

**Faculté des sciences économiques,
sociales, politiques et de communication**

**Gender attitudes and intimate partner
violence in Estonia in 2020: a
differentiated experience based on
gender**

Master thesis in Quantitative Methods for Social
Sciences – UCLouvain

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Academic year 2023-2024 (Summer 2024)

Specialization master 60 in Quantitative Methods for Social Sciences

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Foreword

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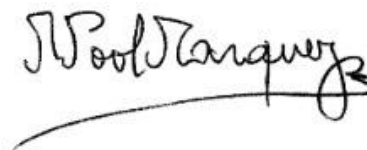


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I) Introduction

Understanding intimate partner violence (IPV) has been a challenging worldwide issue as it remains complex to objectively extract the occurrence of its execution. Besides the conjugal violence phenomenon, the heart of the problem resides in determining the main profiles of people undergoing or perpetrating it and what are the co-parameters of social life that maintain that distribution. The following step often consists in asking politicians to take action based on the research's output. In fact, several debates exist in this matter, regarding the distribution of IPV experience (are women more exposed than men?) or the sociodemographic patterns driving that. But many indicators already bring quite a consensus within the literature, considering their links with IPV. In this master dissertation, we shall not get on the implementation part based on our results but only expose them here. For that goal, we want to statistically infer links between IPV and other variables.

In this master thesis, we want to deepen the link between IPV and gender attitudes along an empirical case-study. We shall pursue an analysis about the contemporaneous Estonian society, based on a database provided by the second round of the Generations and Gender Survey (Generations and Gender Program, 2023), collecting data about events occurred in 2020. Pursuing quantitative research to estimate the link between gender attitudes and IPV, this posture requires that we contain our work on a simple straight forward case-study which data is available in an existing database, regarding as well the time schedule for this master thesis. The recent emission of data also sustains our choice for Estonia. Previous literature has already delivered trend regarding IPV in Estonia. Laanpere et al. (2012) shew that 18.5% of women in Estonia have experienced physical or sexual IPV. It seems that the change from a communist to a democratic liberal State affected gender inequality trends, especially regarding the evolution of employment and wages gap that remains lower than other European trends (Vöormann & Helemäe, 2016).

In this dissertation, we ask ourselves to what extent more traditional gender attitudes – as opposed to modern gender attitudes – are positively linked to the exposition to IPV among hetero men and hetero women, along the socio-demographic situation of Estonia in 2020? To tackle that, we formulate this hypothesis: more traditional gender attitudes are significantly associated with the experience of IPV, although it would be contained if confounded by other sociodemographic covariates. Several relevant covariate candidates are present in the database. The point was to select them along the available data and to reframe their interactions so that we could produce relevant distribution and causal analysis that allow us to establish meaningful

and significant inference in the matter. The huge absence of straight clear answer among respondents brought us to leave away some conceptually relevant variables to carry out our research. Eventually, a sufficient number of covariates could have been used to bring light on the contextualized link between gender attitudes and IPV. Answering this methodological challenge also brings us to deal with the validity of the information (as we can compute available data in our analysis, we can exploit its semantics as much as possible, after survey extraction).

Based on our data and following the literature's conceptual background about our topic, we can defend that gender attitudes do support a disequilibrium between hetero men and hetero women (we do not treat homo relationships here) and that the traditional position of those attitudes is more carried by hetero men than hetero women. The gender gap in IPV experience remains small (about 2%) but nevertheless highly significant. Regarding traditional gender attitudes, there is a double number of hetero men (about 20%) than hetero women (about 10%) among this category. Additionally, traditional gender attitudes generate more exposure to IPV. This phenomenon is stronger for women (about 30% more likely to experience IPV) than men (about 20% more likely to experience IPV), going from a fully modern position to a fully traditional one. Control covariates (marital status, differences such as the age, gender, being a foreigner or not, and the instruction and employment levels) and intermediary covariates (beliefs/religions) do not significantly affect our findings, except gender and age difference, that can slightly affect IPV without changing much its link with gender attitudes. In this dissertation follow the complete framing of our research, the literature review and the full methodology and design of this master thesis, before presenting our main results.

II) Research framing

A) Issue of interest

This dissertation treats the issue of intimate partner violence (IPV), following previous artwork on that topic. The challenge of this social issue is both an academic one and a political one. First, one might look after understanding what the causes of violence are, with an intimate partner, and how the experience of IPV is shared among a given population. In fact, IPV might be the result of a dense “evolutionary and socio-structural forces” (Chester & DeWall, 2018), making it difficult to tackle all its causes at once. Besides, it brings the debate of its actual share regarding socio-demographic patterns, especially along gender. Some would argue that there is a clear unequal repartition of IPV experiences between men and women (Anderson & Cunningham, 2023) while others would say that this remains not clearly answered yet (Krahé et al., 2005).

Those pending debates among others bring eventually this question: what must society do to prevent IPV? Induced by the different conclusions brought from the literature review, policymakers might want to implement coherent policies that might evolve along the academic outcomes in the matter. This requires a rigorous triangulation of the problem: what is the specific context, what are the parameters we want to treat among the multiple possible leading causes of IPV, and with what resources? Except for a study that is directly motivated for a clear possible application as a policy, or even directly called for by authorities, it remains quite blurred to determine the resources at stake beforehand. Therefore, this document does not aim for a concrete implementation definition nor for any further hypothetical policy. In fact, understanding a problem, or setting up a policy, and further evaluation in the agenda are three different tasks, which we only work for the first one for this master thesis.

