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Women's and men's status: Revisiting the relationship between gender equality and intimate partner violence against women in Europe.

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Abstract

The first European Union Survey on Violence against Women (EU-VAW) released in 2014 revealed the unexpected result indicating that the world's most egalitarian countries have relatively high rates of Intimate Partner Violence Against Women (IPVAW). This phenomenon, referred to as the 'Nordic Paradox', revived a heated, intermittently ongoing discussion dating back four decades where several competing hypotheses about the relationship between gender inequality and IPVAW have been proposed, but no consensus has been reached. The main aim of this paper is to revisit the most important of such hypotheses proposed in the last four decades, while proposing a new one that could potentially throw some light on understanding the 'Nordic Paradox'. Multilevel linear regression models are estimated using data from the EU-VAW survey conducted in 2012, and an alternative operationalisation of the Gender Equality Index (our measure of gender equality). We did not find any significant effect of gender equality on IPVAW

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repetition. However, we found that higher country-level status of women and men go together with less IPVAW, with a larger effect of women's status in economic domains compared to the impact of men's economic status, and a larger effect of men's overall status. These findings support the Marxist feminist hypothesis, stating that women's absolute status in the economic and labour domain is critical in lessening IPVAW, as women's real and potential access to resources is key for leaving a violent relationship. At the same time, our results support the 'male privilege protection' hypothesis, which states that gains in women's status in certain domains –such as in the economic sphere considering our results for the European Union– would not suppose a threat to men, allowing ameliorative effects. In contrast, if the overall status of men is threatened, backlash effects would be triggered.

Introduction

The first comparable survey among the European Union Member States, conducted in 2012 the European Union Agency for Fundamental Rights (FRA, 2014), indicated that the most gender-egalitarian countries in Europe –Denmark, Finland, and Sweden– were among the countries with a higher prevalence of Intimate Partner Violence Against Women (IPVAW). These surprising findings, referred to as the 'Nordic Paradox' (Gracia & Merlo, 2016), have revived a heated and intermittent discussion dating back four decades. On the two opposite ends of this debate are the liberal feminists and the radical feminists, representing the ameliorative and the backlash hypothesis respectively. While many scholars have addressed this debate directly (Ivert *et al*., 2019; Gracia *et al*., 2019; Permanyer, & Gómez-Casillas, 2020; Humbert *et al*., 2021) or indirectly (Sanz-Barbero *et a*l., 2018), other equally interesting debates have been side-lined. One of those important debates involves a confrontation between Marxist feminist theoretical claims on the one hand and on the other hand the positions of liberal and radical feminists. Marxist feminists claim that women's absolute status is a better predictor of IPVAW than the gender gap –namely the relative position of women compared to men's–, stressing in particular women's *economic* status as the key aspect leading to a reduction of IPVAW. On the other side of this debate, liberal and radical feminists argue that women's status *relative* to men's status (i.e., the gender gap) is the key aspect impacting IPVAW. Surprisingly, men's absolute status –men's status *per se*, not comparing their status to women's– has been virtually absent 'Nordic Paradox' debate, despite the fact that male partners are the main perpetrators of violence against women (see for example Stöckl, 2013).

The main aim of this paper is to test four existing competing hypotheses: the ameliorative hypothesis proposed by liberal feminist scholars, the backlash hypothesis proposed by radical

feminist academics, the Marxist feminist's hypothesis –also known as the economic marginalization hypothesis–, and finally, the new 'male privilege protection' hypothesis. This last hypothesis is new and states that women are 'allowed' to increase their status to a certain extent, but only if men do not feel that their own status is threatened. Hence, this hypothesis could potentially explain ameliorative and backlash effects empirically observed.

To test these hypotheses, we introduce a couple of methodological improvements. First, we use an IPVAW indicator that is sensitive to the repetition of violence against a woman. In addition, this indicator accounts for the violence that is occurring in the present, and thus is perpetrated by the current partner. Thus, our dependent variable is the repeated violence against women perpetrated by the current partner. Second, we separate the Gender Equality Index (GEI) created by the European Institute for Gender Equality (EIGE) into two different indices: one that operationalises the gender gap (the relative status of women compared to men) and one that measures overall population's achievement or attainment (we will refer to them as synonyms throughout the text). The method we use is multilevel regression analysis using data from the European Union's Violence Against Women survey (EU-VAW survey hereafter) conducted by the European Union Agency for Fundamental Rights (FRA, 2014).

Background: Old and new hypotheses

Previous seminal theoretical contributions to the gender-based violence field of studies have generally understood violence against women as an expression of gender inequality (Daly, 1978; Brownmiller, 1975; Dobash & Dobash, 1979), and have thus questioned whether violence against women would increase or decrease when higher levels of gender equality have been achieved. In this debate, there are two major positions: on the one hand, liberal feminists mostly support the ameliorative hypothesis, which contends that increased levels of gender equality are associated with less violence against women. On the other hand, radical feminists mostly support the backlash hypothesis, which argues that men become more violent mainly in order to regain the power they have lost due to higher levels of gender equality (Yllö, 1984). Although this backlash hypothesis is often presented as being the theoretical extreme opposite of the ameliorative hypothesis, some scholars who study IPVAW tend to embrace more nuanced positions as well. While some authors have suggested that the backlash is a temporary effect that is leading to a sustained ameliorative situation (Brownmiller, 1975; Russell, 1975), others (Whaley, 2013) have suggested that there is an interplay of backlash and ameliorative processes, which also aligns to Stamatel's (2018) findings.

While the debate on ameliorative versus backlash effects is well-recognised and well-addressed in empirical studies, the debate on the impact of women's relative versus absolute status is less well-known. While liberal feminist scholars provide support to the ameliorative hypothesis, and radical feminists to the backlash hypothesis, they both agree on pointing out that women's status *relative* to men's status –gender inequality– is the key factor explaining gender-based violence (Vieraitis, Britto, & Morris, 2015 provide a thorough explanation). By contrast, Marxist feminist theory posits that increases in women's *absolute* status and not in their status relative to men, and more specifically, women's access to economic resources, will reduce rates of violence against women. Following Jaggar (1983), in the capitalism the structural position of women is subject to specific forms of oppression derived from their exclusion from wage labour and confinement in the domestic sphere doing housework and childbearing. Therefore, by being excluded from labour and access to resources, women are oppressed by men from a structural standpoint, thus making them targets of male violence. This hypothesis is often referred to as the women's economic marginalization hypothesis.

Interestingly, while men's violent reactions have been implicitly or explicitly considered in relation to women's gains in relative or absolute status, the role of men's status in violent victimisation has seldom been surveyed or examined in Europe. Men have been viewed as a 'gendered social group' starting with the early feminist contributions (i.e., Brownmiller, 1975, Yllö, 1984). Thus, it has been assumed that a man's individual behaviour is shaped by his structural position as a member of a group, in line with social class theory. However, the idea that men should be considered as a monolithic social group has been contested by authors such as Connell (Connell, & Messerschmidt, 2005), who proposed approaching this issue from a dualistic perspective, whereby hegemonic masculinities are conceived in opposition to non-hegemonic ones. Conversely, other authors have pointed out that even if not all men are connected with the institutions of male dominance, most benefit from these institutions (Donaldson, 1993). These scholars therefore argued that instead of applying a dualistic perspective to this issue, hegemonic masculinity should be considered as a bloc where non-hegemonic masculinities are absorbed and reconfigured to ensure the reproduction of hegemonic masculinity (Demetriou, 2001). In sum, these authors contended that all men benefit from the 'patriarchal dividend' (as proposed by Connell), even though its intragroup distribution is also hierarchically structured.

According to Kosakowska-Berezecka *et al.* (2020) men withdraw their support for gender equality when their status is threatened, which is aligned with the backlash hypothesis. The backlash hypothesis is often presented as referring to a phase in which men get used to equality. Therefore, the way to gender equality is not linear and depends on the interlock of structural and other forms of status, which involves interplays of backlash and ameliorative processes where men, as a social group, would bit by bit get used to equality, with at times resisting the process

towards this end. Kosakowska-Berezecka *et al*. (2020) propose to understand gains in gender equality by mirroring the zero-sum belief claiming that a group's gain is at the expense of another group's losses (Esses, Dovidio, Jackson, & Armstrong, 2001). There would be sources of status bargaining where women are 'allowed' to status acquisition in certain areas in an amelioration process while in other areas backlash effects would be triggered. Similarly to Marxist feminist positions, structural aspects –such as income and labour domains– would be the most sensitive issues, as these are limited resources available to all the members of society. Moreover, gender social groups would play a role in protecting these resources for their own gender class, thus producing a feedback process that reaffirms the own group status.

