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Status mismatch and self-reported intimate partner violence in the European Union: does the country's context matter?

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ABSTRACT



We explore whether status mismatch in education or income within couples is associated with self-reported intimate partner violence (IPV) and whether a country's context relates to this. We used data collected by the 'FRA Violence Against Women Survey' in 2012, and we identified three dimensions of self-reported IPV: IPV via controlling behaviour, psychological IPV, and physical IPV. Based on logistic multilevel estimates of approximately 21,000 women in 27 European countries, we found that women, who were higher educated or earned more than their partners, were more likely to report all three types of IPV. We tested the impact of the societal context by looking at gender ideology, crime rates and the acceptance of domestic violence within a country. Our results suggest that only the level of crime directly impacts IPV, albeit only through controlling behaviour and psychological forms. Furthermore, none of the contextual characteristics moderate the relationship between status mismatch and IPV. Therefore, at least in our sample of European countries, the individual-level factors seem to weigh more than the societal context.


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KEYWORDS Intimate partner violence against women; status mismatch; contextual factors; European Union

Introduction

International research conducted over the past decade has provided increasing evidence of the extent of violence against women, particularly violence perpetrated by intimate male partners (World Health

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Organization 2021). The findings show that violence against women is a much more serious and common problem than previously suspected (Devries *et al.* 2013; Esquivel-Santoveña *et al.* 2013; Johnson 2011). It is a major health concern, as 42% of women that experienced intimate partner violence (IPV) reported a serious injury (World Health Organization 2014). Other studies also report that abused women experience short- and long-term physical, mental, sexual and reproductive health problems, and IPV can even lead to a fatal outcome, involving homicide or suicide (Dillon *et al.* 2013; Stöckl *et al.* 2013; Vilariño *et al.* 2018; World Health Organization 2014, 2021). In addition, its impact stretches beyond the women who experience the violence: it also impacts families, friends and society as a whole. Therefore, it is particularly relevant to understand better which women are more at risk of experiencing IPV.

In this study, we focus on the status mismatch within the couple (i.e. education and income mismatch) as a risk factor for IPV against women. Our choice is based on several arguments. First, while women's participation in education and in the labour market has increased, family sociology scholars still find a tendency towards couples where the men have higher or similar socio-economic status (e.g. education level or income) (Schwartz 2013). These findings suggest that couples in which the woman has a higher education or income level are still relatively rare, but when women with high socio-economic status are searching for a partner, the chance increases that they will date a partner with lower socio-economic status (Esteve *et al.* 2012; Van Bavel 2012). Given the fact that scholars have found that the risk for IPV might increase when women have higher education or income levels than their male partners (Atkinson *et al.* 2005; Weitzman 2014; Zhang and Breunig 2021), this emphasizes the social relevance of examining this topic.

Second, although the cited research suggests that the case of status mismatch and IPV is closed, we argue that we still need more understanding about this relationship. When looking at educational and income mismatch, results are inconsistent with some researchers reporting that the mismatch was related to increased IPV (Atkinson *et al.* 2005; Weitzman 2014; Zhang and Breunig 2021), while others found the opposite or no effect (Ahmadabadi *et al.* 2020; Aizpurua *et al.* 2017; Franklin and Menaker 2014; Reichel 2017; Rodríguez-Menés and Safranoff 2012). An explanation of such inconsistencies could be that researchers have focused on different dimensions of power mismatch, i.e. education or income, and different aspects of IPV, e.g. physical or emotional violence.

Following up on the conflicting results regarding the relationship between status mismatch and IPV in different countries and for different types of IPV (Abramsky *et al.* 2011; Kishor and Johnson 2005), we set out to examine this relationship within a cross-country comparative framework that is made possible by the ‘FRA violence against women survey’ (European Union Agency for Fundamental Rights [FRA] 2012). This is the first cross-country survey that collected comparative information on self-reported IPV in 28 European Union [EU] countries and covered more than 42,000 women. We now not only revisit the status mismatch and IPV relationship, but we also tackle possible explanations of the inconsistent results found by previous research, e.g. the different samples, measures and analytic methods. We accomplish this by taking advantage of the extensive battery of questions addressing different facets of IPV and by performing an equivalence test to determine whether the concept of IPV is multidimensional and equivalent across the EU.

Next, we note that in this research line, income and education mismatch as measures of material resources are usually examined separately in relation to IPV. In Europe, education is a good predictor of income through the effect of education on the achieved labour market position (Shavit and Müller 1998). However, the relationship between education and income differs across countries (Kerckhoff 2001) because the relationship depends on the labour market and general economic conditions. Furthermore, countries also differ in generally accepted ideas of what brings prestige (i.e. economic or cultural capital). For instance, it is possible that in some societies and depending on the labour market and the field of expertise, secondary education could result in jobs that bring a higher income than (some) high education jobs. Still, it is possible that in this society, the lower level of education, despite the associated money-making job, would not bring higher social standing/prestige. In a couple where the man would be in this situation and the woman would have a high level of education (thus, higher prestige) but lower-income, the difference in prestige could still act as a reason for the man to use IPV as a way to obtain the highest status in the family. Therefore, our contribution is that we take into account both mismatches simultaneously to account for the complex relationships between education, income and the kind of resources (material and prestige) that are linked to both these socio-economic indicators in different countries.

