

Have Trends in Leisure Changed Across Cohorts?

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Abstract

Economic theories predict that with modernity and with the increase in standards of living, individuals will aspire for more leisure. However, the results of empirical studies which examined periodical trends in leisure time across developed countries do not confirm this presumption. The current study asks: If changes in leisure stem from ideational changes among different generations, will trends in leisure look different if examined across cohorts, or if measured differently? By integrating theoretical definitions of leisure taken from economics, sociology, and psychology, this research derives four macro-level empirical measures of leisure from various sources. These measures are used to analyze the contribution of population turnover to changes in leisure, in developed countries, using linear regression decomposition method. Our results show an almost unequivocal increase in leisure across cohorts, across 159 country-periods, suggesting that new policies supporting domestic consumption are warranted.

Introduction

Economic theories predict that with modernity and with the increase in standards of living, individuals will aspire for more leisure. By applying Maslow's theory of changing needs (Maslow 1943) to populations and societies, different scholars have suggested that as populations become wealthier and more educated attention shifts from basic needs associated with survival, security, and solidarity to individual self-realization, recognition, gender equality, independence, expressive work, and higher consumption and leisure aspirations (Inglehart 1977, 1997; Gershuny 2000; Lesthaeghe 2010, 2014). Patterns of consumption are also expected to change in accordance with Engel's Law, from basic necessities to luxury goods such as leisure and services (Esping-Andersen 1990: 193). The expectation for a growth in leisure was expressed as early as 1930, in Keynes's essay "Economic Possibilities for Our Grandchildren," where he predicted that economic growth and technological change would result in a decline in working hours and in large increase in leisure over the next 100 years (Keynes [1930] in Piga and Pecchi 2008). Bauman (2001), who writes about the "consumer society" and the "consumerist culture" that comes with modernity, continues this line of argument and claims that what has changed with modernity is that previously consumption was instrumental and functional while in the consumer society consumption does not need to justify itself and is done solely to gain pleurability. Veblen's (2009) theory of the leisure class, published originally in 1899, which connects between conspicuous consumption and leisure, is also in line with this argument. Veblen writes: "From the days of the Greek philosophers to the present, a degree of leisure and of exemption from contact with such industrial processes as serve the immediate everyday purposes of human life has ever been recognized by thoughtful men as a prerequisite to a worthy or beautiful, or even a

blameless, human life. In itself and in its consequences the life of leisure is beautiful and ennobling in all civilized men's eyes" (Ibid. p. 29). Inglehart's (1997) claim that in an age of increasing post-materialism many household strategies are based on alternative values such as the search for more satisfactory lifestyles and leisure time is also in line with this argument. More recently, Gershuny (2000) expressed his expectation that the time spent in leisure will increase over time because "society may need more leisure time to consume its growing product to stimulate the consumption that creates more jobs" (Ibid. p. 8).

Empirical literature demonstrates that starting in the mid-1960s, a dramatic change in the time devoted to leisure has occurred, over time, in different developed countries (Gershuny 2000; Aguiar & Hurst 2007; Greenwood & Vandenbroucke 2008; Gimenez-Nadal & Sevilla 2012). By defining leisure as the time individuals spent socializing, volunteering, gardening, in passive or active leisure, and pet care, as well as the time spent sleeping, eating, and personal activities (excluding medical care), these cross-sectional examinations do not show a conclusive trend in leisure. According to these studies, American and Finnish men and women and Australian and British men have experienced a dramatic increase in leisure between the 1970s and the 2000s, while women in the Netherlands, the U.K., Norway, and Canada experienced a decline in leisure over time, as did men from the Netherlands and Norway (see results for the US in Aguiar & Hurst (2007) and results for the other countries in Gimenez-Nadal & Sevilla (2012)). Therefore, these empirical findings do not provide support for the theoretical expectation of increase in leisure.

Gershuny (2000) notes that economic development as a term is misleadingly limited because cultural change, change in habits, in beliefs, and in values are also part of this process; so that economic development and values change are inextricably linked. In their model of

ideational change, Lesthaeghe & Surkyn (1988) claim that ideational change is characterized by two main features: it is cohort-driven and education-driven; and there is also a period-cohort interaction because idealization is affected by institutional regulation. In line with the cohort-driven ideational model of Lesthaeghe & Surkyn (1988) and the theories discussed above that predict an increase in aspirations for leisure, the current research asks: If changes in leisure stem from ideational changes among different generations, will trends in leisure look different if examined across cohorts rather than over time, or if measured differently? More specifically, we ask whether trends in leisure are positive across cohorts and what is the role of cohort replacement in explaining changes in leisure over time.

Because leisure has multifaceted meanings, it should be measured using diverse measures that capture its different facets. In the next section, four theoretical definitions of leisure will be presented, based on economic, sociological, and psychological literature. Later, four different empirical measures of leisure are derived based on the theoretical definitions of leisure. Using these measures, the contributions of intra-cohort change and population turnover to change in leisure in 37 developed countries are then analyzed using linear regression decomposition method advanced by Firebaugh (1989; 1997; see also Firebaugh & Davis (1988)). Based on the empirical results, the implications of change in leisure for policy and other domains are discussed. Thus, this research elaborates on previous research on leisure by providing a broad and multidisciplinary discussion on the meaning of leisure and by providing, for the first time, a systematic empirical analysis of the change in leisure across cohorts, in a large number of developed countries, using four empirical measures of leisure.

What is Leisure?

Multiple theoretical definitions of leisure exist, and although they intersect, ultimately each definition relates to different characteristics of leisure and suggests a different operational definition for it. Because leisure has multifaceted meanings, it is important to use multiple indicators to measure it, as each measure by itself captures only a limited scope of this phenomenon. Based on economic, psychological, and sociological literature four definitions of leisure have been identified.

Leisure as Time-Use

It is well established that 'leisure time' or 'free time' is the residual that remains after taking account of the time that people have committed to paid work, unpaid work, and personal care (e.g. Gershuny 2000; Goodin et al. 2005). Leisure time has also been labeled as discretionary time, as opposed to the other time uses mentioned above, which are considered unavoidable or obligatory activities (Becker 1965; Goodin et al. 2005). Gimenez-Nadal & Sevilla (2012) present two approaches to distinguish between time-use categories, the "means vs. ends" approach and the "third person" approach. The first approach includes in leisure time only activities that are pursued solely for direct utility (i.e. enjoyment), such as television watching, leisure reading, going to parties, etc. The third person criterion excludes from the definition of leisure those activities that can be carried out by a third party without losing the intended utility for the consumer. These two approaches involve questionable assumptions such as that the enjoyment derived from work can be ignored and that all leisure time is perceived as enjoyable (Gimenez-Nadal & Sevilla 2012; Sevilla et al. 2012). Aguiar & Hurst (2007) demonstrate that the

categorization of different activities into the four major time-use categories is not always straightforward. For example, gardening can be perceived as a hobby (and therefore should be categorized as leisure) or it can be perceived as domestic work (and therefore categorized as unpaid work). There is also a disagreement as to whether childcare should be categorized as leisure or as unpaid work (Guryan et al. 2008).

Leisure as Domestic Consumption and Expenditures

In his seminal theory on the allocation of time, Becker (1965) presents his household production model and distinguishes between work and non-work uses of time. He stresses that goods as well as time serve as inputs in the production of commodities during non-work time, which he also terms consumption time and leisure time. Time and goods are regarded as substitutes for each other and each commodity uses different proportions of the two, so that there are commodities that are more time-intensive and commodities that are more goods-intensive. For example, reading a book is more time-intensive while sending a child to a private summer school is more goods-intensive. This is because the former requires more time per dollar of goods and in the latter, the cost per unit of time is higher. According to Becker, an increase in earnings and an increase in the relative cost of time will make individuals choose goods-intensive commodities over time-intensive commodities, so that more time can be devoted to work-time. From this proposition one can derive that an increase in the relative cost of time will result in the decline of time-use of leisure and an increase in expenditures for goods used for leisure commodities. A decline in the *time-use* of consumption and leisure is also expected due to a secular growth in capital and technology that improves the productivity of consumption time (Becker 1965: 506).

In an extension of the theory of the allocation of time, Gronau (1977, 1986) claimed that Becker's definition of "non-market time" did not distinguish between cleaning, shopping, and other household chores, which are home production time (i.e. unpaid work) and leisure activities, which are home consumption time (i.e. leisure). Instead, Gronau (1986), taking an approach similar to the "third person" approach, defined work at home (i.e. unpaid work) as an activity one could hire someone else to do, while it would be almost impossible to enjoy leisure vicariously using market substitutes (Ibid, p. 282). Another consumption theory, the transaction cost approach to households (Self-reference 2014), suggests that both the public and the commercial sectors provide services that are close substitutes to domestic production, and households in developed countries are increasingly outsourcing unpaid work. Therefore, by purchasing services, households substitute goods for time and outsource time-intensive domestic activities in order to free time for either earnings-intensive activities in the labor market, or for leisure. Moreover, the consumption of certain market goods can also reduce unpaid work, if these goods replace goods that otherwise would have been produced by the household members. This is assuming that individuals derive no direct utility, psychic benefits, or process benefit from producing the goods themselves (Pollak 2012). It is derived from Becker's (1965) theory that a decision to use outsourcing to substitute unpaid work with paid work rather than with leisure time may result in the use of more goods-intensive rather than time-intensive leisure. Therefore, expenditures on leisure may increase while time devoted to leisure may remain unchanged or even decline. Following Gronau's (1977, 1986) distinction between work at home and leisure, expenditures on services that are close substitutes to domestic production will not be considered as expenditures on leisure. Rather, expenditures on commodities that

provide direct utility (i.e. enjoyment) to the consumer can be regarded as leisure-related expenditures. These expenditures can serve as a proxy of the consumers' revealed preferences for leisure (Samuelson 1948).

Leisure as a Lifestyle Choice

A lifestyle choice is a choice a person makes about how to live and behave, according to his or her attitudes, tastes, and values. The definition of leisure as a lifestyle choice suggests that aspirations for leisure are reflected, among other things, by the way individuals value leisure and the importance they grant to it. Both sociological and economic theories have acknowledged the role of tastes and values in shaping individuals' behavior. Sociologists have analysed leisure from different theoretical perspectives. Roberts (1978; 1999), for example, claims that societies are composed of different taste publics who are able to fashion life-styles reflective of their different interests and circumstances. Roberts acknowledges that uses of leisure are related to social class, but emphasizes that other bases of social differentiation, such as age, sex, marital status, and education, are also social determinants of leisure conduct. Hakim (2000) argues that starting in the 20th century there was an increase in the importance of attitudes, values, and personal preferences in the lifestyle choices of prosperous, liberal, modern societies. These changes have opened new options and opportunities for women, but they varied in timing and pace, even between European countries. Hakim's (2000; 2003) preference theory suggests that women are heterogeneous in their preferences and priorities with regards to the conflict between family life and employment. Therefore, it is reasonable to assume that women are heterogeneous also with regard to their leisure preferences. According to Pollak (2012), the early single-person

households model and altruist model of the economists of households (e.g. of Becker 1965; 1991) ignored the possibility of multiple-person households, with multiple preferences of the household members. In his multiple-person household framework, Pollak (2012) stresses the importance of the tastes of individual household members. He argues that individuals' preferences specify the objective functions that individuals seek to maximize, and that family members may bargain in order to maximize their own utility. Therefore, household members may differ in their aspirations for leisure, and disparities and disagreement may exist between partners with regards to leisure. Such disparities in leisure between partners have been found to reduce marital quality and the degree of satisfaction achieved in the marital relationship (Crawford et al. 2002; Claxton & Perry-Jenkins 2008).

Values exist beyond the individual level. In his theory of cultural value orientations, Schwartz (2006) argues that values are also reflected and shaped at the macro, institutional level. He suggests that one of the dimensions that differentiate one culture from another is that of "autonomy versus embeddedness." This dimension defines the extent to which people are autonomous or embedded in their groups. In autonomy cultures, people are viewed as autonomous entities who are expected to cultivate and express their own preferences, feelings, ideas, and abilities, and find meaning in their own uniqueness. Autonomy includes both intellectual and affective components, so that the affective component encourages individuals to pursue affectively positive experiences for themselves and emphasizes values such as pleasure and an exciting, varied life. On the other hand, cultures that promote embeddedness value social order, respect for tradition, security, obedience, and wisdom (Schwartz 2006). It is in this dimension that a society's emphasis on leisure is reflected (Schwartz 1999).