Data

We use data from the FRA's EU-VAW survey (FRA, 2015) of women who reported having a heterosexual orientation as a strategy to select those couples in which the partner is male, a key aspect to pursue our goal of understanding how women's and men's status shapes intimate partner violence victimisation. Additionally, these women were currently married, cohabitating, or involved in a relationship without cohabitation. The initial sample of heterosexual women with a partner is 30,284. The total analytical sample consists of 27,195 women (about 10% of all women were dropped because of missing values on one or more of the variables to be analysed).

Methods

Methodological improvements

We improve previous research methodologically in two ways. First, we use an improved indicator of gender inequality: namely, gender gaps. Most of the studies that have looked at the 'Nordic Paradox' debate have used the EIGE's Gender Equality Index (GEI) to operationalise gender equality (Ivert *et al*., 2019; Sanz-Barbero *et al*., 2018; Permanyer & Gómez-Casillas, 2020; Humbert *et al*., 2021). The GEI is a composite indicator providing a unique score representing the overall achievement in six gender-relevant core domains: 'work', 'money', 'knowledge', 'time', 'power', and 'health'. (see EIGE, 2017: Annex 1). While this index has led to improvements in the availability of gendered data in the European Union, one of its limitations is that high index scores reflect both small gender gaps *and* high levels of overall achievement of both women and men (i.e., population achievement). To overcome this limitation, Permanyer (2015) has proposed getting rid of this overall population attainment component, and instead creating a Gender Gap Measure that should provide less misleading gender inequality estimates. Therefore, the EIGE's GEI can be decomposed into two components: the Gender Gap Measure

that estimates women's attainment relative to that of men, and an Overall Population Attainment Measure that reflects average achievement, without accounting for gender differences.

Moreover, we use an IPVAW indicator that is sensitive to the frequency of victimisation to overcome the limitations of the mainstream IPVAW prevalence indicator. As prevalence indicators do not differentiate between chronic and episodic violence, it is necessary to introduce an indicator of repetition, which is a continuous measure accounting for the frequency of IPVAW. Many studies have highlighted the key role of repetition in portraying victimisation (Walby & Towers, 2017; Walby *et al*; 2017; Walby, Towers & Francis, 2016). The close relationship between partners creates the conditions for chronic victimisation, such as repetition of violent episodes. Thus, our repetition-sensitive indicator allows us to differentiate between episodic and chronic violence (Gómez-Casillas, 2018; Permanyer & Gómez-Casillas, 2020). We also follow previous contributions (Gómez-Casillas, 2018; Permanyer & Gómez-Casillas, 2020) that argued that it is conceptually relevant to differentiate IPVAW that occurred in the past and was perpetrated by the *previous* partner from IPVAW that was perpetrated by the *current* partner. Although information about violence perpetrated by previous partners is also important to examine (and has a higher prevalence than the violence committed by the current partner), merging present and past victimisation could lead to misleading conclusions (Permanyer & Gómez-Casillas, 2020). Moreover, the survey does not allow us to account for the number of previous partners nor consider male partners' individual-related status (i.e. partner's educational attainment or employment status), which deems critical to our research objectives. In sum, higher prevalence measured using traditional IPVAW indicators (i.e., perpetrated by any current or former partner) could also mean that union formation and dissolution occur more often, that a woman's probabilities of escaping a violent relationship are higher, or that a man's probabilities of reoffending against a new partner are higher (Permanyer & Gómez-Casillas, 2020). As a consequence, by using a repetition-sensitive indicator, we account for violence chronicity; and by taking into account IPVAW perpetrated by the *current* partner only, we accurately assess violent victimisation occurring in the present.

Dependent variable

Due to the abovementioned conceptual reasons, the dependent variable is the repetition-sensitive indicator measuring physical or/and sexual violence perpetrated by the *current* partner, which was introduced in a previous study (Permanyer & Gómez-Casillas, 2020). The survey asked women if they were experiencing specific forms of violent victimisation using a modified version of the Conflict Tactic Scale; and, if the respondents said they were, they were asked if they had

experienced violence once, two to five times, or six or more times (see Table 1). The thusly constructed repetition-sensitive indicator had values ranging from 0 to 100; with 0 indicating no violent victimisation and 100 indicating that the woman had experienced every form of violence with the highest frequency. This indicator is therefore a slightly modified version of Permanyer & Gómez-Casillas' (2020) proposed indicator with values ranging from 0 to 1 (this is merely a change in the scale of the indicator).

Independent variables at the contextual level

While some early studies focused on women's dependency on their male partners at an interpersonal level (i.e., Kalmuss & Straus, 1982), Yllö (1984) enriched the discussion by highlighting that women and men bring resources to their couple relationships as members of a 'gender class'. Yllö (1984) uses this terminology to acknowledge that she refers to structural inequalities, which implies differences in the access to resources as a result of institutionalized inequalities, rather than as individuals, which places these studies in a wider social context, considering on the one hand, status at a contextual level and, on the other hand status at an individual level.

On the contextual level, we include five indicators: (1) the original GEI; (2) our modification of the index to measure the Gender Gap Measure; (3) our modification of the index that captures only the achievement component (Overall Population Attainment); (4) women's achievement and men's achievement separately; and (5) women's and men's achievement in the work and money domains. All of these constructed indicators are derived from the European Institute for Gender Equality's Gender Statistics Database, provided by the EIGE in response to our request. We describe each of the indicators in detail below (the formulas for their construction are available in Annex 1).

Gender Equality Index (GEI)

First, we assess the impact of the EIGE's Gender Equality Index (EIGE, 2021a) –a summary measure of 31 indicators for six domains 'work', 'money', 'knowledge', 'time', 'power', and 'health')– on violent victimisation using the indicator as proposed by the EIGE, but slightly changing it to have values ranging from 0 to 1, with 0 indicating full inequality, and 1 indicating full equality.

Gender Gap Measure

Following Permanyer's (2015) contributions, we decompose the EIGE's GEI into two indicators, a Gender Gap Measure and an Overall Population Attainment Measure, which are based on the 31 input indicators, corresponding to the six domains ('work', 'money', 'knowledge', 'time', 'power', and 'health') and used by the EIGE for their GEI index. With respect to the Gender Gap Measure, we follow Permanyer's (2015) methodology, but apply his approach to the list of indicators for 2012 (see EIGE, 2017: Annex 1). This newly created index has values ranging from 0 to 1, with 0 indicating full inequality, and 1 indicating full equality.

Overall Population Attainment Measure

We also generate an Overall Population Attainment Measure that focuses on the average attainment for women and men together. This measure considers each average indicator score for women and men, as provided by the EIGE's Gender Database. The process of turning the Gender Equality Index into an Overall Population Attainment Measure can be challenging because certain indicators are not relevant for overall achievement, or because it is not possible to provide adequate measures (i.e., in the domain of power, the indicator includes shares of female/male representatives; more details are provided in Annex 2). The Overall Population Attainment Measure has values ranging from 0 to 1, with 0 indicating no achievement for the indicators of the GEI index (i.e., in the six domains of (work, money, knowledge, time, power and health), and 1 indicating full achievement.

Women's and men's absolute (economic) achievement

To assess the Marxist feminist approach, we construct the achievement component separately for women (again, with values ranging from 0 (no achievement) to 1 (full achievement), as well as indicators for the work and money domains in particular (to test the Marxist feminist argument more rigorously). Mirroring the women's absolute achievement indicator, we created the men's absolute achievement indicator, which allows us to test the male privilege protection hypothesis. These indexes have values ranging from 0 to 1, with 0 indicating no achievement and 1 indicating full achievement. For further details, see Annexes 1 and 2.