Another novel contribution of our study to the literature on IPV is to explore to what extent contextual factors are associated with IPV.

Research on IPV has largely ignored the role of macro-level factors, as the majority of previous research focused on individual-level antecedents of IPV (Capaldi *et al.* 2012; Yakubovich *et al.* 2018). We argue that moving from individual-level factors to contextual ones is a logical extension of the literature. In fact, in our theory section, we will argue that the context where women live can strengthen or weaken the association of the status mismatch within the couple on the risk of IPV (Heise 2012; Heise and Kotsadam 2015; Humbert *et al.* 2021). We focus on the following contextual factors: gender ideology, crime rates and the acceptance of domestic violence.

The main research questions are (1) To what extent can the prevalence of self-reported IPV be explained by status mismatch within the couple? (2) To what extent can differences in the average levels of self-reported IPV between countries be explained by the country's gender ideology, crime rates and the acceptance of domestic violence? (3) To what extent is the relationship between the status mismatch within the couple and self-reported IPV different between countries with different levels of country's gender ideology, crime rates and the acceptance of domestic violence?

Theory

Status mismatch and IPV

The starting point of the discussion linking social status and IPV was made by Goode (1971), who proposed the so-called *resource theory*. The author argues that men want to have the most power within families, and one way to achieve this is using material resources that can control other family members. When men lack material resources, the author further reasoned that violence or the threat of violence can be used to gain obedience and compliance. According to this line of argumentation, men with a lower social status would be more likely to use violence against their partners than men with a higher status, an expectation that received ample support from the literature (Atkinson *et al.* 2005; Weitzman 2014; Zhang and Breunig 2021).

A weak point of the resource theory is that it only considers the position of one member of the couple. Subsequently, other scholars have argued that the woman's position in the couple is also relevant for explaining IPV (Atkinson *et al.* 2005; Vyas and Watts 2009; Yount and Carrera 2006). The argument advanced was that women may be at higher risk of experiencing IPV when they challenge their male partner's

authority or because the male partner perceives a threat to their authority (Vyas and Watts 2009). This (actual or perceived) challenge to the male partner's authority can be triggered in a situation when the woman is the one with better social status, i.e. brings more material resources to the couple. This so-called *relative resource theory* maintains that men with relatively fewer resources than their female partners could use other strategies to regain power, such as IPV (Atkinson *et al.* 2005; Eswaran and Malhotra 2011; True 2012; Vyas and Watts 2009; Yount and Carrera 2006). They may do this because they feel threatened by the financial or social independence of their partner (Riger and Staggs 2004).

Research that put the relative resource theory to the test equated the imbalance in resources to educational mismatch or income mismatch between partners (e.g. Abramsky *et al.* 2011; Ahmadabadi *et al.* 2020; Cools and Kotsadam 2017; Eswaran and Malhotra 2011; Reichel 2017; Zhang and Breunig 2021). In this paper, we will look at educational mismatch and income mismatch within the couple. Therefore, based on the above, we expect that: *women who have a higher status than their male partners are more likely to report IPV than women who have the same or lower status than their male partner (H1)*. However, the relative resource theory does not make any predictions about country differences as it postulates that the relationship between the status mismatch of the partners and IPV is universal. Below we present arguments that nuance this expectation by explicitly considering the countries' context.

Gender ideology

Each society has its gender ideology as part of its cultural configuration. This gender ideology carries with it, among others, specific assumptions about who should be working and who should be caring (Breen and Cooke 2005; Wiesmann *et al.* 2008). Previous research has shown that ideas about work/caring responsibilities in couples play an important role in explaining IPV (Atkinson *et al.* 2005; Esquivel-Santoveña *et al.* 2013; Holtzworth-Munroe 2005). We take a step further and argue that the general ideas about work/care within a specific context also matter (Sanz-Barbero *et al.* 2018). In countries where the male breadwinner model is prevalent, women that have a higher education or income status than their partners could be seen as challenging this model, and this could result in more tensions within couples. Next, higher levels of marital tension could result in higher chances of IPV. Subsequently, our hypothesis reads: *in countries where the male breadwinner model*

has higher acceptance, the level of self-reported IPV among women is expected to be higher (H2a).

Furthermore, one can argue that gender ideology can also have a moderating effect on the relationship between status mismatch and IPV. In countries where the male breadwinner model is prevalent, there is a stronger expectation for women to perform care tasks and for men to be the providers, and this model is most likely the norm. This corresponds to a situation where the men have the higher status in the family, as most likely the woman will not (fully) participate in the labour market and would not place importance in attaining a high education level. Thus, we expect that in these countries, the marital tension within the couples where the woman has a higher status is stronger than in countries where the male breadwinner model is less accepted. Hence, the expectation: *women who have a higher status than their partners and that live in countries where the male breadwinner model has higher acceptance will have a higher risk of reporting IPV than women who have a higher status than their partners but that live in countries where male breadwinner model has lower acceptance (H2b).*

