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Economic Determinants of Intimate Partner Violence: The Case of Sweden during Covid-19

Maria Perrotta Berlin & Manne Gerrell

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The Case of Sweden during Covid-19

Maria Perrotta Berlin* Manne Gerell†

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Abstract

We document an increase in intimate partner violence (IPV) against women in Sweden during the first wave of the Covid-19 pandemic, notwithstanding the famously *lasseiz-faire* approach taken by the coutry. We investigate the role of different mediating factors, affected by the pandemic, by the containment policies, or by their economic consequences, and spilling over to violence incidence, connecting to established theories of violence. We find support for the importance of time spent at home and female unemployment. We also find a positive correlation with alcohol sales.
Key words: COVID-19, domestic violence, unemployment, self-incapacitation
JEL Codes: J12, J16, K14

PRELIMINARY, DO NOT CITE.

*SITE, Stockholm School of Economics.

†Malmö University.

1 Introduction

As soon as the first shelter-in-place orders were issued by governments around the world, during the early months of 2020, media and advocacy organizations started to report stories and sound the alarm about an heightened risk of domestic violence. Received wisdom about the phenomenon suggested this could be expected: there is a common perception that domestic violence increases during holidays and weekends as families spend more time together. This is in line with the so-called *exposure* model in criminology. In this particular case, exposure would be compounded by isolation from both social networks and support organisations, due to quarantines and lockdowns, and moreover by psychological and financial distress, due to the uncertainty embedded in the crisis situation and the economic downturn that followed it. Alternative, or rather complementary, theories of violence can be called upon to account for these factors, too.

Academic research followed suit. The surge in interest for this question has two main drivers. Describing what is really happening through a careful analysis of relevant statistics, and disentangling the relative importance of different factors has implications for the immediate policy response. Moreover, in a longer term perspective, the crisis offers opportunities to isolate causal mechanisms behind some of the already known risk factors and lead to an all in all improved understanding of the phenomenon of domestic violence.

A few key take-aways emerge from the studies on domestic violence during the past months. First of all, the prevalence. A systematic review and meta-analysis by Piquero et al. (2021) estimates a global average increase in officially reported domestic violence during the pandemic by 7.9%. As for the factors, lockdowns and time spent at home have clearly been identified as important drivers of this increase, see the references in the next section.

With this backdrop, Sweden is an interesting case to study. First of all, Sweden adopted a close to unique strategy for the management of the pandemic. It is still debated whether the reason behind this was the pursuit of an early flock immunity. What is clear is that the approach relied to a large extent on individual responsibility and voluntary compliance. The authorities issued a limited set of official recommendations, detailed in Section 3.2, and trusted the population to adhere to them without any incentive or enforcement mechanism. This has implications for the chain of impacts identified in studies from other countries, going from the pandemic shock, to the policy reaction, to changes in proximate causes of violence, and then to changes in violence prevalence. Did Sweden manage to escape this chain, due to the different approach to policy reaction?

A more general motivation stems from the image of Sweden as a "global champion of gender equality", in the words of the Swedish Minister for Foreign Affairs Ann Linde, and a paradigm of advanced cultural values in this area. Sweden sat firmly on top of the EIGE Gender Equality Index since its inception, in the top 3 of the UN Gender Inequality Index for 7 out of the 10 years since it is published, and in the top 5 of the WEF Gender Gap Index all available years, and despite some remaining pockets of inequality between the genders, scores very high in most of the measures that are used in this domain, thanks to progressive norms as well as policies. As research has shown repeteadly that the interplay between economic factors and cultural norms is determinant for outcomes of domestic violence (e.g., Tur-Prats, 2019, 2021), the analysis of the impact of the pandemic in the

Swedish context can be a useful complement to the picture emerging from countries with a different background.

The paper is organized as follows. The next section reviews a selection of contributions in the literature, organized in different theories of violence. Section 3.1 sets the stage in Sweden, with a background on IPV and the policy approach to the pandemic. Section 4 describes the data and methods we use, and empirical patterns are documented in Sections 5 to 8. Section 9 concludes.

2 Literature

The measures taken in response to the pandemic have affected a variety of causal mechanisms that are central to theories of violence.

The exposure model, emerging from criminology, emphasises the role of *exposure*, i.e. the time that families or couples spend together (Dugan et al., 2003). It is consistent with the stylised fact, reported for example by the Rape, Abuse, and Incest National Network (RAINN) in the US that domestic violence tends to escalate during national holidays, weekends and nights and during periods of bad weather, because in these cases families are at home together for longer.

The opposite of exposure is so-called *incapacitation* (which can also be self-imposed): the idea that less violence takes place when potential perpetrators are kept busy somewhere else - in school (Jacob and Lefgren, 2003), in jail (Levitt, 1996), at the movies (Dahl and DellaVigna, 2009). A recent strand of research (Cunningham and Shah, 2018; Ciacci and Sviatschi, 2022; Immordino et al., 2020) also finds a link between restrictions in the prostitution market and increases in sexual and violent crime.

The broader routine activity theory, that encompasses both exposure and incapacitation as well as some effects of weather and mobility, states that changes in routine activities can both facilitate or obstruct certain crimes from taking place. These theories are fully compatible with Gary Becker's canonical model of crime, where the opportunity to commit a crime, in terms of time and available occasions as well as lack of alternative occupations, enters the production function for crime affecting its costs or benefits.

Another set of studies emphasises the emotional and irrational aspect of violence. A famous study by Card and Dahl (2011), recently updated by Ivandic et al. (2022), identifies a distinct effect of unexpected football game results. More generally, stress and uncertainty, also of an economic nature (Hidrobo et al., 2016; Pronyk et al., 2006; Haushofer et al., 2019), are known to exacerbate the frequency of violent reactions.

A third perspective relates the occurrence of intimate partner violence (IPV) to bargaining within the household. Violence is here interpreted as the result of power imbalances, for example from inequalities in income (Aizer, 2010) or employment status (Anderberg et al., 2016; Tur-Prats, 2021). The status of women in society, reflected for example in female representation or role-modeling in important or visible positions (Iyer et al., 2012; Miller and Segal, 2019), is also found to play a role in this respect.

Among the most recent studies from the pandemic period, the factors that have clearly been identified as important are lockdowns and time spent at home. In particular, research from countries that had internal variation in the strictness of regulation lends

support to the relation between lockdown strictness and increase in domestic violence. Interestingly, violence outside the home (or perpetrated by people outside the immediate family) is decreasing in connection with the severity of lockdown (Ravindran and Shah, 2020; Agüero, 2021). The study by Perez-Vincent and Carreras (2022), which complements evidence on increase in distressed calls with a victims survey, could also show that the effect varied between households in which men were affected or not by the restrictions, depending on which sectors they worked on. Mobile data and GPS have been used to assess the link between violence and actual time spent at home (Leslie and Wilson, 2020), with the addition that the time *neighbors* spend at home also plays a role, through third-party reporting, as demonstrated by the relationship with population density in Ivandic et al. (2020). No effect has been found of alcohol consumption per se, in the cases where bans were used, for example in Mexico City (Silverio-Murillo et al., 2020). However it has been suggested that the venue of alcohol consumption might affect violence differentially, with private at home consumption being more risky than in public settings (Chalfin et al., 2021). Most of these studies are still preliminary, as the pandemic is still not fully over, and many report mixed or weak patterns that have not yet been fully understood and reconciled with the whole body of knowledge in the field. Many important questions are still open.

