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**Does country-context matter? A cross-national analysis of gender and leisure time physical inactivity in Europe**

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**Background:** It is well known that European women are less physically active in their leisure time than European men. Attempts to explain this gender difference often do not succeed in raising the problem above the individual level. However, the size of the disadvantage for women varies considerably across countries, proving that leisure time physical (in)activity takes place in a broader societal context and must also be approached as such. In this sense, some authors have explained women’s lack of leisure time physical activity in terms of gendered power relations in society. Therefore, the present article postulates that over and above the individual effect of gender, there is an additional impact of a society’s gender-based (in)equality distribution.

**Methods:** By means of the 2005 Eurobarometer survey (comprising 25 745 adults from 27 European countries), gender differences in leisure time physical inactivity (LTPI) were analysed by means of multilevel logistic regression analysis. National gender-based (in)equality was measured by the Gender Empowerment Measure and the Gender Gap Index.

**Results:** Controlled for compositional effects, gender differences in LTPI varied as a function of gender-related characteristics at the macro-level. In particular, in countries characterized by high levels of gender-based equality, LTPI differences between men and women even disappeared.

**Conclusion:** The findings underscore the need to adopt a society-level approach and to incorporate socio-contextual factors in the study of gender disparities in LTPI.

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**Introduction**

Physical activity is an important public health issue and the benefits of an active lifestyle in relation to well-being and health have been strongly emphasized in recent years in Europe. Physical inactivity is associated with increased risk of chronic diseases and with other disease states, such as hypertension, diabetes, osteoporosis, particular forms of cancer, obesity and even psychological disorders. Therefore, the need to increase participation in regular physical activity has been identified as one of the most prevalent public health burdens of our times. In this regard, it is well known that European women are less physically active in their
leisure time than European men. Attempts to explain this gender difference generally emphasize women’s different abilities, interests and choices, and consequently do not succeed in raising the problem above the level of the individual. However, the size of the disadvantage for women varies considerably across countries. Research shows that women residing in Southern countries (Portugal, Greece, Italy) have the greatest deficit while the levels of female participation in Scandinavian countries (Sweden, Finland, Denmark) and the Netherlands are equal to or higher than those of men. In addition, in most countries men are more likely to be members of associations, whereas women’s participation is more flexible and market oriented. However, there remain considerable cross-national differences. These differences prove that leisure time physical (in)activity is a thoroughly social phenomenon, which takes place, and finds its meaning for individuals within a broader societal context and must consequently also be approached as such. Therefore, recently, some authors have explicitly recognized the role of gender- and family-related social policy as a source of both ideological and practical influence on the way gender relations are played out in the context of leisure. They have explained women’s lack of leisure time physical activity in terms of the reality of their everyday lives, and gendered power relations in society in particular. Lifestyle and leisure are thus constrained by the lack of equal economic and political power between men and women.

Unfortunately, none of the existing studies on cross-national variation in gender differences in leisure time physical (in)activity7–9 examine the role of this factor in preventing or reducing women’s opportunities for participation in leisure time physical activities. The present article aims to address this gap and postulates that over and above the individual effect of gender, there might be an additional impact of a society’s gender-based (in)equality distribution. Gender differences in leisure time physical (in)activity are thus seen to arise out of societal structures. Rather than viewing gender differences as fixed, our question becomes: under what conditions are gender differences in leisure time physical (in)activity large, and under what conditions small? The conditions highlighted in this article are those facilitating equal distribution of power and life opportunities for men and women in different domains, including economic participation, political empowerment, educational attainment and health and well-being.

Moreover, an additional interpretation to be considered is that previous reports on cross-national gender differences in leisure time physical (in)activity might reflect a so called ‘compositional effect’, i.e. when cross-national variation is in fact attributable to differences in group composition (the characteristics of the individuals of which the groups are comprised). Such compositional effects could erroneously lead to conclusions about contextual variation in gender differences, when in fact the differences are due to individual-level factors in several life domains, such as age, marital status, educational attainment, urbanizational level and employment, all of which have known effects on leisure time physical inactivity (LTPI). Unfortunately, previous studies have not ruled out such factors as likely explanations for the variability of gender differences. Consequently, the contextual (‘the difference a place makes’) and the compositional (‘what’s in a place’) are often confounded.