Crime rates

Based on the (sub-)culture of violence theory developed by Wolfgang *et al.* (1967), violent societies are more likely to have higher IPV rates. The culture of violence theory looks at the broad acceptance of the use of violence within society and it states that some cultures hold values that permit or encourage the use of violence (Doak 2009), or that violence is seen as a normative behaviour (Uthman *et al.* 2010). Following this theory, in violent societies, violence will be used as entertainment or as a preferred method for settling conflicts (Gosselin 2000). Additionally, this theory implies that violence is an approved and legitimized way to manage social interaction within the family (McGloin *et al.* 2011; Ousey and Wilcox 2005). Therefore, it is expected that in highly violent countries, women are more likely to report IPV, because their partners are accustomed to using violence to solve problems. A reasonable assumption is that the level of societal violence would be reflected most likely in the crime rates. Therefore, our next hypothesis reads: *in countries with higher levels of crime rates the level of self-reported IPV is expected to be higher (H3a).*

Similar to our argument regarding gender ideology, we maintain that the same rationale applies to the case of violent societies. When violence

is seen as normative behaviour that legitimately can be used to settle conflicts, this could exacerbate IPV. Therefore, we expect that: *women who have a higher status than their partners and that live in countries with higher levels of crime rates will have a higher risk of reporting IPV than women who have a higher status than their partners but that live in countries with lower levels of crime rates (H3b).*

Acceptance of domestic violence

The level of acceptability and tolerance towards domestic violence against women show a lot of variation between countries (Gracia and Marisol 2015). For example, 84% of the EU citizens considered domestic violence to be unacceptable and should always be punishable by law (Gracia and Marisol 2015). However, the figures ranged from 93% in Greece to 66% in Latvia. Even among women, the same variability in the acceptance of domestic violence was found. For instance, a survey among Italian victims of domestic violence found that 35% of women considered the violence a crime, 44% considered that the episode of violence was something wrong but not a crime, and 19% considered the violence ‘only something that happened’ (Gracia and Marisol 2015). An explanation for these differences in acceptance could be the general climate within a country, i.e. the shared attitudes towards violence in intimate relationships (Gracia and Herrero 2006). If domestic violence is culturally accepted (in all or some circumstances), this will facilitate IPV (Gracia and Herrero 2006). Therefore, it is expected that: *in countries with a high acceptance of domestic violence, the level of self-reported IPV is expected to be higher (H4a).*

Additionally, it is reasonable to assume that men who live in countries, where the acceptance of domestic violence is relatively high, will use IPV more often to compensate for their relative lack of education or income to control their female partner than men who are living in countries, where domestic violence is not widely accepted. Thus, we expect that: *women who have a higher status than their partners and that live in countries with overall higher acceptance of domestic violence will have a higher risk of reporting IPV than women who have a higher status than their partners but that live in countries with overall lower acceptance of domestic violence (H4b).*

Data

To test our hypotheses, we used the ‘FRA violence against women survey’, collected by the European Union Agency for Fundamental

Rights [FRA] (2012) in 2012. Extensive data were collected about experiences of physical, sexual and psychological violence against women, including incidents of IPV in a sample of roughly 42,000 women aged 18–74 across the EU (for more detailed information about the dataset: European Union Agency for Fundamental Rights [FRA] (2014)). For the analyses, we used 27 countries, excluding Croatia, due to the unavailability of some of the contextual measures.

Only women who had a male partner and lived together with that partner were selected for our analyses. After computing the three scales of IPV, we estimated our models on three separate datasets covering 20,977 cases with valid information on all measures for the self-reported IPV via the controlling behaviour dataset, 21,002 complete cases in the self-reported psychological IPV dataset, and 20,987 complete cases in the self-reported physical IPV.

Dependent variables – self-reported IPV against women

The items included in the FRA questionnaire were not yet tested with respect to the dimensions of IPV that they presumably measure; thus, the cross-country equivalence of the resulted scales was unknown. This is especially important to be assessed due to the sensitivity of the questions asked, i.e. ‘how often has your current partner tried to suffocate you or strangle you?’. Three different and hierarchical levels of equivalence of measurement constructs can be distinguished and tested, i.e. *configural*, *metric* and *scalar equivalence*. Configural equivalence is the lowest level of equivalence required, and it simply implies that the model has the same factorial structure across all groups, i.e. the same items loading in the same factors. Metric equivalence implies that the scale metric is the same across all groups, i.e. one unit increase on the scale has the same meaning in each country. Metric equivalence is needed to obtain unbiased regression coefficients. Scalar equivalence implies that the latent construct has to exhibit metric equivalence and has to have the same scale origin. This means that the respondents’ scores will be the same on the latent and the observed variables, and subsequently, comparing group means of the concept of interest is meaningful (Jilke *et al.* 2015). A brief description of the equivalence testing is reported as supplementary material.

Based on the equivalence test, we decided to use three scales. The first scale concerned IPV *via controlling behaviour*, i.e. three questions asking the respondents how often their current partner insists on knowing

where they are in a way that goes beyond general concern, gets angry if they speak with another man/woman, and becomes suspicious that they are unfaithful. The second scale concerned *psychological IPV*, i.e. three questions asking the respondents how often their current partner belittled or humiliated them in front of other people, belittled or humiliated them in private, and done things to scare or intimidate them on purpose, for example, by yelling and smashing things. The third scale concerned *physical IPV*, i.e. three questions asking the respondents how often the current partner slapped them, threw a hard object, beat them with a fist or a hard object, or kicked them. For the items encompassing controlling behaviour and psychological IPV, the response categories ranged between never, sometimes, often and all the time. For the items encompassing physical abuse, the response categories were never, once, 2–5 times and 6 or more times. We computed means scores for the three scales; however, they were severely skewed (e.g. only 13.5% of the respondents reported any incident of IPV via controlling behaviour, only 15.8% reported any incident of psychological IPV and only 5.1% reported any incident of physical IPV). Coupled with the fact that we are not focusing on explaining the intensity of IPV but merely the occurrence of it, we decided to dichotomize them by contrasting the zero score to ‘not reported experiences of IPV’ and score one to ‘has reported experiences of IPV at least once’. An overview of the percentage of women per country per different type of IPV is included in Appendix A, Table A1.