3 Background

3.1 Domestic violence in Sweden

According to a national survey conducted by the Swedish National Council for Crime Prevention (BRÅ, 2012), 7% of the Swedish population is exposed annually to crimes within the family, men and women to a roughly equal extent. The most common behaviors in this context are violations of integrity and privacy and attempts to coherce and control. However a share is exposed to physical and psychological violence. Women report to a larger extent recurring and more serious violence, with 30% of women versus 6% of men exposed to physical violence that requires hospitalization as a consequence.

While some crimes can be reported online (with a social security number), crimes against the person must be reported by phone or visiting a police station. There could therefore be reasons to believe that restricted mobility during the pandemic hindered reporting. However, BRÅ disclosed that, while total crimes reported in March 2020 were 4% lower year-on-year, violent assaults against women were 9% up in the same comparison. During the first half of 2020, 1% more crimes were reported in total compared to the same period of 2019 (BRÅ, 2020). Crimes against the person increased all in all at a similar rate, with some heterogeneity: violent assaults against women went up 4%, against men 1%, while violence against children went down 6%. Reported rapes were also lower than previous year, by 6% and 9% respectively for women and men.[1] As for other crimes, they are all over the place, with thefts down by 3%, burglaries up by 5%, frauds down by

[1]These numbers are based on the report date, so it should be kept in mind that the crimes were not necessarily committed during the same period. Reported rapes of children, for example, increased by a staggering 13%. However this most likely reflects the discovery in july of a pedofile who had been active for the previous 30 years.

13%, alcohol-related down by 1%, drug-related up by 13%. In sum, no consistent trend in reporting could be identified.

3.2 The policy timeline

Table 1: Timeline of major policy measures implemented in Sweden

Week (Date)	Intervention
8 (17/2)	Travel limitations to and from China
10 (3-6/3)	Travel limitations to and from Iran and Italy
11 (12/3)	Gatherings of $>$ 500 people banned
11 (13/3)	Anyone with cold symptoms asked to stay at home
12 (16/3)	Anyone over 70 asked to minimized physical contact
12 (18/3)	Highschool and university to teach from distance
12 (19/3)	Recommendation to refrain from unnecessary travel, entry ban
13 (24/3)	Restaurants, cafés, bars mandated to limit crowding (alcohol curfew from Nov)
13 (27/3)	Gatherings of $>$ 50 people banned
14 (31/3)	No visits to retirement homes (locally hospitals)
14 (1/4)	General recommendation to businesses and associations to limit social interactions. Employers recommended to encourage work from home. Public transport to reduce crowding
Source:	Gerell et al. (2020); Folkhälsomyndigheten

As mentioned in the introduction, the Swedish strategy to manage the pandemic was one of the most hands-off at least among western countries. All interventions took the form of recommendations, without any binding force or sanction, and emphasis placed on individual responsibility. Major official recommendations included: 1) restrictions on the size of public gatherings, first up to 500 and then 50 people; 2) restrictions on bars and restaurants, who could only offer table service and should ensure the absence of physical lines or customers standing at the counter; 3) high schools and higher education institutions (for children from 16-years of age) closed their on campus activities and provided online education; 4) ban on incoming travel from non-EU countries. The full list with time of implementation is provided in Table 1.

3.3 Mobility patterns

Notwithstanding the voluntary nature of Swedish restrictions, it is immediately clear that they had an impact on behavior when inspecting trends in the Google mobility index.[2]

[2]At the start of the pandemic, Google started providing an index of mobility trends over time that is by now very popular and broadly used. It is organized into six categories of geographical locations: retail and recreation areas, grocery stores and pharmacies, parks, public transport stations, workplaces, and residential areas. The indices express the deviation of total users' presence in such areas from a reference

Figure 1 clearly shows a distinctive shift in mobility patterns to the right of the vertical line marking week 11 of 2020 as the beginning of the pandemic, when the Swedish Public Health Agency for the first time acknowledged a very high risk of community spread in Sweden, and indoor events with more than 500 participants were banned. Mobility to retail and recreation areas, and partly also to grocery stores and pharmacies, later on reverted to normal, amidst some ups and downs. However residential and workplace mobility, as well as commuting (transit), have as yet not recovered, indicating perhaps a more permanent change in people preferences and office policies.

4 Data and methods

We have data until March 2021 on all crimes committed within a family, excluding crimes against children.[3] More exactly, crime codes include attempted or planned homicide; violent assault/battery; sexual harassment, assault or rape; violation of integrity or privacy (including limitation of freedoms, coercion, threat, harassment). The classification of the relationship between victim and perpetrator changed over time, though. In January 2018 the definition of intimate partner went from limited to a cohabiting partner, whom the victim lives or has lived with, to include even non-cohabiting partners. It is clear in the data (see Figure 2) that the total number of crimes committed by an intimate partner is, as a consequence, much lower in the years 2016-17. To ensure comparability over time we therefore start the analysis in 2018.

In January 2019 the residual category of relation (known offender which is not an intimate partner) was split to track other family relations. However, this has led to a coding mistake for the code of assault/battery that was first noticed in february 2020 and gradually restored thereafter. This implies that during this period some assaults committed by intimate partners have been classified under other family relations, and viceversa. Therefore, when looking at the code of battery/assault over time, we need to sum together the relationship categories.

In order to adress these limitations in the data, we use different aggregations of crime categories in different specifications. When drawing comparisons over time, we aggregate the data in the following categories, that have been consistently coded over the whole period: all violent crimes against women committed outdoors, all violent crimes against men committed outdoors, battery of women by partner and family members committed indoors, battery of men by partner and family members committed indoors, non-battery crimes against women committed by an intimate partner, non-battery crimes against men committed by an intimate partner. We can reasonably assume that the coding mistake in the data classification does not vary systematically with other socio-economic factors. Therefore, when using those factors in difference-in-differences specifications, the dependent variable is our main indicator of interest, namely crimes committed indoor by an intimate

value before the start of the pandemic (3 januari–6 februari 2020). This data is available for all Swedish municipalities at the daily level.

[3]Crimes against children are only classified according to whether the perpetrator is someone known to the child or not, there is no information on family relation.