Independent variables at the individual level

Regarding the independent variables, we include variables that were introduced in previous studies using the FRA's EU-VAW survey (Humbert *et al*. 2021; Ivert *et al*. 2019; Reichel, 2017), such as (1) socio-demographic characteristics of women, (2) other characteristics of women (of which some of we improve), (3) couple characteristics, and (4) men's characteristics. First, we

include women's age, number of children, and employment status. Although these three variables turned out to be insignificant in our models, we have kept them in order to control for possible composition effects in the age, family, and employment structures of countries. Second, we also include other characteristics of women that previous research has demonstrated to have an impact on IPVAW: women's education, child abuse, marital status, residential area type, and subjective perception of the household's income situation (Ivert *et al*. 2019; Humbert *et al*. 2021; Till-Tentschert, 2017). We improved the measurement of some of these variables: (a) we look at the frequency of child abuse rather than the experience of it (yes/no); and (b) we extend the marital status variable to create a three-category variable: married or cohabiting; having a romantic partner but not living with him; and separated. In addition to these characteristics of previous research, we consider whether the respondent feels she belongs to a minority group. This is a summary variable which indicates that women declare that they consider that they belong to at least one of the following minority groups: ethnic, immigrant, religious, sexual, in terms of disability, or any other minority.[2] Third, we also look at three characteristics of the couple: the duration of the relationship, as repetition would be expected to increase in longer relationships; relative earnings, which reflect status inconsistency at the individual level; and an indication of each partner's power with respect to the couple's consumption patterns, which reflects the couple's egalitarian attitudes towards decision-making. Fourth and finally, since the focus of this paper is also on the role of men, we take into account the male partner's educational level and employment status, as well as the frequency in which he gets drunk. Previous studies have indicated that being often drunk has a role in triggering violence (not on who commits, but when). Even though the evidence on to what extent such an effect would be causal is mixed, studies have shown that alcohol influences the circumstances under which men are likely to commit IPVAW. Men who committed IPVAW when being drunk more often justified their aggressive and violent behaviour, as well as their belief surrounding the role of alcohol related to sexual behaviour (Abbey, 2011; Reichel, 2017; Humbert *et al*., 2021).

[[Insert Table 1 about here]]

[2] There is somewhat overlap between the different 'types' of minorities, especially with the last item (belonging to any other minority). Actually, it turns out that all of the different categories have been coded as 'belonging to any other minority'. In addition, there are 1104 respondents who did not consider themselves to be one of the mentioned groups, but they mentioned to belong to another minority. If we would have separated all categories, we would have in many countries only 1 or 2 cases, so we decided in the end to group them all together.

Hypothesis testing

Derived from these theoretical approaches, we formulate the following hypotheses:

Hypothesis 1. A positive effect of gender equality on repetitive IPVAW, which lends support to the ameliorative hypothesis as proposed by the liberal feminist scholars. The indicator which more accurately accounts for gender equality is the Gender Gap Measure, thus a positive effect of this in repetitive IPVAW would lend support to this hypothesis.

Hypothesis 2. A negative effect of the different measures of gender equality on repetitive IPVAW, which provides support to the backlash hypothesis as proposed by the radical feminist scholars. A negative effect of the Gender Gap Measure on repetitive IPVAW would provide support to this hypothesis.

Hypothesis 3. A negative effect of women's absolute financial and labour status on repetitive IPVAW, which provides support to the Marxist feminist theorists.

Hypothesis 4. A negative effect of men's absolute financial and labour status on economic achievement on repetitive IPVAW, which provides support to the male privilege protection hypothesis.

Analytical strategy

We perform multivariate analyses using stepwise multilevel linear regression models. The operationalisation and descriptives of all the variables are provided in Table 1. Our final analyses cover eight models, seven of which we present in Table 2 (Model 0 has only individual level variables and their coefficients are similar to models 1 to 7). Based on these theoretical and methodological considerations, we take the following approach: First, we test the impact of the EIGE's GEI index on IPVAW (Model 1). Second, we decompose the GEI into two conceptually distinguishable components: one operationalising the Gender Gap Measure (Model 2) and the other one operationalising Overall Population Attainment Measure (Model 3). Introducing the first component into the analysis leads us to rigorously assess the ameliorative effects versus backlash debate. In turn, the Overall Population Attainment component can be further decomposed into the two components of women's attainment (Model 4) which allows us to test predictions from the Marxist feminist theories, and men's achievement which allow us to test de male privilege protection hypothesis (Model 5). Because these Marxist feminist theories mainly focus on women's financial status (Model 6), we additionally narrow down the achievement component to the 'work' and 'money' domains. Finally, we focus on the role of men's status (Model 7).

[[Insert Table 2 about here]]

Results

Table 2 presents the models mentioned above. The results at the individual level are stable across all models. The individual-level results indicate that a woman was more likely to endure repetitive acts of violence from her current partner if she had experienced more repetitive violence during her childhood, was lower educated, belonged to a minority group, or was living in a household where she was finding it difficult to cope with the present income. In terms of the partner's characteristics, a woman was more likely to experience repetitive violence if her partner was lower educated and was getting drunk frequently. Having had shorter and non-cohabiting previous relationships tended to protect a woman from violence, especially if those relationships had been more egalitarian in terms of decisions about how to spend income.

On the contextual level, there is little variance to be explained, as only 0.9% of the total individual and macro-level variance takes place at the context level (there is no difference in the intraclass correlation coefficient of models depending on whether it does or does not include composition effects; i.e., whether individual-level variables are included in the 'empty' model). All of our macro-indicators of interest explain a little bit of this contextual-level variation, with men's absolute overall status for the six domains explaining the most (33% of the total variance at the macro level).

The first model introducing contextual variables (M1) shows a negative and significant relationship between the EIGE's Gender Equality Index - GEI (merging gaps and overall achievement) and violence repetition (p-value<0.01). We observe a small effect (b=-2.273); a one standard deviation change in the original GEI index goes together with a (0.087*-2.273) = -0.20 point difference on the repetitive partner violence scale (which has values ranging from 0 to 86, and has a standard deviation of 4.4). The maximum effect that the original GEI index can explain is [(0.80-0.50)*-2.273][3] = -0.68 points on the IPVAW repetition-sensitive indicator, which is still very little. Despite the small effect size, the effect is in the opposite direction of the backlash hypothesis, which predicted that more equality would go together with more IPVAW. However, the next model (M2) shows that the Gender Gap Measure has no significant impact on violence repetition (b=-2.153). In contrast, the Overall Population Attainment Measure (M3) has a negative and statistically significant impact (b=-1.662; p-value<0.001). These results indicate that the Overall Population Attainment component is leading the EIGE's GEI influence on IPVAW.

[3] The EIGE's GEI has values ranging from 50 to 80, see Table 1.

Finally, we find that men's absolute overall status (M5) shows a stronger effect (b=-2.352; p-value<0.001) than women's absolute overall status (M4; b=-1.481; p-value<0.01), which points to the importance of the men's status in IPVAW. In contrast, when we assess men's and women's work and money composite indicator, we notice the opposite pattern, with M6 indicating that the impact of the women's effect (-2.138; p<0.01) is larger than the men's effect (-1.918; p<0.01), as shown in M7.

Robustness tests

We performed a couple of robustness checks with respect to the effect sizes of our macro-level indicators (see results in Annex Figure 3). We examine both methodological and theoretical issues. More specifically, we consider: the importance of the method of first contact to conduct the interview; the response rate; and overall violence in a country measured using homicide rates. We also did some outlier analyses. Below we discuss each of these corrections in detail.

First, with respect to the methodological issues of the FRA survey, previous studies highlighted that some limitations of the survey make it difficult to draw reliable conclusions from its results. Sylvia Walby and colleagues (Walby *et al*., 2017; Walby & Towers, 2017) pointed out that the method of first contact constitutes one of the main limitations. While women were first approached by phone in the Nordic countries, women were first approached face to face in most of the EU countries. Although the whole interview was not conducted by phone in the Nordic countries, women had the opportunity to accept or refuse to participate in the survey, which would have affected the (selective) response rates; i.e., women who were less motivated to talk about their experiences were more likely to drop out when given the opportunity to say 'no' on the phone. We take this aspect into account by controlling for the method of first contact, and also include those countries where women were first approached by letter (Malta, Slovenia, and the United Kingdom) (FRA, 2014: 13), which is not usually considered in the debate. Variations in the response rate have also been identified as a methodological drawback of the FRA's EU-VAW survey (Walby & Towers, 2017; Walby *et al*; 2017). Although the response rate was related to the method of first contact, we also considered this point in the analysis.