The present study examines both compositional and contextual sources of cross-national variation of gender differences in LTPI among European adults, using data from the 2005 Eurobarometer survey. The article is structured according to three main objectives. The first is to address the amount of gender differences in LTPI across countries. The second is to examine the compositional effects of individual-level factors on cross-national variation in gender differences in LTPI. The third is to present relationships between macro-level factors [gender-based (in)equality] and gender disparities in LTPI.

### Methods

#### Sample

Eurobarometer 64.3 (2005) is one of the most recent available Eurobarometer surveys in which LTPI was assessed in all 27 European Member States. A multistage random sample design was used and to ensure national representative samples, post-stratification weights were applied in each country according to demographic factors (gender, age and town size) using the most recent census data. Data on individuals aged ≥18 years were selected (N = 25745), yielding at least 473 (Cyprus) and at most 1512 (Germany) conducted interviews in each country (table 1).

#### Measurement

##### Individual-level factors

The dependent variable in the analysis, LTPI, was assessed by means of the question: ‘In the last 7 days, how much physical activity did you get from recreation, sport and leisure time activities?’ Answer categories are divided between a lot (11.25%), some (25.69%), little (23.49%) and none (35.69%). For analytical purposes, a dichotomous outcome was created, with respondents answering ‘none’ defined as physically inactive in their leisure time, all others as active (we have performed some exploratory sensitivity analyses with a different operationalization of the outcome variable, i.e. with both respondents answering ‘none’ and ‘little’ as physically inactive in their leisure time, and the others as active (see also previous research)). More specifically, we have re-analysed all models, and although the coefficients were different, the results were generally robust against the change in operationalization implying that the main conclusions about macro-level influences

### Table 1 Sample details and LTPI percentages for the 2005 Eurobarometer survey

<table>
<thead>
<tr>
<th>Countries</th>
<th>N</th>
<th>LTPI</th>
<th>(\chi^2) test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Portugal</td>
<td>968</td>
<td>60.20</td>
<td>54.10</td>
</tr>
<tr>
<td>Romania</td>
<td>960</td>
<td>56.30</td>
<td>50.80</td>
</tr>
<tr>
<td>Malta</td>
<td>483</td>
<td>53.10</td>
<td>48.50</td>
</tr>
<tr>
<td>Greece</td>
<td>979</td>
<td>50.80</td>
<td>42.90</td>
</tr>
<tr>
<td>Hungary</td>
<td>990</td>
<td>47.90</td>
<td>38.70</td>
</tr>
<tr>
<td>Estonia</td>
<td>955</td>
<td>45.40</td>
<td>41.70</td>
</tr>
<tr>
<td>Cyprus</td>
<td>473</td>
<td>45.20</td>
<td>34.00</td>
</tr>
<tr>
<td>France</td>
<td>986</td>
<td>43.30</td>
<td>37.80</td>
</tr>
<tr>
<td>Poland</td>
<td>950</td>
<td>43.10</td>
<td>36.70</td>
</tr>
<tr>
<td>UK</td>
<td>1287</td>
<td>42.70</td>
<td>37.30</td>
</tr>
<tr>
<td>Spain</td>
<td>987</td>
<td>39.90</td>
<td>33.10</td>
</tr>
<tr>
<td>Slovakia</td>
<td>1029</td>
<td>39.60</td>
<td>33.80</td>
</tr>
<tr>
<td>Italy</td>
<td>969</td>
<td>38.20</td>
<td>29.40</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>995</td>
<td>38.10</td>
<td>33.10</td>
</tr>
<tr>
<td>Denmark</td>
<td>1011</td>
<td>37.60</td>
<td>35.30</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>953</td>
<td>37.40</td>
<td>32.40</td>
</tr>
<tr>
<td>Belgium</td>
<td>964</td>
<td>36.50</td>
<td>34.30</td>
</tr>
<tr>
<td>Luxembourg</td>
<td>472</td>
<td>31.20</td>
<td>26.70</td>
</tr>
<tr>
<td>Latvia</td>
<td>933</td>
<td>30.00</td>
<td>28.70</td>
</tr>
<tr>
<td>Sweden</td>
<td>1021</td>
<td>29.50</td>
<td>30.50</td>
</tr>
<tr>
<td>Ireland</td>
<td>968</td>
<td>27.80</td>
<td>26.60</td>
</tr>
<tr>
<td>Slovenia</td>
<td>985</td>
<td>26.80</td>
<td>24.20</td>
</tr>
<tr>
<td>Germany</td>
<td>1512</td>
<td>25.00</td>
<td>22.20</td>
</tr>
<tr>
<td>Lithuania</td>
<td>958</td>
<td>24.90</td>
<td>25.20</td>
</tr>
<tr>
<td>Austria</td>
<td>981</td>
<td>23.20</td>
<td>20.00</td>
</tr>
<tr>
<td>Netherlands</td>
<td>994</td>
<td>22.50</td>
<td>23.20</td>
</tr>
<tr>
<td>Finland</td>
<td>982</td>
<td>18.90</td>
<td>20.40</td>
</tr>
<tr>
<td>Total</td>
<td>25745</td>
<td>39.56</td>
<td>35.23</td>
</tr>
</tbody>
</table>