Figure 1: Mobility patterns during the Covid-19 pandemic

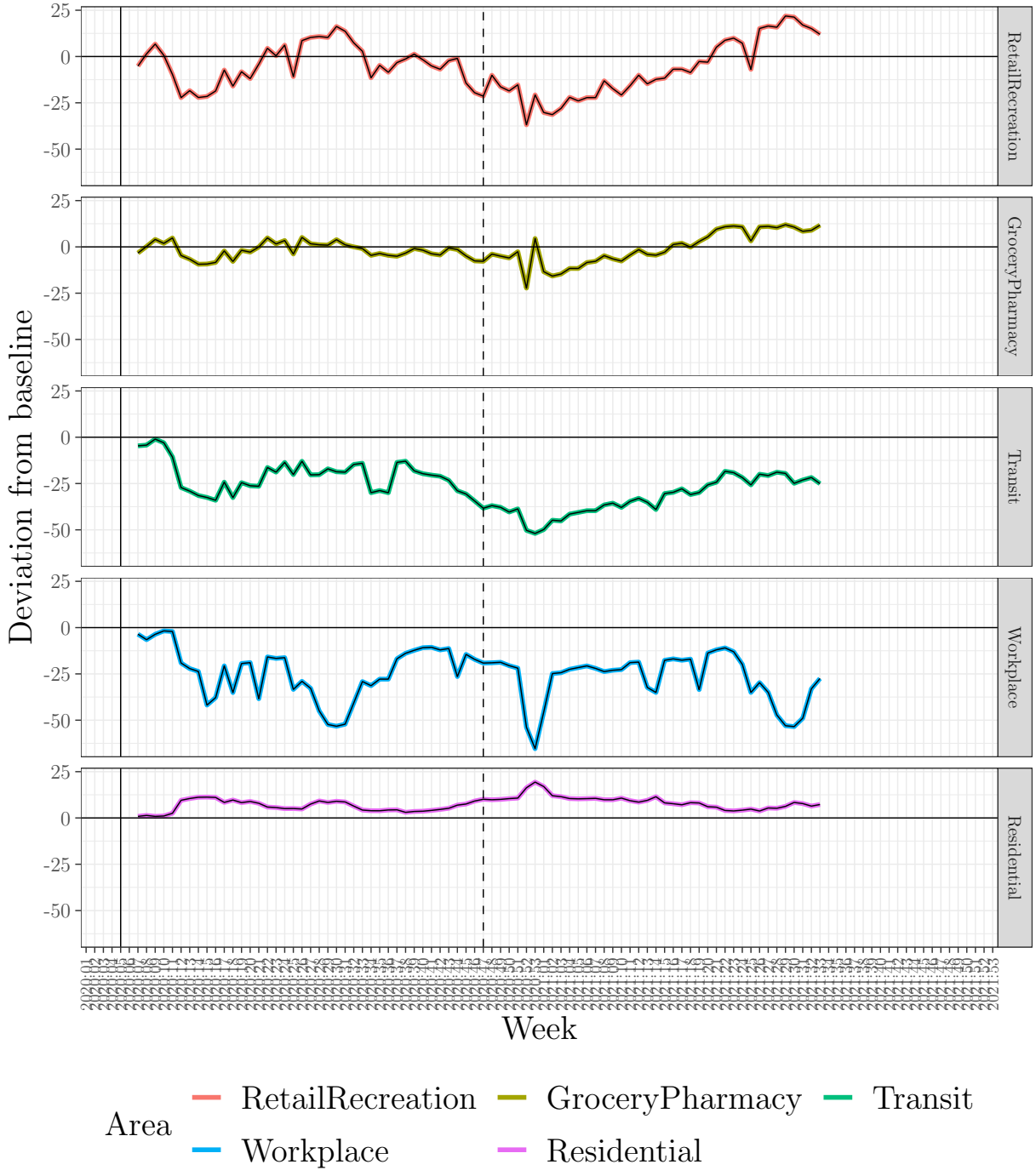
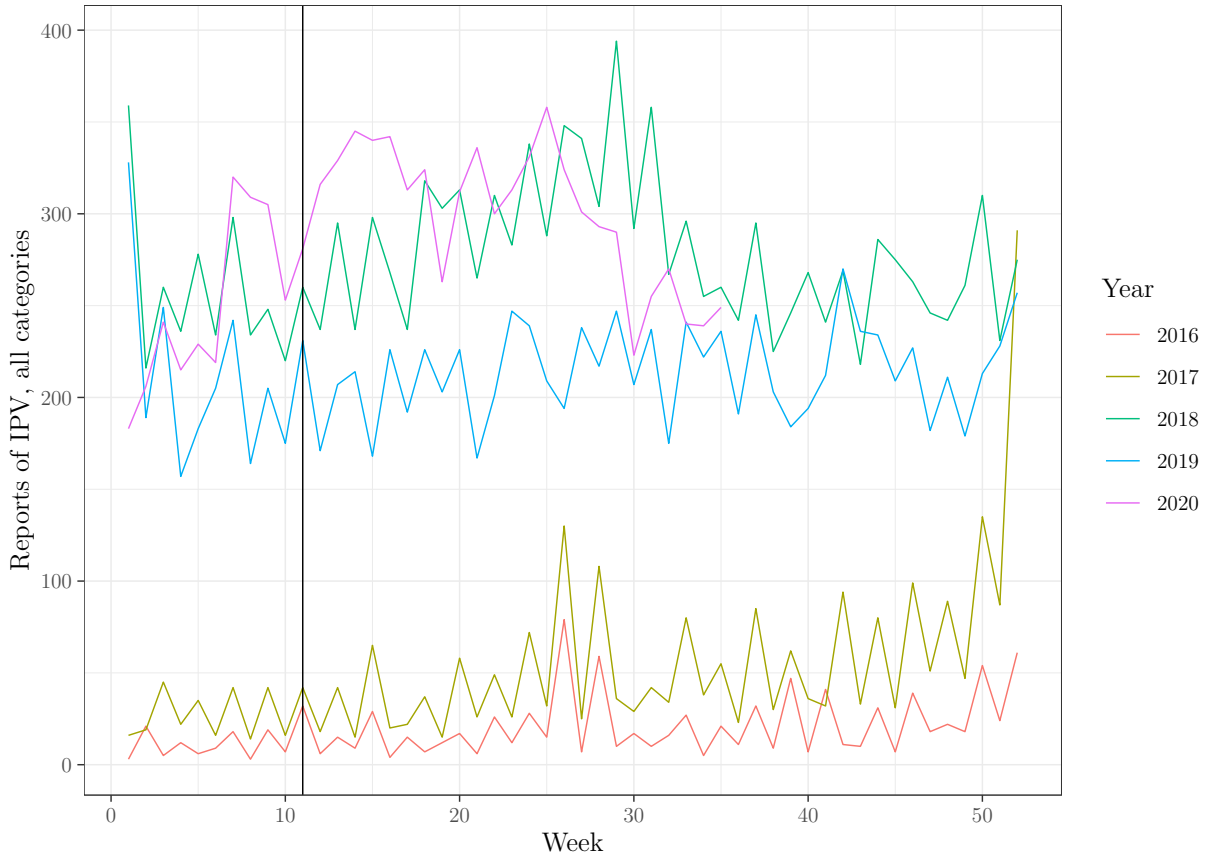


Figure 2: Reports of IPV over the years



partner, disaggregated by the gender of victim. Table 2 reports summary statistics for all the eight aggregations of crime categories.

Table 2: Summary Statistics

Year		2018			2019			2020			2021	
Variable	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD
WBI	15317	0.611	1.67	15317	0.676	1.889	15317	0.74	2.066	4624	0.596	1.725
MBI	15317	0.131	0.52	15317	0.181	0.647	15317	0.206	0.71	4624	0.17	0.62
WnB	15317	0.05	0.259	15317	0.36	1.197	15317	0.579	1.605	4624	0.488	1.358
MnB	15317	0.008	0.093	15317	0.061	0.29	15317	0.102	0.412	4624	0.082	0.345
WO	15317	0.41	1.474	15317	0.369	1.356	15317	0.378	1.346	4624	0.238	0.855
MO	15317	0.905	3.162	15317	0.868	3.03	15317	0.851	2.917	4624	0.563	1.909
WIPVI	15317	0.602	1.641	15317	0.475	1.379	15317	0.643	1.82	4624	0.5	1.489
MIPVI	15317	0.125	0.51	15317	0.082	0.38	15317	0.141	0.544	4624	0.108	0.454

Notes: WBI indicates battery crimes against women. MBI indicates battery crimes against men. WnB and MnB indicate non-battery crimes against women and men, respectively, and WO and MO outdoor crimes. WIPVI and MIPVI indicate intimate partner violence (IPV) committed indoors against women and men, respectively. Crime prevalence (per 10,000).

