**#MeToo...or not?
Do salient shocks affect gender social norms?**

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Abstract

Previous research has documented the importance and persistence of social norms, but there is limited understanding of whether they are capable of changing in the short run. Utilizing data from Sweden and Denmark, this article addresses this gap by testing whether significant local shocks may push societies toward deviating from their social norm. In Sweden, the country was particularly shocked by allegations of sexual harassment against Jean-Claude Arnault on November 24, 2017, which led to salient discussions about systematic gender-related violence and harassment. This paper estimates the impact of the Jean Arnault scandal on attitudes toward women's rights by exploiting survey data from the European Values Study. Using both a regression discontinuity and a difference-in-differences approach, I find a sharp improvement in Swedish attitudes toward women's rights after the scandal, while no significant change is identified in Denmark. These contrasting results demonstrate how the absence of a significant local shock may explain the stability of social norms in similar countries.

Keywords: Social norms; measuring norms; gender inequality; gender attitudes; #MeToo movement.

JEL classification: J16; Z13.

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1 Introduction

On October 17, 2017, the #MeToo movement arose as a worldwide shock to public opinion, which challenged citizens' perceptions of sexual harassment and abuse (Kessler et al., 2020; Smith and Ortiz, 2021). It spread virally through a hashtag on social media, as actress Alyssa Milano encouraged others to post their experiences in order to highlight the magnitude of the issue.[1]

Although Sweden and Denmark are internationally regarded as leaders in gender equality (European Institute for Gender Equality, 2022), the #MeToo movement led to an increased but still relatively small, awareness of the issue in the immediate aftermath of the movement (Pollack, 2019; Nilsson and Lundgren, 2021). This was the case in Denmark in particular, where media coverage of the movement was not extensive and it was not presented as a systemic societal problem (Askanius and Hartley, 2019). However, the international #MeToo movement led to the emergence of the Jean Arnault Scandal in Sweden. On November 24, 2017, allegations made by 18 women who had experienced sexual harassment by Jean-Claude Arnault, a major cultural figure and husband of former Swedish Academy member Katarina Frostenson, were covered by all leading media outlets. This scandal triggered a public discussion about systematic, gender-related violence and harassment (Pollack, 2019), and ultimately led to the suspension of the 2018 Nobel Prize for Literature by the Swedish Academy (Henley and Flood, 2018).

Conversely, in Denmark the #MeToo movement occurred more than three years later, following the story of Danish television personality Sofie Linde, who shared her experiences of sexual assault on national TV in August 2020. Three years after its neighbouring country, Denmark started to "experience its own #MeToo movement" (Abend, 2020).

Thus, in the immediate aftermath of the international #MeToo movement, Sweden and Denmark started to diverge in their attitudes toward sexual harassment and women's rights (Askanius and Hartley, 2021).

In this paper, I exploit this phenomenon to test whether salient local shocks are capable of causing countries with a similar set of gender social norms to diverge, and ultimately whether stable social norms can shift. I hypothesize that, even when facing deeply-rooted attitudes and values, salient shocks to the local population might be capable of shifting (i) the perception of the social, political or economic cost of deviating from the existing set of social norms and (ii) the intrinsic motivation of individuals, based on their internal preferences and beliefs, to challenge these rigidities.

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[1]The magnitude of the #MeToo movement has initiated research focusing on the effects of this social movement. The literature suggests #MeToo increased empathy for sexual victims (Manikonda et al., 2018) and awareness of sexual assault (Castle et al., 2020; Kessler et al., 2020; Banet-Weiser, 2021), and support fir the movement is correlated with individual political identities (Ortiz and Smith, 2022).

In the economics literature, social norms are defined as "social sanctions or rewards" that incentivize individuals when making a decision to follow a specific pattern of behaviour and attitudes (see Young, 1998; Akerlof and Kranton, 2000; Ostrom, 2000; Benabou and Tirole, 2011; Haagsma and Mouche, 2013: Andreoni et al., 2017, among others). In this way, individuals often conform to their internalized perceptions of societies' appropriate behavior in order to fulfill the expectations of others, even when such behavior conflicts with their self-interest and preferred way of behaving (Bicchieri, 2006). Such social norms tend to persist over generations as they are sustained by both internal (e.g., beliefs, ideology) and external (e.g. sanctions, social costs, peer pressure) forces (Bisin and Verdier, 2011).

There is limited knowledge in the social norms literature on the factors that cause long-standing norms to change in a short period of time (Bursztyn et al., 2020a; Giuliano, 2020). As a consequence, social norms are conceptualized as long-run phenomena, which change slowly and remain almost constant over time (e.g. Williamson, 2000; Bisin and Verdier, 2001; Fernández, 2007; Algan and Cahuc, 2010; Gächter and Herrmann, 2011; Balafoutas and Nikiforakis, 2012; Voigtländer and Voth, 2012; Alesina et al., 2013; Becker et al., 2016; Miho et al., 2020; Ho et al., 2022, among others).

This paper contributes to the literature on social norms by testing whether a significant shock can lead to a rapid shift in local gender-discriminating social norms, which represent a classic example of the invariability of norms over time. The existence of deeply-rooted societal rigidities makes individuals adhere to traditional gender norms which might result in discriminating behaviors and attitudes (e.g., Goldin and Katz, 2002; Alesina et al., 2013; Bertrand et al., 2015; Jayachandran, 2015; Kleven and Landais, 2017; Charles et al., 2018; Scarborough et al., 2019). Furthermore, they may explain a part of the gender gap in many different outcomes, such as the female-male literacy ratio, educational achievements, and female participation in economic activities (Morrisson and Jütting, 2005; Norton and Tomai, 2009; Fryer and Levitt, 2010; Cooray and Potrafke, 2011; Nollenberger et al., 2016; Bursztyn et al., 2020b).

In this paper, I demonstrate that the Jean Arnault scandal triggered a sudden change in gender social norms in Sweden, while Danish ones remained static, as there was a belief that the #MeToo movement was merely the result of a worldwide wave of "political correctness" (Askanius and Hartley, 2021).

Using data from the European Values Study (EVS), I employ a Regression Discontinuity Design (RDD), exploiting the Unexpected Event during Survey Design (UESD) methodology, to compare individuals who were interviewed before and after the Jean Arnault Scandal. In addition, I use a difference-in-difference approach, using Danish respondents before and after the Arnault scandal, to construct a plausible control group.

I find that the Jean Arnault scandal led to an improvement in attitudes toward women's rights

in Sweden. This significant improvement is identified even when attitudes towards women's right were close to the maximum value.[2] As a change in social norms is detected despite this potential ceiling effect, these results suggest that shifts in social norms could be greater in other settings/-contexts where gender inequality is more pronounced.

In addition, the difference-in-difference approach also shows that Swedish respondents experienced a positive increase in their attitudes toward women's rights compared to the Danish ones by 0.638 units (on a 1-10 scale). Indeed, the mean differences between control and treated respondents in Denmark did not change during this period. Moreover, in Sweden, gender social norms did not revert to their original pre-treatment values in the aftermath of the scandal (approximately six months later). These results demonstrate that a salient shock to the local population may quickly shift gender social norms, while, in the absence of such a disturbing force, similar societies remain invariant.

2   Related Literature

Previous studies argue that social norms are largely invariant over time. This stability arises from the interaction between persistent norms and different social phenomena (Hoff and Stiglitz, 2016) and can be defined as the societal equilibrium of behaviors and attitudes which societies implicitly "coordinate" to hold constant over time. Consequently, this equilibrium implies that all societies have the tendency, when disturbed, to return to their original state in the absence of a large disturbing force (Hoff and Stiglitz, 2016).

Social norms persist as the emotional, political and economic costs of challenging the existing norm are perceived as larger than the potential gains of changing. These conditions prevent individuals from deviating from the equilibrium (Hoff and Stiglitz, 2010) and may thus support long-standing discrimination toward a particular segment of the population (e.g. women, immigrants) which results in a non-Pareto efficient equilibrium, whereby some agents could improve their welfare by moving from the equilibrium point and others would experience a decline in their well-being (see Putnam, 1993; Tabellini, 2008; Algan and Cahuc, 2010; Acemoglu and Robinson, 2012; Belloc and Bowles, 2013 among others).