*\(P \leq 0.05\), **\(P \leq 0.01\), ***\(P \leq 0.001\).*
of gender (in)equality were upheld with a slightly different dichotomization of the outcome variable).

The independent variables age, marital status, educational attainment, urbanizational level and employment were introduced into the equations to control for cross-national differences in the composition of LTPI-determining characteristics.

Macro-level factors

Two international composite measures of gender-based (in)equality were introduced: the United Nations Development Programme’s Gender Empowerment Measure (GEM) and the World Economic Forum’s Gender Gap Index (GGI) (both measured in 2005). The GEM captures gender differences in life opportunities in three areas: (i) economic participation, measured by women’s and men’s percentage shares of positions as legislators, senior officials and managers; and by women’s and men’s percentage shares of professional and technical positions; (ii) political participation, measured by women’s and men’s percentage shares in parliamentary seats; and (iii) power over economic resources, measured by women’s and men’s estimated earned income (PPP US$).

The GGI complements and expands on the GEM in that it combines quantitative data sets with qualitative measures from the Executive Opinion Survey of the World Economic Forum, a survey of 9000 business leaders in 104 countries. The GGI focuses on five domains: (i) economic participation, measured by male and female unemployment levels, levels of economic activity and remuneration for equal work; (ii) economic opportunity, measured by duration of maternity leave, number of women in managerial positions, availability of government-provided childcare, wage inequalities between men and women; (iii) political empowerment, measured by the number of female ministers, share of seats in parliament, women holding senior legislative and managerial positions, number of years a female has been head of the state; (iv) educational attainment, measured by literacy rates, enrolment rates for primary, secondary and tertiary education, average years of schooling; and (v) health and well-being, measured by effectiveness of governments’ efforts to reduce poverty and inequality, adolescent fertility rate, percentage of births attended by skilled health staff and maternal and infant mortality rates.

For technical details on the GEM, see http://hdr.undp.org/en/media/HDR_20072008_Tech_Note_1.pdf. For the GGL. For both measures, higher scores reflect higher levels of gender-based equality.

Statistical analysis

In the present article, the following questions are raised:

(i) nationally, how is gender related to LTPI?
(ii) having taken account of individual, compositional characteristics, is there still cross-national variation in gender disparities? and
(iii) how do country-level characteristics measuring gender-based (in)equality account for the gender disparities in LTPI between countries?