The definition of leisure as a lifestyle choice emphasizes the connection between individual aspirations and tastes and personal values. Unlike the other measures of leisure, this definition is less affected by monetary or time constraints and is perhaps the best proxy for individuals' aspirations for leisure. Empirically, it suggests that individuals' and societies' aspirations for leisure can also be operationalized by measuring leisure-related values (e.g. in Jeffres & Dobos 1993; Twenge 2010; Twenge et al. 2010; Verbakel 2013).

Leisure as an Experience

Both sociologists, psychologists, and economists have acknowledged the need to distinguish between the way people use their time and the way they experience the activities done (e.g. Juster and Stafford 1991; Gershuny 2000; Kahneman et al. 2004). Cushman and Laidler (1990) argue that leisure is primarily a condition, sometimes referred to as a state of being, an attitude of mind, or a quality of experience. It is distinguished from other time-uses by the individual's perceived freedom to act and by the fact that it is an act that is not imposed by necessity. Moreover, it is assumed to be pleasurable and, although its appeal may be due to certain anticipated benefits, it is intrinsically motivated: it is an end in itself and valuable for its own sake. Therefore, choice, freedom, and voluntarism are the basic components of leisure (Rojek 2005). According to this definition, sleep cannot be categorized as leisure because it is a necessity, although a certain amount of time spent in this activity may result from a free choice (Gimenez-Nadal & Sevilla 2012; Sevilla et al. 2012). Following this perception, activities that are no longer a necessity but are done by choice (such as baking bread, home gardening, etc.) are growingly perceived as leisure activities rather than unpaid work.

Economists referred to the experience of leisure as process benefits, experienced utility, psychic benefits, and process preferences (Pollak 2012; Sevilla et al. 2012). As for process benefits, Juster and Stafford (1991) claim that in the production process there is a need to distinguish between the output that can be consumed also at a later time and between the direct benefit achieved in the time-use of an activity. A feeling of intrinsic satisfaction and enjoyment during the production process, therefore, yields high process benefits for the individual. According to Juster and Stafford (1991), these process benefits and the final output are two distinct components of the utility function of an individual.

It is important to note that the definition of leisure as time-use and the definition of leisure as an experience may not always overlap. As Gershuny (2000) and Gronau (1986) note, sometimes leisure time might not be experienced as leisurely, while some jobs may have leisure-like quality. Therefore, the availability of leisure time and the quality of leisure should be regarded as two distinct characteristics of leisure, as has also been discussed in previous research (Sullivan 1997; Bittman & Wajcman 2000; Mattingly & Bianchi 2003; Sevilla et al. 2012). The quality of leisure is affected by its duration, rhythm, intensity, context, and density (Sullivan 1997; Gimenez-Nadal & Ortega-Lapiedra 2010; Passias et al. 2017). Empirically, previous literature measured whether leisure is experienced as leisurely either by asking respondents to report their feelings in general and their enjoyment in particular (e.g. in Kahneman et al. 2004; Krueger 2007; Gershuny 2013); or by measuring to what degree the leisure is contaminated by other activities; whether it is socially isolated; whether it is fragmented, and how long each leisure episode lasts (e.g. Sullivan 1997; Bittman & Wajcman 2000; Sevilla et al. 2012; Jarosz 2016; Passias et al. 2017).

Method

Data and Leisure Measures

Based on the definitions of leisure discussed above, the current research suggests that trends in leisure can be captured by the time individuals spent in leisure, by the share of leisure-related expenditures out of total expenditures, and by the importance individuals grant to leisure in their life. These operational definitions measure *leisure as time-use*, *leisure as domestic consumption and expenditures*, and *leisure as a lifestyle choice*, respectively. Because we aim to examine change in leisure at the macro-level - of birth cohorts within country-periods - we use macro-level measures of leisure that are already weighted by population sizes and are adjusted by age and year. Such macro-level indicators are available for three out of the four leisure measures described below.

Leisure as time-use - Macro-level indicators of the average hours per day spent in leisure by age group are derived for ten European countries, based on macro-level indicators produced by Eurostat (European Commission 2019) based on time-use surveys. For the United States we use a similar measure based on macro-level indicators produced by the U.S. Bureau of Labor Statistics (2019) based on the American Time Use Survey (ATUS). Only countries for which time-use data is available for at least two periods were included in the analysis. From Eurostat, activity codes AC4-8 were included, to capture the time spent in leisure, social, and associative life. These activities include organizational work related to social life, informal help to other households, participatory activities, visiting and feasts, other social life, entertainment and culture, resting, walking and hiking, sports and outdoor activities, computer games, computing, hobbies and games, reading, TV and video, radio and music, and unspecified leisure. From ATUS, categories

capturing leisure and sports were included: socializing and communicating, attending or hosting social events, relaxing and leisure, watching TV, relaxing and thinking, playing games, computer use for leisure, reading for personal interest, arts and entertainment, participating in sports, exercise, and recreation, walking, attending sports or recreational events, and travel related to leisure and sports.

Leisure as domestic consumption and expenditures - Time-series of the share of leisure-related expenditures out of total expenditures by age, in 30 European countries, are calculated based on macro-level indicators produced by Eurostat based on the household budget survey. For the U.S., the same measure is calculated based on macro-level indicators produced by the U.S. Bureau of Labor Statistics from the Consumer Expenditure Survey. We rely on the United Nations' (2018) classification of individual consumption according to purpose (COICOP) to define leisure-related expenditures, and compute two measures of expenditures. The first measure captures the share of expenditures on recreation, sports, and culture out of total expenditures (COICOP code 9). This measure includes expenditures on recreational durables, other recreational goods, garden products and pets, recreational services, cultural goods and services, newspapers, books and stationery, and package holidays. The second measure, captures the share of expenditures on recreation, sports, and culture as well as expenditures on restaurants and accommodation services (COICOP codes 9 & 11). It adds to the first measure expenditures on food and beverage serving services as well as expenditures on accommodation services.

Leisure as a lifestyle choice - In order to measure the importance individuals grant to leisure in their life, we use micro-level data for 21 developed countries, from the World Values Survey (WVS 2019). In this survey, respondents are being asked to rank, among other things, how

important leisure time is in their life. The original scale ranges from 1 ('very important') to 4 ('not at all important') and we use a reversed scale of this question as a dependent variable, so that a higher average represents a greater importance granted to leisure time.

Lists of the countries, sample sizes and time periods observed from each database are available in Tables 1 to 4. Table A in the Appendix details the list of countries, survey years, and range of birth cohorts available from each source of data.

Empirical Strategy

In order to measure whether trends in leisure have been positive across cohorts, we use the linear decomposition technique for repeated cross-sectional data advanced by Firebaugh and Davis (1988) and by Firebaugh (1989; 1997) and applied to repeated cross-sections by Brewster & Padavic (2000). Using this method, we estimate the magnitude of cohort replacement effect in the observed changes in leisure. Trends in leisure may represent a social change. Because leisure has economic, psychological, and ideational bases, observed aggregated changes in leisure may be affected by both intra-cohort change (due to age effects or period effects) and by a change driven by cohort-replacement. A positive change driven by cohort replacement would point to a turnover in the population, so that older cohorts with lower aspirations for leisure die off and are replaced by younger cohorts, with higher aspirations for leisure. Moreover, cohort replacement can recover some or all of the periodical decline in aspirations for leisure, which is due to intra-cohort change.

As described above, the measures of leisure as a time use and the two measures of leisure as expenditures rely on macro-level aggregated averages calculated by age and year. These group means are the sum of subgroup means weighted by their population share. Linear decomposition treats cohort as a continuous measure of year of birth (Firebaugh 1997:24). Because the macro-level leisure measures are provided only in grouped age categories,¹ in order to compute a continuous variable of birth cohort we use a continuous variable of age and the year of data collection to calculate the birth year related to each individual age in each survey year. In the next step, we assign a constant leisure value for each individual birth year within each age group, according to the average level of leisure of the age group, assuming no growth within each group. The sample size for each country then represents the number of unique pairs of birth cohort within survey year. Using OLS regression, we then regress each leisure measure on birth cohort and survey year:

$$Leisure_{jt} = \beta_0 + \beta_1 * Survey\ year_t + \beta_2 * Birth\ cohort_{jt} + e_{jt} \quad (1.1)$$

where $Leisure_{jt}$ is the average value of leisure for the j^{th} cohort in the t^{th} survey year, β_0 is the estimated intercept, β_1 is the estimated within-cohort slope, β_2 is the estimated cross-cohort slope, $Survey\ year_t$ is the year of measurement in the t^{th} survey, and $Birth\ cohort_{jt}$ is the birth year of the j^{th} cohort in the t^{th} survey. For the leisure measure of leisure as a lifestyle choice,

¹ Macro-level indicators are provided by age groups according to the following: US time-use data - 15-24, 25-34, 35-44, 45-54, 55-64, 65-74; Eurostat's time-use data - 15-19, 20-24, 25-44, 45-64, 65-74; US Expenditures data - 15-24, 25-34, 35-44, 45-54, 55-64, 65-74, 75-84; Eurostat's expenditures data - 14-29, 30-44, 45-59, 60-74.

which relies on the micro-level data available in the World Values Survey, the following equation applies:

$$Leisure_{it} = \beta_0 + \beta_1 * Survey\ year_{it} + \beta_2 * Birth\ cohort_{it} + e_{it} \quad (1.2)$$

where $Leisure_{it}$ is the average value of leisure for the i^{th} respondent in the t^{th} survey year, β_0 is the estimated intercept, β_1 is the estimated within-cohort slope, β_2 is the estimated cross-cohort slope, $Survey\ year_{it}$ is the year of measurement of the i^{th} respondent in the t^{th} survey year, and $Birth\ cohort_{it}$ is the birth year for the i^{th} respondent in the t^{th} survey. The linear decomposition of the last measure uses weighted regressions to correct for population sizes.

Following Davis and Firebaugh (1988) and Firebaugh (1997), we note the following assumptions at this point: (a) a trend in leisure is a monotonic change in the mean measure of leisure between survey years; (b) cohorts differ in their aspirations for leisure; (c) linearity is assumed for the cross-cohort and intracohort slopes. In the current research, the OLS regression is run separately for each leisure measure and for each country. When we observe a non-monotonic development of the trend in leisure within a country (i.e. that the effect of survey year (β_1) changes direction between different periods within a country or that the linearity test for the whole period within a country yields bad results) the linear regression is run separately for each country-period in which there is a monotonic change in leisure.

Using the regressions' results, we then weight β_2 by change in the birth-cohort mean, and β_1 by change in survey year. If the cohort-to-cohort change in leisure is linear, the cohort-replacement component from time t to time $t + k$ is calculated by multiplying the change in the population's average birth year from time t to time $t + k$ by the expected change in leisure from

the j_{th} to the $(j+1)_{st}$ cohort (i.e. by β_2). In order to estimate the intracohort change, we multiply the coefficient for survey year (β_1) by the number of years from the first survey to the last survey in each country-period.

Overall, we decompose trends in leisure for 159 country-periods, using the four different definitions of leisure described above. The results of these decompositions are presented in Tables 1-4. Each table presents the following information (according to the following order): country and period; number of observations (N); mean value of leisure in the last year of the specified period (Y_t); mean value of leisure in the first year of the specified period (Y_0); the total observed change (i.e. $Y_t - Y_0$); the regression coefficient for year of survey (β_{year}); the significance level of the coefficient for year of survey (sig. β_{year}); the regression coefficient for birth cohort (β_{cohort}); the significance level of the coefficient for birth cohort (sig. β_{cohort}); the birth-cohort mean in the last year of the specified period (C_t); the birth-cohort mean in the first year of the specified period (C_0); The within-cohort change (i.e. $\beta_{year} * (YEAR_{max} - YEAR_{min})$); the cohort-replacement effect (i.e. $\beta_{cohort} * (C_t - C_0)$); the total expected change (i.e. within-cohort change + cohort-replacement effect); and the expected/observed change. The last column, which presents the ratio between the expected and the observed change is meant to test whether the linearity and additivity assumptions hold. According to Firebaugh (1997), the expected change typically does not sum exactly to the observed aggregate change. However, the discrepancies between them should not be large, because large discrepancies call into question the linear-additive assumption and signal that another decomposition method should be used. In the last column of Tables 1-4, if the linearity and additivity assumptions hold and the expected change is fully identical to the observed change, the ratio between them is equal to 1.