However, it is possible that some events, if they are salient enough, may be capable of triggering a change in norms that do not revert to the previous equilibrium (Hoff and Stiglitz, 2016). Examples of such shocks may include different structural-political transformations such as transitions to democracy, terrorist attacks, social movements or political scandals, as well as the Jean Arnault Scandal, which may have been large enough to create a deviation from the social norm

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[2]This is a result of Scandinavian countries' position as leading examples of gender equality, as they rank among the highest in equality and empowerment indices (Siim and Borchorst, 2008; Lister, 2009).

in Sweden (Jones, 2009; Young, 2015; Amato et al., 2018; Smerdon et al., 2020; Andreoni et al., 2021).

These shocks may affect individuals' internal factors (beliefs, ideology, preferences, etc.), as well as their perceptions of the social, political and economic costs of not conforming to the norm (external factors). In other words, if the shock is large enough, an individual´s perception of the high costs of deviating from the norm is lowered. If every agent deviates from the social norm (i.e. the societal equilibrium), a new equilibrium will eventually arise, as the overall costs of deviating gradually decrease (e.g. Xie et al., 2011; Centola et al., 2018; Baumann et al., 2020). This mechanism implies that social norms face long periods of stability, until a significant event occurs which challenges them. If the shock is salient enough for the local population, it might be capable of quickly and permanently shifting the existent norm. This deviation can thus lead to a new set of social norms, which will be consolidated by institutional and social support (Young, 2015; Hoff and Stiglitz, 2016).

Some recent studies have tested whether social norms are capable of shifting in the short run (Bassi and Rasul, 2017; Moricz, 2019; Giavazzi et al., 2019; Bursztyn et al., 2020a; Bursztyn et al., 2020b; Szekeres et al., 2020; Dahl et al., 2021; Newman et al., 2021; Szekely et al., 2021; Alvarez-Benjumea, 2022). Bassi and Rasul (2017) show that exposure to persuasive messages related to fertility during the Papal visit to Brazil in 1991 shifted short-run contraception beliefs and long-term fertility outcomes, while Giavazzi et al. (2019) find that U.S immigrants' speed of convergence to local social norms differs depending on their cultural attitudes. Moreover, laboratory work by Bursztyn et al. (2020a) suggests that surprising election results, such as Donald Trump's victory, can lead to sudden shifts in the willingness to openly express xenophobic attitudes. They confirm via revealed preference experiments that political campaign rallies may induce updates in individuals' perceptions of what their peers around them think, leading to fast changes in long-standing social norms.

Research in this field also suggests other ways in which social norms may be capable of forming and changing. Some examples are the explicit bargaining between individuals who share similar beliefs or the enforcement of specific collective behaviours by different sanctioning institutions (Fehr and Gächter, 2002; Horne, 2009; Diekmann et al., 2014; Przepiorka et al., 2022).

The novelty of this paper is that it provides empirical evidence, utilizing a natural rather than a laboratory experiment, in order to understand whether salient shocks can challenge the existing societal equilibrium. The results suggest that a sudden shift in social norms can be observed. On this basis, I argue that these shocks may affect an individual's perceptions of what others believe, as well as their own personal identity, beliefs, ideology, etc (external and internal factors, respectively).[3] In this setting, a shock to gender social norms may not only spur a change

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[3]The impact of the same event may have different effects on behaviors and attitudes in different societies due

in personal beliefs, but also update the perceptions of what others consider the new attitudes to publicly hold. In other words, a change in reported attitudes could be observed even if personal beliefs do not change.

This paper is one of the first studies to provide causal evidence, using non-experimental data, on whether gender equality social movements are capable of quickly shifting social norms; and it expands the social norms literature by empirically testing the hypothesis that salient shocks to a local population might be one of the factors that cause norms to change. By doing so, it expands the scarce and mainly laboratory based approaches to studying changes in social norms.

3 Identification Strategy

3.1 The Jean-Claude Arnault Scandal

In 2017, Sweden and Denmark ranked among the highest of all EU countries on the Gender Equality Index computed by the European Institute for Gender Equality.[4] The same year, following reports of sexual abuse in Hollywood by actress Alyssa Milano on the 17th of October, the hashtag and searches of the $\#MeToo$ movement spread rapidly worldwide.

One month after the initiation of the $\#MeToo$ movement, the Jean Arnault Scandal (November 24, 2017) occurred and became a highly salient issue in Sweden. In the weeks that followed, the campaigns and debates it generated were front-page news in most Swedish newspapers (Pollack, 2019). There are more than 20,000 search hits in the media archive Retriever for the name "Jean-Claude Arnault" dating from between the date of the event and the end of December 2017 (Ganetz and Lindqvist, 2020).[5] In addition, the Google Trends results summarized in Fig. 1 also reveal a clear spike in relative Google searches in Sweden (November 24, 2017) and a much less pronounced one in Denmark.[6]

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to their heterogeneous social norms and rigidities to deviate. For instance, while Clark et al. (2020) find that the sharp reduction in U.S. citizens' well-being after the Boston Marathon Bombing only lasted for one week, Oksanen et al. (2020) note that a significant effect was still observed a number of months after the Paris Terrorist Attacks.

[4]This index is a composite indicator that measures the complex concept of gender equality in different areas, thus giving more visibility to those areas in need and helping to design more effective gender equality measures.

[5]Retriever is the leading Nordic media archive that gathers data from print and digital media, radio and TV.

[6]The number of Relative Google Searches (y-axis) captures interest in the $\#MeToo$ movement in both regions as a proportion of all searches on all topics at the same time and place. The data is scaled on a range from 1 to 100, where 100 is the maximum search interest for the time and location specified. The point where the graph reaches 100 is the point at which the ratio of queries for the specific search term to the total number of searches conducted in the region is at its highest. That is, it is at its peak of popularity. When the score reaches 0 it means there was not enough data to analyze the selected term.
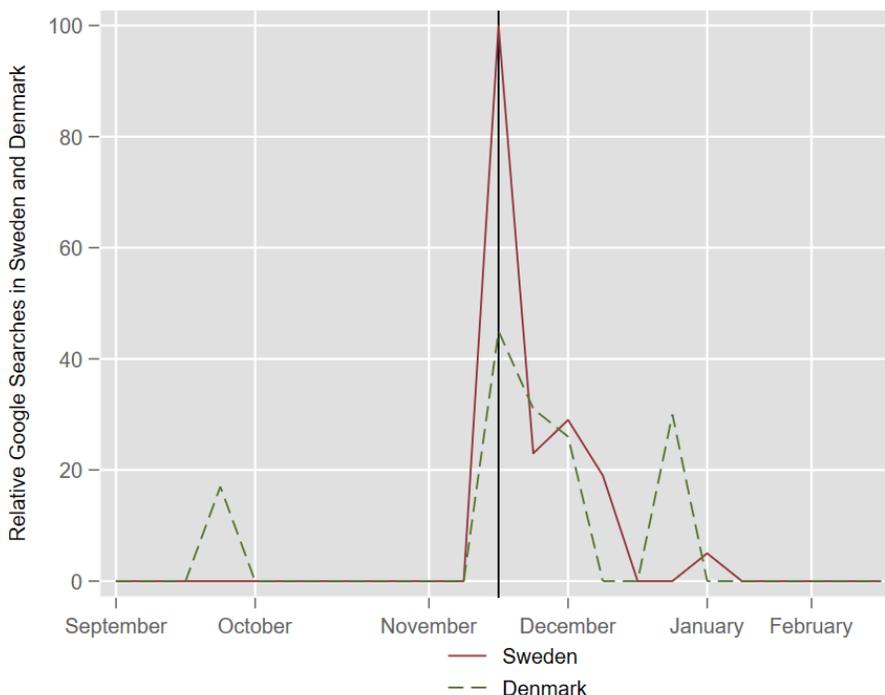
Fig. 1: Google Trends results for Jean-Claude Arnault during the survey fieldwork period. Note: The plot black line denotes November 24, 2017.

The scandal eventually resulted in the introduction of a law that recognizes non-explicit consensual sex as rape, even when no threats of violence or force are used. This new legislation, proposed by the Swedish prime minister, Stefan Löfven, on December 14, 2017, was considered a major victory for women's rights in Sweden. The law came into force on July 1, 2018.