Yet, we still can endorse a clearer definition of our empirical scope of interest in this work and determine the related elements to carry out as relevant explanations for IPV outcomes. We focus on the Estonian case based on data from 2020 collected during 2021 and 2022 in the Generations and Gender Survey (Generations and Gender Program, 2023). As research on IPV causes usually focuses on broad sociodemographic concepts, we shall bring our attention to the impact of gender attitudes on IPV exposure, being a less exploited socio-cultural pattern in this topic – and yet keeping it at the light of other general sociodemographic covariates. The very redline of this master thesis is explaining how IPV and gender attitudes are distributed in our population and how significant is the impact of gender attitudes on IPV.

B) Research question and hypothesis

The research question we want to answer is: to what extent traditional gender attitudes – as opposed to modern ones – are positively linked with the experience of IPV among hetero men and hetero women, along the socio-demographic situation of Estonia in 2020? To answer our research question, we want to evaluate the following hypothesis: we assume that more traditional gender attitudes tend to significantly strengthen the experience of IPV, although their link might be reduced when confounded with other sociodemographic components that are already depicted as more or less driving forces in IPV experiences, following previous works. The objective of this research is both: describing the distribution of IPV and gender attitudes – especially along gender – and estimating the magnitude of the impact on IPV exposure from more traditional gender attitudes. Although this purely quantitative research can depict clear links between gender attitudes and IPV, it remains limited in bringing the strict qualitative causal nature of gender attitudes in generating IPV.

We defend that it is feasible to answer this research question, we have a clear empirical scope: the Estonian people in 2020; and the data comes from the second round of the Generations and Gender Survey (Generations and Gender Program 2023). We maintain that our research question is accurate: we draw a clear link that we want to identify and estimate, between gender attitudes and IPV exposure. This research question is valid as it follows the previous elaborated path of IPV's causes in the literature, and we submit a clear hypothesis that can be evaluated and translated by exploitable indicators. Regarding the recent age of the data (from 2020 but published in 2023), we also claim our research question to be relevant and original. For that, the focus on the role played by gender attitudes also brings relevance and originality because they have been less exploited as a pattern linked with IPV in previous research. We develop further on in the literature review how masculine gender attitudes can be expected to lead to more violence made to others (Fleming et al., 2015), and how romanticized mischievous behavior in the hetero couple can create more vulnerability (Papp et al., 2017). The originality of our master dissertation is that it brings a comparison between men and women – while previous works usually focused on women only – and offer a case-study to empirically estimate the link between gender attitudes and IPV.

III) Literature review

A) IPV and gender inequality in Estonia

In 2012, it was about 18.5% of Estonian women that experienced IPV, physically or sexually (Laanpere et al.). Factors such as the age, the instruction level, the ethnicity, the economic welfare and having had one or several abortions were significantly linked to IPV (ibid.). The younger one was, the more likely she was to experience IPV (ibid.). The most vulnerable educational category was the lowest level of study (ibid.). Foreign women were also more likely to experience IPV (ibid.). Women with less economic security are also more vulnerable (ibid.). Eventually, women with 3 or more abortions in the past were the most likely to face IPV. Regarding the Estonian case, literature mostly focuses on women when it comes to IPV, whereas our master dissertation aims to bring a comparison between men and women. Within the European Union, most countries seem to follow the same trend, and the similar sociodemographic factors seem to sustain the vulnerability, regarding women only (Barbier et al.; 2022).

In 2010, Järviste sustained that “Gender inequality is not perceived as an acute problem” (p. 25), talking about the Estonian society from 2009, compared with Finland, for instance. The author spotted that awareness and willingness to change were not the same between men and women (ibid.): on average, women are more attentive to and willing to support gender equality than men. Regarding work and employment, women expressed a bigger experience of “unequal treatment” (ibid., p. 26) than men, and were supportive to bring more balance, especially with more women at higher positions (ibid.). General attributions to executive or management skills remained more attributed to young men in their education, while familial and caring skills were still the dominant trend for young women education (ibid.). Safety perception is also different between men and women: women tend to feel more unsafe than men in streets and public transportation (ibid.). Although, Vöormann and Helemäe (2016) states that the Estonian gender gap in employment remain lower than the average among other European countries.

Regarding the wage gender gap, Meriküll and Tverdostup (2023) defend there has been a persistent gap from the socialist period to the capitalist period at first, but this gap has tended to decline afterwards, because of general changes and progress to tackle inequalities in society and a progressively increase in modern values considering gender. Nevertheless, the role of the previous communist regime and the effect of the transition from that regime to the current one is still a debate among academics. For instance, Kosyakova et al. (2017) argue that there was not much inequality between men and women for jobs in education or in economics before the

fall of the USSR, but there was indeed a degradation of their working conditions at the eve of the collapse of the communist regime. Marling (2017) adds that the independence of Estonia in 1991 brought back concerns about gender inequality.

B) Gender attitudes link with IPV; gender and sex

According to van der Horst (1991), Gender attitudes “refer to views held by individuals regarding the roles men and women should play in society.” As we mentioned, traditional gender attitudes’ potential to drive IPV has not been much explored yet in the literature. Hence, in their work on heterosexual romance, Papp et al. (2017) developed how women could be more exposed to IPV than men. They established a clear link between “romantic beliefs” and “romanticizing controlling behaviors” (ibid.), and an indirect causality between the same beliefs and “experiences of IPV” (ibid.). Although we do not expressly elaborate on romanticized schemes, this previous work allows us to broaden the question to other types of gender attitudes. We develop the exhaustive list of indicators we use for gender attitudes in the methodology section. Focusing on men, Connell (1995) sustains that men are more likely than women to be violent with others. Eventually, according to Fleming et al. (2015), gender attitudes might indeed drive IPV experiences.

Considering the conceptual use of gender in this master thesis, a short recall should be done to reclarify the definition of gender, sex, man, woman, female and male. We base ourselves on the very basic definitions from the Cambridge Dictionary (2024) and the Oxford English Dictionary (2024). Sex holds for the biological attributes between the child carriers or non-carriers in a specie, respectively designated as female and male – although there can be a small range of partly confounded biological patterns from both sexes for some individuals. Gender gathers the psychological, cultural and societal buildings of being principally men and women, for most people, initially based on the prolongation of the sex – typically, men for males and women for females. As we elaborate further in the methodological part of this master thesis, this very basic semantics implies to accurate elements primarily brought by the Generations and Gender Survey (2023) hereby used.