As was mentioned above, it is most probable that trends in leisure are driven by both cohort-replacement and intracohort changes. Using the linear decomposition method for repeated cross-sectional data, the current research aims to estimate the relative importance of cohort replacement in driving the observed changes in leisure. This is in order to analyze whether aspirations for leisure have increased across cohorts, as demographic, sociological, and economic theories suggest. The partition of the intracohort change into its age and period components is beyond the scope of this paper. Moreover, testing specific hypotheses regarding cohort-replacement's effect through different mechanisms (e.g. education, socio-economic status, etc.) is also beyond the scope of the current research, which focuses on “whether” cohort replacement explains trends in leisure and not on “why” it is so.

Results

The results described in this section rely on Tables 1 to 4, and on Figures 1 to 4. Each corresponding Table and Figure present the results for each of the four leisure measures described above. The figures summarize the results presented in the tables in the following way: the horizontal black lines describe a positive observed change in leisure, i.e. an increase in leisure in the observed country-period; the horizontal grey lines describe a negative observed change in leisure, i.e. a decline in leisure in the observed country-period. The percentage appearing on each line represents the percent of change explained by cohort replacement² (when the year and cohort effects go in the same direction, i.e. both are either positive or negative) or the percent

² The percent of change explained by cohort replacement is calculated by dividing the cohort replacement effect by the total expected change.

recovered due to cohort replacement effect³ (when the year and cohort effects go in opposite directions, i.e. one has a positive sign and the other has a negative sign). The results described below refer to country-periods. In countries where there was a non-monotonic change in leisure, the decomposition results in the tables are presented for both the total period and for the within-country periods in which the change is monotonic. When we refer to the total number of country-periods for each measure, we only refer to the periods in which the change is monotonic (i.e. lines with 'Total' are not counted as country-periods).

Table 1 and Figure 1 present the results for *leisure as time-use*, i.e. the results of the decomposition of the average number of hours per day spent in leisure. Similar to previous studies that analyzed periodical change in leisure time (e.g. Aguiar & Hurst 2007; Gimenez-Nadal & Sevilla 2012), we find that the periodical change in leisure time differs between countries - the observed change is positive in four out of the 12 country-periods and is negative in the remaining eight country-periods. Moreover, β_{year} is insignificant in six out of 12 country-periods, controlling

[Table 1 about here]

for birth-cohort. However, the regression results concerning the cohort-effect are unequivocal - the coefficient of the cohort effect is negative and significant for all the country-periods, meaning that the time spent in leisure is declining across cohorts. As can be seen in Figure 1, cohort replacement explains more than 50 percent of the change in leisure time across the 12 country-periods, so that in half of the country-periods cohort replacement explains all the change in leisure time and accounts for more than 100 percent of the change (e.g. in Finland, Italy, Norway,

³ The percent recovered due to cohort replacement is calculated by dividing the cohort replacement effect by the inverse value of the "within cohort change."

Poland, Spain, and the U.K.). The negative cohort replacement effect may be seen as contradicting the theoretical expectation for an increase in leisure. However, if the relative cost of time is increasing across cohorts, the negative cohort effect related to leisure time may be in line with expectations raised by the home economists that an increase in earnings and an increase in the relative cost of time will make time-intensive commodities less attractive for individuals (Becker 1965; Gronau 1986). According to this reasoning, time spent in leisure is expected to decline rather than increase across cohorts, in order to leave more time to work. If the negative cohort-effects we find in our results indeed support the presumption of the home-economists, this strengthens the need to measure and analyze other facets of leisure, in order to capture (positive) trends in leisure across cohorts.

[Figure 1 about here]

The results related to the linear decomposition of trends in the share of expenditures on recreation and leisure out of total expenditures are presented in Table 2 and Figure 2. We find that the periodical change in these expenditures differ profoundly between and within countries, so that these type of expenditures have significantly increased over time in 50 percent of the country-periods, i.e. the year effect is positive and significant in 31 out of 62 country-periods. In a similar number of country-periods the year effect is negative and significant (see Table 2). However, the results concerning the cohort effect are again more unequivocal, so that the cohort effect is found to be positive in 90 percent of the country-periods and is positive and significant in 79 percent of the country-periods (i.e. in 49 out of 62 country-periods).

[Table 2 about here]

Figure 2 demonstrates that cohort replacement explains 3 to 78 percent of the change in expenditures on recreation and leisure in different country-periods. We find that cohort replacement explains on average 26 percent of the change in these expenditures on leisure, in periods where the periodical trend is positive; and explains on average 19 percent of the change in these expenditures, at times when the periodical trend is negative. In certain periods in Denmark, Finland, France, Lithuania, and the U.S. (5 country-periods overall), cohort replacement accounts for more than 50 percent of the change in these leisure expenditures.

[Figure 2 about here]

When we take into account not only expenditures on recreation and leisure but also expenditures on restaurants and hotels, the results differ (see Table 3 and Figure 3). In 43 percent of the country-periods these expenditures have significantly increased over time, and in 52 percent of the country-periods these expenditures have significantly declined over time. The results concerning the cohort effect are, however, almost unequivocal. In 96 percent of the country-periods (54 out of 56 country-periods) the cohort effect is positive and in 93 percent of the country-period it is positive and significant.

[Table 3 about here]

Figure 3 demonstrates that the average contribution of cohort replacement to the change in expenditures on recreation, leisure, restaurants, and hotels is 47 percent and ranges between four percent to 447 percent. We further find that cohort replacement contributes on average 58 percent to the change in these leisure-related expenditures, in periods when the periodical trend is positive; and explains on average 37 percent of the change in these expenditures, at times

when the periodical trend is negative. In 14 country-periods (25 percent) cohort replacement accounts for more than 50 percent of the change in these leisure expenditures.

Therefore, when we measure trends in leisure by the share of leisure-related expenditures out of total expenditures, rather than by the time spent in leisure, the results point to an increase in leisure across cohorts. Both the negative cohort-effects related to leisure as time-use and the positive cohort-effects related to leisure as expenditures are in line with the predictions set by the home economists (Becker 1965), if with the increase of the relative cost of time across cohorts, individuals choose goods-intensive over time-intensive commodities or leisure.

[Figure 3 about here]

The results of our last leisure measure, which captures *leisure as a lifestyle choice*, are presented in Table 4 and Figure 4. The total observed change in the importance granted to leisure in one's life is found to be positive in 20 out of 29 country-periods (69 percent), β_{year} is found to be positive in 14 country-periods (48 percent), and is positive and significant only in 8 country-periods overall. Therefore, controlling for birth-cohort, the importance granted to leisure has significantly increased over time only in 28 percent of the country-periods observed. The cohort effect (β_{cohort}), on the contrary, is found to be positive in 28 out of 29 country-periods (i.e. in 97 percent of the country-periods), and it is positive and significant in 90 percent of the country-periods. Cohort effects are found to be positive and significant in all the examined countries apart from the US, where the cohort effects are insignificant in the three country-periods examined.

[Table 4 about here]

Figure 4 demonstrates that the average contribution of cohort replacement to the change in the importance granted to leisure in one's life is 45 percent and ranges between six percent to 126 percent. Cohort replacement explains on average 49 percent of the change in the importance granted to leisure, in periods when the observed change is positive; and on average 32 percent of this change at times when the observed change is negative. In 10 country-periods (35 percent) cohort replacement accounts for more than 50 percent of the change in the importance granted to leisure in one's life.

[Figure 4 about here]

A summary of the results described above, across leisure measures and country-periods, is available in Table 5.

[Table 5 about here]

Conclusions and Discussion

In this study, we ask whether trends in leisure are positive across birth cohorts. Four theoretical definitions for leisure are derived, based on economic, sociological, and psychological literature. Each of these definitions captures a different facet of leisure. Based on these definitions, we derive four empirical measures that capture leisure as time-use, leisure as expenditures and domestic consumption, and leisure as a lifestyle choice. Using a linear decomposition technique for repeated cross-sectional data advanced by Firebaugh and Davis (1988) and by Firebaugh (1989; 1997), we estimate the magnitude of cohort replacement effect in the observed changes in leisure. A positive cohort replacement effect would point to an increase in leisure among later cohorts.

Our results clearly show almost unequivocal significant cohort-effects across four leisure measures and across 159 country-periods. We find significant negative cohort effects across all country-periods for the average hours per day spent in leisure; and significant positive cohort effects for the great majority of the country-periods when measuring leisure as expenditures (two measures overall) and when measuring leisure as a lifestyle choice. Therefore, the time spent in leisure has declined across cohorts while leisure-related expenditures and the importance individuals grant to leisure in their life have increased among younger generations. We further find that the average contribution of cohort replacement to the change in leisure ranges between 23 percent to 439 percent across leisure measures. Moreover, cohort replacement is the more important component driving the societal change in leisure (i.e. explains more than 50 percent of this change) in 100 percent of the country-periods, when leisure is measured as the time spent in leisure; in 8-25 percent of the country-periods when leisure is measured as the share of leisure-related expenditures out of total expenditures; and in 35 percent of the country-periods when leisure is measured as the importance granted to leisure in one's life. Similar to previous empirical studies (e.g. Aguiar & Hurst 2007; Gimenez-Nadal & Sevilla 2012) we do not find systematic periodical trends in leisure (see Table 5).

Although it seems that our findings concerning the decline in the time spent in leisure across cohorts are not in consensus with the results concerning the other three leisure measures, which show positive cohort effects and an increase in leisure across cohorts, we suggest that these findings are not necessarily contradictory. If the relative cost of time and the importance of earnings for income are increasing across cohorts (an assumption that needs to be tested in a future research), our results support the supposition derived from Becker's (1965) theory of the

allocation of time that consumption in later cohorts will be shifted from time-intensive commodities to goods intensive commodities. In other words, because leisure time is perceived as time-intensive and earnings-intensive, individuals in later cohorts will spend less time in leisure (in order to devote more time to work), but will increase the share of leisure-related expenditures out of their total expenditures (because they have the money but not the time to enjoy leisure). So, taken altogether, we conclude that our findings provide support for an increase in leisure across cohorts.

Why is it important to consider trends in leisure across cohorts? Leisure participation, leisure satisfaction, and leisure attitudes have frequently been reported as having the most positive and significant influence on individual quality of life and subjective well-being (Argyle 1996; Lloyd & Auld 2002; Leung & Lee 2005). Moreover, leisure quantity and quality are often used as measurable indicators of social integration and physical and mental health (Ashe et al. 2008; Stern & Munn 2010; Grøntved & Hu 2011; Craig & Mullan 2013). Becker (1965) also suggests that leisure, among other things (such as sleep and food), is required for efficiency and that some time (and other resources) would have to be spent on leisure activities in order to maximize money income. He further claims that households in richer countries forfeit money income in order to obtain additional utility, i.e., they exchange money income for a greater amount of psychic income (Ibid, p. 498).

From a macro-economic point of view, households' consumption is an essential part of the circular flow of income and expenditures. Household members receive income from firms and governments and either save their disposable income or spend it by consuming services and

goods (McEachern 2009). Leisure time is required in order to consume products, and the stimulation of consumption allows the creation of more jobs (Gershuny 2000).