Country-level variables

Gender ideology was measured by the Gender Equality Index derived from the European Institute for Gender Equality [EIGE] (Humbert *et al.* 2015). EIGE used secondary data sources, such as Eurostat, Eurofound and European Commission, to make a comparable and harmonized dataset that could then be used to calculate a Gender Equality Index. It is built around six core domains: work, money, knowledge, time, power and health. We used the sub-scale of care activities as our measure of gender ideology of a country: it compares working women’s and men’s involvement in caring and educating their children or grandchildren and their involvement in cooking and housework. Thus, our chosen measure encompasses the breadwinning/caring activities. The original index ranges from 0 to 100; a higher score represents support for a more equal division of breadwinning/caring activities

within the couple. However, for our analyses, we reversed it so that a higher score indicates a country with more support for the male breadwinner/woman caring model. For clarity, from now on, we will refer to this measure as ‘support for male breadwinning’.

Crime rates were measured using police statistics on acts causing harm or intending to cause harm against the person, injurious acts of a sexual nature (including rape and sexual assault), and acts against property involving violence or threats against a person (Eurostat 2014). For all countries, the figures correspond to the year 2012; only for Cyprus, we used figures pertaining to 2010. For our analyses and to ensure the comparability of this information between countries, we calculated the percentage relative to the overall population size. A higher score indicates a higher crime rate.

The *acceptance of domestic violence* was calculated using the individual-level data from the 2010 Eurobarometer 73.2 (European Commission 2010). A limitation of this dataset is that Croatia is not included. Furthermore, the division of countries is different from that used in the FRA dataset. To deal with this limitation, we combined data from Germany West and Germany East, as well as the data from Great Britain and Northern Ireland. We used the question: ‘In your opinion, is domestic violence against women: (1) acceptable in all circumstances, (2) acceptable in certain circumstances, (3) unacceptable but should not always be punishable by law, or (4) unacceptable and should always be punishable by law’. We combined the last two categories in ‘unacceptable’ (0) and the first two in ‘acceptable’ (1). Subsequently, we calculated the percentage of acceptance within a country. A higher score on the scale indicates a higher acceptance of domestic violence within that particular country.

Individual-level variables

The status mismatch

To measure *educational mismatch*, we compared the self-reported highest achieved education level of the woman with the education level of her partner. We collapsed the different education categories into primary, secondary and tertiary education, and we derived a dummy contrasting women who had a higher education level than their partners vs. women who had a lower or similar education level than their partners (ref.). Approximately 12% of the women had a higher education level than their partners.

Income mismatch was measured with the question ‘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?’. We created a dummy comparing women who argued that they earned more than their partner vs. women who earned less or both earned roughly the same (ref.). The percentage of women that earned more than their partner was almost 12% in the general sample.

Control variables

We included a set of control variables at the individual level, which were chosen based on findings from previous research that showed that they are related to IPV and to status mismatch, and thus they could confound their relationship. The *education level of the woman* is included to account for the absolute level of education of the respondent. We used the highest achieved education level, i.e. primary (ref.), secondary and tertiary education. *Employed woman* and *Employed partner* are two dummies indicating whether the woman or partner was employed (ref.) or not. *Age 50+* is a dummy indicating whether a woman was below age 50 (ref.) or 50 years or older. *Children* are included as a dummy for women who had at least one child vs. none (ref.). *Native* is a dummy differentiating between native vs. foreigners (ref.). *Alcohol use of the partner*: is measured in four categories: never (ref.), less than once a month, one or more times a month and once or more times a week. *Urbanization* is the type of locality where the women lived in, measured in six categories: a big city (ref.), the suburbs or outskirts of a big city, a town or a small city, a country village, a farm or home in the countryside, and other. We control in the models about gender ideology *equal say in the household*, a dummy differentiating between women who felt that they had an equal say with regard to the use of the household income vs. not (ref.). For the models regarding crime rates, we include a dummy named *partner violent extern*, referring to whether the women’s parent ever had been physically violent towards anyone outside the family or not (ref.). To control for composition effects, we control for *knowledge of victim services* which is measured by a dummy variable contrasting women who knew at least one victim service in their country vs. no knowledge of such services (ref.) and for the *length of relationship* which is measured in categories differentiating between ≤ 10 years (ref.), 11–20 years, 21–30 years, 31–40 years, 41–50 years and ≥ 51 years. To control for response bias, we used information from the interviewers about the general conditions in which the interview had taken

Table 1. Descriptive statistics.