C) Socio-demographic covariates and IPV

In this part, we review the known effects of, instruction level, marital status, gender, age, immigrant situation, professional occupation, and convictional beliefs on IPV; always restricted to hetero couple. We have already managed to elaborate on those for Estonia, but we now want to dig in a little bit more in general terms. Regarding age differences, Volpe et al. tell us that an older partner can be more at risk to perpetrate IPV (2013). Following Brownridge & Halli (2002), age difference can increase the exposure of IPV for women when they are younger than their partner. Still along the same authors (ibid.), marital status would be less of a driving component of IPV exposure in comparison with other covariates, such as age. Besides, Bernards and Graham (2013), defend that being married tends to decrease the risk to experience IPV, in comparison with non-married or separated couple. Regarding education, Wang (2016) argues that it would bring many different ideas and practices, being one of the most driving assets in creating or containing domestic violence. As previously mentioned, a higher instruction level would help to avoid IPV better (Laanpere & al., 2012). Corollary to education, de Rothman et al. claim that employment can also be a source of escape or empowerment to face IPV (2007).

Regarding immigration, Morrison et al. defend that being an immigrant can be a source of more vulnerability to IPV, in the very context of the USA (2023). It is interesting to compare this assertion with our Estonian case. Regarding the question of gender unequal share of IPV experiences, the literature seems to be still in debate. Some would argue that there is a clear concentration of IPV experiences among women (Anderson and Cunningham, 2023) while others draw that it would not be systematically the case (Krahé et al. 2005). What is interesting to highlight is that, although there is no absolute consensus yet on the fact that women significantly undergo more IPV than men, there is no real academic position defending that men might face more often IPV than women. One last concept we mobilize here is the religious or convictional belief. How and what religion could create more IPV is often discussed in general, but the literature does not seem to denote a significant weight for one or another belief in the exposure to IPV. Following Koch and Ramirez (2010) fundamentalism more than religion is more a driving asset for IPV exposure. With our data, we cannot elaborate more on the magnitude of religiosity, but we can still observe if the type of belief/religion remains insignificant to explain IPV exposure.

IV) Methodology and design

A) The data from the Generations and Gender Survey Round II for Estonia

As we mentioned, our research exploits data from the second round of the Generations and Gender Survey (Generations and Gender Program), published in 2023, collected in 2021 and 2022 to gather information from 2020. We must specify that we treat IPV experience without assigning if the respondent perpetrates or undergoes it. Following the questions assigned by countries, the variable “Experienced violence with current partner” – line 24 of the questions table – collects data through this question: “Have you experienced physical or mental violence while living with your partner?” In fact, this question does not allow one to clearly establish if the respondent is the source of IPV or its destination. Our main variable of interest aims only to estimate the general experience of IPV, without clarifying the position of the respondent in its execution.

To evaluate the strength of gender attitudes, we use the following nine proxy variables (ibid.): “Values: Women need children” (1); “Values: Men need children” (2); “Values: Child needs a father and a mother” (3); “Values child suffers if mother works” (4); “Gender Importance: Political leaders” (5); “Gender Importance: University” (6); “Gender Importance: Job” (7); “Gender Importance: Childcare” (8); and “Gender Importance: Small Children” (9). All those variables are gathered into a synthetic one: “Gender attitudes”, brought as our causal variable linked to IPV experience with the current partner. The previous nine variables coming directly from the survey are used as proxies to estimate respondents’ gender attitudes. Computing them into one helps to have a simplified and systematic view of the link between gender attitudes as a whole unit and IPV experience.

As socio-demographic controlling covariates, we use the marital status and multiple differences between the respondent and its current partner: age, instruction level, employment status and the native/migration status. Following our state of the art in the matter, those different patterns that are exploitable in the Generations and Gender Survey also play a role in IPV experience. Hence, they might moderate the effect of gender attitudes on IPV. In addition, they could also affect respondents’ gender attitudes as such socio-demographic patterns can affect socialization and thus internalized modern or traditional gender attitudes. We also use the religious or convictional beliefs among the respondents as intermediary covariates. As shown in the literature review, religiosity may affect both IPV experience and gender attitudes. Although, in our dataset, we cannot use the religiosity variable because of too many missing values among respondents. Yet, we can work with the variable tackling respondent’s specific

religion or belief, but we are not able to state anything about its effect on gender attitudes. In the contrary, we see in table 6 that gender attitudes can significantly explain the specific religion/belief. Thus, we can only use that last variable as an intermediary variable affected by gender attitudes and affecting maybe IPV, or not.

There is another important remark regarding respondent's gender and partner's gender. Respondent's gender is found through the following question: "What is your gender?" which for possible answers are "male" or "female" in the original survey (Generations and Gender Program, 2023). Besides, the question regarding partner's gender is "Is your partner..." and must be completed by "male" or "female" (ibid.). We must take several precautions with those formulations. As mentioned in the literature, male and female tend to be used as sexual pattern issued by biology while men and women tend to depict cultural pattern developed in sociology, psychology and anthropology (mainly), although there is no absolute consensus yet on that semantics. The survey asks the respondent about its gender (cultural pattern) while the possible answers are male or female, referring to sex (biological pattern). This construction constitutes a first semantic confusion.