From a demographic perspective, higher aspirations for leisure across cohorts may explain many of the family changes that have come to be known as the second demographic transition (SDT) behaviors (Lesthaeghe 2010). The rise in SDT behavior in developed countries, which includes declines or delays in marriage, spread of cohabitation, increases in union dissolution, postponement of childbearing, and an increase in childlessness, among other phenomena, has been connected to unprecedentedly low levels of childbearing in these countries (Billari and Kohler 2004; Lesthaeghe and Neidert 2006; Sobotka 2008). A long-term decline in cohort fertility rates has also been documented across developed countries for women at the end of childbearing ages (Frejka 2008; Frejka and Calot 2001; Hellstrand et al. 2019; Myrskylä et al. 2013; Zeman et al. 2018), suggesting that younger cohorts change their family-related behavior and life-course transitions, relative to older cohorts. Time invested in paid work and unpaid work competes with the time individuals can devote to leisure. It was found in previous research that parents have less leisure time and the quality of their leisure is lower relative to individuals with no children (Bittman and Wajcman 2000; Goodin et al. 2005), and that both parents experience a decline in the quantity of available leisure time with the transition to parenthood (Cantwell & Sanik 1993; Knoester & Eggebeen 2006; Claxton & Perry-Jenkins 2008). If individuals anticipate that a family change may reduce the quantity and quality of their leisure time due to the increase in unpaid work, they may delay or forgo making such family changes. For example, anticipated or actual decline in leisure may lead individuals to postpone leaving the parental home and/or co-residing with a partner. Anticipated or actual decline in leisure may also

make individuals delay or forgo (additional) childbearing. As noted above, if this is indeed the case, the increase in aspirations for leisure across cohorts may be a driver of many SDT behaviors, as these behaviors are believed to be driven by cultural change in preferences, values, and ideational goals (Lesthaeghe 1983; Lesthaeghe and Van de Kaa 1986; Lesthaeghe and Surkyn 1988) and cultural changes are believed to be cohort-driven (Lesthaeghe and Surkyn 1988).

Our findings have policy implications. The great majority of current family-policies and reconciliation policies are aimed at supporting families' unpaid-work that is meant to be done during working hours. Childcare facilities, for example, take care of children at the time of the day when their parents are supposed to be at work. Unpaid work that is meant to be done after working hours is left to the responsibility of the household members, and competes with their leisure time. We find that leisure time is declining across cohorts. Thus, on top of the already relatively established family policies that support domestic production, new family and reconciliation policies are needed in order to also support domestic consumption by contributing to the availability of leisure time of individuals and families. As Bittman (2002) suggests, the ability to participate in leisure requires both access to leisure goods and services and a sufficient quantity of time in which to enjoy them. Access to leisure is important in order to reduce the social exclusion of certain groups in society (Bittman 2002; Katz-Gerro & Sullivan 2010). Disparities in the availability of (high quality) leisure time between certain groups (e.g. by gender) is also a public concern.

Leisure policy to support domestic consumption can take several forms. The first type of leisure policy can affect individuals' access to leisure facilities and activities by increasing their availability and/or reducing their cost (Gershuny 2000). The second type of leisure policy can help

households increase the time available for leisure. This can be done in several ways, each requiring an intersection of family policies with other types of policies, e.g. labor market and education policies. One way to increase leisure time for families and households is by restricting the time available for paid work. For example, a restriction of maximum working hours and a definition of the length of the working week as well as of statutory holiday entitlements can potentially increase the time available for leisure among households (Gershuny 2000). The spread of the 24-hour economy and increase in non-standard work schedules (Presser 1999), both of which shorten the leisure and care time workers can spend with their children (Presser 1989), increase the importance of such policies.

If Presser (2001) is right and individuals also prefer child-free leisure, another policy intervention to increase leisure time of parents can be an extension of school and childcare hours. Countries vary in the length of the school day and the number of school days per school year (Gornick et al. 1997; Lee & Barro 2001). Parents who favor child-free leisure can experience an increase in leisure-time by the extension of school or childcare days and hours (assuming that this time will not be devoted to paid work).

Finally, a third possible policy intervention to increase leisure time can act to reduce the time household members devote to housework. As demonstrated in a previous study (Self-reference 2016), the time spent on housework is higher than the amount of time spent on childcare across gender, countries, and time. For example, the time spent on housework, by full- and part-time employed women, is on average 2.3 times higher than the time spent on childcare. Yet housework tasks provide less enjoyment to parents than childcare (Robinson and Godbey 1999), and women would be more prone to bargain them out. Moreover, because cleaning tasks

usually demand less trust than childcare tasks, the transaction costs of outsourcing housework are lower than those of childcare and the barriers to the delegation of housework are weaker (De Ruijter and Van der Lippe 2009; Self-reference 2014). Therefore, governmental policies that give incentives to households to outsource housework may reduce the time families devote to unpaid work, and this time can, in turn, be devoted to leisure (or paid work).

State-driven programs that give incentives to outsource housework currently exist in different shapes across Europe. Examples include the French Che`que Emploi-Service Universel, the Belgian Dienstencheques, and the Austrian Dienstleistungsscheck. The German Minijobs, Denmark's law on home service ("lov om hjemmeservice"), and tax deduction schemes in Finland and Sweden, are other types of housework-related programs (for more details see Morel (2015)). These housework-related policies share three main goals: 1) creating jobs in the low-wage sector; 2) tackling undeclared work, and 3) facilitating work-life balance within households. While the impact of these types of schemes on the labor supply of women who purchase domestic services has already been studied (e.g. Hallde´n & Stenberg 2012; Self-reference 2018, 2019), the effect of such policies on the leisure time of families in general and of women in particular has not yet been addressed by empirical studies.

In summary, this research aimed to examine *whether* aspirations for leisure have increased across cohorts, and not the reasons behind this change. Moreover, it does not refer to possible disparities between social groups with regards to leisure, across cohorts. These aspects are beyond the scope of the current research and should be examined in future research.

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Table 1: Linear Decomposition of Trends in the Average Number of Hours per Day Spent in Leisure.

Country/Period	N	Mean Y _t	Mean Y ₀	Total observed change	β_{year}	Sig. β_{year}	β_{cohort}	Sig. β_{cohort}	Mean C _t	Mean C ₀	Within cohort change	Cohort replacement effect	Total expected change	Expected / Observed change
Belgium-2000-2010	105	4.9	5.3	-0.4	0.02	0.239	-0.03	0.000	1971	1953	0.16	-0.56	-0.40	1.08
Estonia - 2000-2010	105	4.9	4.6	0.3	0.06	0.000	-0.02	0.000	1971	1953	0.59	-0.31	0.28	1.00
Finland - 2000-2010	105	5.4	5.4	0.0	0.06	0.001	-0.03	0.000	1971	1953	0.56	-0.59	-0.03	1.61
France - 2000-2010	105	4.5	4.3	0.1	0.05	0.003	-0.02	0.000	1971	1953	0.46	-0.32	0.14	0.93
Germany-2000-2010	105	5.4	5.2	0.1	0.04	0.003	-0.02	0.000	1971	1953	0.37	-0.27	0.10	0.90
Italy - 2000-2010	105	4.2	4.4	-0.2	0.01	0.575	-0.02	0.000	1971	1953	0.10	-0.36	-0.26	1.07
Norway - 2000-2010	105	5.4	5.7	-0.3	0.00	0.917	-0.02	0.000	1971	1953	0.01	-0.29	-0.28	1.02
Poland - 2000-2010	105	4.7	4.9	-0.3	0.01	0.264	-0.02	0.000	1971	1953	0.14	-0.43	-0.29	1.04
Spain - 2000-2010	105	4.8	4.8	0.0	0.03	0.040	-0.02	0.000	1971	1953	0.33	-0.36	-0.03	3.61
UK - 2000-2010	105	4.7	5.2	-0.5	0.01	0.606	-0.03	0.000	1971	1953	0.07	-0.58	-0.51	1.04
USA - Total	659	5.2	5.1	0.0	0.03	0.003	-0.04	0.000	1973	1963	0.31	-0.36	-0.05	-1.19
2007-2012	359	5.4	5.1	0.2	0.06	0.014	-0.04	0.000	1968	1963	0.32	-0.16	0.15	0.67
2012-2017	360	5.2	5.4	-0.2	-0.01	0.865	-0.04	0.000	1973	1968	-0.03	-0.20	-0.22	1.19

Note: 1) Mean Y₀ and Mean Y_t are the average expenditures in the first year and in the last year of each period, respectively.

2) Total observed change = Mean Y_t – Mean Y₀.

3) Mean C₀ and Mean C_t are the average birth cohort in the first year and in the last year of each period, respectively.

4) Within cohort change = $\beta_{year} * (YEAR_{max} - YEAR_{min})$.

5) Cohort replacement effect = $\beta_{coho} * (C_t - C_0)$.

6) Total expected change = Within cohort change + Cohort replacement effect.

Table 2. Linear Decomposition of Trends in the Share of Expenditures on Recreation and Leisure Out of Total Expenditures (%).

Country/Period	N	Mean Y_t	Mean Y_0	Total observed change	β_{year}	Sig. β_{year}	β_{cohort}	Sig. β_{cohort}	Mean C_t	Mean C_0	Within cohort change	Cohort replacement effect	Total expected change	Expected / Observed change
Austria - Total	305	11.5	8.3	3.2	0.12	0.000	0.01	0.013	1971	1950	2.52	0.23	2.75	0.86
1994-2010	244	12.7	8.3	4.5	0.24	0.000	0.01	0.025	1966	1950	3.79	0.16	3.95	0.89
2010-2015	122	11.5	12.7	-1.3	-0.27	0.000	0.02	0.000	1971	1966	-1.36	0.08	-1.28	1.00
Belgium - Total	366	7.8	10.2	-2.4	-0.10	0.000	0.01	0.018	1971	1944	-2.73	0.16	-2.57	1.09
1988-1994	122	10.7	10.2	0.5	0.07	0.000	0.02	0.000	1950	1944	0.44	0.09	0.53	1.00
1994-2015	305	7.8	10.7	-2.9	-0.14	0.000	0.00	0.299	1971	1950	-2.94	0.06	-2.88	1.00
Bulgaria - Total	183	4.7	2.9	1.8	0.15	0.000	0.03	0.000	1971	1961	1.45	0.31	1.76	1.00
2005-2010	122	2.6	2.9	-0.3	-0.07	0.000	0.02	0.000	1966	1961	-0.37	0.09	-0.29	1.00
2010-2015	122	4.7	2.6	2.0	0.38	0.000	0.03	0.000	1971	1966	1.89	0.16	2.05	1.00
Croatia – 2005-2015	183	5.0	5.4	-0.4	-0.08	0.000	0.04	0.000	1971	1961	-0.83	0.39	-0.44	1.01
Cyprus – 2005-2015	183	4.5	5.9	-1.5	-0.19	0.000	0.04	0.000	1971	1961	-1.89	0.43	-1.46	1.00
Czech R. –2005-2015	183	9.4	10.5	-1.1	-0.11	0.000	0.00	0.687	1971	1961	-1.12	0.02	-1.10	0.99
Denmark -1994-2010	244	11.6	10.9	0.7	0.02	0.038	0.02	0.000	1966	1950	0.26	0.34	0.59	0.84
Estonia – 2005-2015	183	10.9	6.7	4.1	0.36	0.000	0.05	0.000	1971	1961	3.60	0.54	4.14	1.00
Finland - Total	305	9.2	10.7	-1.5	-0.08	0.000	0.01	0.000	1971	1950	-1.72	0.25	-1.47	0.98
1994-2005	183	11.2	10.7	0.6	0.02	0.011	0.03	0.000	1961	1950	0.20	0.37	0.57	1.01
2005-2015	183	9.2	11.2	-2.1	-0.21	0.000	0.00	0.258	1971	1961	-2.09	0.03	-2.06	1.00
F. Yugoslav–2005-10	122	2.8	3.8	-1.0	-0.22	0.000	0.02	0.000	1966	1961	-1.08	0.09	-1.00	1.00
France - Total	305	7.7	7.3	0.4	-0.03	0.000	0.02	0.000	1966	1944	-0.55	0.51	-0.04	-0.10
1988-1994	122	7.8	7.3	0.5	0.04	0.002	0.04	0.000	1950	1944	0.23	0.23	0.46	1.01
1994-2005	183	6.8	7.8	-0.9	-0.11	0.000	0.03	0.000	1961	1950	-1.19	0.29	-0.90	0.99
2005-2010	122	7.7	6.8	0.9	0.17	0.000	0.01	0.000	1966	1961	0.84	0.04	0.88	1.00

Table 2. (Continued)