Unfortunately, most existing methodologies are problematic in the manner in which contextual factors are implemented. The more recent multilevel methodologies, however, provide a comprehensive framework to empirically address the key contextual considerations of our research question.5,14 By performing a multilevel analysis, the clustered structure (individuals at level-1 and countries at level-2) is taken into account and accurate estimations of individual standard errors are obtained. Moreover, by explicitly maintaining countries as a contextual level, it is reasoned that important processes of social, political and/or economic nature operating at this level might have a bearing on gender differentials in LTPI.

A three-step sequential modelling strategy is adopted with complexity being increased in every successive model. The focus of each of the models is described below.

Unconditional or null model

Before estimating the individual-level multilevel models, it is appropriate to begin by estimating a model with no predictors at either level to test whether significant variation in LTPI exists across countries (and consequently multilevel modelling is appropriate). Moreover, in order to understand how much of the overall variance in LTPI is attributable to either the individual or the country level, it is useful to calculate the intraclass correlation coefficient (ICC). [The intraclass correlation coefficient for linear multilevel models is obtained by the following formula: \( \rho = \frac{\tau_{00}}{\tau_{00} + \sigma^2} \) where \( \sigma^2 \) is the individual-level variance. However, in non-linear models, such as our Bernoulli model, this formula is less useful because the individual-level variance is heteroscedastic.22 Snijders and Bosker23 describe an alternative definition of the ICC for non-linear models as follows: \( \rho = \frac{\tau_{00}}{\tau_{00} + \pi^2/3} \). This definition treats the dependent variable as an underlying latent continuous variable following a logistic distribution of which the variance is \( \pi^2/3 \), which measures the proportion of the variance of the dependent variable that exists between countries.

Individual-level model controlling for compositional effects

Cross-national variation in gender differences could occur as a result of known individual risk factors for gender differences in LTPI. To test for such compositional effects, gender differences are adjusted for age, marital status, educational attainment, urbanizational level and employment. If the pattern of variation in gender differences reflects a compositional effect related to (one of) these factors, we would expect a reduction in the variation after controlling for these individual-level factors. Both the intercept and the gender effect have been allowed to vary across countries (i.e. to be random), while the effects of all other variables are constrained to be the same across countries (i.e. to be fixed).

Cross-level model

To examine the impact of national-level gender-based (in)equality characteristics, a series of cross-level interaction models are tested. For presentation purposes, countries are grouped in low, medium and high groups based on the tertile scores of the relevant macro-level indicators. To test whether significant cross-level interactions exist, interaction terms between gender and the country subgroups are computed separately for each of the gender-based (in)equality measures and tested against the main effect model.

Since the response variable has two possible outcomes, logistic multilevel (Bernoulli) models based on a logit-link function are used. Models were fitted using the hierarchical linear modelling (HLM) 6.3 software.24 The probability of LTPI occurrence is estimated by calculation of multivariate odds ratio.

Before analysing gender-based inequality in LTPI in a multilevel framework, the total LTPI percentages for each country, those for men and women separately, and women’s LTPI rate as percentage of men’s were computed. In addition, the gender differences in LTPI were examined using the \( \chi^2 \) measure in SPSS 17.0. The results of these analyses are presented in table 1.

Results

LTPI differences across countries

The countries in table 1 are ranked according to their total LTPI values, with Portugal and Romania as the most inactive nations:
around six out of 10 adult citizens are physically inactive in their leisure time. Finland is the least inactive country with only less than two out of 10 Finns aged ≥18 years reporting being totally inactive in their leisure time. In general, LTPI seem to increase when moving from the north to the south in Europe, and East Europeans generally seem to have higher scores than West Europeans (with Lithuania, Slovenia and to a lesser degree Latvia as exceptions). Moreover, for 23 of the countries, women have higher LTPI prevalences than men.