	N country	N	Mean/ %	SD	Min	Max
<i>IPV via controlling behaviour</i>						
A woman is more educated than her partner		20,977	13.5		0.000	1.000
A woman earns more than her partner		20,977	12.4		0.000	1.000
<i>Psychological IPV</i>						
A woman is more educated than her partner		20,977	11.6		0.000	1.000
A woman earns more than her partner		21,002	15.8		0.000	1.000
<i>Physical IPV</i>						
A woman is more educated than her partner		21,002	12.4		0.000	1.000
A woman earns more than her partner		21,002	11.6		0.000	1.000
<i>Country-level variables</i>						
Support for male breadwinning	27		54.9	16.118	20.700	79.900
Crime rates	27		0.4	0.356	0.031	1.213
Acceptance of domestic violence	27		2.8	1.653	0.497	6.574

Note: the country-level variables are standardized for the analyses.

place, regarding the *respondent was telling the truth, respondent had difficulties in privacy* and *respondent felt unsafe* (Gracia and Herrero 2006; Herrero *et al.* 2017).

Table 1 summarizes the descriptive statistics for the three samples corresponding to the two different types of status mismatch and the three contextual dependent variables. The descriptive statistics of the control variables are included in Appendix A, Tables A2.

Analytical strategy

To test our hypotheses, we used logistic multilevel regression techniques that account for hierarchical clustering of respondents within countries and allow us to estimate direct contextual associations as well as cross-level interactions (Snijders and Bosker 2012). The results are presented in Tables 2–4, corresponding to the three dependent variables.¹

The analytical strategy for each dependent variable was the same. We started with a null model to estimate the intra-class correlation. In Model 1, we included educational mismatch and income mismatch. Next, we estimated the direct association of each contextual measure and afterwards the cross-level interactions with education and income mismatch measures by allowing the slopes of the two individual-level variables to

¹See Online Supplementary Materials for a replication script of the analyses.

Table 2. Parameter estimates from logistic multilevel regression analyses of self-reported IPV via controlling behaviour in the EU.

	M1	M2	M3	M4
A woman is more educated than her partner (No = Ref.)	0.285*** (0.073)	0.280*** (0.075)	0.253*** (0.076)	0.285*** (0.073)
A woman earns more than her partner (No = Ref.)	0.164* (0.068)	0.177* (0.070)	0.096 (0.072)	0.165* (0.068)
Support for male breadwinning		0.116 (0.083)		
Crime rates			-0.202** (0.074)	
Acceptance of domestic violence				0.157 (0.083)
Constant	-1.690*** (0.161)	-0.649*** (0.170)	-1.746*** (0.159)	-1.694*** (0.158)
<i>N</i> country	27	27	27	27
<i>N</i> individual	20,977	20,716	20,355	20,977

Notes: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$; Standard errors in parentheses; Ref. = Reference category; All models are controlled for the education level of the woman, age, employment status woman, employment status partner, knowledge of victim service, having children, ethnic background, length of the relationship, alcohol use of partner, urbanization, respondent was telling the truth, respondent had privacy difficulties and respondent felt unsafe; Models 2–4 are also controlled for equal say about household income; Models 5–7 are also controlled for partner violent extern; For the full-model, see Appendix A Table A3.

Table 3. Parameter estimates from logistic multilevel regression analyses of self-reported psychological IPV in the EU.

	M1	M2	M3	M4
A woman is more educated than her partner (No = Ref.)	0.158* (0.067)	0.153* (0.069)	0.092 (0.070)	0.158* (0.067)
A woman earns more than her partner (No = Ref.)	0.147* (0.063)	0.173** (0.066)	0.082 (0.067)	0.148* (0.063)
Support for male breadwinning		0.031 (0.080)		
Crime rates			-0.143* (0.071)	
Acceptance of domestic violence				0.076 (0.079)
Constant	-2.458*** (0.156)	-1.140*** (0.168)	-2.666*** (0.159)	-2.461*** (0.155)
<i>N</i> country	27	27	27	27
<i>N</i> individual	21,002	20,739	20,374	21,002

Notes: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$; Standard errors in parentheses; Ref. = Reference category; All models are controlled for the education level of the woman, age, employment status woman, employment status partner, knowledge of victim service, having children, ethnic background, length of the relationship, alcohol use of partner, urbanization, respondent was telling the truth, respondent had privacy difficulties and respondent felt unsafe; Models 2–4 are also controlled for equal say about household income; Models 5–7 are also controlled for partner violent extern; For the full-model, see Appendix A Table A4.

Table 4. Parameter estimates from logistic multilevel regression analyses of self-reported physical IPV in the EU.

	M1	M2	M3	M4
A woman is more educated than her partner (No = Ref.)	0.379*** (0.115)	0.362** (0.120)	0.238 (0.125)	0.380*** (0.115)
A woman earns more than her partner (No = Ref.)	0.277** (0.103)	0.290** (0.107)	0.147 (0.113)	0.278** (0.104)
Support for male breadwinning		0.137 (0.110)		
Crime rates			-0.141 (0.100)	
Acceptance of domestic violence				0.179 (0.103)
Constant	-3.367*** (0.249)	-2.146*** (0.264)	-3.492*** (0.258)	-3.375*** (0.247)
<i>N</i> country	27	27	27	27
<i>N</i> individual	20,982	20,719	20,353	20,982

Notes: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$; Standard errors in parentheses; Ref. = Reference category; All models are controlled for the education level of the woman, age, employment status woman, employment status partner, knowledge of victim service, having children, ethnic background, length of the relationship, alcohol use of partner, urbanization, respondent was telling the truth, respondent had privacy difficulties and respondent felt unsafe; Models 2–4 are also controlled for equal say about household income; Models 5–7 are also controlled for partner violent extern; For the full-model, see Appendix A Table A5.

vary between countries.² In Models 2, 3 and 4, we present the results of the measure of support for the male breadwinner model, Models 5, 6 and 7 focus on crime rates, and Models 8, 9 and 10 focus on the measure of acceptance of domestic violence. All the models 1–10 included the individual-level control variables.