Moreover, as a result of one of the worst crises in the history of the Swedish Academy, the King of Sweden, Carl XVI Gustaf, decided to postpone the 2018 Nobel Prize of Literature to ensure the survival of the Academy (Henley and Flood, 2018). A detailed description of the magnitude of the Jean Arnault scandal can be found in Section 6.1 of the Appendix.

To study the effect of the Jean Arnault Scandal, I use the EVS to compare the individual survey responses of those interviewed before the event was covered in leading media outlets $t_{interview} < t_{event}$ (control) and after $t_{interview} > t_{event}$ (treatment). The running variable is the fieldwork days on which the EVS interviews took place, and the cutoff is the day on which the Jean Arnault Scandal was publisized.

As I show later, the date on which an individual is interviewed is unrelated to the timing of the Arnault scandal. This natural randomization of treatment and control, independently of

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time t, increases the internal validity of this study (there are no biases related to unobserved confounders or reverse causality).

3.2 Model Specification

The estimation of the effects of the Jean Arnault scandal on gender social norms proceeds in two steps. First, I use an RDD, exploiting the UESD methodology, to compute the effect of the scandal on Swedish attitudes toward women's rights.[7] This methodology allows me to capture both the immediate impact of the event as well as whether the impact of the scandal changed (weakened or strengthened) as time went by. Second, I use Danish respondents as a counterfactual for the treatment group (Swedish respondents after the scandal). Thus, a difference-in-differences model is used to capture the change in the outcomes of the control group with respect to the treatment one.[8]

The RDD estimation relies on the following specification:

$$Y_{it} = \alpha + \rho D_{it} + \lambda Z_{it} + \gamma(D_{it} * Z_{it}) + \beta x_{it} + \eta_{it}, \tag{3.1}$$

where Y_{it} are the attitudes toward women's rights of respondent i reported on day t, α is a constant, D_{it} captures treatment status, and, η_{it} is the error term. D_{it} takes the value of 1 if the individual is interviewed after the date of the event (November 24, 2017). Conversely, it is equal to O when the individual is interviewed before the event. Z_{it} represents the running variable, which is defined as the absolute distance in days from the date of the scandal; it takes negative values for the days before the scandal and it is positive for the days after, and 0 for the day of the event itself and is dropped from the empirical model.

The goal of the RDD approach is to estimate the parameter ρ on treatment D_{it} in order to capture the effect of the Jean Arnault scandal on the outcome variable through the treatment dummy. Since the UESD approach relies on the assumption that survey respondents are assigned to treatment and control groups independently of the time of the event, this ρ coefficient yields an unbiased estimate of the local average treatment effect. That is, the day on which each respondent is interviewed during the fieldwork period is as good as random. This is discussed in more detail below.

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[7]The UESD is a methodology which exploits the occurrence of an unpredictable event during the fieldwork period of a survey (Muñoz et al., 2020). This identification strategy has gained increasing popularity in identifying the effect of important phenomena such as natural disasters, terrorist attacks, protests and demonstrations, or political scandals (e.g. Metcalfe et al., 2011; Branton et al., 2015; Ares and Hernández, 2017; Boydstun et al., 2018).

[8]Note that individuals who answered the survey on the exact day of the scandal (November 24, 2017) are dropped from all estimations, as is standard practice in the field.

The running variable is also interacted with the treatment indicator. By including the interaction term, the γ parameter allows me to examine whether the effect of the scandal varied (weakened or strengthened) with increasing values in the running variable above the cutoff point, or, conversely, whether the slope of the mean values reverted to their original pre-treatment values thereafter.

Next, I run a difference-in-differences model to compare the causal effect of the Jean Arnault Scandal on Swedish respondents interviewed after the event (treated group) with respect to all Danish respondents and the Swedish respondents interviewed before the scandal (control group). In other words, I compare the average change in social norms for Swedish respondents exposed to the treatment and those not subjected to the scandal (Swedish respondents before the scandal and all Danish respondents). The corresponding model is specified as the following:

$$Y_{igt} = \alpha + \gamma D_i + post_t + \delta(D_i * post_t) + X'_{igt}\kappa + \phi_{gt} + \epsilon_{igt}, \tag{3.2}$$

where Y_{igt} are the attitudes toward women's rights of respondent i reported on day t for the different two groups (control and treatment) g, α is a constant, D_i is the treatment indicator (Sweden dummy), the $post_t$ is the post-treatment indicator (equal to 1 if the individual is interviewed after the event), γ are group fixed effects, X'_{igt} are the time-varying individual characteristics which will be employed in the entropy balance procedure (see subsection 3.3.), ϕ_{gt} are the within-country region fixed effects and, lastly ϵ_{it} is the error term.[9] The coefficient of interest is δ, which estimates the average treatment effect of the Swedish respondents interviewed after the scandal on attitudes toward women's rights in democracy.[10]

This estimation strategy may be subject to a number of potential threats. For example, the shift in gender social norms, and the subsequent change in law in Sweden, might have been driven by the worldwide #MeToo movement which began one month earlier. While it is true that the #MeToo movement led to a collective mobilization protest against sexual harassment, it was not until the Jean Arnault scandal was covered by leading media outlets that Swedish society initiated the naming and sharing campaigns and debates (Pollack, 2019; Hartley and Askanius, 2020; Nilsson and Lundgren, 2021). That said, in section 4.3 I conduct different Placebo tests separately using the #MeToo movement and the empirical median of the control group of the main RDD estimation as treatment indicators instead of the Jean Arnault indicator. These placebo test reveal that the treatment has no significant effect, thus supporting the equal-trends assumption. In addition, falsification tests based on a series of variables that are close to my outcome of interest, but unrelated to gender social norms, are performed in section 6.5 in the Appendix. As expected, no significant effect is found.

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[9]The standard errors are robust and clustered at the regional level.

[10]Note that this model assumes that the group composition does not change over time, that is, there is no possible mobility between the treatment and the control group.

Another potential threat is the so called "Ignorability Assumption", which states that being treated or not is independent of individuals' potential outcomes (Legewie, 2013; Muñoz et al., 2020). In this paper, this assumption is relaxed to what is called the "Conditional Ignorability Assumption". Thus, being treated is still independent of individuals' potential outcomes, but independence is now conditional on a set of covariates. As a result, in the absence of threats to excludability and ignorability, a difference in means between those interviewed before and after the Arnault scandal would be the sole consequence of the scandal and yield an unbiased estimator.[11]

3.3 Data and Methods

I first provide a description of the EVS 2017 survey and the summary statistics employed in the analysis. In addition, I examine the comparability of respondents before and after the Arnault Scandal by producing a battery of balance tests. Next, I provide both a discussion and graphical evidence for the selection of an optimal bandwidth in the RDD specification.

3.3.1 Data

I employ the 2017 survey conducted by the European Values Study (EVS), which is a large-scale, cross-national and longitudinal survey of human beliefs and political, economic and social values.[12] The data is collected via a face-to-face interview at the respondent's place of residence conducted by a trained interviewer. The respondent's answers are recorded via CAPI (Computer Assisted Personal Interview). Each respondent is selected after a representative single or multi-stage sampling of the adult population in the country.[13] A random sample selection, prior to the interviewing process, is used when there are no lists of individuals available. Therefore, an equal selection probability across households is guaranteed since this randomly chosen sample is intended to be an unbiased representation of the total population (Bauer, 2014). Before the selected respondents are interviewed in person, a letter is sent at least two days before the interviewer's arrival. In addition, a minimum of four repeated contact attempts are made to enhance the probability of interviewing the person who was randomly selected.[14] Finally, no respondents

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[11]Therefore, it is assumed that the observed effect would not have been driven by other, relatively minor events that were not nearly as salient.

[12]The EVS 2017 dataset includes 59,438 respondents and 36 countries.

[13]In single-stage sampling, a population is divided into specific units, such as regions, households or individuals, and then a sample is chosen directly by collecting data from everyone in the selected groups. In contrast, in the multistage procedure, the overall population is divided into groups, and then the selected groups are split into sub-groups at various stages, thus considering the nested structure of the population. This group division makes it easier for the researcher to collect the data (Battaglia, 2008).