This gender gap is, however, only significant (at \( P \leq 0.05 \)) in 15 of these countries. The size of the gender differences varies considerably across countries, being largest in Cyprus (19.50%). For four countries in our sample (i.e. Sweden, Finland, The Netherlands and Lithuania), men have higher LTPI scores than women. However, this gender difference is significant in none of the countries. For men, the lowest LTPI score is found in Austria (20.00%) and Finland (20.40%), whereas women report the lowest levels of LTPI in Finland (17.90%) and The Netherlands (21.90%). The highest LTPI is found for both men and women in Romania and Portugal.

### Multilevel models

#### Unconditional or null model

The results of our unconditional model show that statistically significant variance in LTPI exists at the country level (variance component intercept = 0.238 with \( P \leq 0.001 \)), making it clear that the multilevel nature of LTPI should not be ignored. Moreover, the proportion of the variance in LTPI that exists between countries is considerable: 6.75% \([100 \times 0.238/(0.238+3.29)]\). The ICC after including individual-level variables is: \( \rho = (0.170/0.170 + \pi^2/3) = 0.049 \). As noted by other authors, 25 the individual level usually accounts for a great deal of the variance when data are measured at the individual level. Moreover, the variance found here is congruent with previous studies into leisure time physical (in)activity in Europe, 5 but may well be an artefact of not taking into account key compositional characteristics. This is corrected for in the model shown in table 2, which represents a simple multilevel model where the level-2 gender variation is estimated after allowing for, and conditional on, selected individual, compositional effects.

#### Individual-level model: controlling for compositional effects

Table 2 shows the odds ratios (ORs) of gender on LTPI before and after adjustment for compositional effects (ORs of all fixed effects available upon request from the authors). After allowing for individual characteristics, a \( \chi^2 \) test shows that significant variation in gender differences in LTPI between countries remains even though the amount of variation decreased a little from 0.034 to 0.033 (The ICC after including both individual-level variables and the GEM is \( \rho = (0.109/0.109 + \pi^2/3) = 0.032 \)). This indicates, in other words, that the variation in gender differences in LTPI cannot be accounted for by individual confounders alone and hence country-context matters.

### Cross-level models

Before turning to the cross-level models, a model containing the contextual variables in addition to the compositional variables was estimated. Each of the contextual variables (included separately) was significant at \( P \leq 0.001 \). Moreover, an exploratory aggregate bivariate analysis showed that women’s LTPI rate as percentage of men’s was positively related to both the GEM (Spearman’s \( \rho = 0.543 \) with \( P \leq 0.001 \)) and the GGI (Spearman \( \rho = 0.683 \) with \( P \leq 0.001 \)), indicating that in countries characterized by more gender-based equality, the LTPI rates of women tend to approach those of men.

Our multilevel analyses confirm that the ORs of gender on LTPI vary across country subgroups (table 3). The coefficients for the group of countries characterized by high levels of gender-based equality differ significantly (at \( P \leq 0.001 \)) from those for the group of countries characterized by low and medium gender-based equality, respectively. In countries characterized by low or medium gender-based equality, significant gender differences in LTPI can be noticed, with European women reporting being around 1.4 times more physically inactive in their leisure time compared with men (with \( P \leq 0.001 \)). In countries characterized by high levels of gender-based equality, differences between men and women disappear.

### Discussion

By studying samples from all European Union countries, the present study showed that the magnitude of gender differences in LTPI varies cross-nationally, a finding that is consistent with some recent European studies on gender and leisure time physical (in)activity. 1-3,9. Compared with these studies, the major strength of our analyses was that a more powerful statistical method was used. Adopting multilevel methodologies gives a much stronger basis for making judgments about cross-national variability. Through controlling for potential confounders (age, marital status, educational attainment, urbanization level and employment), it was found that the cross-national variation of gender differences in LTPI was highly robust for compositional effects. The key finding, however, was that gender differences in LTPI varied as a function of gender-related characteristics at the macro-level. In countries characterized by a high level of equal opportunities between men and women in several life domains, gender differences in LTPI seemed to be absent, net of all individual-level effects. National gender-based (in)equality thus seems to have implications for the way in which men and women construct their individual (and household) lifestyles, and fundamentally affects the broader context in which leisure time physical (in)activity occurs. Our results show that especially countries with