Country/Period	N	Mean Y _t	Mean Y ₀	Total Observed change	β_{year}	Sig. β_{year}	β_{cohort}	Sig. β_{cohort}	Mean C _t	Mean C ₀	Within cohort change	Cohort replacement effect	Total expected change	Expected / Observed change
Germany - Total	366	10.0	9.0	1.0	0.01	0.319	0.00	0.382	1971	1944	0.19	0.08	0.27	0.27
1988-1999	183	11.9	9.0	2.9	0.24	0.000	0.03	0.000	1955	1944	2.64	0.34	2.98	1.01
1999-2015	244	10.0	11.9	-1.9	-0.11	0.000	-0.02	0.000	1971	1955	-1.68	-0.27	-1.95	1.00
Greece - Total	366	4.3	5.0	-0.6	-0.07	0.000	0.04	0.000	1971	1944	-1.86	1.16	-0.70	1.09
1988-1994	122	4.2	5.0	-0.8	-0.19	0.000	0.06	0.000	1950	1944	-1.15	0.37	-0.77	1.00
1994-1999	122	4.7	4.2	0.5	0.05	0.000	0.05	0.000	1955	1950	0.26	0.25	0.51	1.00
1999-2010	183	3.8	4.7	-0.8	-0.10	0.000	0.03	0.000	1966	1955	-1.14	0.31	-0.84	0.99
2010-2015	122	4.3	3.8	0.5	0.06	0.008	0.03	0.000	1971	1966	0.31	0.16	0.47	1.00
Hungary - 2005-2015	183	5.4	8.4	-3.0	-0.33	0.000	0.03	0.000	1971	1961	-3.26	0.27	-2.99	1.00
Ireland - Total	305	7.9	9.1	-1.2	-0.06	0.000	0.01	0.004	1971	1950	-1.20	0.19	-1.01	0.83
1994-2005	183	9.9	9.1	0.8	0.05	0.000	0.02	0.000	1961	1950	0.56	0.25	0.81	1.03
2005-2015	183	7.9	9.9	-2.0	-0.20	0.000	0.00	0.582	1971	1961	-1.98	-0.02	-2.00	1.00
Italy - Total	366	5.5	7.6	-2.1	-0.12	0.000	0.02	0.000	1971	1944	-3.11	0.51	-2.59	1.24
1988-1994	122	7.9	7.6	0.3	0.03	0.020	0.01	0.000	1950	1944	0.18	0.08	0.26	0.99
1994-2015	305	5.5	7.9	-2.3	-0.13	0.000	0.02	0.000	1971	1950	-2.65	0.40	-2.25	0.96
Latvia – 2005-2015	183	7.0	6.2	0.9	0.07	0.000	0.02	0.000	1971	1961	0.66	0.20	0.86	1.00
Lithuania - Total	183	5.1	4.2	0.9	0.05	0.000	0.04	0.000	1971	1961	0.53	0.39	0.92	0.99
2005-2010	122	4.0	4.2	-0.2	-0.07	0.000	0.04	0.000	1966	1961	-0.35	0.19	-0.17	0.99
2010-2015	122	5.1	4.0	1.1	0.18	0.000	0.04	0.000	1971	1966	0.90	0.20	1.10	1.00
Luxembourg - Total	366	6.8	7.4	-0.7	-0.08	0.000	0.00	0.742	1971	1950	-2.27	0.02	-2.25	3.44
1988-1994	122	11.1	7.4	3.6	0.58	0.000	0.03	0.000	1950	1944	3.46	0.16	3.62	1.00
1994-2015	305	6.8	11.1	-4.3	-0.18	0.000	-0.01	0.004	1971	1950	-3.70	-0.19	-3.89	0.91
Malta – 2005-2015	183	7.8	9.6	-1.8	-0.18	0.000	0.00	0.246	1971	1961	-1.80	-0.04	-1.84	1.00

Table 2. (Continued)

Country/Period	N	Mean Y _t	Mean Y ₀	Total Observed change	β_{year}	Sig. β_{year}	β_{cohort}	Sig. β_{cohort}	Mean C _t	Mean C ₀	Within cohort change	Cohort replacement effect	Total expected change	Expected / Observed change
Netherlands - Total	366	8.2	9.5	-1.3	-0.04	0.000	0.02	0.000	1971	1944	-0.95	0.59	-0.35	0.27
1988-2005	244	10.9	9.5	1.4	0.06	0.000	0.04	0.000	1961	1944	0.94	0.60	1.53	1.09
2005-2015	183	8.2	10.9	-2.7	-0.27	0.000	0.00	0.714	1971	1961	-2.70	-0.01	-2.71	1.00
Norway – 2005-2010	122	12.3	12.2	0.2	0.02	0.308	0.01	0.000	1966	1961	0.11	0.07	0.18	1.01
Poland - Total	183	5.7	6.2	-0.5	-0.09	0.000	0.04	0.000	1971	1961	-0.91	0.43	-0.48	0.99
2005-2010	122	7.3	6.2	1.0	0.15	0.000	0.05	0.000	1966	1961	0.77	0.26	1.03	1.00
2010-2015	122	5.7	7.3	-1.5	-0.34	0.000	0.04	0.000	1971	1966	-1.72	0.21	-1.51	1.00
Portugal - Total	366	4.2	4.1	0.1	0.02	0.001	0.02	0.000	1971	1944	0.49	0.41	0.89	6.05
1988-1994	122	3.6	4.1	-0.4	-0.10	0.000	0.03	0.000	1950	1944	-0.58	0.16	-0.41	1.00
1994-2005	183	5.3	3.6	1.7	0.15	0.000	0.00	0.360	1961	1950	1.66	0.03	1.69	1.00
2005-2015	183	4.2	5.3	-1.1	-0.13	0.000	0.01	0.000	1971	1961	-1.27	0.13	-1.14	1.00
Romania –2005-2015	183	3.1	3.7	-0.6	-0.08	0.000	0.03	0.000	1971	1961	-0.84	0.25	-0.59	1.00
Slovakia - Total	183	6.0	5.8	0.2	-0.01	0.449	0.03	0.000	1971	1961	-0.12	0.32	0.20	0.97
2005-2010	122	7.0	5.8	1.2	0.22	0.000	0.03	0.000	1966	1961	1.10	0.15	1.25	1.00
2010-2015	122	6.0	7.0	-1.0	-0.24	0.000	0.03	0.000	1971	1966	-1.19	0.15	-1.04	1.00
Slovenia -2005-2015	183	7.0	9.0	-2.0	-0.19	0.000	-0.01	0.003	1971	1961	-1.90	-0.09	-1.99	1.00
Spain - Total	366	5.9	5.1	0.8	-0.01	0.135	0.03	0.000	1971	1944	-0.22	0.89	0.68	0.79
1988-1994	122	6.7	5.1	1.7	0.24	0.000	0.04	0.000	1950	1944	1.46	0.21	1.67	1.00
1994-1999	122	6.1	6.7	-0.6	-0.16	0.000	0.03	0.000	1955	1950	-0.78	0.15	-0.63	1.00
1999-2005	122	6.6	6.1	0.5	0.05	0.026	0.04	0.000	1961	1955	0.27	0.22	0.49	1.00
2005-2015	183	5.9	6.6	-0.7	-0.10	0.000	0.03	0.000	1971	1961	-1.02	0.33	-0.69	1.01
Sweden - Total	305	14.6	12.6	2.0	0.03	0.003	0.03	0.000	1971	1950	0.57	0.65	1.22	0.62
1994-1999	122	14.7	12.6	2.1	0.40	0.000	0.03	0.000	1955	1950	1.98	0.13	2.11	1.00
1999-2005	122	12.5	14.7	-2.2	-0.40	0.000	0.03	0.000	1961	1955	-2.40	0.19	-2.21	1.00
2005-2015	183	14.6	12.5	2.1	0.17	0.000	0.04	0.000	1971	1961	1.71	0.35	2.06	1.00

Table 2. (Continued)

Country/Period	N	Mean Y _t	Mean Y ₀	Total Observed change	β_{year}	Sig. β_{year}	β_{cohort}	Sig. β_{cohort}	Mean C _t	Mean C ₀	Within cohort change	Cohort replacement effect	Total expected change	Expected / Observed change
Turkey – 2005-2015	183	3.0	2.3	0.7	0.06	0.000	0.01	0.000	1971	1961	0.59	0.12	0.71	1.00
UK - Total	305	12.8	12.0	0.8	0.05	0.000	-0.02	0.000	1966	1944	1.19	-0.53	0.66	0.85
1988-1999	183	13.3	12.0	1.3	0.11	0.000	0.01	0.030	1955	1944	1.18	0.09	1.27	0.96
1999-2005	122	12.1	13.3	-1.3	-0.21	0.000	0.00	0.886	1961	1955	-1.28	0.01	-1.27	1.00
2005-2010	122	12.8	12.1	0.7	0.22	0.000	-0.07	0.000	1966	1961	1.10	-0.37	0.73	1.00
USA - Total	2380	10.4	9.6	0.8	-0.02	0.000	0.03	0.000	1968	1935	-0.50	0.83	0.33	0.42
1984-1997	980	10.7	9.6	1.1	0.02	0.038	0.06	0.000	1948	1935	0.22	0.77	0.99	0.90
1997-2000	280	9.7	10.7	-1.0	-0.28	0.000	0.03	0.000	1951	1948	-0.85	0.09	-0.76	0.76
2000-2008	630	11.2	9.7	1.5	0.12	0.000	0.02	0.000	1959	1951	0.98	0.14	1.12	0.76
2008-2013	420	9.6	11.2	-1.6	-0.29	0.000	-0.01	0.000	1964	1959	-1.47	-0.05	-1.51	0.95
2013-2017	350	10.4	9.6	0.8	0.18	0.000	-0.02	0.000	1968	1964	0.70	-0.08	0.62	0.78

Note: 1) Mean Y₀ and Mean Y_t are the average expenditures in the first year and in the last year of each period, respectively.

2) Total observed change = Mean Y_t – Mean Y₀.

3) Mean C₀ and Mean C_t are the average birth cohort in the first year and in the last year of each period, respectively.

4) Within cohort change = $\beta_{year} * (\text{YEAR}_{\max} - \text{YEAR}_{\min})$.

5) Cohort replacement effect = $\beta_{cohort} * (C_t - C_0)$.

6) Total expected change = Within cohort change + Cohort replacement effect.

Table 3. Linear Decomposition of Trends in Expenditures on Recreation, Leisure, Restaurants, and Hotels Out of Total Expenditures (%).