[14]The first contact attempt has to be made in-person, while following attempts can be made by via telephone in order to arrange a meeting.

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substitution of any kind (individuals or addresses) is allowed.

The Swedish survey was conducted between September 27, 2017 and June 6, 2018, while the Jean Arnault scandal took place on the November 24, 2017. The survey includes a question asking about respondents' attitudes toward women's rights in a democracy. The question the respondents are asked is "should women have the same rights as men in a democracy?" on a 1 to 10 numeric scale, where 1 means "not at all essential" and 10 means "it definitely is essential".

This variable is a suitable proxy for gender social norms. First, previous studies measure social norms as self-reported attitudes similar to this question (Algan and Cahuc, 2010; Petty and Briñol, 2010; Bursztyn et al., 2020a). Second, following Alesina et al. (2013)´s seminal study, reported gender-role and gender-discriminating attitudes are regarded as valids indicator of gender-equality social norms.

3.3.2 Descriptive Statistics: Balance Tests

To test that being interviewed on a specific day is unrelated to pre-treatment characteristics (such as geographical conditions, reachability issues, etc.), I test for possible imbalances between treatment and the control group assignment. These descriptive statistics, as well as T-tests to determine whether the means of the treatment and control groups are equal to each other, are displayed in Table 1.

Table 1. Descriptive Statistics.

	Sweden			Denmark		
	Control	Treatment	T-test difference	Control	Treatment	T-test difference
Attitudes toward women's rights (1-10)	9.10	9.59	3.391***	9.50	9.43	-0.934
Age (years)	55.14	50.32	-4.409***	52.967	47.542	-6.015***
Educational level (0-8)	4.305	4.417	0.887	4.250	4.432	1.907
Employed	0.527	0.594	2.165*	0.563	0.679	4.745***
Retired	0.362	0.245	-4.104***	0.339	0.213	-5.549***
Student	0.051	0.086	1.992*	0.049	0.067	1.609
Married	0.569	0.493	-2.391*	0.569	0.519	-1.981*
Female	0.497	0.529	0.917	0.487	0.534	1.907
Interest in Politics (1-4)	2.186	2.244	1.164	2.158	2.234	1.902
Native	0.885	0.856	-1.258	0.931	0.898	-2.506*
Sample Size	359	824		1,059	628	

* $p < 0.05$, *** $p < 0.001$.

Table 1 shows that the mean response on the outcome variable for the control group is 9.10 for Sweden and 9.50 for Denmark before the event. After the event, there is a statistically significant improvement in the average scores in Sweden (9.59) and a non-significant decline in Denmark (9.43).[15]

Table 1 also illustrates that both countries share a similar covariate distribution. However, the treatment and control groups within each country are not balanced in terms of some characteristics. Generally, respondents in the treatment group are, on average, younger, less likely to be married, more likely to be employed, and less likely to be either retired or a non-student. The pattern of these pre-treatment characteristics is similar in the Danish and the Swedish samples. These findings suggest that respondents who have more available time, are more likely to be interviewed earlier in the fieldwork process.

Next, in order to formally test for imbalances between the treatment and control groups, I run simple difference-in-mean balance tests using multiple bandwidths. These balance tests for both Sweden and Denmark are provided in Figs. 3 and 4 respectively.

Fig. 2 shows that the treatment and control groups in Sweden are unbalanced in several pre-treatment covariates, thus replicating the results in Table 1. By narrowing the bandwidth, these imbalances are substantially reduced, although some differences are still present when using the 10 days bandwidth.[16]

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[15]The standard deviation of the outcome variable in Sweden is of 2.55 for the control group and 1.63 for the treatment group. With regard to Danish respondents, the standard deviation of the outcome variables is 1.43 and 1.56 for the control and treatment groups respectively.

[16]In particular, the *Age* variable reports a significant imbalance between control and treatment out of the scale range displayed in Fig. 2 (0.934).
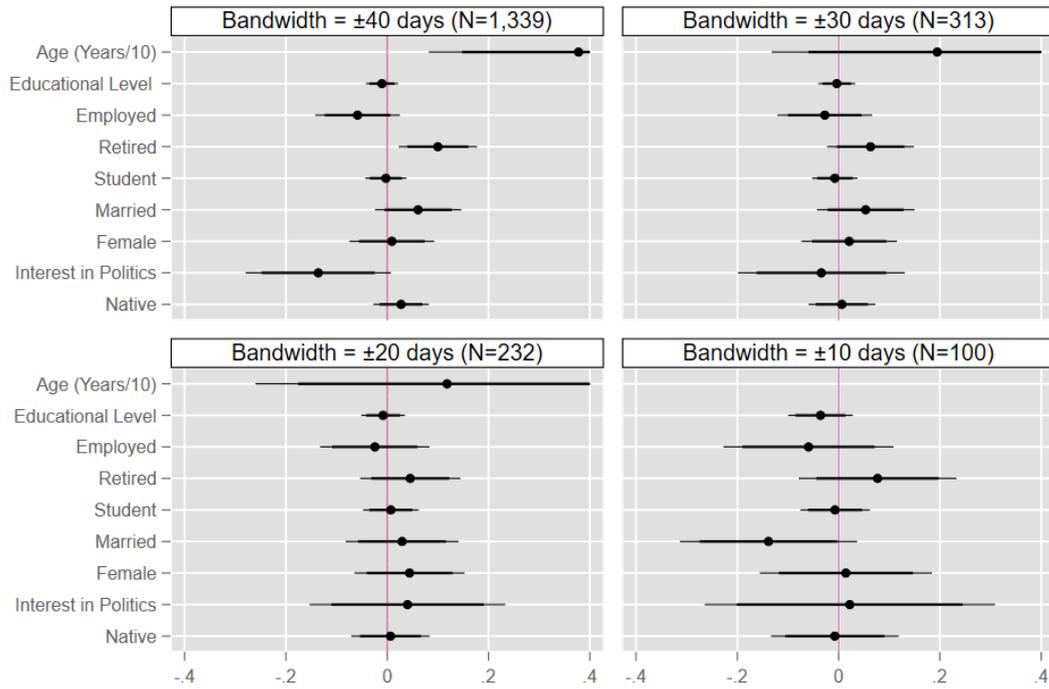
Fig. 2. Balance tests: Covariate differences between the control and treatment groups using multiple bandwidths in Sweden.

Similarly, Fig. 3 shows that Danish respondents in the control group are, on average, older, more likely to be married, female and either unemployed or retired, and are less likely to have a strong interest in politics. These differences are similar in sign and magnitude to the ones obtained for Swedish respondents. As expected, by narrowing the bandwidth, the imbalances are substantially diminished.[17]

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[17] Again, the *Age* variable reports a significant imbalance which is out of the scale range displayed in Fig. 3.
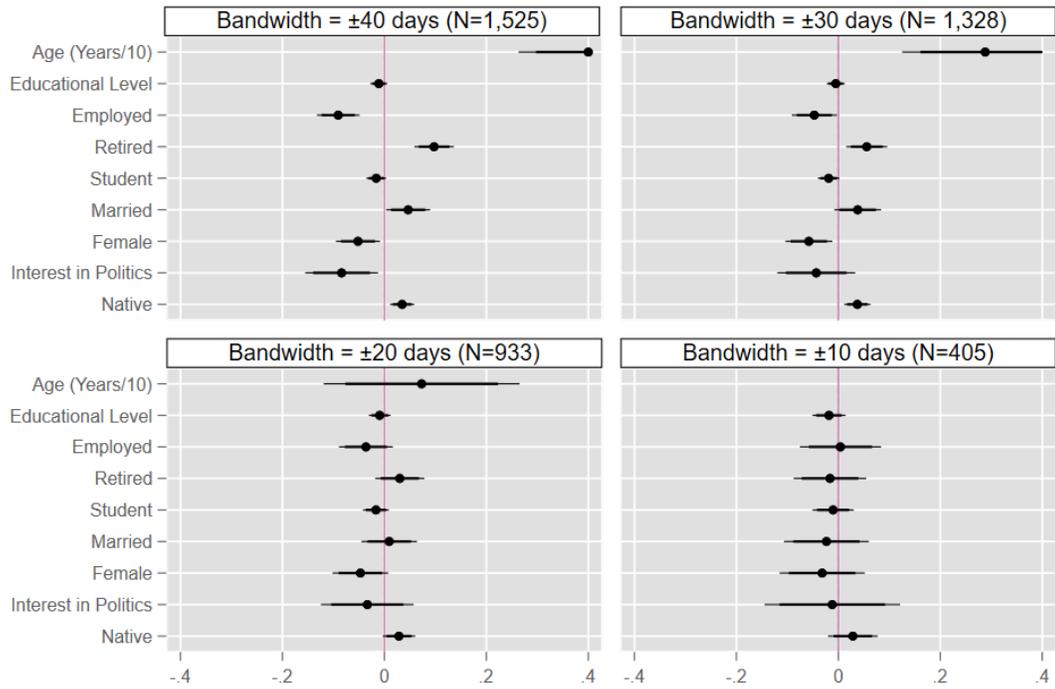
Fig. 3. Balance tests: Covariate differences between the control and treatment groups using multiple bandwidths in Denmark.