Results

Prevalence of IPV

Before presenting the results of the formal tests of our hypotheses, we present some exploratory analyses to compare the level of self-reported IPV among the EU countries. Our equivalence tests (reported as supplementary material) showed that self-reported IPV via controlling behaviour and self-reported physical IPV scales were not scalar equivalent, i.e. comparisons of the country means of these scales are not meaningful. Subsequently, we present only the differences in country means of self-reported psychological IPV.

In [Figure 1](#), we present the weighted share of women that reported psychological IPV in each country. Large cross-national variation can be observed. The countries with the highest proportions of self-reported psychological IPV were Lithuania (29.0%), Slovakia (24.5%) and Latvia (23.6%). Countries with the lowest proportions of women who reported psychological IPV were Ireland (7.4%), Spain (8.1%), and the United Kingdom (8.2%). A clear clustering of countries does not emerge from this figure.

In [Figure 2](#), we show the correlation of the weighted share of women that reported psychological IPV per country and the percentage of women within a country that experienced education mismatch or income mismatch. This figure shows no clear relationship between self-reported psychological IPV and status mismatch.

Self-reported IPV via controlling behaviour

In [Table 2](#), we present the formal tests of our hypotheses for the dependent variable *self-reported IPV via controlling behaviour*. The intra-class correlation indicated that only 6% of the variation in IPV via controlling behaviour is explained by differences between countries. This relatively

²Because of the relatively low sample of countries, the estimates of the variance components could be biased but the coefficients not. See: Maas and Hox (2005). Since in this paper we are not interested in the variances, the sample size should not constitute a problem.

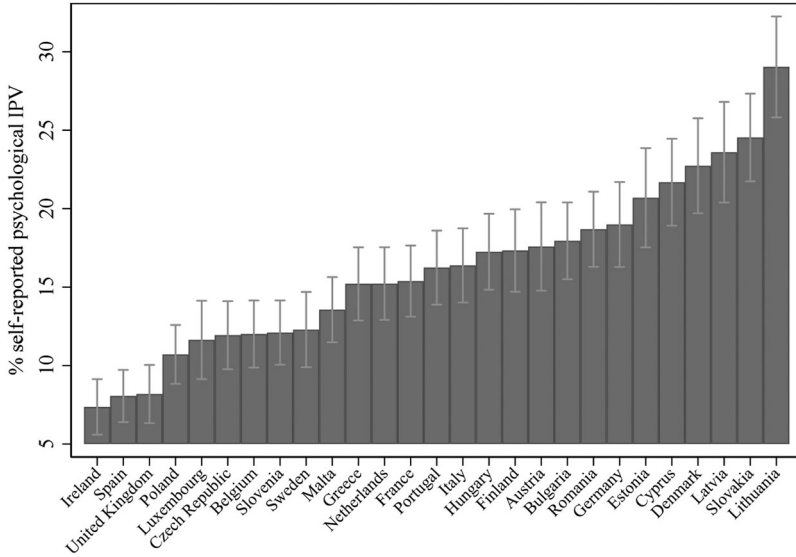


Figure 1. Percentage of women who reported that they experienced psychological IPV at least once across the EU with 95% confidence intervals.

low figure suggests that individual factors are more important than country factors in explaining self-reported IPV via controlling behaviour.

In Model 1 we included educational and income mismatch controlled for other individual-level factors. The model showed that women with a

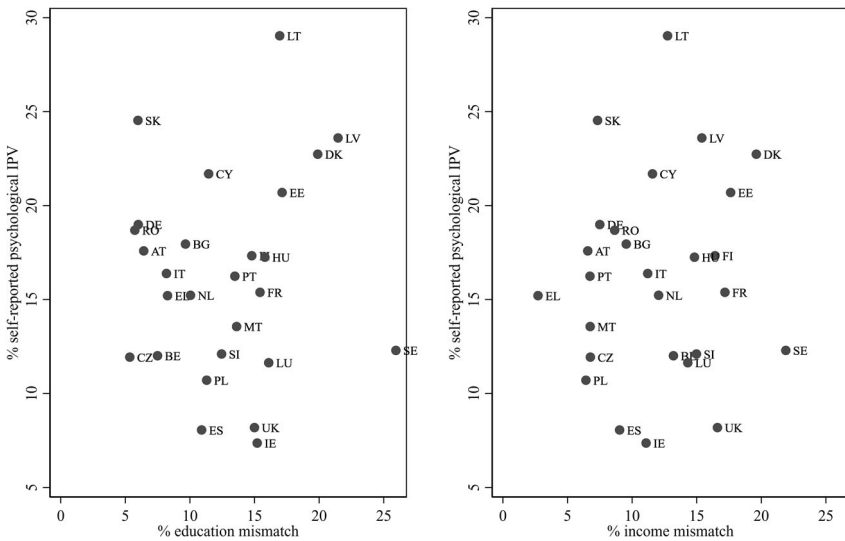


Figure 2. Correlation between status mismatch and self-reported psychological IPV.

higher education level and women who earn more than their male partners were more likely to report IPV via controlling behaviour. When we included educational mismatch and income mismatch separately, the same conclusions emerged (See Appendix A, Table A3). These findings are in line with our expectation that the status mismatch in the couple relates to higher chances of reporting IPV via controlling behaviour and that income and educational mismatch are relevant predictors.