Country/Period	N	Mean Y_t	Mean Y_0	Total observed change	β_{year}	Sig. β_{year}	β_{cohort}	Sig. β_{cohort}	Mean C_t	Mean C_0	Within cohort change	Cohort replacement effect	Total expected change	Expected / Observed change
Austria – 1994-2015	305	18.6	13.4	5.2	0.16	0.000	0.06	0.000	1971	1950	3.30	1.24	4.54	0.87
Belgium - Total	366	14.1	15.8	-1.7	-0.08	0.000	0.02	0.000	1971	1944	-2.19	0.54	-1.65	0.95
1988-1994	122	16.4	15.8	0.5	0.06	0.017	0.03	0.000	1950	1944	0.35	0.17	0.52	1.00
1994-2015	305	14.1	16.4	-2.3	-0.11	0.000	0.01	0.000	1971	1950	-2.37	0.29	-2.08	0.92
Bulgaria – 2005-2015	183	10.1	6.8	3.2	0.19	0.000	0.13	0.000	1971	1961	1.87	1.34	3.21	1.00
Croatia – 2005-2015	183	7.7	8.8	-1.1	-0.20	0.000	0.09	0.000	1971	1961	-2.02	0.87	-1.15	1.00
Cyprus – 2005-2015	183	13.5	14.1	-0.6	-0.16	0.000	0.10	0.000	1971	1961	-1.58	0.95	-0.63	1.00
Czech R. –2005-2015	183	15.5	15.5	0.0	-0.06	0.076	0.06	0.000	1971	1961	-0.56	0.58	0.02	0.94
Denmark -1994-2010	244	17.2	14.3	2.9	0.07	0.000	0.09	0.000	1966	1950	1.09	1.42	2.51	0.88
Estonia – 2005-2015	183	15.1	10.0	5.2	0.39	0.000	0.13	0.000	1971	1961	3.85	1.32	5.17	1.00
Finland - Total	305	14.7	15.8	-1.1	-0.16	0.000	0.12	0.000	1971	1950	-3.36	2.44	-0.92	0.87
1994-1999	122	15.1	15.8	-0.7	-0.28	0.000	0.14	0.000	1955	1950	-1.38	0.69	-0.69	1.00
1999-2005	122	15.8	15.1	0.7	-0.03	0.247	0.14	0.000	1961	1955	-0.19	0.86	0.67	1.00
2005-2015	183	14.7	15.8	-1.0	-0.21	0.000	0.10	0.000	1971	1961	-2.06	1.02	-1.04	1.00
F. Yugoslav–2005-10	122	8.4	8.3	0.1	-0.06	0.074	0.08	0.000	1966	1961	-0.31	0.42	0.11	0.99
France - Total	305	13.5	15.8	-2.3	-0.23	0.000	0.09	0.000	1966	1944	-5.15	2.02	-3.12	1.37
1988-2005	244	11.5	15.8	-4.2	-0.35	0.000	0.09	0.000	1961	1944	-5.90	1.60	-4.30	1.01
2005-2010	122	13.5	11.5	2.0	0.32	0.000	0.07	0.000	1966	1961	1.60	0.37	1.96	1.00
Germany - Total	366	15.1	15.8	-0.7	-0.06	0.000	0.00	0.588	1971	1944	-1.70	0.03	-1.67	2.51
1988-1994	122	17.3	15.8	1.5	0.23	0.000	0.02	0.000	1950	1944	1.38	0.12	1.50	1.00
1994-2015	305	15.1	17.3	-2.2	-0.12	0.000	0.00	0.300	1971	1950	-2.56	0.06	-2.50	1.16
Greece - Total	366	14.6	13.2	1.4	-0.04	0.000	0.14	0.000	1971	1944	-1.05	3.81	2.75	1.91
1988-1994	122	10.0	13.2	-3.3	-0.68	0.000	0.14	0.000	1950	1944	-4.09	0.85	-3.25	1.00
1994-2015	305	14.6	10.0	4.7	0.04	0.003	0.14	0.000	1971	1950	0.84	2.92	3.76	0.80

Table 3. (Continued)

Country/Period	N	Mean Y_t	Mean Y_0	Total Observed change	β_{year}	Sig. β_{year}	β_{cohort}	Sig. β_{cohort}	Mean C_t	Mean C_0	Within cohort change	Cohort replacement effect	Total expected change	Expected / Observed change
Hungary - 2005-2015	183	8.6	11.6	-3.0	-0.38	0.000	0.07	0.000	1971	1961	-3.75	0.74	-3.01	1.00
Ireland - Total	305	14.4	13.6	0.8	0.02	0.098	0.06	0.000	1971	1950	0.42	1.34	1.76	2.09
1994-2010	244	16.8	13.6	3.2	0.14	0.000	0.08	0.000	1966	1950	2.21	1.22	3.42	1.06
2010-2015	122	14.4	16.8	-2.4	-0.52	0.000	0.04	0.000	1971	1966	-2.58	0.18	-2.40	1.00
Italy – 1988-2015	366	11.1	14.0	-2.9	-0.19	0.000	0.08	0.000	1971	1944	-5.13	2.11	-3.02	1.04
Latvia – Total	183	11.6	11.3	0.3	-0.08	0.009	0.11	0.000	1971	1961	-0.82	1.12	0.30	1.00
2005-2010	122	10.1	11.3	-1.2	-0.37	0.000	0.12	0.000	1966	1961	-1.84	0.59	-1.25	1.00
2010-2015	122	11.6	10.1	1.5	0.22	0.000	0.09	0.000	1971	1966	1.11	0.44	1.55	1.00
Lithuania–2005-2015	183	8.3	8.9	-0.6	-0.21	0.000	0.15	0.000	1971	1961	-2.11	1.49	-0.62	1.00
Luxembourg - Total	366	15.1	12.0	3.1	0.05	0.000	0.02	0.010	1971	1944	1.24	0.41	1.65	0.53
1988-1999	183	17.8	12.0	5.8	0.51	0.000	0.02	0.001	1955	1944	5.57	0.24	5.81	1.00
1999-2015	244	15.1	17.8	-2.7	-0.16	0.000	-0.01	0.234	1971	1955	-2.48	-0.08	-2.56	0.95
Malta – 2005-2015	183	16.3	16.8	-0.4	-0.08	0.000	0.03	0.000	1971	1961	-0.77	0.33	-0.44	1.01
Netherlands - Total	366	14.2	17.6	-3.4	-0.14	0.000	0.07	0.000	1971	1944	-3.81	2.00	-1.81	0.53
1988-1994	122	15.6	17.6	-1.9	-0.40	0.000	0.08	0.000	1950	1944	-2.42	0.50	-1.93	1.00
1994-1999	122	17.8	15.6	2.2	0.34	0.000	0.09	0.000	1955	1950	1.70	0.46	2.16	1.00
1999-2015	244	14.2	17.8	-3.6	-0.26	0.000	0.07	0.000	1971	1955	-4.19	1.12	-3.07	0.85
Norway – 2005-2010	122	16.1	16.3	-0.2	-0.10	0.000	0.07	0.000	1966	1961	-0.50	0.35	-0.16	1.00
Poland - 2005-2015	183	9.8	8.2	1.6	0.06	0.001	0.10	0.000	1971	1961	0.61	0.99	1.60	1.00
Portugal - Total	366	13.5	14.4	-0.9	-0.07	0.000	0.09	0.000	1971	1944	-1.97	2.54	0.57	-0.63
1988-1994	122	13.5	14.4	-0.9	-0.28	0.000	0.13	0.000	1950	1944	-1.67	0.77	-0.89	1.00
1994-2005	183	16.0	13.5	2.5	0.16	0.000	0.07	0.000	1961	1950	1.75	0.78	2.53	1.01
2005-2015	183	13.5	16.0	-2.5	-0.33	0.000	0.08	0.000	1971	1961	-3.31	0.79	-2.52	1.00
Romania –2005-2015	183	4.3	4.5	-0.2	-0.07	0.000	0.05	0.000	1971	1961	-0.68	0.47	-0.21	0.99

Table 3. (Continued)

Country/Period	N	Mean Y _t	Mean Y ₀	Total Observed change	β_{year}	Sig. β_{year}	β_{cohort}	Sig. β_{cohort}	Mean C _t	Mean C ₀	Within cohort change	Cohort replacement effect	Total expected change	Expected / Observed change
Slovakia - Total	183	10.3	9.9	0.4	-0.05	0.107	0.10	0.000	1971	1961	-0.54	0.96	0.42	1.01
2005-2010	122	11.9	9.9	2.0	0.28	0.000	0.11	0.000	1966	1961	1.41	0.55	1.96	1.00
2010-2015	122	10.3	11.9	-1.5	-0.40	0.000	0.09	0.000	1971	1966	-1.99	0.46	-1.54	1.00
Slovenia -2005-2015	183	11.8	13.2	-1.4	-0.16	0.000	0.02	0.001	1971	1961	-1.60	0.21	-1.39	1.00
Spain - Total	366	16.2	14.1	2.1	-0.04	0.000	0.11	0.000	1971	1944	-0.97	2.86	1.89	0.89
1988-2005	244	16.4	14.1	2.3	0.03	0.048	0.10	0.000	1961	1944	0.44	1.62	2.06	0.89
2005-2015	183	16.2	16.4	-0.2	-0.15	0.000	0.13	0.000	1971	1961	-1.48	1.28	-0.20	1.04
Sweden - Total	305	18.5	16.1	2.4	-0.02	0.112	0.09	0.000	1971	1950	-0.36	1.95	1.60	0.67
1994-1999	122	18.8	16.1	2.7	0.45	0.000	0.09	0.000	1955	1950	2.23	0.47	2.70	1.00
1999-2005	122	16.3	18.8	-2.4	-0.51	0.000	0.10	0.000	1961	1955	-3.03	0.59	-2.44	1.00
2005-2015	183	18.5	16.3	2.1	0.12	0.000	0.09	0.000	1971	1961	1.23	0.92	2.15	1.00
Turkey – 2005-2015	183	9.6	6.7	2.8	0.19	0.000	0.09	0.000	1971	1961	1.93	0.91	2.84	1.00
UK - Total	305	22.1	22.1	0.0	-0.05	0.002	0.06	0.000	1966	1944	-1.17	1.21	0.04	-1.50
1988-1994	122	19.9	22.1	-2.2	-0.46	0.000	0.09	0.000	1950	1944	-2.77	0.56	-2.20	1.00
1994-1999	122	21.3	19.9	1.4	0.17	0.001	0.12	0.000	1955	1950	0.84	0.59	1.43	1.00
1999-2005	122	20.3	21.3	-1.1	-0.27	0.000	0.09	0.000	1961	1955	-1.62	0.55	-1.07	1.00
2005-2010	122	22.1	20.3	1.8	0.39	0.000	-0.03	0.003	1966	1961	1.95	-0.14	1.81	1.00
USA - Total	2380	17.4	17.2	0.2	-0.07	0.000	0.05	0.000	1968	1935	-2.38	1.68	-0.69	-4.41
1984-1989	420	18.2	17.2	0.9	0.08	0.050	0.10	0.000	1940	1935	0.39	0.49	0.88	0.93
1989-1991	210	16.5	18.2	-1.6	-0.91	0.000	0.09	0.000	1942	1940	-1.82	0.18	-1.64	1.00
1991-1997	490	17.6	16.5	1.0	0.09	0.005	0.08	0.000	1948	1942	0.51	0.46	0.97	0.96
1997-2013	1190	16.0	17.6	-1.5	-0.06	0.000	0.03	0.000	1964	1948	-0.99	0.54	-0.45	0.30
2013-2017	350	17.4	16.0	1.4	0.31	0.000	0.00	0.544	1968	1964	1.24	-0.01	1.23	0.90

Note: 1) Mean Y₀ and Mean Y_t are the average expenditures in the first year and in the last year of each period, respectively.

2) Total observed change = Mean Y_t – Mean Y₀.

- 3) Mean C_0 and Mean C_t are the average birth cohort in the first year and in the last year of each period, respectively.
- 4) Within cohort change = $\beta_{year} * (YEAR_{max} - YEAR_{min})$.
- 5) Cohort replacement effect = $\beta_{cohort} * (C_t - C_0)$.
- 6) Total expected change = Within cohort change + Cohort replacement effect.

Table 4. Linear Decomposition of Trends in the Importance Granted to Leisure in the Respondent's Life on a Scale of 1 (not at all important) to 4 (very important).