We found that the method of first contact for conducting the survey interview hardly affected the coefficients of the EIGE's GEI, the Gender Gap Measure, or women's or men's status. Moreover, the country response rate did not appear to change our conclusions. Indeed, if anything, these methodological 'correction' variables only increased the negative effect sizes of the attainment variables (see the coefficients for Models "meth").

With respect to the theoretical control, we note that, following previous studies, it could also be argued that violence against women is higher in those countries where violence is more normalised (Humbert *et al*., 2021). We therefore take into account the most reliable indicator of overall country-wide violent victimisation: homicide rates (UNODC, 2021). While other types of violent crimes, such as non-lethal violent crimes or robbery, are widely underreported, lethal violence is a robust indicator (Krug *et al*., 2002; UNODC, 2013). Again, we did not find any significant impact of this indicator on IPVAW, or a substantial change in the impact of the overall population attainment indicator or one of its subindices on IPVAW.

Third and finally, we checked to what extent certain outliers might affect our results. When looking at the extent IPVAW repetition, we see that Romania, which is a country with a large gender gap and low achievement, has an extremely high score on the IPVAW indicator. We therefore ran models excluding this country, but found no substantive changes in our models. This also applies to the three Nordic countries included in the sample (Denmark, Finland, and Sweden). When excluding these three countries –which are the only ones for which the telephone instead of a letter or a face-to-face visit was used as a first contact method– we did not find substantive changes in the coefficients of our variables of interest. Results are available upon request.

Discussion

Previous research analysing the relationship between gender equality and violent victimisation using FRA's EU-VAW survey data and the EIGE's Gender Equality Index-GEI (Ivert *et al*., 2019; Sanz-Barbero *et al*., 2018; Humbert *et al*., 2021) reported either inconclusive findings or a positive relationship, and thus supported the backlash hypothesis. In this paper, we not only tested the impact of the EIGE's GEI index on an improved IPVAW repetition-sensitive indicator; we also improved the measurement of gender inequality, thereby distinguishing two components of the EIGE's GEI: (1) a Gender Gap Measure and (2) an achievement component, using the Overall Population Attainment Measure. In addition, this latter component was included in our models as an overall population attainment measure, and separately for men and women. In this way, we could test the Marxist feminist and the male privilege protection hypothesis.

Our results highlight the following points. First, in contrast to previous results confirming the backlash hypothesis, we found the opposite effect: namely, a negative and statistically significant relationship between the EIGE's GEI and the repetition-sensitive indicator of current partner IPVAW. Therefore, if EIGE's GEI is considered as a proper measure of gender inequality, our results would support the ameliorative hypothesis. Thus, we can conclude that support for either the backlash or the ameliorative hypothesis is very sensitive to the IPVAW indicator used. This

finding on the impact of different indicators on drawing different conclusions is aligned with previous studies (Permanyer, & Gómez-Casillas, 2020; Walby, Towers & Francis, 2016).

Second, when we separated the EIGE's GEI into two different composite indicators, we found that the Gender Gap Measure did not have a significant coefficient, and thus provided no support for either the ameliorative or the backlash hypothesis. Therefore, the results on the relationship between gender equality and IPVAW repetition are also sensitive to how gender equality is measured. On the contrary, we found that the Overall Population Achievement was the component that most explained the lower rates of IPVAW repetition. This finding could be connected with the fact that in countries more committed to investing in social policies, namely the social democratic ones, violence is lower than in liberal ones (Walby, 2009). Hence, higher social expenditure and welfare in general would be a critical aspect leading to overall population achievement, thus impacting in lower victimization rates.

Third, our results on the negative and statistically significant effect of women's absolute status on IPVAW repetition support the Marxist feminist position. These results contrast with Stamatel's (2018), who didn't find any significant results for women's absolute status in the European Union, but comparisons with this study are challenging due to the differences in methodologies and indicators used. Our results could be understood following Dugan et al. (2003), who state that beyond a woman's specific status and circumstances, her perception of her potential access to resources may discourage her from or encourage her to leave a threatening relationship. In other words, mirroring contributions in the field of union dissolution (van Damme and Kalmijn, 2014), it could be argued that it is not only the actual economic costs of leaving an abusive relationship that matter, but also the expected economic costs of leaving. Thus, women who live in contexts where women have achieved higher levels of economic independence, even if they are not employed or have low occupational status or low earnings, may be expected to leave an abusive relationship, as their expected economic costs of leaving are low in such contexts.

Fourth, regarding men's absolute status, our results lend support to the male privilege protection hypothesis. Although we found that women's absolute economic status was more important than men's, for *overall* achievement for the six domains ('work', 'money', 'knowledge', 'time', 'power', and 'health'), we found that men's achievement has a larger effect than women's. These apparently mixed results supporting both the Marxist feminist position and male privilege protection hypothesis may be coherently explained considering that in the European Union, women structural economic and labour status is what allows them to leave the violent relationship and, at the same time, women are 'allowed' to gain in these domains if the overall attainment of males in considering all the domains ('work', 'money', 'knowledge', 'time', 'power', and 'health') is not threatened. These results could indicate that men, as a gender class, are not equally prepared for gender equality in all domains. Here we should distinguish between a structural

position derived from economic and labour status and that derived from overall status (also including the domains 'knowledge', 'time', 'power', and 'health'). Note that we refer here to men's overall achievement levels at a country level, and individual men in those countries (contexts) would be affected by the overall levels of achievement of males in that context (contextual effect) –even though there might also be a (small) composition effect left of men's status that we do not capture by controlling for men's education and men's employment status.[4]

Our study relies on cross-sectional data, which prevents us from providing conclusions over time. With this disclaimer in mind, we can allow some theoretical considerations to be tested in future studies using longitudinal data. The male privilege protection hypothesis extends previous contributions considering that gains in gender equality will go through phases of backlash (Brownmiller, 1975; Russell, 1975) and articulates with the Marxist feminist hypothesis. Both would theoretically explain why there are periods of gains in women's rights in certain areas in an amelioration process, and how they interlock with periods of backlash. Hence, as women's gains in terms of equality impact on increased levels of gender equality, a backlash to these newly acquired benefits for women might occur if men feel that they are losing too much of their absolute overall status. For men, it would be no reaction in terms of IPVAW if women's status improves in specific areas, such as economic and work-related domains, as long as they do not perceive that their own position does not decrease in absolute terms. In sum, following Whaley *et al*. (2013) and Stamatel (2018), who already acknowledged that IPVAW arises from an interplay of counterbalancing forces that provoke either ameliorative or backlash effects, we provide an explanation that could account for both processes, which also entails understanding gains in absolute status for both men and women and how this would allow an amelioration process or triggering backlash effects. Similarly, this status-related process could explain the increase in violence against women repetition during the 2008 financial crisis in England and Wales (Walby, Towers & Francis, 2016).

This study has several limitations, which lead us to be cautious in our conclusions. These limitations have to do with both methodological and theoretical aspects. Methodologically, the most important limitations are related to the drawbacks of the FRA's EU-VAW survey, such as problems with how the respondents were approached; the questionnaires and the scales used to gather information on victimisation; the sample sizes and sample frames; and the capping of the number of violent incidents included (Walby *et al.*, 2017; Walby and Towers, 2017, Permanyer

[4] Macro-level effects can occur due to both contextual level and individual composition effects. In this paper, we do not aim to distinguish between the two, as this would require more data on individual level socio-economic, time, and well-being characteristics of men and women (i.e. for each of the six EIGE GEI dimensions individual level characteristics). However, our reasoning mainly refers to contextual level effects. We leave disentangling composition from contextual effects to future research.

& Gómez-Casillas, 2020; Humbert *et al.*, 2021). Due to the small sample size, we could not analyse different sources of minority separately, and we had to collapse them into one variable. Theoretically, we proposed several hypotheses about processes over time that should ideally be tested using cross-national *panel* data. In this context, it is worth mentioning that since Yllö's (1984) study first appeared, there has been much discussion about the backlash and ameliorative effects across geographies, while the theoretical interpretations often relied on gender equality advances over time. In other words, different geographies are often considered to be at different stages of development in the road leading to gender equality. For instance, the Nordic countries are considered in a higher stage of "history" due to their higher levels of gender equality. However, Wemrell's (2022) study of backlash shows that Sweden should not be portrayed as having reached an ultimate phase of development in terms of gender equality. Thus, our paper has limitations related to the fact that we needed to rely on cross-sectional data. We would therefore like to call for a new data collection effort that not only updates the 2012 FRA data, but also looks at longitudinal processes. Still, our male privilege protection hypothesis could be helpful for understanding the mixed results that appear to support both ameliorative and backlash effects. Additionally, due to data availability, we were not able to account for the cultural-specific issues that shape women's disclosure of their experiences of violence in a country. Using FRA's EU-VAW survey question asking respondents if they know any women who has suffered any form of domestic violence to account for women's disclosure at a country level would not be appropriate because women would report a higher knowledge of women in this situation in the countries where violent partners re-partner more often, as explained by the violent partners' rotation hypothesis (Gómez-Casillas, 2018; Permanyer, & Gómez-Casillas, 2020). Finally, we focus our study on the European Union Member States, where levels of gender equality are quite high, which calls for being cautious in not extrapolating our conclusions to other contexts.