The next level of confusion comes from the fact that, when asked for its gender, a person might express the gender it wishes to belong to, or the gender the dominant cultural codes or its main gendered socialization might assign that person to. Eventually, asking if the partner is male or female might give echo to partner sex and not gender, bringing it difficult to compare with the exact same conceptual framing with respondent's gender. Considering these three levels of conceptual inaccuracy, we must arbitrary choose how to compensate it. Assuming that most people are cisgender – assigned and living their life as men for male-born bodies and as women for female-born ones – we can smooth out the conceptual inaccuracy of the survey to postulate that both questions for the respondent and the partner stand for the gender.

B) Recoding our variables of interest and other covariates

Many of our variables must have been recoded and our data filtered, to be properly exploited. The entire database counts 8992 observations. Regarding the nature of our research, we obviously must restrain our analysis to respondents with a partner. Cutting it to keep only respondents in hetero partnership, we are left with 6710 people. In addition, the database counts only 68 people in homo-relationships, bringing the analysis to be less significant for this category. We recode the violence-with-current-partner related variable so that the absence of

IPV embodies the 0 value, keeping one unit of difference between the experience of IPV with the current partner at 1 (dichotomous variable). Through this way, we can observe the elasticity of IPV experience probability, with the absence of violence as the point of reference.

To create our synthetic causal variable of gender attitudes, we organize the nine proxy variables for gender attitudes into the same scale. Each of those nine variables are categorical and organized in five levels. We rewrite the values of their five levels as 0, 1, 2, 3 and 4. The full modern position standing as the referencing point (0), while the highest categorical value embodies the most traditional position (4). For gender attitudes' proxies labeled as "Values", the numeric scale goes from a strong disagreement to a strong agreement, in favor of traditional gender attitudes. For the gender attitudes labeled as "Gender Importance", the scale goes from a strong preference for a binary gender to a strong preference for the other one. In this case, the numerical order puts at the top the strong preference for men when the gender importance is traditionally attributed to men, and the strong preference for women at the top when the attribution traditionally goes for women. For instance, "Gender Importance: Political leaders" sees its highest value labeled as "Strong preference for men", while "Gender Importance: Childcare" sees its highest value labeled as "Strong preference for women". This categorical values coding puts the most modern position as the reference point to focus on the effect of more and more traditional gender attitudes (on IPV).

We create our synthetic variable for gender attitudes by calculating the mean for all the nine proxy variables. For each respondent, we sum all the values from all composing variables that we divide by 36 – first by nine as it is a mean for all the nine proxy variables, and then by four so that the possible mean remains between 0 (the most modern position) and 1 (the most traditional position). From nine proxy variables initially categorical, we computed a synthetic variable that measures the gender values ratio from a fully modern position (0) to a fully traditional position (1). A categorical version of this last variable is also created: there is the very modern position starting at 0, switching for the modern after 0.2, changing for the neutral position after 0.4, going for the traditional position after 0.6 and being the very traditional position after 0.8 till 1 included. We chose to organize our intervals in this last way cause none of the previous border values (0.2, 0.4, 0.6 or 0.8) appeared in the computed data. Thus, our cut does not arbitrary store any border value in one category or another. To sum up, we have both a proportional variable to express respondents' gender values from 0 to 1, and a categorical version with five different categories from the most modern to the most traditional position.

We illustrate our explanation from this last paragraph with a concrete example. Take a respondent with the nine following fictional scores (coming from each one of the nine proxy variables for gender attitudes): 0, 2, 1, 4, 0, 0, 3, 1, 1; and derive its mean (the sum of those values divided by nine) : $(0 + 2 + 1 + 4 + 0 + 0 + 3 + 1 + 1)/9 = 1.333\dots$. Remember that this mean is based on values going from 0 to 4 and we want to express the mean as 0 to 1, so we must divide it by 4 (the accelerated process being summing values from the nine proxy variables and divide them by 36 directly): $1.333\dots/4 = 0.333\dots$. In a scale going from 0 to 1. The calculated value being closer to zero than one, the respondent thus has aggregated gender values that are more modern. From this variable, we compute a categorical one as previously described. In our example, the derived value falls in the 0.2 to 0.4 category, being a modern position. The possible positions are: very modern (0 to 0.2, but no observation does fall in it in our sample), modern (0.2 to 0.4), neutral (0.4 to 0.6), traditional (0.6 to 0.8), very traditional (0.8 to 1).

For our control variables, we follow the same approach: we put zero for the reference category and made sure each different category is separated by one unit between each one of them. For the marital status, being married is coded as 1 and not being married as 0. For the age difference, a younger partner is coded as 1, a younger respondent is coded as -1, and an equal age between both partner and respondent is coded as 0. For the professional occupation, 0 holds for partner and respondent being both unoccupied, 1 holds for respondent being unoccupied and partner being occupied, 2 stands for respondent being occupied while partner is not, and 3 holds for both being occupied. For the instruction level difference, 1 holds for a higher level for the respondent and -1 holds for a higher level for the partner; 0 is an equal level for both. For the migration status difference, the coding is the following: both are immigrant or native (0), partner is immigrant and respondent is native (-1), or respondent is immigrant and partner is native (1). Regarding the gender variable: a hetero man is coded as 0 and a hetero woman as 1, so that we measure the impact of being a woman on experiencing IPV, following the literature. All comparative variables are derived from separate variables about the respondents or their partner. This coding allows to synthesize many variables into efficient straight-forward comparative status, using 0 as the status of reference, with ordinal organization of the categories so that they can make sense for further regressions.

We recode the intermediary variable differently. For the convictional belief/religion, we recoded each possible option as a new binary variable, coded as 0 if respondent does not follow one belief/religion, or 1 if respondent does. We include missing values and other special values

(don't know, does not want to answer etc.) as binary variables. We do not mean to exploit them as such, they are simply used to evacuate potential bias from the initial variable without deleting more observations. Some other potential variables that could have been relevant in the analysis are not considered because of a too large number of observations falling into missing values or other special cases. Besides, it appeared that some beliefs/religions could not be exploited in some regressions, made impossible to use for further comparisons. Those beliefs/religions that shall remain out of the analysis are being Muslim, Hindu, or having an incomplete survey for a respondent (leading to a missing value for the religion/belief variable). The final list of remaining beliefs or religions is: Protestant, Roman Catholic, Buddhist, Jewish, Orthodox, other Christian, other, none, don't know, refusal. Here, we cannot establish an ordinal leveling among the different religions or beliefs as we do for the control variables. For control variables, they may induce indeed a progressive potential experiencing of IPV following the state of the art. This is an assumption that does not apply to all beliefs taken as one variable.