The specification we use for the D-i-D is as follows:

$$\Delta Y_{wi}^{2020-2019} = \beta * X_{wi}^{2020} + \mu_w + \nu_i + \epsilon_{wi} \tag{1}$$

where the dependent variable is the change in IPV reported in municipality i and week w of 2020 from the same week (month) of 2019. The explanatory factors X_{wi}^{2020} that we consider include mobility patterns, total and relative unemployment, and alcohol sales in the same municipality and week (county and month, when it comes to alcohol) of 2020.[4] Again, we can use reported indoor IPV, notwithstanding the coding error in relationship definition, since the coding mistake can be assumed to be uncorrelated with these covariates. The measurement error might however bias our estimates towards zero.

5 Changes in crime during the pandemic

Since Sweden did not introduce a strict lockdown, we start by looking at the evolution of crime rates over time. In Figures 3 and 4 we plot weekly and monthly aggregations of crime incidents within a municipality, cleaned of year, week and municipality fixed effects. Figure 3 also highlights in blue the timing of the restrictions listed in Table 1. The weekly specification allows us to look at responsiveness to the restrictions with more precision. On the other hand, due to the small number of crimes on a weekly basis, these estimates are also more volatile, while by contrast the monthly data are smoother.

[4]Some of these factors are potentially endogenous to IPV, this will be adressed case by case when discussing results.