Conclusions

Our results do not clearly support either the backlash or the ameliorative hypothesis when gender equality is operationalized using the Gender Gap Measure. They do, however, present two other important findings: First, country-level women's status, and especially women's financial and employment-related status, have an effect on lessening IPVAW, thus providing support for the Marxist feminist theoretical positions. In countries where women's economic and labour status is higher, women would be encouraged to leave a violent relationship not only due to each women's actual status but also due to her potential access to resources after a separation. Second, our results indicate that men's overall status has an important impact on lower rates of IPVAW, lending support to the 'male privilege protection' hypothesis. Interestingly, the effect of women's status in the 'work' and 'money' domains is larger than men's, while the effect of men's overall status

for the six domains ('work', 'money', 'knowledge', 'time', 'power', and 'health') is higher than women's. With respect to men, in countries where their overall status is higher, they would feel that their privilege as members of a 'gender class' is protected and therefore women's status gains in economic and financial terms would not pose a great threat to them. This suggests that men's acceptance of women's status acquisition is not linear and not uniform across sources of status, which would involve an interplay of backlash and ameliorative process.

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Table 1

Table 1. Definitions of measures used in the analyses and descriptive statistics, FRA (mean and standard deviation / percentages). Analytical sample – missing cases listwise deleted: N = 27,195 women.

Variable	Definition	Descriptive statistics		
		Percentage or mean (standard deviation)	Mini-mum	Maxi-mum
Main analyses				
IPV repeated current partner	Continuous variable, normalized sum score of answering categories regarding its repetition (0, 1, 3.5, 6) on each of the 13 items: 'pushed you or shoved you'; 'slapped you; threw a hard object at you'; 'grabbed you or pulled your hair'; 'beat you with a fist or a hard object, or kicked you'; 'burned you'; 'tried to suffocate you or strangle you'; 'cut or stabbed you, or shot at you'; 'beat your head against something'; 'being forced you into sexual intercourse'; 'attempt of forced sexual intercourse'; 'made you take part in any form of sexual activity when you did not want to, or you were unable to refuse'; 'consent to sexual activity because you were afraid of what might happen if you refused'	0.77 (4.4)	0	86
Age of respondent	Asked in seven categories: 1. 18-24; 2. 25-29; 3. 30-34; 4. 35-39; 5. 40-49; 6.50-59; 7. 60+	18-24: 6.4; 25-29: 7.7 30-34: 9.7; 35-39: 11; 4049: 23; 50-59: 21; 60+: 22	1	7
Childhood abuse	Frequency of physical and or sexual violence during childhood (continuous variable) based on the following question: "The next questions concern the time when you were under 15 years of age. Before you were 15 years old, how often did any adult – that is, somebody who was 18 years or older – do any of the following to you: Slap you or pull your hair so that it hurt you? Hit you very hard so that it hurt you? Kick you very hard so that it hurt you? Beat you very hard with an object like a stick, cane or belt so that it hurt you? Stab or cut you with something so that it hurt you? Expose their genitals to you when you did not want them to? Make you pose naked in front of any person or in photographs, video or an internet webcam? Touch your private parts - genitals or breasts - when you did not want them to? Make you touch their private parts - genitals or breasts - when you did not want to? Have sexual intercourse with them when you did not want to? Answering categories: Never (0), once (1), more than once (3). Continuous variable, normalized sum score of answering categories regarding its repetition (0,1,3) on each of the 10 items.	0.048 (0.10)	0	1
Education respondent	Highest ISCED level attained: 0 "pre-primary education", 1 "primary education", 2 "lower secondary education", 3 "(upper) secondary education", 4 "post-secondary non tertiary education", 5 "first stage of tertiary education (not leading directly to an advanced research qualification)", 6 "second stage of tertiary education (leading to an advanced research qualification)". Recoded into 1 "low: level 0-2" 2 "mid: level 3-4" 3 "high: level 5-6".	high: 23; medium: 50; low: 27	1	3
Education partner	Idem Education respondent	high: 22; medium: 44; low: 35	1	3
Employment status	Recoded from the following question: "Are you working in a paid job or are you unemployed or doing something else – using this card, how would you describe your **main** activity?" Final categories: 1. "Paid work: Full-time or self-employed", 2. "Paid work – part-time", 3 "Homemaker – looking after the home/children/relatives etc. or on parental leave, other unpaid or voluntary work", 4. "Unemployed", 5 "Student – in training", 6 "Disabled", 7 "Retired", . Missing (military, other)	full-time: 42; part-time: 12; homemaker: 16; unemployed: 8.2; student: 3.7; disabled: 1.2; retired: 16	1	7
Employment status partner	Idem Employment status respondent	full-time: 67; part-time: 2.5; homemaker: 0.4; unemployed: 4.7; student: 2.0;	1	7

		disabled: 1.4; retired: 22		
Living area	1 “Town or village”, 2 “Farm”, 3 “City”.	Town: 63; Farm: 3.3; City: 34	1	3
Children	0 “No children”, 1 “1 Child”, 2 “2 Children”, 3 “3+ Children”	0: 54; 1:21; 2: 18’ 3+: 7.0	0	3
Minority	Categorical variable; checking at least one or more of the categories (1-5 or 7) based on the following question: Thinking about where you live, do you consider yourself to be part of any of the following? Please tell me all that apply: 1. An ethnic minority; 2. An immigrant minority; 3. A religious minority; 4. A sexual minority; 5. A minority in terms of disability; 6. Any other minority group, specify …; 7 None. Recoded: 0. Not belonging to a minority group, 1. Belonging to at least one minority group.	None: 88; 1: 12	0	2
Relative earnings	Would you say that your partner earns less than you, or your earnings are roughly the same, or that your partner earns more than you? 1 “He earns more”, 2 “Equal earning”, 3 “She earns more”, 4 “missing (dk, nap, refused)”	he earns more: 63; equal: 21; she earns more: 12; missing: 4.5	1	4
Income coping	Which of the descriptions on this card comes closest to how you feel about your household’s income nowadays? 1 “Living comfortably on income”, 2”Coping on income”, 3 “Finding it difficult or very difficult on income	living comfortably: 25; Coping: 43; Difficult: 32	1	3
Relationship type	1 “Married or civil partnership; 2 “romantic relationship, not living together”, 3 “separated”	Married: 91; Relationship: 9.1; Separated: 0.3	1	3
Equal say	Do you feel you have an equal say with regard to the use of the household income? 1 “Yes”, 2 “No”, 3 “missing (don’t know, not applicable, refused)”	No equal say: 6.5; Equal say: 83; missing: 11	1	3
Union duration	Asked in seven categories: 1. <1 year; 2. 1-10; 3. 11-20; 4. 21-30; 5. 31-40; 6.41-50; 7. 51+	<1: 2.3; 1-10: 28; 11-20: 21; 21-30: 18; 31-40: 16; 41-50: 11; 51+: 2.6	1	7
Partner drunk	Treated as continuous variable: How often does your partner drink so much that he/she gets drunk? 1 “Never drinks”, 2 “A few times a year or less”, 3 “Once every two months”, 4 “Once a month” 5 “A couple of times a month”, 6 “Once or twice a week”, 7 “Every day or almost every day”. Recoded into: 1. Never, 2. Up to once a month; 3. Up to twice a week, 4. Every day.	1. Never: 60; 2. Up to once a month: 32; 3. Up to twice a week: 6.4; 4. Every day: 0.9	1	4
Gender Equality Index (EIGE’s GEI)	This index (2012), created by EIGE, is a composite measure of six domains (work, money, knowledge, time, power, health). Together it consists of 31 indicators (when it was first released it measured 27 indicators) which measure both the Gender Gap and Women’s Achievement. . It originally ranges from 1 to 100. Source: Database sent by EIGE under request	61 (8.6)	50	80
Gender Gap Measure	This index (2012) is the Gender Gap component of EIGE’s GEI, uncontrolled for Achievement in the six domains. It ranges from 0 to 1, meaning 0 full inequality and 1 full equality. Source: Permanyer (2015).	72 (6.0)	60	84
Overall Population Attainment Measure	This index (2012) is the Overall Population Attainment component of EIGE’s GEI in the six domains. It ranges from 0 to 1, meaning 0 no achievement and 1 full achievement.	64 (14)	38	90
Women’s absolute achievement	This index (2012) is the Overall Women’s achievement in the six domains. It ranges from 0 to 1, meaning 0 full inequality and 1 full equality.	56 (14)	35	88
Men’s absolute achievement	This index (2012) is the Overall Men’s achievement in the six domains. It ranges from 0 to 1, meaning 0 full inequality and 1 full equality.	67 (10)	45	85
Women’s abs. achievement work and	This index (2012) is the Overall Women’s achievement in the two of the six EIGE’s GEI domains: ‘work’ and ‘money’. It ranges from 0 to 1, meaning 0 full inequality and 1 full equality.	72 (9.5)	57	88