C) Description analysis and regression models

Our analysis is held in five main steps. First, we describe the magnitude and the significance of the difference between hetero men and hetero women for IPV exposure and gender attitudes. We use means variation t-tests to operate this first basic descriptive analysis (using the proportional gender attitudes variable), and chi-square categorical association tests to elaborate further on the actual distribution for both IPV and gender values among hetero men and hetero women (using the categorical gender attitudes variable). T-tests are relevant here to state first if there are indeed significant differences between hetero men's and women's means considering gender values and IPV. Then, categorical association significance chi-square tests between IPV or gender values, and gender, remain relevant to elaborate further on the specific distribution. The last four main parts of our results consist of an in-depth links analysis, using linear probability models (Mood, 2010) with robust standard errors, to compensate heteroskedasticity induced by linear probability models (ibid.). We basically regress the IPV dichotomous variable by our proportional gender attitudes variable for the whole hetero sample, and then for hetero men and women separately. We afterwards attempt to contextualize the effect of gender attitudes on IPV exposure. This comes with three different approaches: first with control covariates, then with intermediary covariates, and eventually with an aggregated model (including both control and intermediary covariates).

As a reminder, control covariates gather gender, the marital status of the respondents, and multiple comparative status with their partners: professional occupation, age, native or immigrant status and the instruction level. For the model including control variables, the differentiation between hetero men and hetero women is made through the binary gender variable (thus there is no need to regress a model exclusively for men or women). The intermediary variables related to beliefs/religions are used to mediate the effect of gender attitudes with restrictions. We operate two regressions: one with hetero men and the other with hetero women only. As a reminder, the possible convictions/religions are good candidates for mediating the effect of gender attitudes as gender attitudes significantly explain the distribution of beliefs/religions for their initial aggregated variable (att08 in the database, Generations and Gender Program, 2023). Eventually, we compute one aggregated model confounding the effect of IPV with both control and intermediary covariates. We assume it is relevant to compare the magnitude of the link between IPV and gender attitudes only, versus among a broad pool of patterns, empirically at stake in daily life. As a recap, the purpose here is to assess or not the unequal repartition of traditional gender attitudes and IPV exposure along gender in the Estonian society in 2020.

V) Main resultsA) Unequal IPV experience and gender attitudes along gender

The experience of IPV (table 1a, n = 6317) varies significantly between men and women (t-statistic rises at 2.65 in absolute value, with a 0.009% probability that there is no association between our sample and the whole population), but its magnitude seems to remain low (1.9% of absolute difference in absolute value, so 4.53% of relative difference in absolute value, based on men's mean). The mean value for hetero men is 0.081 and it is 0.1 for women. When 0 is the absence of IPV and 1 means that IPV occurred, women have 1/10 chance to experience IPV and men have a slight lower 0.8/10 chance. Based on table 1b (n = 6710), a hetero man has a significant 7.66% likelihood to experience IPV with his current partner, while the odds rise at 9.41% for a hetero woman (chi-square-statistic is 30.14 with a close-to-zero p-value). This makes an absolute difference of 1.75%, bringing a 22% relative difference, taking the hetero men's IPV probability as reference. Thus, there is a slightly higher but very significant risk for hetero women to have experienced IPV with their current partner, in comparison with hetero men.

Following back table 1a, hetero men tend to have more traditional gender values than hetero women. On a scale going from very modern (0) to very traditional (1), the mean for men is 0.551 while it is 0.488 for women, bringing men on the traditional side and women and the modern side, on average. Yet, both means remain close to the neutral position (0.5). This means difference is given with a close-to-zero p-value and has a 6.4% absolute difference and a 12.9% relative difference, based on hetero men's mean. Based on table 1c (n = 6710), given with a close-to-zero p-value for the chi-square association test, the modern group gathers a majority of women (15.35% of women) and a minority of men (6.7% of men). The neutral category gathers most people, about 40% for both men and women. The traditional category gathers a double number of men (22.34%) than women (10.57%) and the strongly traditional category gathers about 1% for both men and women. The association and means tests show a clear trend for women to be rather modern and for men to remain traditional, although the neutral level gathers about 40% of both genders.

Based on table 2b (n = 2478) and 2c (n = 1907), the gap between fully modern gender values and fully traditional gender values brings 32.4% more odds to experience IPV with the current partner, for hetero women in the far traditional wing, compared with the most modern possible position. The same effect rises at 23.8% for men. In other words, keeping everything else equal, a hetero woman with fully traditional gender values is 32.4% more likely to

experience IPV than a hetero woman with fully modern gender attitudes, while a hetero man with fully traditional gender attitudes is 23.8% more likely than a hetero man with fully modern gender attitudes to undergo IPV. Again, the internalization of more traditional gender attitudes is more hazardous to women than men in hetero relationships, when it comes about experiencing IPV. The magnitude of the impact from more traditional gender attitudes for both men and women is given at a same very high significant level. Without taking the gender into account (table 2a, n = 4385), the gender attitudes gap (the added probability to experience IPV with fully traditional gender attitudes, compared with fully modern gender attitudes) makes a difference of 24.5% in facing IPV exposure.