Figure 3: Event study estimates - weekly

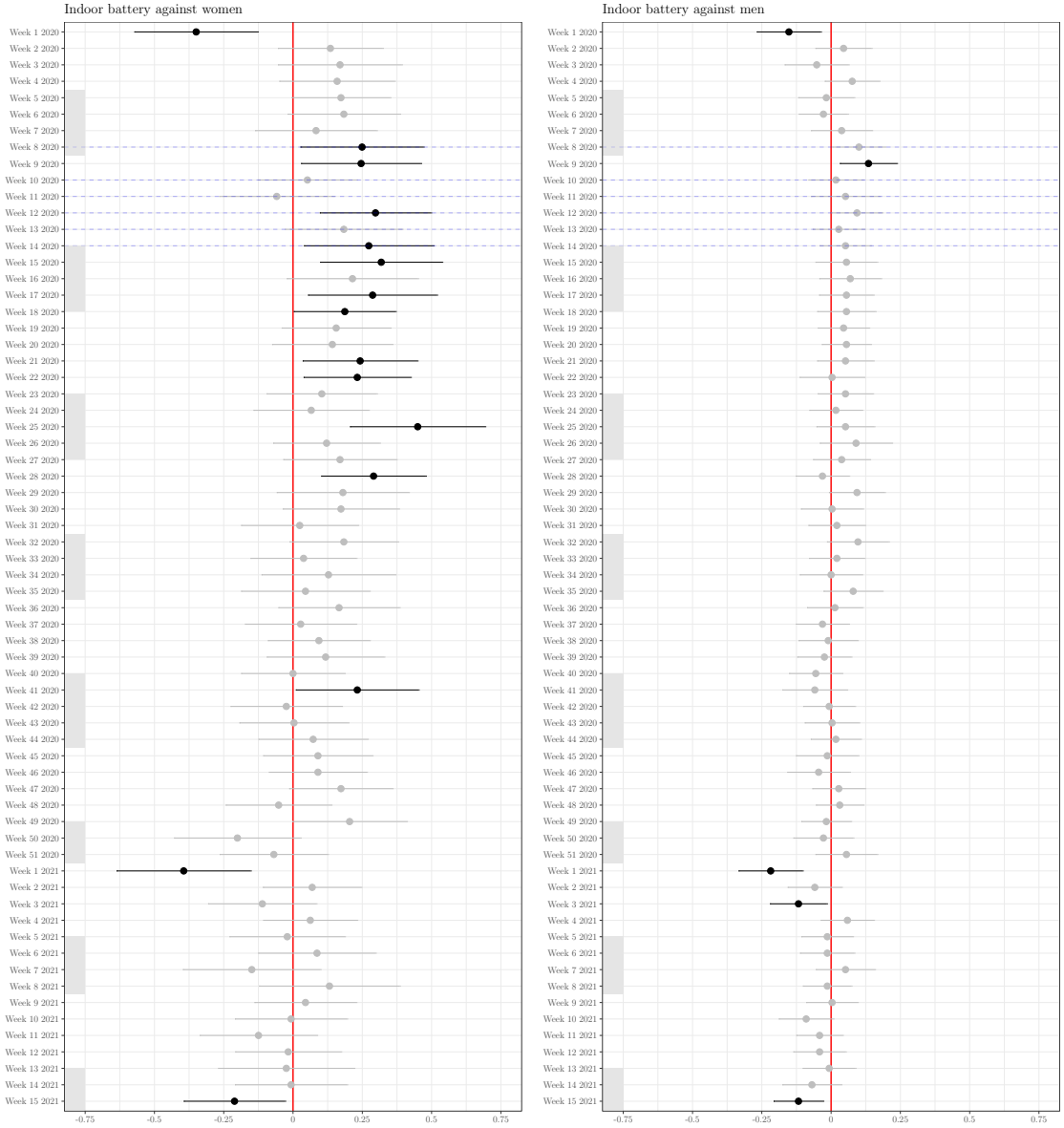


Figure 4: Event study estimates - monthly

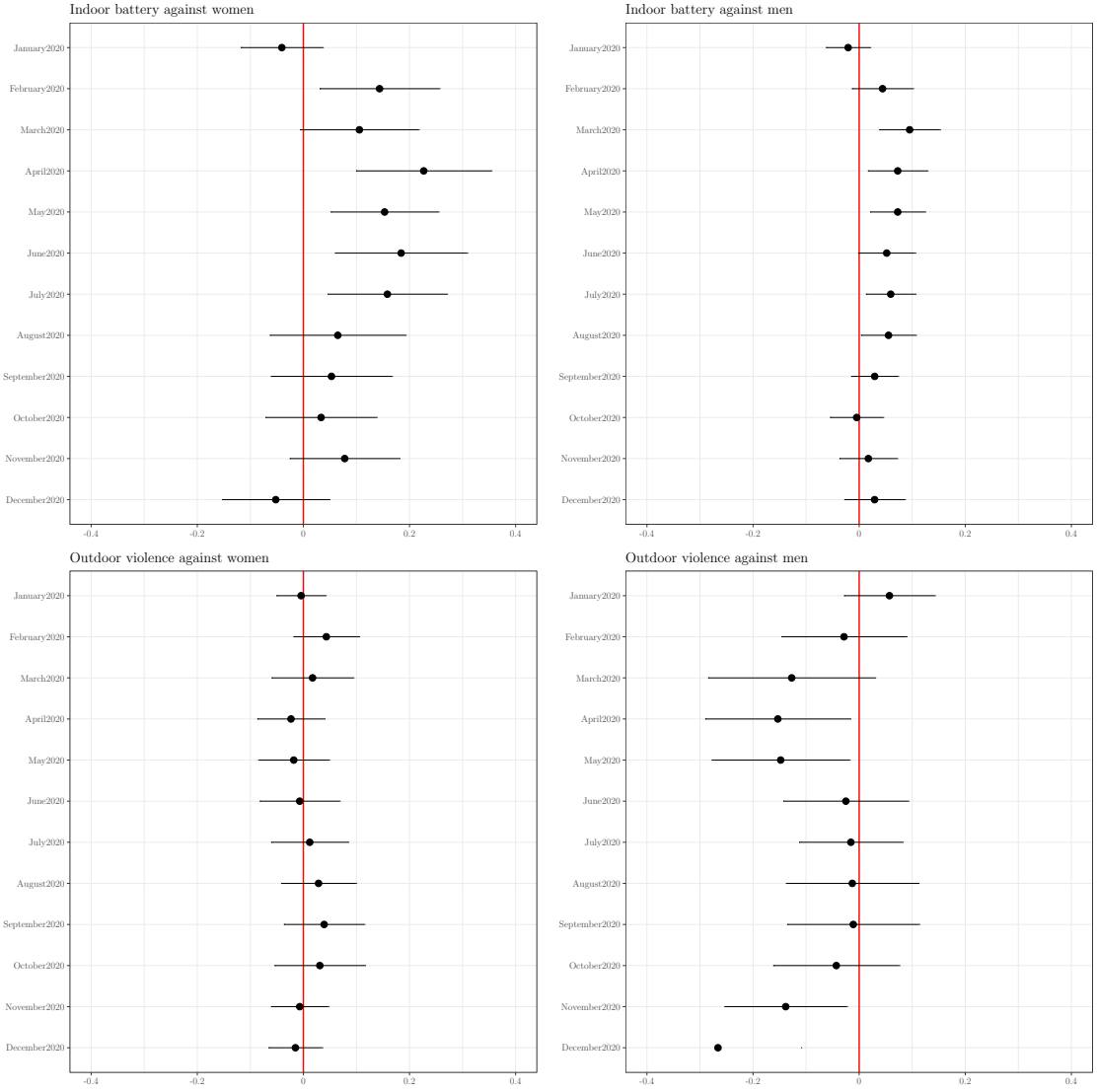


Table 3 reports estimates of the following equation, a D-i-D specification using pre-pandemic years (2018-2019) as control in order to account for seasonal trends:

$$Y_{ity} = \alpha Covid_t + \gamma Post_{2020} + \beta Covid_t * Post_{2020} + \mu_t + \nu_i + \epsilon_{ity} \quad (2)$$

The indicator *Covid* is not exogenously defined, as there was no lockdown in Sweden, but rather marks the weeks of the year for which we see a significant increase in incidents in Figure 3, starting week 11 and ending week 28. This is just to show the total change in the selected types of crimes over this period. The size is in the order of magnitude of 6 to 12 to -6 percent of the mean for women; -8 to 23 percent for men.

Table 3: Difference-in-differences specification

	Victim gender					
	Women			Men		
	WBI	WnB	WO	MBI	MnB	MO
Covid*Post	4.420***	2.250***	−2.520***	1.430***	0.368	−6.940***
	(1.310)	(0.767)	(0.765)	(0.502)	(0.318)	(1.930)
Week FE	Yes	Yes	Yes	Yes	Yes	Yes
City FE	Yes	Yes	Yes	Yes	Yes	Yes
2019 baseline	Mean : 68	Mean : 18	Mean : 36	Mean : 6	Mean : 37	Mean : 87
Observations	45,951	45,951	45,951	45,951	45,951	45,951
R^2	0.758	0.459	0.709	0.504	0.226	0.830
Adjusted R^2	0.756	0.455	0.707	0.501	0.220	0.829

Note: *p<0.1; **p<0.05; ***p<0.01

Weekly prevalence (cases per 1,000,000) between 1-Jan-2018 and 31-Dec-2020. Standard errors clustered at the municipality level. WBI (MBI) is indoor battery of women (men); WnB (MnB) is non-battery IPV against women (men); WO (MO) is outdoor violence against women (men).

The estimates in Table 3 can be seen as a reduced-form total impact of the pandemic on the selected types of crimes. However, a secular increasing trend in violence over the period would also result in similar estimates. In order to isolate potential changes driven by the pandemic from secular trends we need to exploit variation in some other dimension. This exercise is also relevant for policy purposes, as it helps identifying to some extent the mechanisms behind the total increase. From the perspective of policy prevention and intervention, the implications are different if the increase in violence is driven by exposure, i.e. families spending more time together; by financial stress due to the bleak economic outlook and potentially unemployment within the household; by the limitation of entertainment and activity options (connected to so-called *self-incapacitation*); by psychological distress and potential substance abuse, and so on. The variation in some of these factors might provide more insight into the policy-relevant question about channels, and at the same time

Table 4: Indoor IPV and mobility in urban areas

	Victim gender					
	Women			Men		
Residential	0.020		0.033	−0.013		−0.005
	(0.022)		(0.025)	(0.010)		(0.009)
Workplace		0.003	0.011		0.002	0.006**
		(0.002)	(0.008)		(0.001)	(0.003)
Week FE	Yes	Yes	Yes	Yes	Yes	Yes
City FE	Yes	Yes	Yes	Yes	Yes	Yes
2019 baseline		Mean : 0.47			Mean :0.08	
Observations	4,990	11,246	4,870	4,990	11,246	4,870
R^2	0.240	0.220	0.242	0.132	0.126	0.133
Adjusted R^2	0.210	0.197	0.211	0.098	0.101	0.098

Note: *p<0.1; **p<0.05; ***p<0.01
Standard errors clustered at the week and city level.

help with the identification of the effect that we want to separate from a secular trend. In the next section we focus on mobility patterns.

6 IPV and mobility patterns

One hypothesis that attracted massive media attention and also found some support in other countries (Leslie and Wilson, 2020; Ivandic et al., 2020) is the worry that, when families spend more time together, in the confimnement of the home, more occasions for violence will arise. In Table 4 we estimate a variation of equation 4, where X_{ity} is one of two cathegories of Google's mobility index, in residential areas and workplaces. Since the two are interdependent, we also include them together. With one exception, coefficients are very small and insignificant. OLS estimates might however be biased. The voluntary nature of the Swedish "lockdown" – or rather the lack of a proper lockdown – adds a layer of endogeneity to the relationship between mobility and IPV. Being able to choose, it is natural to expect that individuals more exposed to the risk of violence would choose to be less at home with their partner, for example. This might lead to an attenuation bias pushing our coefficients towards zero.

In the next section, we use an indirect approach to alleviate these concerns. It is based on the intuition that mobility deviations from pre-pandemic norms, when it comes to the residential VS workplace choice, can be expected to be stronger during weekdays than during weekends.

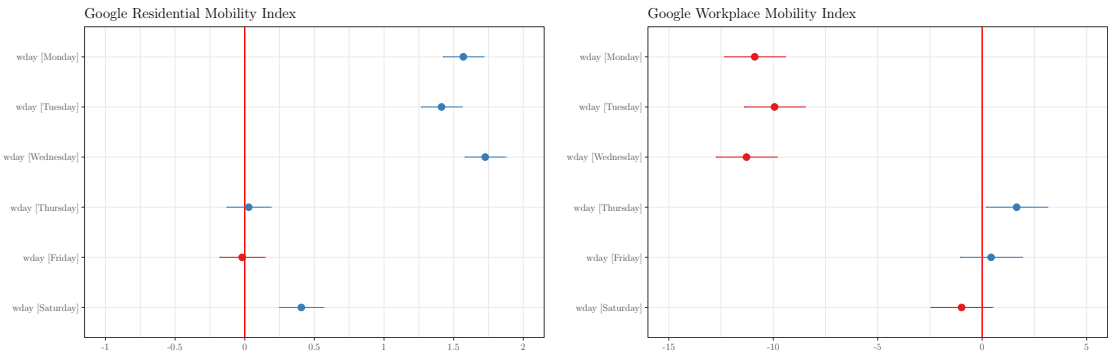


Figure 5: Non-parametric model of mobility over weekdays, 2020

6.1 Mobility and day of the week

In Figure 5 we report the outcome of non-parametric analysis of mobility patterns across days of the week. The mobility series are first cleaned from a seven days rolling mean, so that each data point reports the deviation in mobility patterns from the previous week. We estimate:

$$M_{jiD} = \sum_{h=1}^{7} w_h I_h(D) + \zeta_{iD} \tag{3}$$

where M_{jiD} is mobility in area-type j of municipality i during day D, $I_h(D)$ are indicators for the weekdays, and the w_h's are coefficients to be estimated.[5] Clearly, deviations from pre-pandemic mobility patterns are more dramatic Monday through Wednesday, and close to zero during weekends.