money domain				
Men's abs. achievement work and money domain	This index (2012) is the Overall Men's achievement in the two of the six EIGE's GEI domains: 'work' and 'money'. It ranges from 0 to 1, meaning 0 full inequality and 1 full equality.	74 (11)	58	91
Supplementary analyses (Annex 3)				
Contact method	Based on table 4.2 of FRA's EU VAW Survey technical annex: method used for contacting the sampled addresses and individuals for the first time, by EU Member State. 1. Directly face-to-face; 2. By telephone; 3. By letter	Face-to-face: 77 Telephone: 11 Letter: 11	1	3
Response Rate	Based on table 7.2 of FRA's EU VAW Survey technical annex: method used for contacting the sampled addresses and individuals for the first time, by EU Member State.	48 (16)	19	84
Homicide	Owns calculations for the year 2011 (average 2010-2012) based on victims of intentional homicide. Homicide rate average 2011-2012. Source: Authors' elaboration from UNODC, 2021.	1.52 (1.20)	0.73	6.8

Source: Authors' calculations based on the FRA's survey on Violence Against Women Survey dataset, 2012 and other sources.

Table 2

Table 2. Experience of Repeated IPVAW for women who are currently partnered. Multilevel Linear Regression on continuous Repeated IPVAW experience variable (Minimum 0 No IPVAW, maximum 100 Many repeated IVP experiences)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Age 18-24	ref	ref	ref	ref	ref	ref	ref
Age 25-29	0.154	0.151	0.154	0.153	0.155	0.155	0.155
Age 30-34	0.145	0.143	0.144	0.144	0.145	0.145	0.146
Age 35-39	0.090	0.087	0.090	0.089	0.090	0.089	0.090
Age 40-49	0.169	0.164	0.170	0.168	0.170	0.168	0.169
Age 50-59	0.154	0.148	0.155	0.154	0.154	0.152	0.152
Age 60+	0.122	0.114	0.126	0.125	0.125	0.120	0.120
Frequency Child Abuse	3.490***	3.483***	3.494***	3.491***	3.495***	3.491***	3.493***
High Educat. Level	ref	ref	ref	ref	ref	ref	ref
Medium Educat. Level	0.098	0.099	0.095	0.096	0.096	0.098	0.099
Low Educat. Level	0.254**	0.255**	0.250**	0.250**	0.252**	0.255**	0.257**
High Educat. Level Partner	ref	ref	ref	ref	ref	ref	ref
Medium Educat. Level Partner	0.026	0.028	0.025	0.026	0.023	0.025	0.025
Low Educat. Level Partner	0.330***	0.333***	0.326***	0.329***	0.325***	0.330***	0.330***
Full-time or self-employed	ref	ref	ref	ref	ref	ref	ref
Parttime	0.109	0.100	0.114	0.108	0.119	0.113	0.114
Homemaker/unpaid work	-0.030	-0.033	-0.027	-0.031	-0.024	-0.026	-0.024
Unemployed	0.149	0.149	0.149	0.149	0.149	0.148	0.148
Student	-0.019	-0.027	-0.015	-0.018	-0.015	-0.020	-0.020
Disabled	0.249	0.241	0.255	0.250	0.257	0.248	0.247
Retired	-0.099	-0.098	-0.101	-0.099	-0.102	-0.101	-0.102
Ftime or self-employed Partner	ref	ref	ref	ref	ref	ref	ref
Parttime Partner	0.232	0.230	0.236	0.233	0.237	0.233	0.233
Homemaker Partner	2.230***	2.227***	2.228***	2.229***	2.225***	2.226***	2.226***
Unemployed Partner	0.443***	0.441***	0.444***	0.443***	0.443***	0.442***	0.441***
Student Partner	0.202	0.198	0.202	0.201	0.203	0.202	0.203
Disabled Partner	0.743***	0.739***	0.748***	0.745***	0.750***	0.743***	0.742***
Retired Partner	0.069	0.070	0.069	0.069	0.069	0.070	0.070
Town or Village	ref	ref	ref	ref	ref	ref	ref
Farm	0.359*	0.357*	0.361*	0.362*	0.357*	0.354*	0.351*
City	-0.023	-0.021	-0.025	-0.023	-0.027	-0.025	-0.025
No Children	ref	ref	ref	ref	ref	ref	ref
1 Child	0.025	0.025	0.024	0.025	0.024	0.025	0.024
2 Children	0.045	0.044	0.044	0.045	0.044	0.044	0.044
3+ Children	0.121	0.118	0.122	0.121	0.122	0.120	0.119
Not belonging to a minority	ref	ref	ref	ref	ref	ref	ref
Belonging to at least one minority	0.247**	0.245**	0.246**	0.245**	0.247**	0.247**	0.247**
He earns more	ref	ref	ref	ref	ref	ref	ref
Equal Earning	0.050	0.051	0.050	0.050	0.050	0.050	0.050
She earns more	0.015	0.013	0.017	0.016	0.017	0.015	0.015
Earnings missing	0.139	0.142	0.138	0.138	0.138	0.139	0.139
Living comfortably on present income	ref	ref	ref	ref	ref	ref	ref
Coping on present income	-0.058	-0.049	-0.063	-0.058	-0.065	-0.061	-0.061
Finding it difficult or very difficult on present income	0.323***	0.338***	0.317***	0.324***	0.313***	0.319***	0.319***
Married or civil partnership	ref	ref	ref	ref	ref	ref	ref
Romantic relationship	-0.874***	-0.879***	-0.873***	-0.876***	-0.871***	-0.875***	-0.873***
Separated	-0.175	-0.178	-0.171	-0.174	-0.169	-0.175	-0.174
No equal say in how to spend income	ref	ref	ref	ref	ref	ref	ref
Equal say in how to spend income	-3.027***	-3.030***	-3.025***	-3.026***	-3.025***	-3.028***	-3.028***
Equal say income Missing	-2.179***	-2.177***	-2.178***	-2.177***	-2.179***	-2.176***	-2.177***
Duration union less than 1 year	ref	ref	ref	ref	ref	ref	ref
Duration relationship 1-10 years	0.026	0.028	0.025	0.026	0.024	0.025	0.026
Duration relationship 11-20 years	0.293	0.296	0.291	0.292	0.291	0.292	0.293
Duration relationship 21-30 years	0.320	0.324	0.319	0.320	0.319	0.321	0.321
Duration relationship 31-40	0.393	0.398	0.391	0.392	0.391	0.393	0.394

years							
Duration relationship 41-50 years	0.688**	0.693**	0.686**	0.686**	0.687**	0.689**	0.690**
Duration relationship 51+ years	0.906***	0.908***	0.906***	0.905***	0.907***	0.908***	0.910***
Partner never drunk	ref	ref	ref	ref	ref	ref	ref
Partner drunk up till once a month	0.363***	0.362***	0.364***	0.366***	0.362***	0.361***	0.359***
Partner drunk up till twice a week	2.143***	2.141***	2.147***	2.147***	2.144***	2.140***	2.138***
Partner drunk every day	8.304***	8.305***	8.302***	8.304***	8.299***	8.301***	8.299***
EIGE's GEI	-2.273**						
Gender Gap Measure		-2.153					
Overall Population Attainment Measure			-1.662***				
Women's abs. achievement				-1.481**			
Men's abs. achievement					-2.352***		
Women's abs. ach. work and money domain						-2.138**	
Men's abs. ach. work and money domain							-1.918**
_cons	3.604***	3.766***	3.285***	3.049***	3.801***	3.750***	3.638***
sd country level	0.34	0.37	0.32	0.34	0.31	0.34	0.34
sd individual level	4.13	4.13	4.13	4.13	4.13	4.13	4.13
icc	0.007***	0.008***	0.006***	0.007***	0.006***	0.007***	0.007***
BIC	154831	154835	154827	154830	154826	154830	154830
N	27195	27195	27195	27195	27195	27195	27195

Notes:

[1] * p<0.05, ** p<0.01, *** p<0.001

[2] Bold variables are country-level variables and their coefficients

Source: Authors' calculations based on the FRA's survey on Violence Against Women Survey dataset, 2012 and other sources.