Country/Period	N	Mean Y _t	Mean Y ₀	Total observed change	β_{year}	Sig. β_{year}	β_{cohort}	Sig. β_{cohort}	Mean C _t	Mean C ₀	Within cohort change	Cohort replacement effect	Total expected change	Expected / Observed change
Australia - Total	4827	3.34	3.34	0.00	-0.001	0.337	0.003	0.000	1966	1953	-0.02	0.03	0.01	-10.52
1995-2005	3413	3.38	3.34	0.04	0.004	0.069	0.003	0.000	1954	1953	0.04	0.00	0.04	1.00
2005-2012	2796	3.34	3.38	-0.05	-0.013	0.000	0.001	0.000	1966	1954	-0.09	0.01	-0.08	1.86
Bulgaria- 1997-2006	2003	2.92	2.77	0.15	0.009	0.036	0.010	0.000	1959	1952	0.08	0.07	0.15	1.00
Canada - 2000-2006	4059	3.29	3.25	0.03	0.005	0.181	0.001	0.037	1958	1955	0.03	0.00	0.03	1.00
Cyprus - 2006-2011	2041	3.44	3.35	0.09	0.012	0.072	0.007	0.000	1969	1965	0.06	0.03	0.09	1.00
Czech R.-1991-1998	2063	2.98	3.02	-0.04	-0.011	0.025	0.010	0.000	1950	1947	-0.08	0.03	-0.04	1.00
Estonia - 1996-2011	2530	3.22	2.95	0.28	0.011	0.000	0.010	0.000	1964	1953	0.16	0.12	0.28	1.00
Finland - 1996-2005	1978	3.36	3.26	0.10	0.009	0.002	0.004	0.000	1958	1954	0.08	0.02	0.10	1.00
Germany- Total	6076	3.18	3.19	-0.01	-0.005	0.000	0.007	0.000	1964	1953	-0.08	0.07	-0.01	1.80
1997-2006	4036	3.11	3.19	-0.08	-0.012	0.000	0.007	0.000	1958	1953	-0.11	0.03	-0.08	1.00
2006-2013	4076	3.18	3.11	0.07	0.005	0.141	0.007	0.000	1964	1958	0.03	0.04	0.07	1.00
Hungary- 1998-2009	1653	3.14	3.05	0.09	0.001	0.699	0.008	0.000	1962	1953	0.02	0.07	0.09	1.00
Japan - Total	6771	3.34	3.05	0.30	0.004	0.001	0.011	0.000	1960	1947	0.07	0.13	0.21	0.70
1990-2000	3331	3.35	3.05	0.31	0.022	0.000	0.012	0.000	1953	1947	0.22	0.07	0.30	0.97
2000-2005	2380	3.34	3.35	-0.02	-0.010	0.046	0.010	0.000	1957	1953	-0.05	0.04	-0.02	1.00
2005-2010	3440	3.34	3.34	0.01	-0.004	0.378	0.009	0.000	1960	1957	-0.02	0.03	0.01	1.00
Netherlands- 2006-2012	2930	3.35	3.51	-0.16	-0.026	0.000	0.005	0.000	1959	1961	-0.16	-0.01	-0.16	1.00

Table 4. (Continued)

Country/Period	N	Mean Y_t	Mean Y_0	Total Observed change	β_{year}	Sig. β_{year}	β_{cohort}	Sig. β_{cohort}	Mean C_t	Mean C_0	Within cohort change	Cohort replacement effect	Total expected change	Expected / Observed change
New Zealand- 1998-2011	2823	3.42	3.39	0.03	0.001	0.801	0.003	0.000	1960	1951	0.01	0.03	0.03	0.99
Norway - 1996-2007	2151	3.44	3.29	0.14	0.011	0.000	0.003	0.001	1961	1953	0.12	0.02	0.14	1.00
Poland - Total	3961	3.21	3.16	0.06	-0.002	0.263	0.006	0.000	1964	1945	-0.04	0.12	0.08	1.47
1989-1997	2029	3.02	3.16	-0.14	-0.020	0.000	0.004	0.000	1950	1945	-0.16	0.02	-0.14	1.00
1997-2012	3050	3.21	3.02	0.20	0.007	0.001	0.007	0.000	1964	1950	0.10	0.09	0.20	1.00
Romania - 1998-2012	4425	3.09	2.96	0.13	0.004	0.092	0.008	0.000	1966	1955	0.05	0.08	0.14	1.03
Slovakia - 1990-1998	1547	3.06	2.99	0.07	0.004	0.463	0.007	0.000	1954	1948	0.03	0.04	0.07	1.03
Slovenia - 1995-2011	3081	3.28	3.09	0.20	0.009	0.000	0.005	0.000	1961	1951	0.15	0.05	0.20	1.05
Spain - Total	6251	3.37	3.24	0.13	0.001	0.519	0.008	0.000	1965	1945	0.02	0.16	0.17	1.31
1990-1995	2677	3.12	3.24	-0.11	-0.029	0.000	0.007	0.000	1950	1945	-0.14	0.03	-0.11	1.00
1995-2011	4773	3.37	3.12	0.25	0.007	0.000	0.008	0.000	1965	1950	0.12	0.12	0.24	0.97
Sweden - 1996-2011	3199	3.50	3.46	0.04	0.000	0.901	0.003	0.000	1964	1952	0.00	0.03	0.04	1.03
Switzerland - 1989-2007	3796	3.28	3.32	-0.04	-0.007	0.000	0.006	0.000	1954	1942	-0.12	0.08	-0.04	1.03
United States- Total	6162	3.29	3.30	-0.01	-0.002	0.249	0.000	0.968	1965	1950	-0.02	0.00	-0.03	2.80
1995-1999	2709	3.33	3.30	0.03	0.007	0.320	0.000	0.794	1957	1950	0.03	0.00	0.03	1.00
1999-2006	2438	3.26	3.33	-0.07	-0.009	0.014	-0.001	0.164	1960	1957	-0.07	0.00	-0.07	1.00
2006-2011	3453	3.29	3.26	0.03	0.007	0.150	0.000	0.645	1965	1960	0.03	0.00	0.03	1.00

Note: 1) Mean Y_0 and Mean Y_t are the average expenditures in the first year and in the last year of each period, respectively.

2) Total observed change = Mean Y_t - Mean Y_0 .

3) Mean C_0 and Mean C_t are the average birth cohort in the first year and in the last year of each period, respectively.

4) Within cohort change = $\beta_{year} * (YEAR_{max} - YEAR_{min})$.

5) Cohort replacement effect = $\beta_{cohor} * (C_t - C_0)$.

6) Total expected change = Within cohort change + Cohort replacement effect.

Table 5. Summary of the Linear Decomposition and Regressions Results across Leisure Measures and Country-Periods.

Leisure measure	Year effect		Cohort effect				Cohort-replacement effect		
	Positive and sig.	Negative and sig.	Positive	Positive and sig.	Negative	Negative and sig.	Average contribution	Range	Effect > 50%
Hours per day spent in leisure	50%	0%	0%	0%	100%	100%	439%	51% - 2880%	100%
Share of expenditures on recreation and leisure out of total expenditures	50%	50%	90%	79%	10%	10%	23%	3% - 78%	8%
Share of expenditures on recreation, leisure, restaurants and hotels out of total expenditures	43%	52%	96%	90%	4%	2%	47%	4% - 447%	25%
Importance granted to leisure in one's life	28%	31%	97%	90%	3%	0%	44%	6% - 126%	35%

Note: Percentages are calculated out of total number of country-periods.

Table A. Description of Survey Years and Range of Birth Cohorts by Country and by Source of Data.

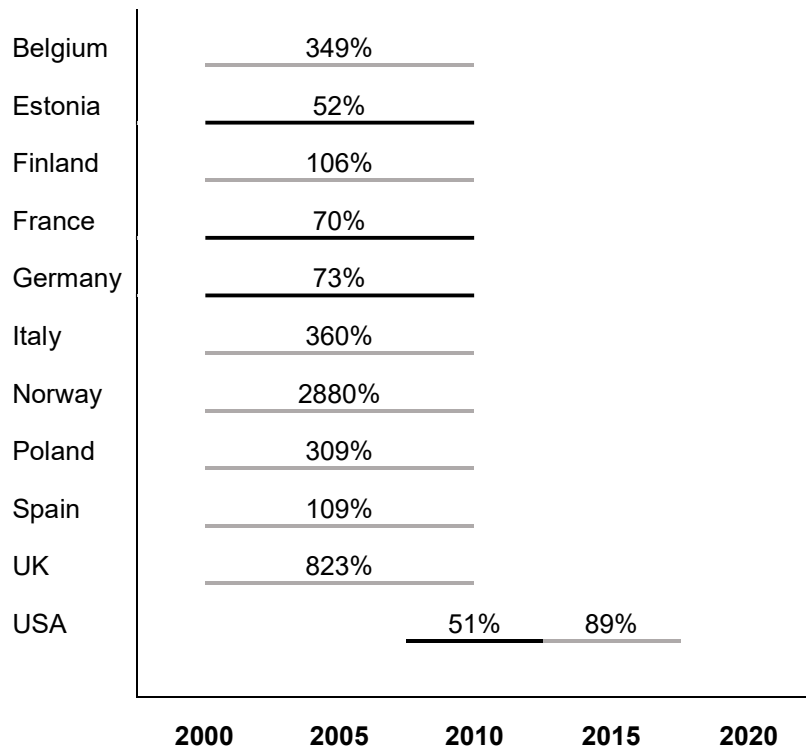
	Time-Use Data	Expenditures Data	World Values Survey
Australia			1981, 1995, 2005, 2012
			1890-1994
Austria		1994, 1999, 2005, 2010, 2015	
		1920-2001	
Belgium	2000, 2010	1988, 1994, 1999, 2005, 2010, 2015	
	1926-1995	1914-2001	
Bulgaria		2005, 2010, 2015	1997, 2006
		1931-2001	1906-1988
Canada			2000, 2006
			1902-1989
Croatia		2005, 2010, 2015	
		1931-2001	
Cyprus		2005, 2010, 2015	2006, 2011
		1931-2001	1915-1995
Czech Republic		2005, 2010, 2015	1991, 1998
		1931-2001	1900-1980
Denmark		1994, 1999, 2005, 2010	
		1920-1996	
Estonia	2000, 2010	2005, 2010, 2015	1996, 2011
	1926-1995	1931-2001	1918-1993
Finland	2000, 2010	1994, 1999, 2005, 2010, 2015	1981, 1996, 2005
	1926-1995	1920-2001	1911-1988
Former Yugoslav		2005, 2010	
		1931-1996	
France	2000, 2010	1988, 1994, 1999, 2005, 2010	
	1926-1995	1914-1996	
Germany	2000, 2010	1988, 1994, 1999, 2005, 2010, 2015	1997, 2006, 2013
	1926-1995	1914-2001	1907-1996
Greece		1988, 1994, 1999, 2005, 2010, 2015	
		1914-2001	
Hungary		2005, 2010, 2015	1982, 1998, 2009
		1931-2001	1908-1991
Ireland		1994, 1999, 2005, 2010, 2015	
		1920-2001	
Italy	2000, 2010	1988, 1994, 1999, 2005, 2010, 2015	
	1926-1995	1914-2001	

Japan			1981, 1990, 1995, 2000, 2005, 2010
			1897-1992
Latvia		2005, 2010, 2015	
		1931-2001	
Lithuania		2005, 2010, 2015	
		1931-2001	
Luxembourg		1988, 1994, 1999, 2005, 2010, 2015	
		1914-2001	
Malta		2005, 2010, 2015	
		1931-2001	
Netherlands		1988, 1994, 1999, 2005, 2010, 2015	2006, 2012
		1914-2001	1917-1994
New Zealand			1998, 2004, 2011
			1905-1993
Norway	2000, 2010	2005, 2010	1996, 2007
	1926-1995	1931-1996	1917-1988
Poland	2000, 2010	2005, 2010, 2015	1989, 1997, 2005, 2012
	1926-1995	1931-2001	1906-1993
Portugal		1988, 1994, 1999, 2005, 2010, 2015	
		1914-2001	
Romania		2005, 2010, 2015	1998, 2005, 2012
		1931-2001	1905-1994
Slovakia		2005, 2010, 2015	1990, 1998
		1931-2001	1900-1980
Slovenia		2005, 2010, 2015	1995, 2005, 2011
		1931-2001	1911-1993
Spain	2000, 2010	1988, 1994, 1999, 2005, 2010, 2015	1990, 1995, 2000, 2007, 2011
	1926-1995	1914-2001	1902-1993
Sweden		1994, 1999, 2005, 2010, 2015	1981, 1996, 2006, 2011
		1920-2001	1891-1993
Switzerland			1989, 1996, 2007
			1900-1989
Turkey		2005, 2010, 2015	
		1931-2001	
United Kingdom	2000, 2010	1988, 1994, 1999, 2005, 2010	
	1926-1995	1914-1996	
USA	2007-2017	1984-2017	1981, 1995, 1999, 2006, 2011
	1934-2002	1900-2002	1886-1993

Note: The first line for each country describes survey years and the second line describes the range of birth cohorts.