### Table 2 Results of multilevel Bernoulli regression modelling of LTPI among Europeans, OR for gender (reference category = males), before and after adjustment for compositional effects (i.e. age, marital status, educational attainment, urbanization level and employment) + variance of intercept and gender term

<table>
<thead>
<tr>
<th></th>
<th>Before adjustment for compositional effects</th>
<th>After adjustment for compositional effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>OR for gender (95% CI)</td>
<td>1.359*** (1.252–1.474)</td>
<td>1.272*** (1.166–1.386)</td>
</tr>
<tr>
<td>Variance of intercept (SE)</td>
<td>0.167*** (0.003)</td>
<td>0.170*** (0.003)</td>
</tr>
<tr>
<td>Variance of gender term (SE)</td>
<td>0.034*** (0.001)</td>
<td>0.039*** (0.001)</td>
</tr>
</tbody>
</table>

***P ≤ 0.001.

### Table 3 Results of multilevel Bernoulli regression modelling of LTPI among Europeans, OR for gender (reference category = males), after adjustment for compositional effects (i.e. age, marital status, educational attainment, urbanization level and employment). Countries grouped into low, medium and high based on the tertile scores of the GEM and GGI, respectively

<table>
<thead>
<tr>
<th></th>
<th>Low</th>
<th>Medium</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEM OR gender (95% CI)</td>
<td>1.401*** (1.264–1.550)</td>
<td>1.332*** (1.214–1.461)</td>
<td>1.096 (0.992–1.212)</td>
</tr>
<tr>
<td>GGI OR gender (95% CI)</td>
<td>1.515*** (1.366–1.681)</td>
<td>1.291*** (1.174–1.422)</td>
<td>1.088 (0.991–1.195)</td>
</tr>
</tbody>
</table>

***P ≤ 0.001.
gender-empowering social policies constitute a social context that has positive consequences for gender disparities in LTPI. Removing inequality between men’s and women’s participation in leisure time activities will therefore require far more than simply European-wide mass media campaigns aimed at convincing women to become physically active in their leisure time. Instead of such individually oriented approach, public health policy should adopt a society-level perspective in addressing gender disparities in LTPI. In most countries, women still bear the major responsibilities for household duties and childcare while men bear the major responsibility for generating income. In the absence of radical changes in gender roles within the family, the aim of reducing inequality between men and women may best be served by facilitating parental (female) employment by reducing the conflicting demands of paid work and childcare while at the same time restructuring the organization of work to reduce the time burden, on women in particular. Evidently, a more nuanced and detailed understanding is needed of the implications of countries’ social policies aimed at narrowing unequal opportunities in several life domains between men and women.

To the best of our knowledge, no previous study on leisure time physical (in)activity has looked at gender disparities from a multilevel perspective. Despite this major strength, however, we should also note some limitations.

First, the external validity of the findings might be difficult to ascertain. Although intentionally two different macro-level indicators of gender-based (in)equality were included (the GEM and the GGI), their conceptual basis has been questioned by some authors on the grounds that they are composites of conceptually very different indicators. As a tool for testing hypotheses about very specific mechanisms, these indicators might indeed be of relatively limited heuristic value. Nevertheless, in the context of this study, both indicators proved to be useful and support the view that macro-level gender-related factors need to be taken into account when studying gender differences in LTPI from a cross-national perspective. And although exploratory analyses with the subcomponents of the GEM and the GGI provided more or less similar results, a natural next step for future studies would be to incorporate particular national, political, economic, cultural, education- and health-based factors as moderators of cross-national gender differences in LTPI.