Based on this analysis, we estimate another version of equation 4,

$$Y_{ywi} = \delta * MobilityWD_{wi} + \theta * MobilityWE_{wi} + \mu_w + \nu_i + \epsilon_{ywi} \tag{4}$$

where $|\delta - \theta|$ is the parameter of interest.

Since week-end levels of mobility are not different from pre-pandemic levels, while week day levels are, the (triple) difference of the change in mobility in 2020 compared to pre-pandemic and on week days compared to week-ends should give us a causal estimate of the impact of mobility on crime.

Looking at differences and their p-values at the bottom of Table 5 we see that impacts are now larger and, in many cases, significant. When it comes to violence agaisnt women, residential mobility has a positive impact and workplace mobility a negative one, however the latter becomes insignificant when including both at the same time, in column (3). While going to work mechanically reduces time spent at home, and through this channel the incidence of violence, given time spent at home it doen not really matter whether people go to workplaces or somewhere else the rest of the time. This seems to

[5]The models control for municipality and week of the year as well as weather bins. See more on this in next section.

Table 5: Indoor IPV and mobility in urban areas, alternative IV

	Victim gender					
	Women			Men		
ResWD	0.076**		0.068**	0.011		0.014
	(0.038)		(0.034)	(0.010)		(0.010)
ResWE	−0.060		−0.064	−0.019*		−0.013
	(0.052)		(0.050)	(0.011)		(0.012)
WorkWD		−0.008**	−0.007		−0.001	0.004
		(0.004)	(0.008)		(0.002)	(0.005)
WorkWE		0.004	0.00001		0.002***	0.003*
		(0.003)	(0.004)		(0.001)	(0.002)
Diff Res	0.136		0.132	0.03		0.027
Diff Res p-val	0.102		0.085	0.042		0.1
Diff Work		-0.012	-0.007		-0.004	0
Diff Work p-val		0.059	0.527		0.083	0.96
2019 baseline		Mean : 0.47			Mean :0.08	
Observations	4,214	8,725	4,172	4,214	8,725	4,172
R^2	0.225	0.209	0.239	0.150	0.130	0.152
Adjusted R^2	0.192	0.184	0.207	0.114	0.102	0.116

Note: *p<0.1; **p<0.05; ***p<0.01
Standard errors clustered at the week and city level.

point to the exposure channel, whereby it is really time spent at home that matters. The size is such that a ten percent increase in the weekday residential mobility index in a municipality during a given week leads to 1,3 more cases of IPV agaisnt women compared to the same week of 2019. Relative to the baseline mean, this is an increase by a factor of 2,7.

The effects on violence against men, significant but quite small, disappear when both mobility categories are included together, in column (6).

7 Unemployment

The global economy suffered a downturn due to the pandemic, with the currently estimated impact on global GDP growth for 2020 around -4%, and this includes the labor market. Direct impacts on the labor market follow from containment policies (stay-at-home orders, closure of some non-essential sectors). Less direct impacts are caused by demand and supply shocks, both domestic and at the global level. Sweden had very little of the first, but was affected by the second type of impacts, due to uncertainty and nervousness in the domestic economy and, as a small open economy, by disruptions in production chains and global demand and supply.

Labor market disruptions may have a range of impacts on the household, and in particular on IPV risk. First of all there are direct impacts from changes in unemployment status, for those affected. If someone in the household loses their job, this will lower the household income, which, though mediated by social safety, might increase financial stress and uncertainty about the future. It might also impact stress, sense of self worth, and general psychological well-being for the individual affected. And moreover it might affect their relative status within the household. All of these factors, as we know from the literature, affect the IPV risk, sometimes in different directions depending on the context. Further, disruptions in the local labor market, for example at the municipality level, can exacerbate and make more salient the general uncertainty in the economy, which might generate stress and sense of insecurity also for those individuals who did not lose their job.

The nature of our data captures a mix of both, without being able to distinguish whether the effect is driven by individuals actually losing their job, or by the feeling of uncertainty and crisis perceived when many in one's neighborhood (municipality) lose their job. We use data from the registry of unemployed individuals kept by the Swedish Public Employment Service (Arbetsförmedlingen) on the weekly flow of job seekers by municipality. Laid-off individuals are required to register with Arbetsförmedlingen in order to receive the unemployment benefits. Therefore we are quite confident that the coverage of these data is accurate.

Figure 6 shows the evolution of the stock of job seekers over the first wave of the pandemic, while Figure 7 distinguishes between the changes in unemployment for the male and female population. They evolved in strikingly parallel fashion, though starting from different levels. Other studies also confirmed no evidence of a gender unequal impact of the (first wave of) the pandemic on labor markets in Sweden (Campa et al., 2021).

Table 6 estimates yet another version of equation 4, where we control for past levels of unemployment, total or gender specific, in the same municipality and week. Indeed,