B) The confounded link between gender attitudes and IPV experience

We want to observe how the impact of gender attitudes can be refrained when including control variables (table 3, n = 3984): the marital status, the age difference, the instruction level difference, the professional occupation difference, the nativity difference, and eventually, the gender. Going from having fully modern gender attitudes to having fully traditional gender attitudes increases by 31.7% the likelihood of experiencing IPV (at a very high level of significance). This coefficient remains similar to the simple regression's gender attitudes' coefficient (32.4%). Apparently, when attempting to affect the link between IPV and gender attitudes with other control covariates, the actual magnitude of gender attitudes does not change much. This finding works for the entire sample, regardless of gender.

Other control covariates present marginal impact on IPV exposure (each of them does not increase IPV exposure by more than 2% in absolute value) and the two only significant results are the age difference (an older-than-partner respondent has 1.3% less odds to experience IPV than a same-age-than-partner respondent, and 2.6% less than a younger-than-partner respondent, with a p-value under 5%) and the partnership gendering (following our previous results, a hetero woman has on average 1.9% more risks than a hetero man to experience IPV, ceteris paribus, with a p-value under 5%). While the effect of those covariates is already more or less established by the previous literature, we do not necessarily reassess them. We sustain the persistent effect gender attitudes on IPV, even when trying to confound that with control covariates, supporting the strong impact of traditional gender attitudes in generating vulnerability, especially for younger-than-their-partner hetero women.

Regarding the mediation of beliefs/religions, it appears that all mediation variables (belief/religions options) are separately significant but jointly non-significant (the F-test expresses a missing value) for hetero women (table 4a, $n = 2478$). For hetero men (table 4b, $n = 1907$), mediation variables' coefficients are separately and jointly non-significant (high p-values and a missing value for the F-test). This is a very interesting phenomenon, possibly since religion/belief's occupation is competitive (one cannot belong to more than one). However, the gender attitudes' coefficient remains highly significant and close to its previously regressed versions. The gender attitudes gap increases by 31.8% the odds to experience IPV for hetero women and by 25.5% for hetero men. When confounding the effect of gender attitudes with both control and intermediary variables (table 5, $n = 3984$), the three variables that remain significant are the gender (increasing the odds for IPV of 2.1% with a p-value smaller than 10%), the age difference (decreasing the likeliness of IPV of 2.6% for an older respondent compared to a younger respondent, with a p-value lower than 5%), and the effect of gender attitudes (maintaining a gender attitudes gap that increases IPV chances by 31.9% with a p-value under 1%).

Eventually, when we attempt to confound it with many other variables, the effect of gender attitudes remains similar as when there is no other pattern at all. As a reminder, a hetero woman that has fully traditional gender attitudes would be 32.4% more likely to experience IPV and this odd is 23.8% for a hetero man (compared to a fully modern position). When controlling for many other variables, this coefficient reaches 31.9% for both men and women. Nevertheless, this last coefficient might capture the effect of other sociodemographic variables, meaning that the hazardous effect of more traditional gender values may be reinforced when other covariates strive for more vulnerability as well. A last remark about the constant coefficients: they remain meaningless in the analysis across all models. In fact, the constant coefficient would denote the output in IPV when all parameters are up to 0. Considering covariates first, it represents a very accurate and unlikely specific case for any respondent, especially for religion/belief. Discussing gender attitudes, a 0 being associated with a fully modern position does simply not exist in our sample.

VI) Conclusion

In contemporary Estonia, hetero women do experience slightly more IPV than hetero men – who have more traditional gender attitudes – and gender attitudes look like a strong driving force for IPV exposure. Let recall us that all analysis about the link between IPV exposure and gender attitudes remain very significant all the time. As discussed, the difference between hetero men and hetero women throughout IPV experience is slightly small (7.66% of men and 9.41% of women experienced IPV) but we cannot really establish if the experience holds as perpetration or damage, based on survey's question (Generations and Gender Program, 2023). What comes out clearer is the unequal share of traditional gender attitudes that gathers a double quantity of hetero men (22.34% of them) than hetero women (10.57% of them). Having fully traditional gender attitudes increases roughly from a quarter to a third the possibility to experience IPV – compared to fully modern gender attitudes – and remains solid when computed with a large pool of other sociodemographic covariates. Even if this master dissertation can highlight solid quantitative links between IPV and gender attitudes, it would require another qualitative empirical evidence of the assumption that traditional gender attitudes actually cause more IPV. It is more accurate to state here for empirical association mainly.

As a reminder, our research question is: to what extent traditional gender attitudes – as opposed to modern ones – are positively linked with the experience of IPV among hetero men and hetero women, along the socio-demographic situation of Estonia in 2020? And our hypothesis assumed that more traditional gender attitudes tend to significantly strengthen the experience of IPV, although their link might be diminished when confounded with other sociodemographic components. At the light of our last results, we can indeed defend the significant weight of gender attitudes in relation with IPV experience likeliness. We can furthermore reassess that this link would be restrained by other sociodemographic patterns: it does not seem to be contained nor diminished when computed with. For our research, we made the audacious choice to assemble many sociodemographic covariates as comparative variables between the respondent and its partner. The positive point is that it efficiently mixes two variables in one for many covariates, letting our research be more operational. Yet, it might capture part of the weight the native variables would have carried at first.

However, this dissertation is no work on those sociodemographic patterns, especially. They have been already deeply treated previously by other works. The point of this master thesis is using them in confounding the impact of gender attitudes, which is eventually run – and that does not reassess the impact of IPV. As mentioned in the methodological part, the scope

of the questions in the source survey may also affect the type of answers we get and their statistical inference power. Yet, the limits have been clearly discussed, and the entire computation has as purpose to associate operationality and semantics derived from actual events and patterns extracted among respondents. Unequal experience of IPV between men and women described in the literature is also supported by our work. It looks like recent trend in IPV for hetero women in Estonia may not be as frequent as several years ago but yet keeps capturing the IPV phenomenon, more than hetero men's trend. Finally, while we do not reassess the implication of other socio-demographic covariates related to IPV and depicted by others, this dissertation might underline a driving role of gender attitudes' link with IPV. We believe this master thesis might deliver a simple and efficient empirical case-study that could be easily compared with others.