Supplemental Annexes:

Supplement to: Gómez-Casillas, A.; van Damme, M.; Permanyer, I. Women's and Men's Status: Revisiting the Relationship Between Gender Equality and Intimate Partner Violence Against Women in Europe. *Journal of Interpersonal Violence* https://doi.org/10.1177/08862605231158760

Annex 1

The formula to estimate the Gender Gap Measure, the Overall Population Attainment Measure and the and women's absolute status is the following EIGE's aggregation methodology (EIGE, 2017: 17)

$$I_i^t = \prod_{d=1}^{n} \left\{ \prod_{s=1}^{k_d} \left[\sum_{v=1}^{n_s} \frac{\Upsilon}{n_s} \right]^{\frac{1}{k_d}} \right\}^{w_d} \quad (1)$$

Where I_i^t is the composite indicator for each of the European Union Member States (i) in the specific year (t); d is the number of domains, 6 for the Gender Gap Measure, the Overall Population Attainment Measure and the Women's absolute status and two for the Marxist indicator (work and money domain); s represents the subdomains; n_s the number of indicator in the subdomains s; k_d is the number subdomain in the domain d; w_d is the weight related to the domain as indicated by experts consulted by EIGE.

For the Gender Gap Measure:

$$\Upsilon(x_{it}) = \left| \frac{x_{it}^w}{x_{it}^m} \right| \quad (2)$$

Where x_{it}^w represent women's scores while x_{it}^m represent men's scores for each of the 28 EU countries (i) in 2012 (t).

For the Overall Population Attainment Measure:

$$\Upsilon(x_{it}) = \frac{x_{it}^a}{M} \quad (3)$$

Where x_{it}^a represents the overall score, aggregating women and men's achievement in each of the indicators and $M$is the maximum observed value across countries.

For the Women's absolute status index

$$\Upsilon(x_{it}) = \frac{x_{it}^w}{M} \quad (4)$$

Where x_{it}^w represent women's achievement in each for each of the 28 EU countries.

Annex 2

Table A1. List of indicators of the Gender Equality Index

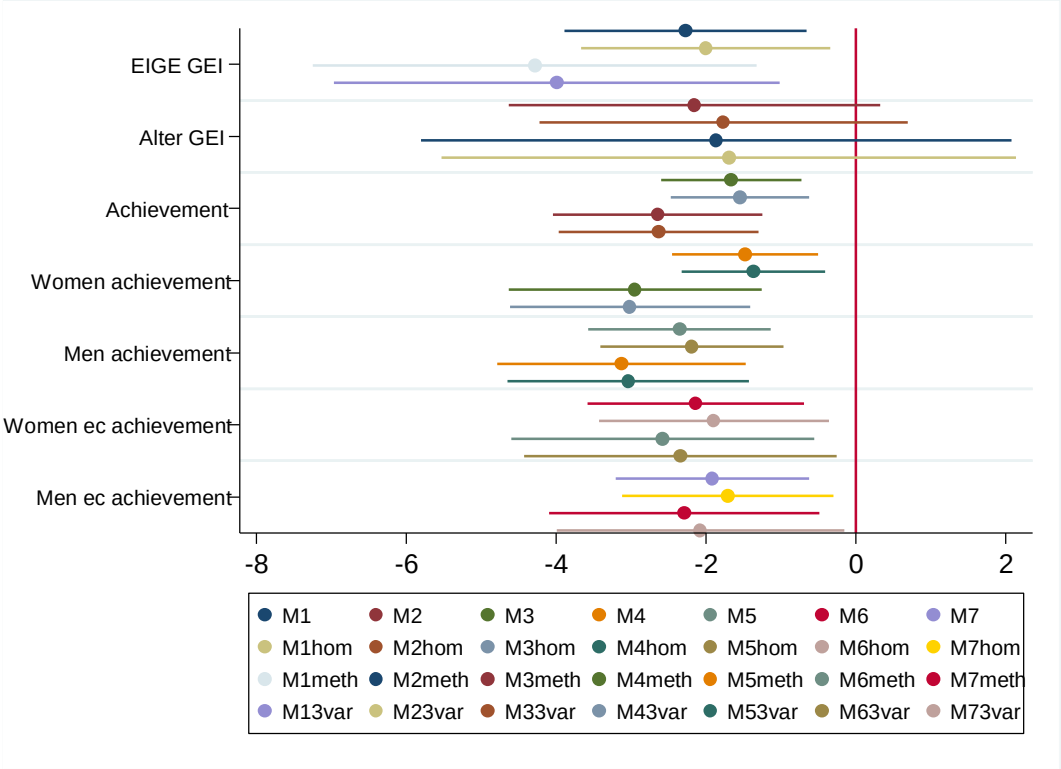
Domain	Subdomain	N	Indicator and reference population	Relevant for Overall Population Attainment indicator	Relevant for women's and men's absolute status
Work	Participation	1	Full-time equivalent employment rate (%, 15+ population)	Relevant	Relevant
		2	Duration of working life (years, 15+ population)	Relevant	Relevant
	Segregation and quality of work	3	Employed people in education, human health and social work activities (%, 15+ employed)	Not relevant	Not relevant
		4	Ability to take an hour or two off during working hours to take care of personal or family matters (%,15+ workers)	Relevant	Relevant
		5	Career Prospects Index (points, 0-100)	Relevant	Relevant
Money	Financial resources	6	Mean monthly earnings (PPS, working population)	Relevant	Relevant
		7	Mean equivalized net income (PPS, 16+ population)	Relevant	Relevant
	Economic situation	8	Not-at-risk-of-poverty, ≥60 % of median income (%,16+ population)	Relevant	Relevant
		9	S20/S80 income quintile share (16+ population)	Not relevant	Not relevant
Knowledge	Attainment and participation	10	Graduates of tertiary education (%, 15+ population)	Relevant	Relevant
		11	People participating in formal or non-formal education and training (%, 15+ population)	Relevant	Relevant
	Segregation	12	Tertiary students in the fields of education, health and welfare, humanities and arts (tertiary students) (%, 15+ population)	Not relevant	Not relevant
Time	Care activities	13	People caring for and educating their children or grandchildren, elderly or people with disabilities, every day (%, 18+ population)	Not relevant	Not relevant
		14	People cooking and/or doing housework, every day (%, 18+ population)	Not relevant	Not relevant
	Social activities	15	Workers doing sporting, cultural or leisure activities outside of their home, at least daily or several times a week (%, 15+ workers)	Relevant	Relevant
		16	Workers involved in voluntary or charitable activities, at least once a month (%, 15+ workers)	Not relevant	Not relevant
Power	Political	17	Share of ministers (% W, M)	Not available*	Relevant
		18	Share of members of parliament (% W, M)	Not available*	Relevant
		19	Share of members of regional assemblies (% W, M)	Not available*	Relevant
	Economic	20	Share of members of boards in largest quoted companies, supervisory board or board of directors (% W, M)	Not available*	Relevant
		21	Share of board members of central bank (% W, M)	Not available*	Relevant
	Social	22	Share of board members of research funding organizations (% W, M)	Not available*	Relevant
		23	Share of board members in publicly owned broadcasting organizations (% W, M)	Not available*	Relevant
		24	Share of members of highest decision-making body of the national Olympic sport organizations (% W, M)	Not available*	Relevant
Health	Status	25	Self-perceived health, good or very good (%, 16+ population)	Relevant	Relevant
		26	Life expectancy in absolute value at birth (years)	Relevant	Relevant
		27	Healthy life years in absolute value at birth (years)	Relevant	Relevant
	Behavior	28	People who do not smoke and are not involved in harmful drinking (%, 16+ population)	Relevant	Relevant
		29	People doing physical activities and/or consuming fruits and vegetables (%, 16+ population)	Relevant	Relevant
	Access	30	Population without unmet needs for medical examination (%, 16+ population)	Relevant	Relevant
		31	People without unmet needs for dental examination (%, 16+ population)	Relevant	Relevant

Note: * not available for Overall Population Attainment indicator measures

Source: Authors' elaboration from EIGE, 2017

Annex 3

Figure A1. Experience of Repeated IPVAW for women who are currently partnered. Multilevel Linear Regression on continuous Repeated IPV experience variable (Minimum 0 No IPV, Maximum 100 Many repeated IPVAW experiences).