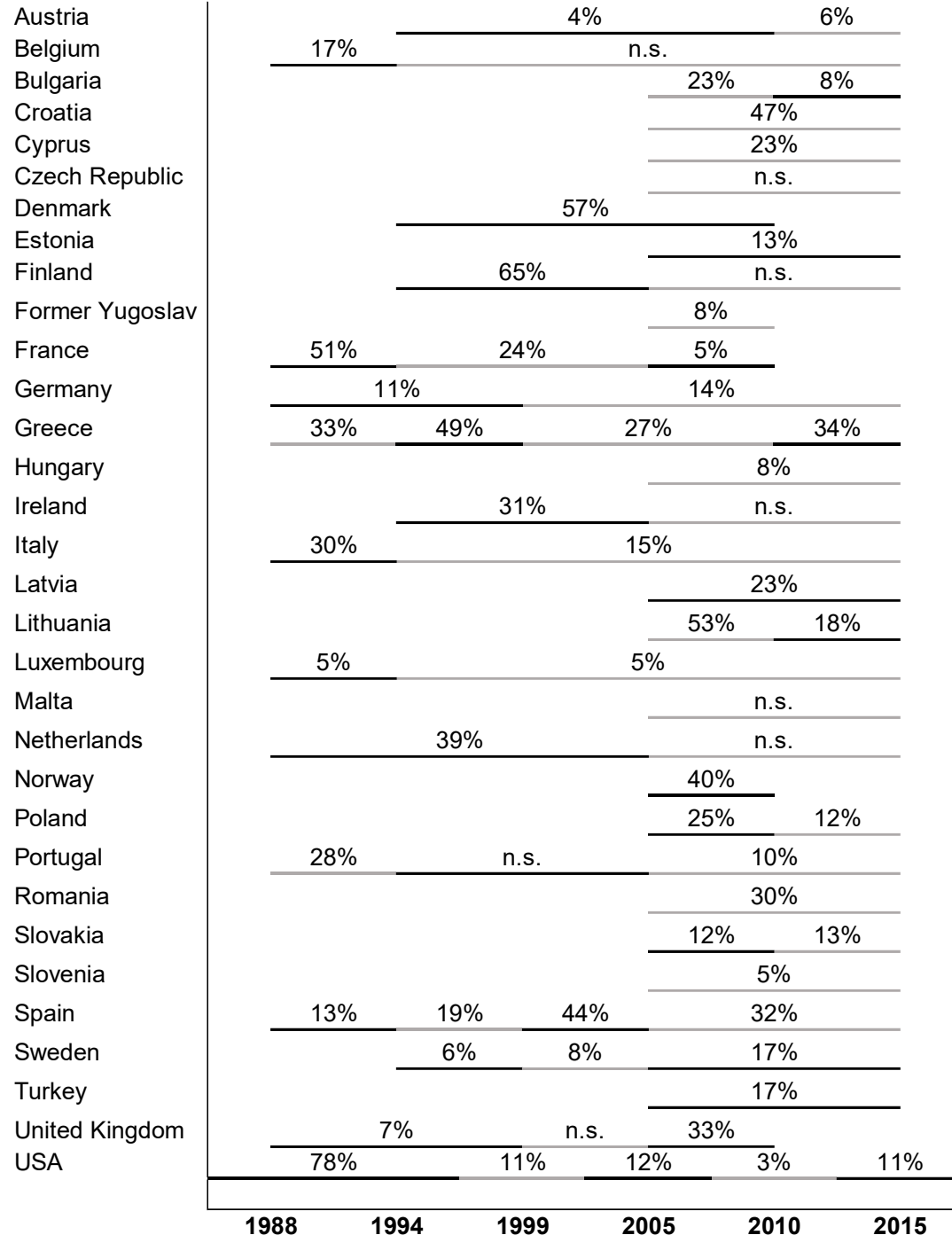
Hyphenated survey-years represent a continuum of yearly surveys between the two years.

Figure 1. Trends in the Average Number of Hours per Day Spent in Leisure.



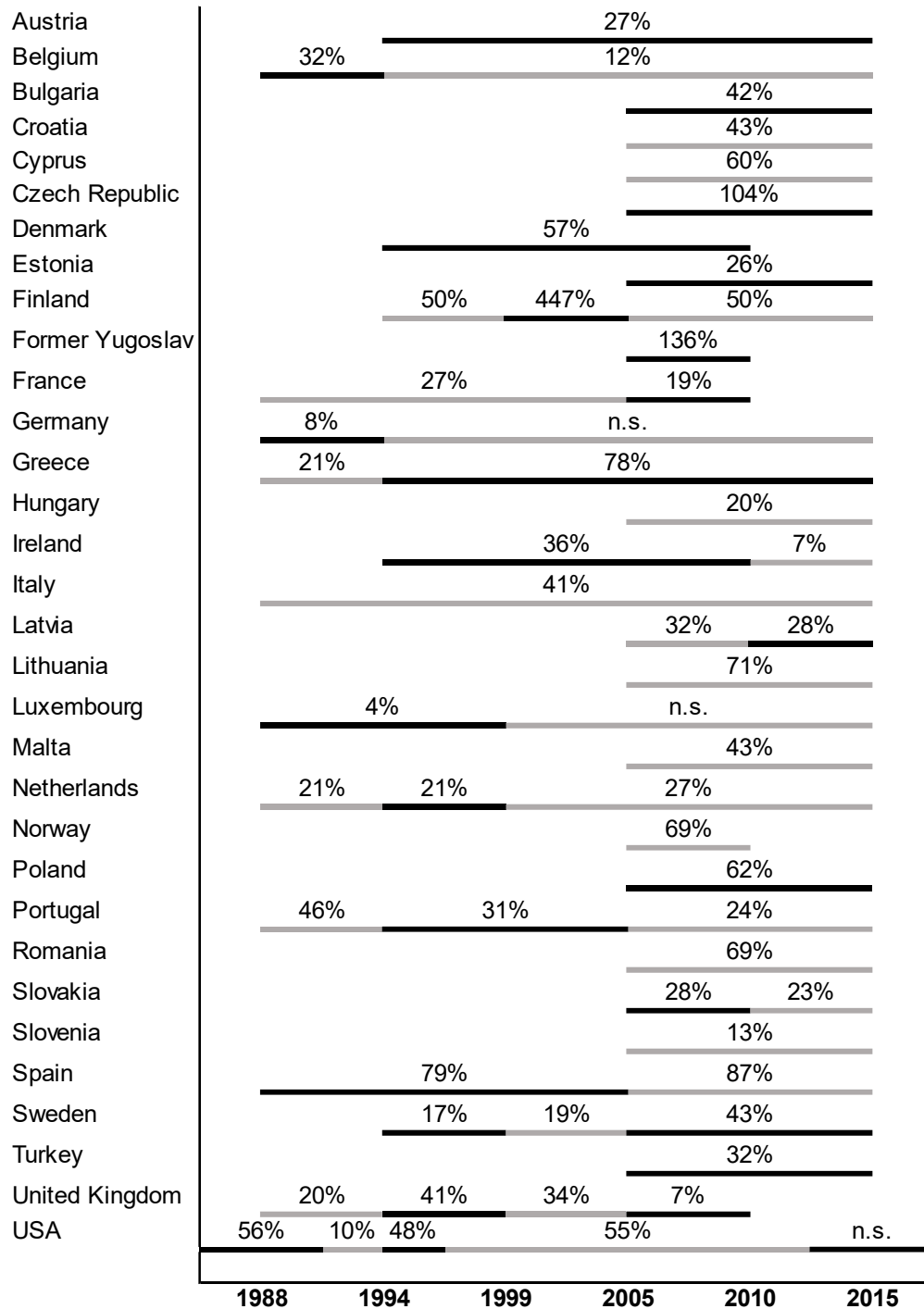
Note: **Black line** represents a positive observed change; **Grey line** represents a negative observed change.

Numbers above the lines represent % explained by cohort replacement (when the year and cohort effects have the same sign) or % recovered due to cohort replacement (when the two effects have opposite signs).

Figure 2. Trends in Expenditures on Recreation and Culture Out of Total Expenditures (%)

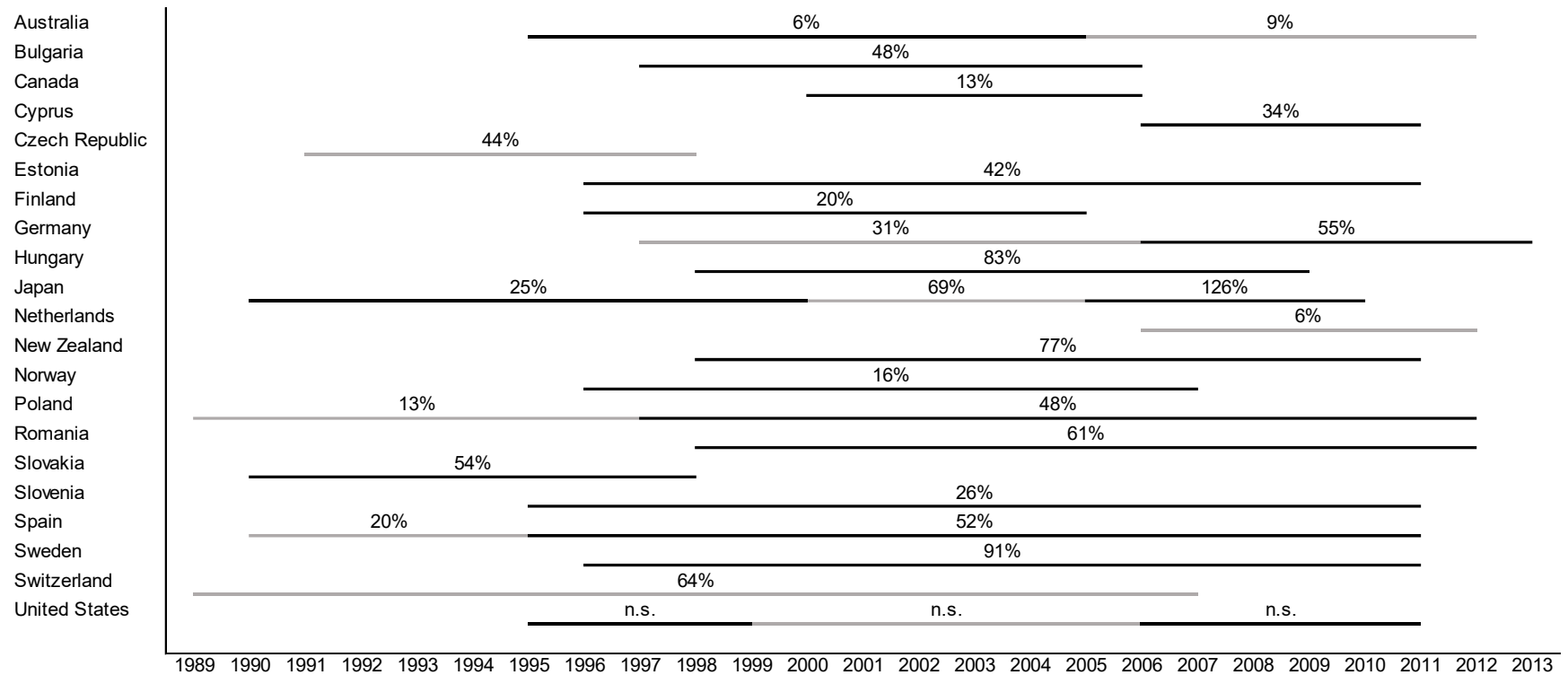
Note: (1) **Black line** represents a positive observed change; **Grey line** represents a negative observed Change; (2) Numbers above the lines represent % explained by cohort replacement (when the Year and cohort effects have the same sign) or % recovered due to cohort replacement (when the Two effects have opposite signs); (3) n.s. = insignificant cohort effect.

Figure 3. Trends in Expenditures on Recreation and Culture and on Restaurants and Hotels Out of Total Expenditures (%)



Note: (1) **Black line** represents a positive observed change; **Grey line** represents a negative observed Change; (2) Numbers above the lines represent % explained by cohort replacement (when the Year and cohort effects have the same sign) or % recovered due to cohort replacement (when the Two effects have opposite signs); (3) n.s. = insignificant cohort effect.

Figure 4. Trends in the Importance Granted to Leisure in the Respondent's Life on a Scale of 1 (not at all important) to 4 (very important).



Note: (1) **Black line** represents a positive observed change; **Grey line** represents a negative observed Change; (2) Numbers above the lines represent % explained by cohort replacement (when the Year and cohort effects have the same sign) or % recovered due to cohort replacement (when the Two effects have opposite signs); (3) n.s. = insignificant cohort effect.