Figure 6: Registered job seekers during the first wave of the Covid-19 pandemic

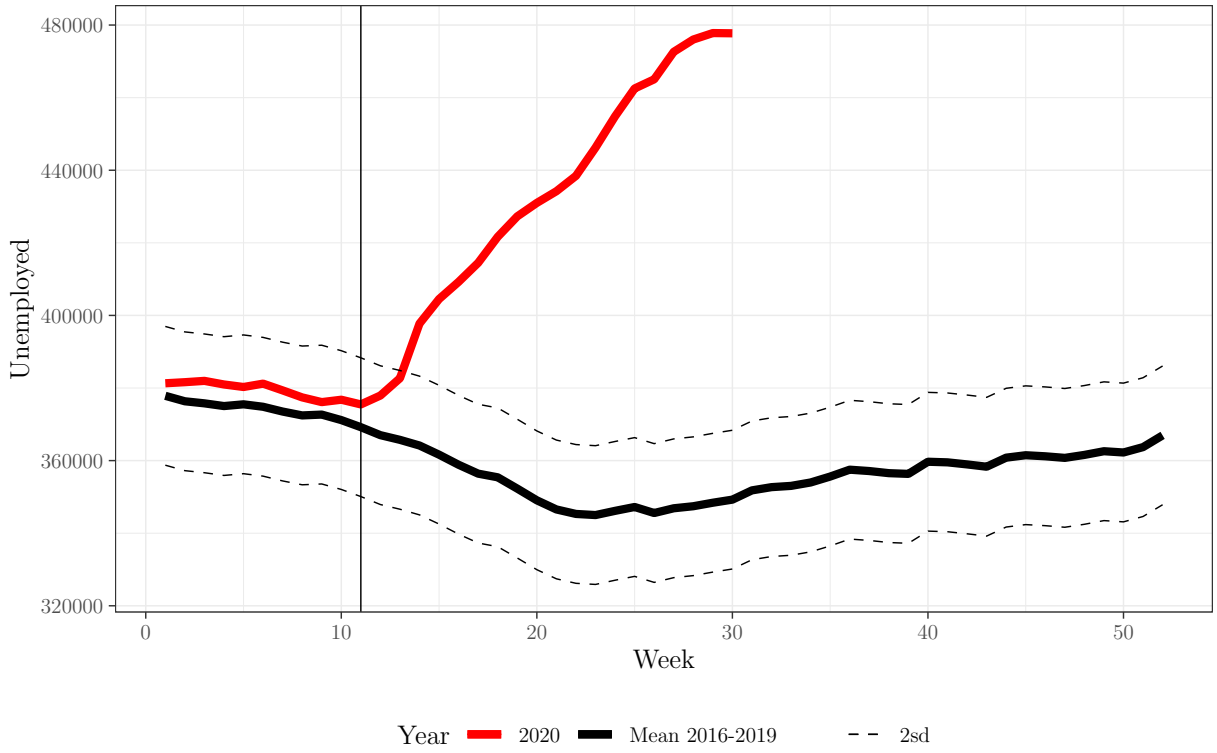


Figure 7: Male and female job seekers during the first wave of the Covid-19 pandemic

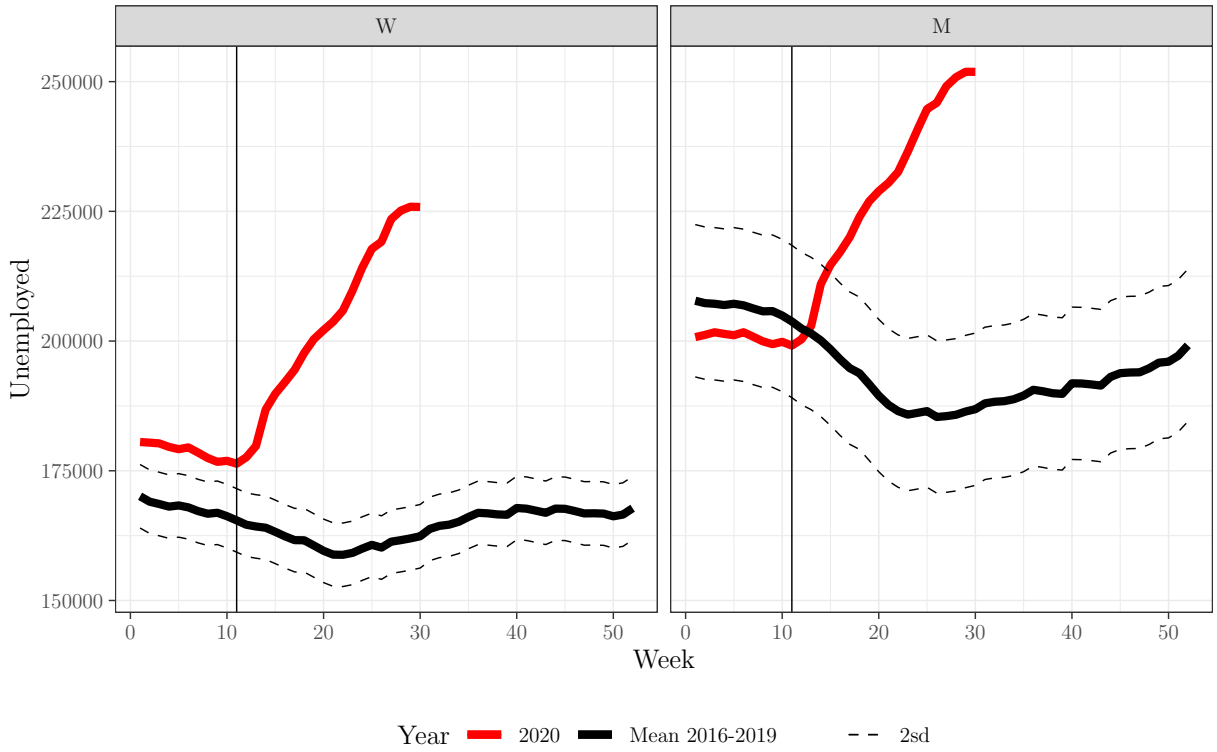


Table 6: Indoor IPV and unemployment

	Victim gender					
	Women			Men		
Unempl	0.0004***	0.001***		0.00001	0.00004	
	(0.0001)	(0.0002)		(0.0001)	(0.00004)	
Unempl1519		−0.002*			−0.0002	
		(0.001)			(0.0003)	
WomUnempl			0.003***			0.0001
			(0.001)			(0.001)
WomUnempl1519			−0.012***			−0.002
			(0.002)			(0.001)
MenUnempl			−0.0004			0.0001
			(0.001)			(0.001)
MenUnempl1519			0.005***			0.001
			(0.002)			(0.001)
Week FE	Yes	Yes	Yes	Yes	Yes	Yes
City FE	Yes	Yes	Yes	Yes	Yes	Yes
2019 baseline		Mean : 0.47			Mean :0.08	
Observations	8,670	8,670	8,670	8,670	8,670	8,670
R^2	0.210	0.213	0.226	0.131	0.131	0.134
Adjusted R^2	0.179	0.182	0.196	0.098	0.098	0.100

Note: *p<0.1; **p<0.05; ***p<0.01
Standard errors clustered at the week and city level.

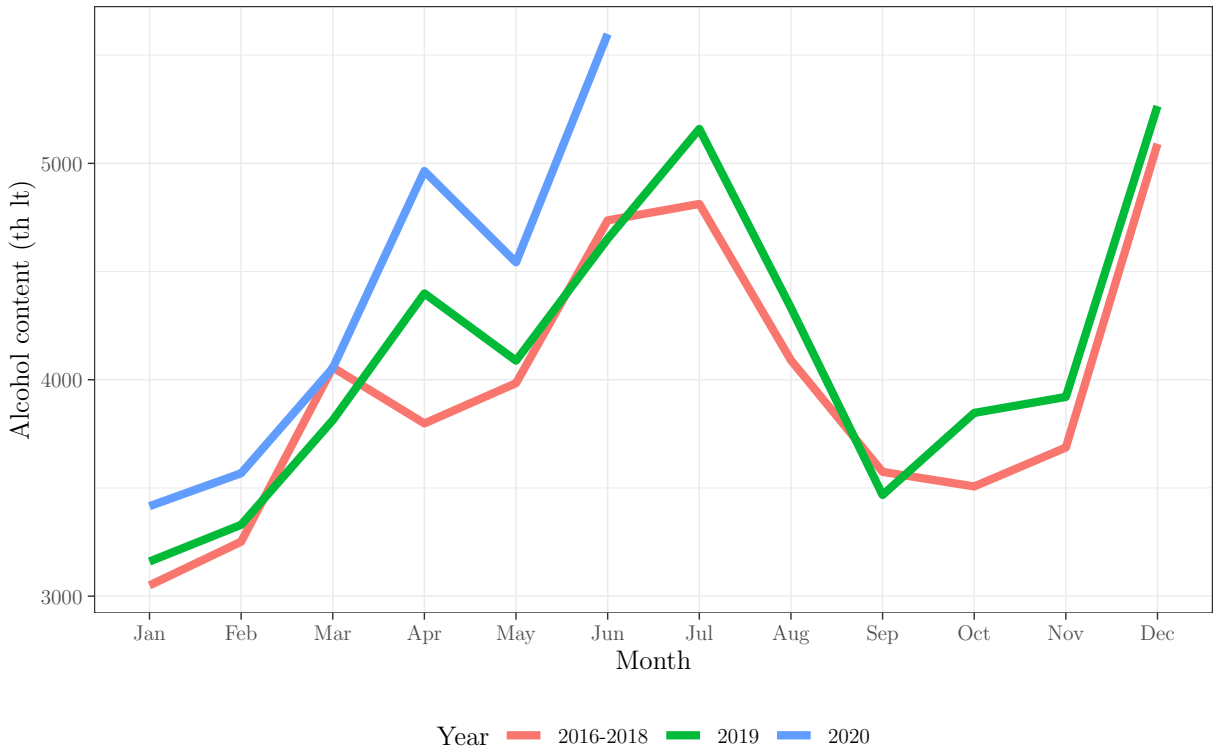
while there are no impacts on IPV against men, unemployment has a positive effect on IPV against women. This effect becomes larger when controlling for past levels: municipalities and weeks which normally have more job seekers experienced lower increases of IPV in 2020 compared to 2019, while it is the contemporaneous levels of job seekers that drive the effect. When disaggregating by gender in column (3), we see that this pattern is in particular driven by female unemployment. The presence of 100 additional job seekers in a municipality (the average level is ca 1200) leads to .3 additional cases of IPV against women compared to 2019, which is 64% of the mean.[6] Municipalities and weeks with normally higher unemployment experienced increases in IPV, but here the unemployment shocks due to the pandemic did not have an additional impact.