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VIII) Appendix**Table 1a: means differences for IPV and gender attitudes along gender**

Means variations along gender (t-tests)	n of hetero men	n of hetero wo- men	Mean hetero men	Mean hetero wo- men	Dif	St. Err.	t-value	p- value
IPV with current partner: no (0)/yes (1)	2668	3649	0.081	0.1	-.019	.007	-2.65	.009
Gender attitudes: fully modern (0) – fully traditional (1)	1994	2606	0.551	0.488	.064	.004	18.85	0

Table 1b: IPV distribution along gender

Gender	Ever experienced IPV with current partner				
	No	Yes	Don't know	Refusal	Total
Hetero men	2452	216	103	49	2820
	86.95	7.66	3.65	1.74	100.00
Hetero women	3283	366	105	136	3890
	84.40	9.41	2.70	3.50	100.00
Total	5735	582	208	185	6710
	85.47	8.67	3.10	2.76	100.00

Pearson Chi2 = 30.14 Prob = 0.0000

First row has *frequencies* and second row has *row percentages*

Table 1c: gender attitudes distribution along gender

Gender	Gender attitudes positioning (categories)					
	Modern	Close to neutral	Traditio -nal	Strong- ly traditio- nal	Missing values	Total
Hetero men	189	1130	630	45	826	2820
	6.70	40.07	22.34	1.60	29.29	100.00
Hetero women	597	1579	411	19	1284	3890
	15.35	40.59	10.57	0.49	33.01	100.00
Total	786	2709	1041	64	2110	6710
	11.71	40.37	15.51	0.95	31.45	100.00

Pearson Chi2 = 278.7154 Prob = 0.0000

First row has *frequencies* and second row has *row percentages*

Table 2a: simple linear probability model with gender attitudes (both genders)

IPV with current partner	Coef.	St. Err.	t- value	p- value	[95% Conf Interval]	Sig
Fully traditional gender attitudes (constant)	.245 -.026	.041 .02	6.01 -1.28	0 .202	.165 -.066 .325 .014	***
Mean dependent var		0.100	SD dependent var		0.300	
R-squared		0.009	Number of obs (n)		4385	
F-test		36.150	Prob > F		0.000	
Akaike crit. (AIC)		1852.820	Bayesian crit. (BIC)		1865.592	

*** $p < .01$, ** $p < .05$, * $p < .1$

Table 2b: linear probability model with gender attitudes (hetero women only)

IPV with current partner	Coef.	St. Err.	t- value	p- value	[95% Conf Interval]	Sig
Fully traditional gender attitudes (constant)	.324 -.05	.06 .028	5.39 -1.77	0 .077	.206 -.106 .442 .005	*** *
Mean dependent var		0.108	SD dependent var		0.310	
R-squared		0.014	Number of obs (n)		2478	
F-test		29.016	Prob > F		0.000	
Akaike crit. (AIC)		1198.947	Bayesian crit. (BIC)		1210.577	

*** $p < .01$, ** $p < .05$, * $p < .1$

Table 2c: linear probability model with gender attitudes (hetero men only)

IPV with current partner	Coef.	St.Err.	t- value	p- value	[95% Conf Interval]	Sig
Fully traditional gender attitudes (constant)	.238	.06	3.97	0	.121 .356	***
Mean dependent var		0.090	SD dependent var		0.287	
R-squared		0.009	Number of obs (n)		1907	
F-test		15.765	Prob > F		0.000	
Akaike crit. (AIC)		629.756	Bayesian crit. (BIC)		640.863	

*** $p < .01$, ** $p < .05$, * $p < .1$

Table 3: linear probability model with gender attitudes & control variables (both genders)

IPV with current partner	Coef.	St.Err.	t- value	p- value	[95% Conf Interval]	Sig
Fully traditional gender attitudes	.317	.046	6.88	0	.227 .407	***
Marital status	-.008	.01	-0.82	.412	-.027 .011	
Age difference	-.013	.006	-2.24	.025	-.025 -.002	**
Instruction difference	.005	.006	0.89	.373	-.007 .017	
Occupation difference	-.001	.006	-0.24	.807	-.013 .01	
Migration/nati- ve difference	-.002	.017	-0.14	.885	-.036 .031	
Gender (constant)	.019 -.066	.012 .029	1.61 -2.31	.106 .021	-.004 -.123	.042 -.01 **
Mean dependent var		0.100	SD dependent var		0.300	
R-squared		0.016	Number of obs (n)		3984	
F-test		8.104	Prob > F		0.000	
Akaike crit. (AIC)		1661.683	Bayesian crit. (BIC)		1712.004	

*** $p < .01$, ** $p < .05$, * $p < .1$

Table 4a: linear model with gender attitudes & intermediary variables (hetero women only)

IPV with current partner	Coef.	St.Err.	t- value	p- value	[95% Conf	Interval]	Sig
Fully traditional gender attitudes	.318	.064	4.99	0	.193	.443	***
Protestant	.105	.021	4.90	0	.063	.147	***
Roman Catholic	.153	.067	2.28	.023	.021	.285	**
Buddhist	.238	.136	1.74	.081	-.03	.505	*
Jewish	-.018	.004	-4.99	0	-.025	-.011	***
Orthodox	.136	.02	6.85	0	.097	.175	***
Other Christian	.135	.056	2.40	.016	.025	.246	**
Other	.235	.062	3.79	0	.113	.356	***
None	.127	.01	12.80	0	.108	.147	***
Don't know	.124	.057	2.17	.03	.012	.236	**
Refusal	.14	.037	3.81	0	.068	.212	***
(constant)	-.177	.035	-4.99	0	-.246	-.107	***
Mean dependent var		0.108	SD dependent var			0.310	
R-squared		0.017	Number of obs (n)			2478	
F-test		.	Prob > F			.	
Akaike crit. (AIC)		1210.814	Bayesian crit. (BIC)			1264.966	