Secondly, cross-national comparison of data such as in the present study might involve several sources of bias, among which method bias. However, although inevitable variation in the data collection exists (e.g. influence from the reviewer), the available documentation suggests no bias with respect to the countries’ adherence to the protocol.

Thirdly, although our analyses were controlled for urbanizational level (a proxy indicator of within-country regional differences), from an empirical perspective, it would be interesting to evaluate the relative contribution of gender-based (in)equality at different contextual levels such as regions or communities. Unfortunately, although extensions of the debate fit perfectly within our multilevel framework, regional data on this subject are not available.

Fourthly, our study relies on cross-sectional data so that the implications of change over time could not be assessed. In this regard, longitudinal studies might be interesting to both confirm and extend our cross-sectional findings.

Fifthly, although the Eurobarometer data were the best available, the self-reported single-question registration of leisure time physical (in)activity might under- or overestimate real levels and might vary across subgroups. Moreover, there might have been some variation between countries in how respondents understood what was covered by ‘physical activity from recreation, sport and leisure time activities’ (other research provides a more in-depth discussion on this problem of ‘equivalence of meaning’). In addition, with a reference period of 7 days, weather influences might also give some bias to the results. Unfortunately, objective or multi-item leisure time physical (in)activity data are not available in all European countries, or at least not in sufficient detail for cross-national comparison. In addition, our data are restricted to physical (in)activity in leisure time, and any inferences pertain only to this form of activity. Consequently, the mentioned effects might be contradictory. For example, a factor hampering leisure time physical activity at the cultural level might at the same time increase the propensity to become physically active in other settings such as during gardening or household work. Research from 2004 has shown that high percentages of leisure time physical activity go hand in hand with relatively low levels of physical activity beyond the leisure sphere. According to this study, Scandinavians, for instance, seem to be involved in leisure time physical activities to a large extent while (or possibly because) they are comparatively inactive at work, in and around the house or when moving from place to place. However, results from a 2007 European study did not confirm these ‘compensation mechanisms’. What is certain, is that demographics (i.e. an increase in elderly citizens) and many cultural drivers (i.e. a decrease in activity derived through housework and self-powered transport; a declining trend for physically demanding jobs) are pushing us towards a more sedentary rather than a more active European Union. However, outside of physical activity in the leisure time, the opportunities to promote other types of physical activities are rather limited. It is difficult to envisage public intervention policies aimed specifically at promoting gardening or do-it-yourself tasks. Moreover, apart from using the stairs instead of the elevator, or from jogging during lunch time, it sounds rather ridiculous to formulate government recommendations aimed at increasing the physical burden of jobs. Therefore, we suggest the important contribution of physical leisure time activities to health (among which the prevention or control of overweight and obesity) primarily through the extent to which it contributes towards increasing physical activity, although there is also evidence to suggest that the social engagement aspects of leisure time physical activity are beneficial in their own right.

**Key points**

- Attempts to explain gender differences in LTPI often do not succeed in raising the problem above the level of the individual. However, the cross-national differences found prove that LTPI is a social phenomenon that should also be approached as such.
- Compared with previous studies, the major strength of our analyses was that a more powerful statistical method was used. Adopting multilevel methodologies give a much stronger basis for making judgements about cross-national variability. It was found that the cross-national variation of gender differences in LTPI was highly robust for compositional effects.
- Our study shows that national gender-based (in)equality has implications for the way in which men and women construct their individual (and household) lifestyle, and fundamentally affects the broader context in which leisure time physical activity occurs, or does not occur. Especially countries with gender-empowering social policies constitute a social context that has positive consequences for gender disparities in LTPI.
- Removing inequality between men’s and women’s participation in leisure time activities will thus require far more than simply European-wide mass media campaigns aimed at convincing women to become physically active in their leisure time. Instead of such individually oriented approach, public health policy should adopt a society-level perspective in addressing gender disparities.
Conflicts of interest: None declared.

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