Fig. A.1 (see Appendix section 6.1) displays the frequency of each Swedish response for the outcome variable employing the 20 days bandwidth, while Fig. A2 shows the density of responses for both Sweden and Denmark before and after the scandal. Note that those interviewed on the day of the Arnault Scandal are excluded from the analysis.

I also test whether the pre-treatment characteristics are similar in Sweden and Denmark, and thus find support for the hypothesis that both samples are comparable and that Denmark is a valid counterfactual for Sweden.

Fig. 4 shows that the Swedish and Danish respondents in the control group are only, on average, statistically significantly different in terms of age and whether they are native or not. Danish respondents are, on average, younger and more likely to be native. Despite these differences, these results show that both samples have similar pre-treatment characteristics that may affect the likelihood of treatment. Therefore, Danish respondents can be plausibly used as a counterfactual in the difference-in-differences approach.
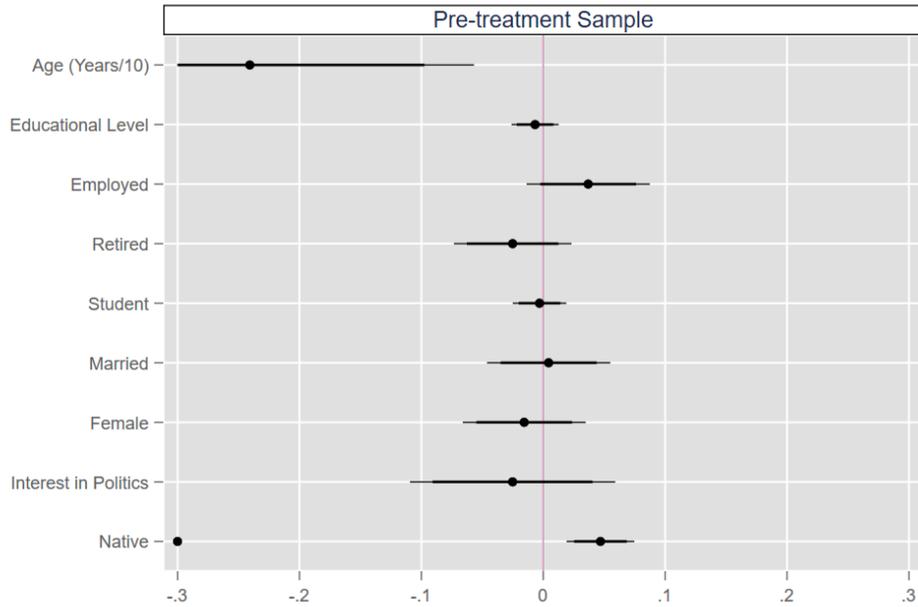
13

Fig. 4. Balance tests: Covariate differences between Denmark and Sweden for the pre-treatment observations.

3.3.3 Discussion and Graphical Evidence for the Optimal Bandwidth Selection for the RDD

The RDD estimation identifies local average treatment effects around the date of the event (the cutoff point), where the control and treatment individuals are most similar. Following the UESD approach, this estimation can be interpreted as causal because respondents were randomly divided into treatment and control groups by their interview date. As displayed in section 3.3.2, individuals are more similar closer to the cutoff point.

Consequently, a narrower bandwidth must be used in order to estimate the immediate effect of the Arnault scandal on gender social norms for those who were treated.[18] In order to find the optimal bandwidth for the RDD analysis, I estimate power calculations for two different effect sizes. Following Muñoz et al. (2020), I take as a reference the distribution and the standard deviation of the outcome variable among those interviewed before the event (which equals 2.55 in this case). Power equal to 0.80 is recommended for estimating a meaningful effect (Lenth, 2001). Since the optimal bandwidth is only required for the RDD specification, I only consider

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[18]The selection of an optimal bandwidth is based on the trade-off between bias reduction (with a smaller bandwidth) and the loss of precision. For more details on the optimal bandwidth discussion, see Calonico et al. (2019).

the Swedish sample.

Based on the power analysis in Fig. 5, the ± 20 days bandwidth is optimal for several reasons. First, the balance tests (Fig. 2) indicate that relying on a wider bandwidth leads to larger imbalances in pre-treatment covariates. Second, a narrower bandwidth (e.g., 10 days) might not produce enough statistical power to detect an effect of a significant size. Conversely, the selected bandwidth provides sufficient statistical power (0.80) to detect a meaningful variation in gender social norms, equivalent to 0.4 of the standard deviation of the outcome variable in the control group (see Fig. 5).[19] Third, a new institutional law was proposed in the Swedish parliament on December 14 (21 days after the Arnault scandal). Hence, using this 20 day period allows me to capture the initial shock that shifts attitudes leading to a new equilibrium, which is later supported by the new institutional setting (i.e., the proposed new law).

Fig. 5 shows that the ± 18 bandwidth is the first bandwidth with a power equal to 0.80 for an effect size of a 0.40 standard deviation change. I also estimate the power for a larger effect size (one half of a standard deviation). The ± 12 bandwidth is the first bandwidth with a power larger than 0.80 for this effect size. In addition to the power calculations, this stacked histogram summarizes the number of cases included in the treatment (black bars) and control (gray bar) groups for each bandwidth. The total height of the stacked bars refers to the total number of valid cases included with each bandwidth. This figure demonstrates that relying on the ± 20 days bandwidth provides enough statistical power to estimate a meaningful effect.

