0.168***	0.168***
Atypical		0.047**	0.047**		0.046	0.046
Skill match		0.086***	0.085***		0.035*	0.035*
Second job		-0.029	-0.029		0.033	0.033
ln(Commuing)		-0.072***	-0.072***		-0.050***	-0.050***
Unpaid overtime		-0.202***	-0.202***		-0.091***	-0.091***
No overtime		0.015	0.015		-0.023	-0.023
Unsocial hours		-0.141***	-0.141***		-0.106***	-0.106***
Rigid schedule		-0.123***	-0.123***		-0.116***	-0.116***
Financial satisfaction*ln(Work hours)			-0.013			0.001
Constant	3.401***	3.053***	3.025***	7.123***	5.642***	5.643***
Number of observations	12774	10664	10664	16687	14692	14692
legend * p<.1, ** p<.05, *** p<.01						

Source: Isfol Plus panel dataset 2005-2010

Note (a): Reference modalities are “Centre” for geographical variables (“North”, “South and Islands”), “No health problems” for “Some health problems” and “Serious health problems”, “Degree” for Education variables, “Medium-skilled” for Occupation type variables, “Paid overtime” for “Unpaid overtime” and “No overtime”

Note (b): ln(Age), ln(Age2), ln(Income), ln(Work hours), ln(Commuting) respectively correspond to the natural logarithm of Age, Age squared, Income, Work hours and Commuting time. Mean(ln(Income)) is the mean over time, for each individual, of the natural logarithm of Income. The inclusion in all models of ln(Income) and Mean(ln(Income)) is aimed at representing respectively a “shock effect” (the role of changes from one year to another) and a “level effect” (the role of the stable level of income across the years).

Note (c) The definition of atypical workers is the “Type 3” definition provided by Isfol (2012).

Looking at common estimates results for low-income earners and high-income earners, first of all, it seems that workers in the North of Italy are more satisfied with their work time

arrangements than workers in the Centre. Secondly, in these models, as those in the previous empirical analysis on life satisfaction, age has a U-shaped relationship with satisfaction (the row *Minimum age* in Table 7 indicates the turning point). Other common results for the different income quintiles are the following: the relationship between work hours and work time satisfaction is negative and very significant (with higher coefficients for high-income earners) like the one between financial satisfaction and work time satisfaction (*first hypothesis*) and that between commuting time and work time satisfaction. Furthermore, workers doing unpaid overtime are less satisfied than workers doing paid overtime, irrespective of the quintile they belong to; the same negative relationships holds true for unsocial hours (i.e. the fact of working at night and during holidays) and rigid schedule arrangements. Finally, workers engaged in activities for which their education level is necessary (*Skill match*) seem to be more satisfied with their work time arrangements. The latter relationship is less significant for high-income earners, which can be linked to the presence of many entrepreneurs – who manage their tasks by themselves - in the top quintiles. As expected, also working in the public sector seem to have a positive relationship with work time satisfaction, irrespective of the position in the income distribution. The interaction between financial satisfaction and work hours, while suggesting a negative sign for low-income earners (i.e. a strengthening of the negative effect of work hours on work time satisfaction for those financially satisfied) and a positive sign for high-income earners (i.e. an attenuating impact on the negative effect of work hours on work time satisfaction for those financially satisfied) does not seem significant for neither of the two groups.

With reference to differing results between the two income groups, women seem to be less satisfied than men with their work time arrangements, only in the top income quintiles. Another factor which seems to be significant only for high-income earners has to do with the fact of having children, which surprisingly has a positive relationship with work time satisfaction. The signs relating to education do not appear coherent between the different models and, overall, not very significant. While the “shock effect” of income (see Note (b) of Table 7) does not appear significant in any model, the “level effect” seems to play a role, but only for low-income earners; this may be linked to their more burdensome financial conditions compared to high-income earners. Another differing result is related to overtime arrangements: for low-income earners both full-time workers and workers in a voluntary part-time seem to be more satisfied than

workers in involuntary part-time¹⁹, while no significant relationship emerge for high-income earners. As regards occupation type, a slightly significant positive relationship with work time satisfaction is registered for high-skilled workers in the bottom quintiles, while a negative one is registered for low-skilled workers in the top quintiles. Ultimately, atypical workers in the bottom quintiles seem to be more satisfied with work time arrangements; this may be due – given income levels - to the more flexible nature of their work time arrangements.