[6]In this context, unemployment at the municipal level, caused by the external unexpected shock of the pandemic, can safely be considered exogenous to IPV at the individual level. Therefore OLS estimates capture in this case the causal impact.

8 Alcohol

Due to isolation and anxiety associated with the pandemic and the restrictive measures, policy makers feared an increase in alcohol and other substance abuse. This in turn could reduce the effectiveness of non-pharmacological Public Health interventions and compound many undesirable consequences of the pandemic, on health, mental well-being and social issues, including violence. Therefore alcohol was directly restricted in many countries. Besides those special cases, almost everywhere, the temporary closure of bars and restaurants and the general restrictions on social gatherings altered the patterns of alcohol consumption, if not the magnitudes. It is indeed unclear whether alcohol consumption increased during the pandemic (Roberts et al., 2021; Kilian et al., 2021), but changes in the modes of consuming alcohol have been documented. In particular, a shift towards more at home consumption, as opposed to in public places, can be expected.

Figure 8: Alcohol sales during the first wave of the pandemic



This is of relevance for the impact on IPV risk. Previous research in Sweden shows that alcohol consumption in restaurants has a 5–10 times stronger effect on reported outdoors assault than alcohol consumption at home, while the latter has a stronger effect on domestic violence (Lenke, 1990). Recent studies from the pandemic partly confirm this. The already cited Chalfin et al. (2021) find that "the strength of the relationship between visits to alcohol outlets and domestic violence more than doubles starting in March 2020". However other studies find no evidence (Silverio-Murillo et al., 2020; Perez-Vincent et al., 2020).

The data depicted in Figure 8 show the pure liters alcohol sales by the Swedish monopoly retailer, Systembolaget, aggregated at the county and month level. The blue line for 2020 is clearly well above both the previous year sales curve and the long term average, for the period April-June. Even if this is only a partial picture of total alcohol consumption, it is not quantitatively negligible, as in 2019 sales from Systembolaget represented 70% of the total. In fact, total registered alcohol purchase (including from restaurants and grocery shops that sell lower alcohol content beverages)[7] was only up between 1-2% in the period Mach to May. Preliminary results from the nationwide Monitor surveys show that the total procurement of alcohol might actually have fallen by seven percent compared with the corresponding period in 2019. Nevertheless, the composition of alcohol purchase and its mode of consumption were clearly shifted, towards more privately procured and consumed at home, as opposed to public places and under social gatherings. As mentioned above, this might have implications.

Table 7 shows that, even controlling for average past sales in the same county and month, increases in alcohol purchases are associated with positive impacts on IPV, both for women and men. Estimates are relatively small, in particular for men, ranging between 0.3 and 6 additional episodes within the county in a month for a thousand liters increase in alcohol sales. However, they might be biased towards zero by endogeneity: both victims and perpetrators of IPV might consume more alcohol as a consequence of the violence, bringing up the county mean, and both alcohol and violence might be affected by a third factor, for example unemployment. These estimates are therefore to be seen as simple correlations, with all the caveats of the case.

[7]This excludes purchase abroad, smuggling, and home production, which is forbidden.

Table 7: Indoor IPV and alcohol consumption

	Victim gender							
	Women				Men			
Total (th. l.)	1.080***				0.273***			
	(0.139)				(0.072)			
Liquor		6.320***				1.770***		
		(0.868)				(0.434)		
Wine			2.090***				0.640***	
			(0.265)				(0.133)	
BeerCider				2.670***				0.399*
				(0.413)				(0.211)
Mean1618	−3.050***	−2.290***	−2.350***	−3.060***	−1.130***	−1.050***	−1.190***	−0.613
	(0.795)	(0.756)	(0.718)	(0.925)	(0.412)	(0.378)	(0.360)	(0.473)
Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
County FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2019 baseline		115.4				19.8		
Observations	126	126	126	126	126	126	126	126
R^2	0.979	0.978	0.979	0.976	0.905	0.907	0.912	0.895
Adjusted R^2	0.973	0.971	0.973	0.969	0.879	0.881	0.888	0.866

Note: *p<0.1; **p<0.05; ***p<0.01
Standard errors clustered at the week and city level.

9 Conclusions

The political reaction to the spread of COVID-19 has led, in many countries, to dramatic and abrupt changes in many dimensions that have been previously associated with conflicts and violence within households. Lockdowns and confinement per se lead to families spending more time together, with less opportunities for "self-incapacitation" of violent individuals, and individuals at risk being more isolated from their social networks. The economic shock following the lockdowns, which led to spikes in unemployment, may also have spurred an increase in conflict through the channels of economic insecurity and stress. Social distancing might have increased time spent on childcare and household chores, and moreover in such a way to upset the balance of "normal times" division of labor within households.

Sweden is a special case, since no strict lockdown was enforced in the country. It is though well documented by now that a combination of fear of the contagion and, later on, the recommendations by the authorities to work from home to the extent possible, to maintain social distancing and to avoid unnecessary travel, resulted in significantly altered mobility patterns and other adjustments to everyday life, including alcohol consumption. The voluntary nature of these adjustments make this case relevant also to evaluate, by contrast, the actual social cost of a strict lockdown.

The IPV increase documented in many countries around the world has been counted among the costs of lockdown. Looking at the case of Sweden, we can now claim that this cost is partly associated to the pandemic itself, even without a lockdown. This study finds support in particular for the mediating impact of mobility patterns, with time spent at home playing a crucial role; unemployment, in particular women losing their job; and, though in a less stringent way, of alcohol consumption. Here lie insights for policy that aims at adressing the prevalence of IPV. At a time of crisis it is important to guarantee shelter to individuals at risk, and more generally be conscious of the importance of imbalances in income and status within the household.

The surge of studies on domestic violence during the pandemic highlights the fact that such times of crisis exacerbate the problem. But the simple truth is that violence against women, the great majority of which takes the form of DV or IPV, is a permanent, endemic form of conflict, that is always with us beyond pandemics and crises, and harvests victims in their hundreds and thousands every day. It is important to understand the mechanisms driving it, which policy can act on, to effectively combat it, during and after the pandemic.

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