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[19]Following Ioannidis et al. (2017), a minimum effect size ranges between a 0.2 and 0.5 standard deviation change.
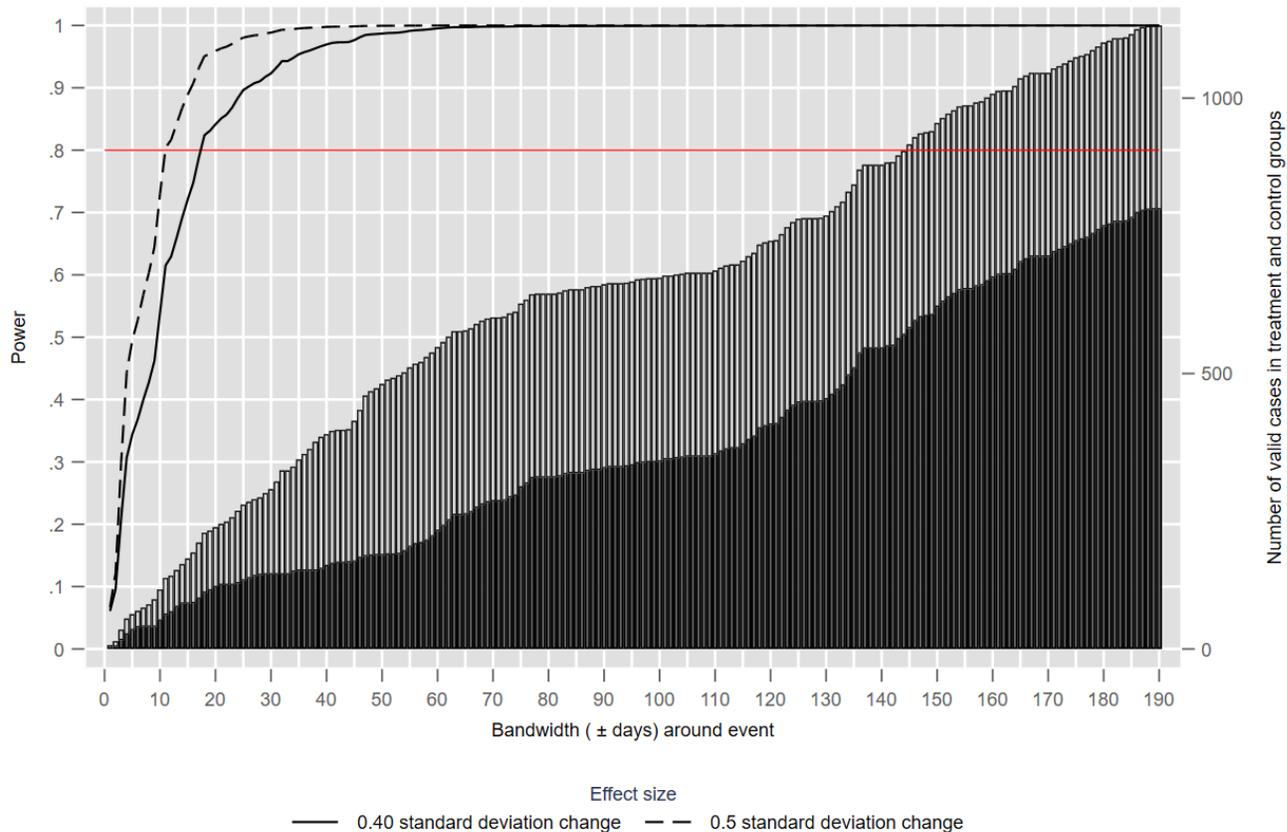
Fig. 5. Statistical power for various effect sizes and bandwidths in Sweden. Note: Power calculations are for a 0.05 significance level and based on the standard deviation of the control group.

3.3.4 Entropy Balancing Estimation

Although each respondent was selected for interview following a probability sampling process, it is possible that treatment assignment may also be related to a set of decisions affecting the data collection process taken by the fieldworker or the respondent. For example, since repeated visits to interview the respondent are allowed, being interviewed at a specific date may also be correlated with characteristics that affect the outcome variable (such as geographical conditions, reachability issues, etc.), as suggested in Table 1. When acknowledging these threats to the ignorability assumption, respondents who were more likely to be interviewed at a specific time (e.g., older people) have to be re-weighted (Legewie, 2013).

To re-weight the observations, I consider all covariates X_i included in the balance tests (see subsection 3.3.1). I employ the entropy balancing pre-processing procedure, which builds upon

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the propensity score method while addressing its limitations, to create balanced samples between the treatment and control groups (Hainmueller, 2012; Tübbicke, 2022). Entropy balancing techniques, as opposed to traditional propensity score methods, directly adjust the balancing weights to the specified sample moments, thus integrating covariate balance directly into the weights (Hainmueller, 2012).[20] Hence, once all relevant covariates that might affect the probability of being interviewed at a specific time are considered, treatment status is independent of any potential outcome.

For simplicity, I use the optimal bandwidth for the RDD in this specification (20 days). The re-weighting process, combined with using the 20-days bandwidth, results in a smaller sample size. The Swedish sample is reduced to 214 while the Danish sample is now 919. This sample reduction is due to the shorter time period considered, as well as the presence of missing values for some of the variables included in the entropy balance estimation. Table 2 displays the post-balance mean statistics after balancing the control and treatment units of each country separately. Although both countries still share a similar covariate distribution, Danish respondents are, on average, younger, less educated, more likely to be employed, as well as to be female and be married, and less likely to have strong interest in politics.

Table 2. Post-balance descriptive statistics (20-days bandwidth as the weighting variable).

	Sweden	Denmark
	Mean	Mean
Age (years)	51.490	49.020
Education (level)	4.481	4.447
Employed	0.594	0.654
Retired	0.273	0.244
Student	0.066	0.067
Married	0.528	0.542
Female	0.471	0.519
Interest in Politics	2.189	2.205
Native	0.839	0.891
Control units	106	534
Treated Units	108	385

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[20]I thus adjusted for the mean, variance and skewness of the covariates across groups with a tolerance level of 0.05.

4 Results and Discussion

4.1 RDD estimation

Table 3 shows the RDD estimation of the effects of the Jean Arnault scandal on attitudes toward women's rights in a democracy in Sweden. Column (1) reports the results of model 3.1, which only includes the treatment indicator for the whole Swedish sample (N=1,179). Respondents interviewed after the scandal had, on average, more positive attitudes toward women's rights in a democracy. A statistically significant effect of 0.499 points (on a 10-point scale) is observed. Therefore, the effect found is a substantial improvement in Swedish gender social norms.

The lower panel of column 1 tests whether this shift in gender social norms occurred immediately after the Jean Arnault scandal. As introduced in Model 3.1, a running variable ranging from -58 to 190 (the fieldwork days before and after the event), with 0 corresponding to November 24, 2017, is estimated. This running variable is interacted with the treatment indicator. The *Treatment* variable corresponds to the effect of the Jean Arnault scandal when the running variable *Days* equals 0 (the first day after the scandal). The interaction term (*Treatment* X *Days*), in turn, indicates that the effect of the Arnault scandal did not significantly weaken as time went by. That is, the slope of the mean values did not return to its pre-treatment level. This supports the hypothesis that the event may have triggered a durable change in Swedish gender social norms, although the null hypothesis that there is no reverting effect cannot be fully rejected in this simple interaction term model.

In Column (2), I rely on the optimal bandwidth of ± 20 days, but with no entropy balancing nor region fixed effects. The control and treatment groups include 119 and 113 individuals, respectively. Column (2) reports a statistically significant local average treatment effect of 0.599 points (on a 1-10 point scale). In addition, there is no significant weakening of the effect over the ± 20 bandwidth window, as shown by the interaction term. These results indicate that attitudes toward women's rights in a democracy significantly improved following the coverage of the scandal over the ± 20 days time window.

Column (3) reports the results from the same specifications as Column (2) with the inclusion of region fixed effects and the reweighting sample process through entropy balancing.[21] This is the preferred specification. The pattern of results is consistent with Columns (1) and (2). A local average treatment effect of 0.642 units is obtained. This coefficient is statistically significant and is slightly larger than in the model with no weights nor fixed effects. In addition, the interaction term indicates that the effect of the scandal did not significantly revert to pre-treatment levels after the scandal. Again, the null hypothesis that there is no reverting effect cannot be fully rejected.

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[21]Note that the re-weighting process results in a smaller sample because of the presence of missing values for some of the variables employed.

Finally, Column (4) adds *Confidence in the Press* as a control variable.[22] This variable captures respondents' reported confidence in media outlets and takes the form of categorical variable ordered from 1 to 4, in which Category 1 corresponds to a low confidence in the press and larger categories to higher confidence. The main results are largely unchanged when confidence in the press is included. The effect is positive and statistically significant. Hence, the more confidence the respondent has in the press, the more likely the respondent is to favor equal rights for women.

Table 3. RDD estimation of the Arnault scandal in Sweden.

	Full sample	±20 days bandwidth		
	(1)	(2)	(3)	(4)
Treatment	0.499***	0.599*	0.642*	0.604*
	(0.124)	(0.253)	(0.285)	(0.272)
R^2	0.013	0.023	0.129	0.169
Treatment	0.084	0.758	0.890	0.894
	(0.124)	(0.516)	(0.658)	(0.619)
Days	0.012	0.004	0.007	0.004
	(0.007)	(0.027)	(0.053)	(0.050)
Treatment X Days	-0.011	-0.026	-0.044	-0.043
	(0.007)	(0.039)	(0.056)	(0.054)
Confidence in the Press				0.588*
				(0.278)
Observations	1179	232	214	210
R^2	0.016	0.025	0.139	0.174
Region Fixed Effects	No	No	Yes	Yes
Reweighted Sample	No	No	Yes	Yes

Standard errors in parentheses, * $p < 0.05$, *** $p < 0.001$.