7. Conclusion

The increased pressure for time perceived in modern economies, resulting also from the evidence shown in this paper, calls attention not only to the relevance of how market and non-market hours distribute across individuals and income classes, but also to the inclusion of the time dimension among the fundamental aspects of subjective well-being.

Although a much longer time-span would be necessary in order to prove that a process of redistribution of working hours from “the poor” to “the rich” has taken place also in Italy in the last decades, overall, the figures shown in the paper seem to be quite in line with the evidence found for other countries according to which modern capitalist economies are characterised by a “rich working class” and a “poor leisure class”: we observe lower average work hours for the bottom income quintile (compared to other quintiles) together with a decreasing trend in the period 2005-2010.

The first empirical analysis seems to confirm the hypothesis put forward: a positive relationship between work hours and SWB is found only for high-income earners, while no significant relationship between these two variables is found for low-income earners. Furthermore, no “moderator effects” are detected, in contrast with what Pereira and Coelho (2013) suggest. By contrast, work hours seem to have a direct effect on SWB, even if this is not against social identity theory. Specifically, work hours may be “means” at the disposal of high-income earners to affirm their social role within their reference groups, in line with what other studies on time use and well-being maintain.

Finally, the models proposed to explain work time satisfaction suggest a negative relationship between *work time satisfaction* and *financial satisfaction*, irrespective of the position of workers in the income scale. Furthermore, other determinants (age, working in public sector,

¹⁹ Please note that, according to the figures presented in section 3, part-time workers are overrepresented in the first two income quintiles.

skill match, commuting time, working during unsocial hours and with a rigid schedule) seem to have a negative relationship with work time satisfaction, both for high-income earners and for low-income earners. However, the analysis also pointed out some factors which have a different impact for the two income groups. The most relevant are linked to gender and family variables - with female high-income earners less satisfied than men - and to the role of income levels as well as part-time arrangements , which seem to be important factors but only for low-income earners.

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Appendix A

Table 3a. Work hours and well-being: the effects of personal and occupational characteristics for the 4th and 5th income quintiles (output results in odds ratios)

	model i1	model i2	model i3	model i4
Personal characteristics				
<i>North</i>	0.879*	0.879*	0.882*	0.881*
<i>South and Islands</i>	1.046	1.045	1.047	1.047
Woman	1.196***	1.198***	1.198***	1.197***
Age	0.883***	0.873***	0.874***	0.874***
Age squared	1.001***	1.001***	1.001***	1.001***
Family type				
<i>In a couple with children</i>	1.945***	1.965*	1.945***	1.943***
<i>In a couple</i>	1.959***	3.117***	1.955***	1.961***
<i>Single-parent</i>	1.059	0.949	1.061	1.06
<i>Child in a family</i>	1.094	1.122	1.098	1.096
<i>Child of a single-parent</i>	0.613**	1.925	0.614**	0.613**
<i>Other</i>	0.974	0.62	0.979	0.978
Education				
<i>Upper secondary</i>	0.753***	0.757***	0.624	0.754***
<i>Degree</i>	0.666***	0.669***	0.539	0.666***
Income	0.999	0.999	0.999	0.999
Work hours	1.021*	1.011	1.016	1.011**
Occupational characteristics				
Rigid schedule	0.904*	0.906*	0.907*	0.999
Public sector	1.171**	1.169**	1.173**	1.169**
Other characteristics linked to work				
Commuting time	0.997**	0.997**	0.997**	0.997**
Interactions				
Age	1			
Family type				
<i>In a couple with children</i>		1		
<i>In a couple</i>		0.987		
<i>Single-parent</i>		1.003		
<i>Child in a family</i>		0.999		
<i>Child of a single-parent</i>		0.97		
<i>Other</i>		1.013		
Education				
<i>Upper secondary</i>			1.004	

<i>Degree</i>			1.004	
Rigid schedule				0.997
Number of observations	5001	5001	5001	5001
<i>legend * p<.1, ** p<.05, *** p<.01</i>				

Source: Isfol Plus panel dataset 2010

Note a): Reference modalities are “Centre” for geographical variables (“North”, “South and Islands”), “Single” for Family Type variables, “Lower secondary” for Education variables, “Medium-skilled” for Occupation type variables, “Paid overtime” for “Unpaid overtime” and “No overtime”. The definition of atypical workers is the one provided by Isfol (2012).

Note b): Income is in thousands, so odds ratios refers to a change of €1000 in income.