*** $p < .01$, ** $p < .05$, * $p < .1$

**Table 4b: linear probability model with gender attitudes & intermediary variables
(hetero men only)**

IPV with current partner	Coef.	St.Err.	t- value	p- value	[95% Conf Interval]	Sig
Fully traditional gender attitudes	.255	.064	3.99	0	.13 .381	***
Protestant	-.139	.268	-0.52	.603	-.666 .387	
Roman Catholic	-.231	.269	-0.86	.391	-.759 .297	
Buddhist	.065	.293	0.22	.824	-.509 .639	
Jewish	-.251	.267	-0.94	.348	-.774 .272	
Orthodox	-.206	.267	-0.77	.441	-.729 .318	
Other Christian	-.208	.273	-0.76	.446	-.743 .327	
Other	-.118	.271	-0.43	.664	-.65 .414	
None	-.174	.267	-0.65	.515	-.697 .35	
Don't know	-.142	.273	-0.52	.603	-.678 .394	
Refusal	-.175	.269	-0.65	.517	-.703 .353	
(constant)	.123	.27	0.45	.65	-.408 .653	
Mean dependent var		0.090	SD dependent var		0.287	
R-squared		0.020	Number of obs (n)		1907	
F-test		.	Prob > F		.	
Akaike crit. (AIC)		627.161	Bayesian crit. (BIC)		688.247	

*** $p < .01$, ** $p < .05$, * $p < .1$

Table 5: aggregated linear probability model with all variables (both genders)

IPV with current partner	Coef.	St. Err.	t- value	p- value	[95% Conf Interval]	Sig
Fully traditional gender attitudes	.319	.048	6.65	0	.225 .413	***
Marital status	-.006	.01	-0.63	.529	-.026 .013	
Age difference	-.013	.006	-2.20	.028	-.024 -.001	**
Instruction difference	.005	.006	0.86	.392	-.007 .017	
Occupation difference	-.001	.006	-0.17	.865	-.013 .011	
Migration/nati- ve difference	-.005	.017	-0.28	.777	-.038 .028	
Gender	.021	.012	1.84	.066	-.001 .044	*
Protestant	-.175	.263	-0.66	.506	-.69 .34	
Roman Catholic	-.178	.266	-0.67	.504	-.699 .343	
Buddhist	.06	.281	0.21	.83	-.491 .612	
Jewish	-.279	.262	-1.06	.287	-.793 .235	
Orthodox	-.187	.262	-0.71	.477	-.701 .328	
Other Christian	-.174	.266	-0.66	.512	-.695 .347	
Other	-.095	.265	-0.36	.722	-.615 .426	
None	-.175	.262	-0.67	.504	-.689 .339	
Don't know	-.154	.266	-0.58	.561	-.675 .366	
Refusal	-.158	.264	-0.60	.548	-.676 .359	
(constant)	.102	.265	0.39	.7	-.417 .621	
Mean dependent var	0.100		SD dependent var	0.300		
R-squared	0.021		Number of obs (n)	3984		
F-test	6.696		Prob > F	0.000		
Akaike crit. (AIC)	1659.771		Bayesian crit. (BIC)	1772.992		

*** $p < .01$, ** $p < .05$, * $p < .1$ (still table 5)

Table 6: religions/beliefs variable as an intermediate for gender attitudes in explaining IPV (validity evidence)

Religions or beliefs	Coef.	St.Err.	t-value	p-value	[95% Conf Interval]	Sig
Gender attitudes	-4.258	.344	-12.38	0	-4.932 -3.584	***
(constant)	11.826	.176	67.09	0	11.481 12.172	***
Mean dependent var		9.635	SD dependent var		2.861	
Number of obs (n)		4384	Chi-square		153.150	
Prob > chi2		0.000	Akaike crit. (AIC)		21524.336	

*** $p < .01$, ** $p < .05$, * $p < .1$

Gender attitudes and intimate partner violence in Estonia in 2020: a differentiated experience based on gender

Master thesis in Quantitative Methods for Social Sciences - UCLouvain

SUMMARY

Understanding intimate partner violence (IPV) is a challenge: it relies on complex social realities among couple – in this case, hetero couple only. While previous literature mostly considers economic and cultural patterns linked with IPV, this master thesis focuses on the interaction between IPV and gender attitudes (beliefs of what men and women ought to be as distinguished genders).

Based on data from the Generations and Gender Survey II for Estonia in 2020, we want to understand to what extent traditional gender attitudes – as opposed to modern ones – are positively linked with the experience of IPV among men and women, along their socio-demographic situation.

We initially assume that more traditional gender attitudes tend to significantly strengthen the experience of IPV – more strongly for women than for men – although their link might be diminished when confounded with other social aspects.

We use t-tests and chi-square tests to see if there are meaningful differences between men and women in gender attitudes and experience of IPV. Then, we regress the experience of IPV by gender attitudes and see how strong their link is. Further regressions are made to distinguish the changes when accounting for the whole sample or only one gender, or when using added patterns as control or intermediary covariates.

It appears that trends in IPV experience along gender attitudes remain solid and constant, even with other factors. Outputs are that a man with fully traditional gender attitudes is 25% roughly more likely to experience IPV than man with fully modern gender attitudes; and this gap is approximately 33% for women. On average, women are 1.9% more likely than men to experience IPV. Furthermore, the whole sample is quite balanced regarding gender attitudes, but men still tend to be more traditional and women a bit more modern.

Keywords: gender attitudes, gender, Estonia, IPV, quantitative methods.