4.2 Difference-in-differences estimation

The results of the Difference-in-Differences analysis are displayed in Table 4. Column (1) displays the difference-in-differences estimation for the whole sample. The treatment effect of the Jean Arnault Scandal is given by the interaction between *Sweden X Treatment*. On average, Swedish respondents experienced a significant increase of 0.566 points in their attitudes towards women´s rights in a democracy. Column (3) replicates the analysis using the 20 days bandwidth, and the

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[22]The inclusion of other control variables which might potentially affect the outcome variables, such as religion or income, barely change the results in terms of magnitude and statistical significance.

results obtained are similar in terms of magnitude and statistically significance.

Columns (2) and (4) introduce region fixed effects and the set of controls included in the entropy balance estimation and the *Confidence in press* variable. The magnitude of the effect is increased for the whole sample (Column 2), but decreases for the 20 days bandwidth estimation (Column 4). Both treatment coefficients are statistically significant.

Table 4. Difference-in-Differences Analysis for Sweden and Denmark

	Full sample		±20 days bandwidth	
	(1)	(2)	(3)	(4)
Sweden	-0.404***	-0.581**	-0.424**	0.083
	(0.103)	(0.154)	(0.152)	(0.090)
Treatment	-0.071	-0.075	-0.088	-0.106
	(0.085)	(0.037)	(0.100)	(0.060)
Sweden X Treatment	0.566***	0.638**	0.688**	0.619*
	(0.137)	(0.203)	(0.210)	(0.228)
Observations	2871	2788	1160	1127
R^2	0.007	0.051	0.057	0.034
Region FE	No	Yes	No	Yes
Controls	No	Yes	No	Yes

Cluster standard errors at the regional level in parentheses, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

These results indicate that Swedish treated respondents experienced a positive increase in their attitudes toward women's rights compared to the control respondents (Danish respondents + untreated Swedish respondents). Both coefficients are statistically significant at the conventional levels. In sum, these results show that in Sweden, which experienced a local, salient, and unexpected shock, the impact was strong enough to significantly shift the existing gender social norm, while no such impact was observed in Denmark.

4.3   Robustness analysis

To assess the plausibility of the temporal stability assumption, I test for the presence of possible pre-event time trends. By doing so, I aim to rule out the possibility that the change in social norms at the cutoff point is due to a non linear function between the outcome and the time trend. I thus analyze the relationship between the timing of interviews and the outcome variable during the control period (before November 24). Specifically, I test for the existence of a linear and a non linear relationship (using a quadratic form) between these two variables before the event. The results can be observed in Table 5. A small but statistically significant time linear trend before the event can be observed (Column 1), but no significant quadratic relationship is

found (Column 2).[23] Hence, no evidence of a non-linearity relationship is found thus supporting the identification strategy displayed in Table 3.

Table 5. Pre-event time trends in Sweden

	Pre-event period	
	(1)	(2)
Days	0.019*	-0.044
	(0.087)	(0.037)
Days X Days		-0.001
		(0.00)
Observations	331	331
R^2	0.120	0.130
Region Fixed-Effects	Yes	Yes

Standard errors in parentheses, * $p < 0.05$.

In addition, I run different falsification tests (see Table A.3 in the appendix section 6.4) to test whether the scandal had any impact on a series of other attitudinal variables that are unrelated to gender social norms, and thus unaffected by the Arnault scandal. The two analyzed variables are support for Homosexuality and Abortion. As expected, the effects of the scandal on this variables are of a reduced magnitude and not statistically significant.

I also estimate the effect of a placebo treatment using the 20 days bandwidth in Sweden. The empirical median of the distribution of the Swedish control group is employed as the placebo treatment point (November 13). The "placebo treatment" variable takes the value 0 for those interviewed between November 4-13 and the value 1 for those interviewed between November 14-23. The results are displayed in Table 6.

Column (1) shows that the placebo treatment has no statistically significant effect on gender social norms. In addition, the results in the interaction model (Column 2) reveal an effect that is not statistically significant both on the jump at the cutoff point and on the interaction term. These results are consistent with the hypothesis that the shift in gender social norms is driven by the Arnault Scandal.

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[23]This linear relationship may be explained by the emergence of the #MeToo movement on October 17, 2017.

Table 6. Placebo treatment in Sweden

	Control group	
	(1)	(2)
Placebo treatment	-0.363	0.132
	(0.454)	(0.658)
Days		-0.011
		(0.036)
Placebo treatment X Days		-0.047
		(0.107)
Observations	105	105
R^2	0.084	0.089
Region Fixed-Effects	Yes	Yes

Standard errors in parentheses

I also exploit the $#MeToo$ movement as another placebo treatment in Sweden. Respondents interviewed between the October 17 and the date of the Jean Arnault scandal (November 24) are considered as the treatment group, and those interviewed before October 17 the control one. Table 7 shows that none of the placebo estimation coefficients are statistically significant at any conventional level, suggesting that the results found in Table 3 are mainly driven by the Jean Arnault scandal and not by the $#MeToo$ movement.

Table 7. $#MeToo$ movement as the Placebo treatment in Sweden

	Placebo Treatment	
	(1)	(2)
Placebo treatment	0.540	-0.460
	(0.328)	(0.751)
Days		0.114
		(0.074)
Placebo treatment X Days		-0.121
		(0.078)
Observations	318	318
R^2	0.101	0.117
Region Fixed-Effects	Yes	Yes

Standard errors in parentheses.

Finally, in the Appendix (see Table A2 in section 6.4), I replicate the two main RDD estimations with different bandwidth sizes (40, 30 and 10 days). The corresponding entropy balancing

weights are re-estimated. The results show that the magnitude of the effect is larger when a narrower bandwidth is used. However, this large effect does not reach conventional levels of significance.

5   Conclusion and Potential Extensions

In this paper, I study how social norms, usually described in the economics literature as stable, may be capable of changing in a short period of time. I test the hypothesis that salient shocks to a local population may explain how individuals deviate "en-masse" from the social norm.

Specifically, by exploiting daily survey data obtained from the EVS, I find that the Jean Arnault scandal changed attitudes toward women, for the whole Swedish sample, by half a point (on a 1-10 point scale). In addition, the effects of the scandal did not significantly revert within the next six months. This result supports the hypothesis that social norms, specifically gender social norms, are capable of experiencing a significant and durable change in a short time frame when faced with a strong enough local disturbing force.

Similar results are obtained when using the 20 days bandwidth and the sample is reweighted. In this model, a local average treatment effect of 0.642 points is found. Again, there is no evidence of any reverting process.

I also compare Swedish respondents with respondents from a similar society (i.e., Denmark), which did not experience a local shock during the fieldwork period. The results show that Swedish respondents experienced a positive increase in their attitudes toward women's rights compared to the Danish and non-treated Swedish respondents by 0.638 units for the whole fieldwork period. Indeed, the mean differences between control and treated respondents in Denmark did not change, thus supporting the hypothesis that in the absence of a large shock, changes in social norms will be gradual or non-existent.

This analysis sheds light on the potential factors that may be capable of shifting social norms in the short run. Even in societies that have a stable and invariable societal equilibrium, a sudden local event may be capable of quickly changing norms. Social norms are only likely to shift if the perceived benefits of changing are greater than the costs. This potential gain may be driven by a new perception of social norms or changes in peer behavior, as well as by intrinsic factors underlying individuals' attitudes and behaviors.[24] More generally, these findings suggest that in the absence of a local and salient shock, societies remain static and the shift toward a

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[24]One could argue that the risk of deviating is close to zero in this computer survey framework since the answers were privately elicited. However, computerized surveys are still affected by the prevalence of self-reporting socially desirable behaviors (Gnambs and Kaspar, 2015; Wallace et al., 2018).

new equilibrium will thus be gradual.

This is one of the first studies to provide empirical evidence on the ability of social norms to quickly change using observational data. These results align with recent findings by other works which suggest that social norms are capable of shifting in the short run. By providing empirical evidence using observational data, my results advance the social norms literature, which is an area mainly studied with laboratory experimental approaches.