Notes: MXhom=Homicide rate, which operationalise criminal climate; MXmeth= Methodological controls (method of first contact and response rate); MX3var=control all three variables together (More information available in table 1)

Source: Authors' calculations based on the FRA's survey on Violence Against Women Survey dataset, 2012 and other sources.

Annex 4

Table A2. Experience of Repeated IPVAW for women who are currently partnered. Multilevel Linear Regression on continuous Repeated IPV experience variable (Minimum 0 No IPV, maximum 100 Many repeated IPVAW experiences). Sensitivity check using macrolevel data of 2010 instead of 2012.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Age 18-24	ref	ref	ref	ref	ref	ref	ref
Age 25-29	0.153	0.150	0.155	0.153	0.156	0.155	0.156
Age 30-34	0.144	0.142	0.144	0.144	0.145	0.145	0.147
Age 35-39	0.089	0.086	0.090	0.089	0.090	0.089	0.091
Age 40-49	0.168	0.161	0.170	0.168	0.170	0.168	0.169
Age 50-59	0.153	0.146	0.155	0.154	0.154	0.151	0.152
Age 60+	0.122	0.112	0.126	0.124	0.124	0.120	0.120
Frequency Child Abuse	3.489***	3.481***	3.493***	3.490***	3.493***	3.490***	3.491***
High Educat. Level	ref	ref	ref	ref	ref	ref	ref
Medium Educat. Level	0.098	0.100	0.095	0.096	0.097	0.098	0.099
Low Educat. Level	0.252**	0.253**	0.250**	0.250**	0.253**	0.256**	0.259**
High Educat. Level Partner	ref	ref	ref	ref	ref	ref	ref
Medium Educat. Level Partner	0.026	0.028	0.025	0.026	0.024	0.025	0.025
Low Educat. Level Partner	0.331***	0.334***	0.326***	0.329***	0.325***	0.330***	0.330***
Full-time or self-employed	ref	ref	ref	ref	ref	ref	ref
Parttime	0.107	0.097	0.114	0.107	0.119	0.114	0.115
Homemaker/unpaid work	-0.031	-0.033	-0.026	-0.031	-0.023	-0.026	-0.023
Unemployed	0.149	0.149	0.149	0.149	0.149	0.148	0.148
Student	-0.021	-0.029	-0.016	-0.019	-0.015	-0.020	-0.020
Disabled	0.249	0.240	0.255	0.250	0.257	0.248	0.246
Retired	-0.099	-0.098	-0.101	-0.099	-0.102	-0.101	-0.102
Full-time or self-employed Partner	ref	ref	ref	ref	ref	ref	ref
Parttime Partner	0.232	0.229	0.236	0.233	0.237	0.234	0.233
Homemaker Partner	2.230***	2.225***	2.228***	2.229***	2.225***	2.226***	2.225***
Unemployed Partner	0.442***	0.440***	0.444***	0.443***	0.443***	0.442***	0.441***
Student Partner	0.201	0.197	0.202	0.201	0.203	0.203	0.203
Disabled Partner	0.743***	0.738***	0.748***	0.744***	0.750***	0.742***	0.741***
Retired Partner	0.069	0.069	0.069	0.068	0.069	0.070	0.070
Town or Village	ref	ref	ref	ref	ref	ref	ref
Farm	0.358*	0.354*	0.361*	0.361*	0.358*	0.355*	0.351*
City	-0.022	-0.020	-0.025	-0.022	-0.027	-0.025	-0.025
No Children	ref	ref	ref	ref	ref	ref	ref
1 Child	0.025	0.025	0.024	0.025	0.024	0.025	0.024
2 Children	0.045	0.044	0.045	0.045	0.044	0.044	0.044
3+ Children	0.120	0.117	0.122	0.120	0.122	0.120	0.119
Not belonging to a minority	ref	ref	ref	ref	ref	ref	ref
Belonging to at least one minority	0.246**	0.245**	0.246**	0.245**	0.247**	0.247**	0.247**
He earns more	ref	ref	ref	ref	ref	ref	ref
Equal Earning	0.050	0.051	0.050	0.050	0.050	0.050	0.050
She earns more	0.015	0.012	0.017	0.016	0.017	0.015	0.015
Earnings missing	0.139	0.143	0.138	0.139	0.138	0.139	0.139
Living comfortably on present income	ref	ref	ref	ref	ref	ref	ref
Coping on present income	-0.056	-0.047	-0.063	-0.057	-0.065	-0.061	-0.062
Finding it difficult or very difficult on present income	0.327***	0.343***	0.317***	0.326***	0.313***	0.320***	0.319***
Married or civil partnership	ref	ref	ref	ref	ref	ref	ref
Romantic relationship	-0.875***	-0.881***	-0.873***	-0.876***	-0.871***	-0.875***	-0.872***
Separated	-0.176	-0.178	-0.171	-0.175	-0.169	-0.176	-0.175
No equal say in how to spend income	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Equal say in how to spend income	-3.028***	-3.031***	-3.025***	-3.027***	-3.025***	-3.028***	-3.029***
Equal say income Missing	-2.178***	-2.177***	-2.178***	-2.177***	-2.179***	-2.176***	-2.178***
Duration union less than 1 year	ref	ref	ref	ref	ref	ref	ref
Duration relationship 1-10 years	0.026	0.029	0.025	0.026	0.024	0.025	0.026
Duration relationship 11-20 years	0.293	0.296	0.291	0.292	0.291	0.292	0.293
Duration relationship 21-30 years	0.320	0.325	0.319	0.320	0.319	0.321	0.322
Duration relationship 31-40 years	0.393	0.399	0.391	0.392	0.391	0.393	0.395
Duration relationship 41-50 years	0.688**	0.693**	0.686**	0.687**	0.687**	0.689**	0.691**
Duration relationship 51+ years	0.906***	0.909***	0.906***	0.905***	0.907***	0.908***	0.910***
Partner never drunk	ref	ref	ref	ref	ref	ref	ref
Partner drunk up till once a	0.364***	0.362***	0.364***	0.366***	0.362***	0.360***	0.358***

month							
Partner drunk up till twice a week	2.144***	2.141***	2.147***	2.147***	2.144***	2.139***	2.137***
Partner drunk every day	8.305***	8.305***	8.302***	8.305***	8.298***	8.300***	8.298***
EIGE's GEI	-2.105*						
Gender Gap Measure		-1.498					
Overall Population Attainment Measure			-1.634***				
Women's abs. achievement				-1.430**			
Men's abs. achievement					-2.291***		
Women's abs. ach. work and money domain						-2.161**	
Men's abs. ach. work and money domain							-1.904**
_cons	3.474***	3.273***	3.267***	3.012***	3.761***	3.770***	3.620***
sd country level	0.35	0.38	0.32	0.34	0.31	0.34	0.34
sd individual level	4.13	4.13	4.13	4.13	4.13	4.13	4.13
icc	0.007***	0.008***	0.006***	0.007***	0.006***	0.007***	0.007***
BIC	154832	154836	154827	154830	154826	154830	154830
N	27195	27195	27195	27195	27195	27195	27195

Notes:

[1] * p<0.05, ** p<0.01, *** p<0.001

[2] Bold variables are country-level variables and their coefficients

Source: Authors' calculations based on the FRA's survey on Violence Against Women Survey dataset, 2012 and other sources.