Turning to Model 2, we did not find a significant correlation between the acceptance of a male breadwinner model within a country and the self-reported IPV via controlling behaviour. According to Model 3, we found that the higher the level of crime rates within a country, the less likely were women to report experiences of IPV via controlling behaviour compared with women living in a country with lower levels of crime rates. However, we expected the opposite. Moreover, income mismatch became insignificant after adding crime rates to the model. Next, we found that the higher the acceptance of domestic violence within a country, the higher the likelihood for women to report IPV via controlling behaviour. While this is in line with our expectation, this relationship was not significant (Model 4).

We also expected that the contextual measures would moderate the relationship between status mismatch and self-reported IPV via controlling behaviour. However, no significant interactions were observed with education or income mismatch (See Appendix A, Table A3 and Figure A1).

Self-reported psychological IPV

In Table 3, we present the estimates of the multilevel analysis for the dependent variable *self-reported psychological IPV*. We estimated an intra-class correlation of 5%, again a low figure suggested that individual factors were more important than country factors in explaining self-reported psychological IPV.

We present the relation between status mismatch and self-reported psychological IPV controlled for other individual-level factors in Model 1. We found that women with a higher education level than their male partners were more likely to report psychological IPV than women who had the same or a lower education level than their male partners. For income mismatch, we found the same result: women who earn more than their male partner were more likely to report psychological IPV. This was in line with our expectation, and the findings were robust when estimating the relation of the two-status mismatch variables in separate models (See Appendix A, Table A4).

When we look at [Table 3](#), we found no support for the acceptance of the male breadwinner model (Model 2) and the level of acceptance of domestic violence (Model 4). We found a significant relationship between the level of crime rates within a country and self-reported psychological IPV; however, the association was opposite of what we expected (Model 3), i.e. women who lived in a country with high levels of crime rates were less likely to report experiences of psychological IPV than women living in a country with lower levels of crime rates. However, both status mismatches became insignificant when crime rates were added.

Furthermore, none of the contextual measures moderated the relationship between status mismatch and IPV (See Appendix A, Table A4 and Figure A2).

Self-reported physical IPV

We present the estimates of the multilevel analysis of *self-reported physical IPV* in [Table 4](#). According to the intra-class correlation estimated in the null model, 8% of self-reported physical IPV was explained by country differences.

Looking at Model 1, [Table 4](#), we found that women with a higher education level than their male partner were more likely to report physical IPV than women who had the same or a lower education level than their male partners. The likelihood of reporting physical IPV was also higher among women with higher income levels than their male partners. The results were also robust when including the two types of status mismatch separately in the model (See Appendix A, Table A5).

In the subsequent models (Models 2–4), none of the contextual measures were significantly related to physical IPV. However, when adding crime rates, the relationship between status mismatches and physical IPV is insignificant. We did not find a moderating effect of the contextual variables on the relationship between status mismatch and physical IPV (See Appendix A, Table A5 and Figure A3).

Individual-level variables

Our results showed that the contextual factors play a limited role in explaining self-reported IPV in our sample of European countries, and so we will conclude the results by presenting the individual-level factors that are significant across all models. Overall, women with

higher education levels are less likely to report IPV than women with low education levels. Women with children are more likely to report IPV, and women not native to a country are more likely to report IPV. Additionally, the more alcohol is used by the male partner, the higher the chances are that women report IPV. Also, respondents who felt unsafe during the interview were more likely to report IPV.

Robustness checks

To evaluate the robustness of our results, we estimated some additional models. First, we left out the interviewer variables, and we found that our conclusions remained the same (Appendix A, Tables A6–A8). Second, we used a bootstrapping procedure to estimate whether the conclusions are robust to sample composition, but we did not find evidence for such bias (Appendix A, Tables A9–A11). Third, we also controlled for widely used measures of societal wealth (i.e. GDP), and we found that all the macro-level variables turned not significant (Appendix A, Tables A12–A14). However, we note that they are strongly correlated with the level of societal wealth, and it is not possible to determine strictly from a statistical point of view whether the measure of societal wealth is only picking up the effect of our macro variables or this effect is substantively relevant. Fourth, we re-estimated the models weighted using the design weight provided by the survey team. Some of the models, where the dependent variables were psychological and physical IPV did not converge; however, from the converged models, our conclusions remained the same (Appendix A, Tables A15–A17). Regarding the models for the dependent variable ‘controlling behaviour IPV’, all our conclusions regarding the country-level variables were robust, only the income mismatch variable was not significant anymore at .05.

Conclusion and discussion

In this study, we set out individual and contextual factors that relate to the levels of IPV in the EU. We used a novel dataset that collected information on self-reported IPV among women living in 27 EU countries. We identified three dimensions of IPV, i.e. IPV via controlling behaviour, psychological IPV and physical IPV. Based on logistic multilevel models, the following main conclusions were drawn.

First, we found that the relative resource theory was supported and that status mismatch does matter in explaining IPV. Women with a

higher education level than their male partners were more likely to report IPV via controlling behaviour, psychological IPV and physical IPV than women who had the same or a lower education level than their male partners. The same holds for women who earned more than their male partners. Our findings were robust, and the corresponding effect sizes were moderate and slightly stronger for the educational mismatch than for the income mismatch. These results are in line with previous research from various countries (Atkinson *et al.* 2005; Weitzman 2014; Zhang and Breunig 2021), but add value by showing both the educational mismatch and income mismatch are relevant predictors, independent of each other. However, after including crime rates in the model, the relationship between income mismatch became not significant in relation to all three types of IPV, and education mismatch became insignificant in relation to self-reported psychological and physical IPV. Therefore, our results suggest that in countries with a stronger culture of violence, the relationship between status mismatch within the couple and IPV is suppressed.

Next, we showed that contextual factors matter in explaining self-reported IPV, although this is limited. Against our expectations, we found that in countries with higher crime rates, women were less likely to report IPV via controlling behaviour and psychological IPV than women living in countries with lower crime levels. We could think of different reasons: Firstly, a reason could be that for women living in countries with higher crime rates, violence is a legitimized way to manage social interaction within the family (McGloin *et al.* 2011; Ousey and Wilcox 2005). Women living in these countries could be more desensitized to violence because it occurs with a greater frequency in their daily lives and, therefore, will not interpret the controlling behaviour or psychological IPV from their partner as an experience of IPV. Secondly, another underlying mechanism for this could be for women in highly violent countries less acceptable to talk with other people about IPV, including the interviewer (European Union Agency for Fundamental Rights [FRA] 2015). Thirdly, the measurement of crime rates itself could explain this finding. Previous research has shown that crime reporting differs across EU countries (Torrente *et al.* 2017), which could mean that the official statistics do not correctly reflect the level of crime within a country or the differences between the countries. With the data at hand, it is not possible to disentangle which of these arguments are behind our findings.

A more methodological conclusion regards the questions covering different aspects of IPV that were asked in the FRA survey. We found that not all items included in the questionnaire were meaningful in all

countries, i.e. some questions referred to incidents that are so rare that in some countries, no variation in answers was recorded. Furthermore, after the equivalence tests were conducted, the final list of items that composed the three scales of IPV was limited compared to the initial list of items. This is not necessarily bad news, as it implies that it is possible to measure these dimensions of IPV with a limited number of questions. Additionally, we were able to establish that the three IPV scales exhibit cross-country equivalence, i.e. partial scalar invariance for psychological IPV and metric invariance for the other two. This is again good news, as it implies that these scales can be used within the set-up of regression analysis and will yield unbiased coefficients. We note, however, that the prevalence of cases of IPV was low, and this has implications for studies that more specifically want to identify and study its victims more in detail. This is also why we did not attempt to understand the intensity of IPV but focused on its prevalence.

This study has many limitations. First, self-reported violence had to be used, and the extent to which the reported IPV matches the actual experienced IPV is unknown (European Union Agency for Fundamental Rights [FRA] 2015). However, even if we would have at our disposal statistics of reported IPV, one can argue that these figures are biased because many victims will not go to the police and file a complaint. This could be especially true for IPV via controlling behaviour and psychological IPV. Next, due to the low occurrence of IPV in the sample, we decided to examine IPV in the current relationship, without setting a time frame, for example, IPV occurring within the previous 12 months. Therefore, it could be possible that the education level of the woman was lower when the abuse occurred, but that the women had become more highly educated in the meanwhile (the same reasoning could follow for earnings). Furthermore, the IPV occurrence and the gravity of IPV manifestation could have common but also different precedents. Future research is warranted along these lines. In addition, future research should also examine the different relationships in which IPV occurs. In this investigation, heterosexual couples were investigated, and the questions regard situations in which the man abuses the woman. However, it is also recognized that bidirectional IPV exists or that women abuse their male partners (Dokkedahl and Elklit 2019) and IPV can also occur in lesbian and gay partnerships (e.g. see review: Rollè *et al.* 2018).

Our findings suggest that individual-level characteristics seem to be better predictors of IPV than the country's context. However, we

should consider that this could be related to the country sample in our analyses, i.e. European countries where IPV is largely not supported by the (formal or informal) institutions and with limited variation in the measures that we use to capture country-level characteristics. Possibly with a different country sample that includes societies where gender equality or the acceptance of domestic violence variables have more extreme values compared to the European countries, or using country-level averages and including the heterogeneity around those means (Ivert *et al.* 2020), our findings could be challenged.

The implications of our findings for the European level policy build on the conclusions regarding the importance that the individual-level factors, i.e. the education and income mismatch, still have for IPV. We propose that a substantial contribution to further decrease in IPV in Europe can be made in two ways: first by normalizing families where the women have higher income or education in the couple, and second by discouraging the use of violence as a legitimate way to manage social interaction within the family. How this can be achieved, is a question that we leave to behavioural change theorists and practitioners, as they could provide the understandings and the tools to support policy-makers in designing effective, focused interventions to achieve these goals.

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No potential conflict of interest was reported by the author(s).

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