There are some limitations to this study. On the one hand, the size of the effect may be larger than expected considering that attitudes toward women's rights in a democracy were already very positive in both Sweden and Denmark. Since an effect is found despite the outcome variable already being close to maximum, the impact of the scandal may be underestimated. On the other hand, every respondent interviewed after the event was considered to be treated, but one cannot assume that they were effectively exposed to the treatment, thus resulting in a potential overestimation. Hence, the significant results obtained in Sweden directly after the scandal could be interpreted as an Intention-to-treat estimation rather than as a local average treatment effect. Nonetheless, the likelihood of not being aware of the Arnault scandal is low due to the relevance of this event in Swedish society.

In addition, it could be argued that the outcome variable does not accurately capture existing gender social norms, since these are hard to measure (Bertrand et al., 2015). The EVS survey, like most other surveys, does not provide explicit information about social norms, but only captures respondents' attitudes toward a specific issue. Although the aggregation of peoples' attitudes has been employed in other studies as a measure of social norms (e.g., Alesina et al., 2013), attitudes do not perfectly predict behavior and correlate only weakly with behavior in situations where there are strong social norms that conflict with individual attitudes. Consequently, a more robust and precise measure of social norms might be needed.

Our understanding of the evolution of social norms and the mechanism behind sudden and unforeseen shifts could be enriched by implementing a robust cross-country comparative analysis and single-country case studies. Hence, future research should test this argument in other social settings, particularly in countries where gender discrimination is high. This research will help to explain what underlies the heterogeneous and disparate societal dynamics observed across countries.

Finally, the mechanism I study in this paper may highlight the factors behind effective and considerable attitudinal changes. This change may help governments tackle societal problems and move from non-Pareto societal equilibria. More broadly, this new conceptual framework may help to explain the sudden evolution of local social norms when facing significant events such as the COVID pandemic, terrorist attacks and migrant crises.

Declaration of competing interest

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References

Abend, L. (2020). The idea of denmark as a gender paradise is a myth. #metoo finally came to denmark—and the reckoning is only just beginning. *Time. Accessed on November 3, 2021.* https://time.com/5906403/denmark-me-too-gender-equality/.

Acemoglu, D. and Robinson, J. (2012). Why nations fail: The origins of power, prosperity, and poverty. *New York: Crown Bus.*

Akerlof, G. and Kranton, R. (2000). Institutions the Long Divergence. *Quarterly Journal of Economics*, 115(3):715–753.

Alesina, A., Giuliano, P., and Nunn, N. (2013). On the origins of gender roles: Women and the plough. *The Quarterly Journal of Economics*, 128(2):469–530.

Algan, Y. and Cahuc, P. (2010). Inherited trust and growth. *American Economic Review*, 100(5):2060–92.

Alvarez-Benjumea, A. (2022). Uncovering hidden opinions: social norms and the expression of xenophobic attitudes. *European Sociological Review, jcac056.*

Amato, R., Lacasa, L., Díaz-Guilera, A., and Baronchelli, A. (2018). The dynamics of norm change in the cultural evolution of language. *Proceedings of the National Academy of Sciences*, 115(33):8260–8265.

Andreoni, J., Nikiforakis, N., and Siegenthaler, S. (2021). Predicting social tipping and norm change in controlled experiments. *Proceedings of the National Academy of Sciences*, 118(16).

Andreoni, J., Rao, J. M., and Trachtman, H. (2017). Avoiding the ask: A field experiment on altruism, empathy, and charitable giving. *Journal of Political Economy*, 125(3):625–653.

Ares, M. and Hernández, E. (2017). The corrosive effect of corruption on trust in politicians: Evidence from a natural experiment. *Research & Politics*, 4(2):1–8.

Askanius, T. and Hartley, J. M. (2021). Activist-journalism and the norm of objectivity: Role performance in the reporting of the metoo movement in denmark and sweden. *Journalism Practice*, 15(6):860–877.

Askanius, T. and Hartley, M. J. (2019). Framing gender justice: A comparative analysis of the media coverage of metoo in denmark and sweden. *Nordicom Review*, 40(2):19–36.

Balafoutas, L. and Nikiforakis, N. (2012). Norm enforcement in the city: A natural field experiment. *European Economic Review*, 56(8):1773–1785.

Banet-Weiser, S. (2021). 'ruined' lives: Mediated white male victimhood. *European Journal of Cultural Studies*, 24(1):60–80.

Bassi, V. and Rasul, I. (2017). Persuasion: A case study of papal influences on fertility-related beliefs and behavior. *American Economic Journal: Applied Economics*, 9(4):250–302.

Batha, E. (2020). Rape conviction rates rise 75% in sweden after change in the law. Accessed July 22, 2021. Retrieved from https://www.reuters.com/article/us-sweden-crime-rape-law-trfn-idUSKBN23T2R3.

Battaglia, M. (2008). Multi-stage sample. *In Lavrakas, P.J. (Ed.), Encyclopedia of survey research methods.*, pages 493–493.

Bauer, J. (2014). Selection errors of random route samples. *Sociological Methods Research*, 43(3):519–544.

Baumann, C., Singmann, H., Gershman, S., and von Helversen, B. (2020). A linear threshold model for optimal stopping behavior. *Proceedings of the National Academy of Sciences*, 117(23):12750–12755.

Becker, S. O., Boeckh, K., Hainz, C., and Woessmann, L. (2016). The empire is dead, long live the empire! long-run persistence of trust and corruption in the bureaucracy. *Economic Journal*, 126(590):40–74.

Belloc, M. and Bowles, S. (2013). The persistence of inferior cultural-institutional conventions. *American Economic Review*, 103:93–98.

Benabou, R. and Tirole, J. (2011). Identity, morals, and taboos: Beliefs as assets. *The Quarterly Journal of Economics*, 126(2):805–855.

Bertrand, M., Kamenica, E., and Pan, J. (2015). Gender identity and relative income within households. *The Quarterly Journal of Economics*, 130(2):571–614.

Bicchieri, C. (2006). The grammar of society: The nature and dynamics of social norms. *Newyork NY: Cambridge University Press*.

Bisin, A. and Verdier, T. (2001). The economics of cultural transmission and the dynamics of preferences. *Journal of Economic Theory*, 97:298–319.

Bisin, A. and Verdier, T. (2011). Chapter 9 - the economics of cultural transmission and socialization. *In Jess Benhabib and Alberto Bisin and Matthew O. Jackson (Eds.), Handbook of Social Economics, North-Holland*, 1:339–416.

Boydstun, A. E., Feezell, J. T., and Glazier, R. A. (2018). In the wake of a terrorist attack, do americans' attitudes toward muslims decline? *Research & Politics*, 5(4):1–7.

Branton, R., Martinez-Ebers, V., Carey, T. E., and Matsubayashi, T. (2015). Social protest and policy attitudes: The case of the 2006 immigrant rallies. *American Journal of Political Science*, 59(2):390–402.

Bursztyn, L., Egorov, G., and Fiorin, S. (2020a). From extreme to mainstream: The erosion of social norms. *American Economic Review*, 110(11):3522–3548.

Bursztyn, L., González, A. L., and Yanagizawa-Drott, D. (2020b). Misperceived social norms: Women working outside the home in saudi arabia. *American Economic Review*, 110(10):2997–3029.

Calonico, S., Cattaneo, M., and Farrell, M. (2019). Optimal bandwidth choice for robust bias corrected inference in regression discontinuity designs. *The Econometrics Journal*, 23.

Castle, J. J., Jenkins, S., Ortbals, C. D., Poloni-Staudinger, L., and Strachan, J. C. (2020). The effect of the #metoo movement on political engagement and ambition in 2018. *Political Research Quarterly*, 73(4):926–941.

Centola, D., Becker, J., Brackbill, D., and Baronchelli, A. (2018). Experimental evidence for tipping points in social convention. *Science*, 360(6393):1116–1119.

Charles, K., Guryan, J., and Pan, J. (2018). The effects of sexism on american women: The role of norms vs. discrimination. *SSRN Electronic Journal*.

Clark, A. E., Doyle, O., and Stancanelli, E. (2020). The impact of terrorism on well-being: Evidence from the boston marathon bombing. *The Economic Journal*, 130(631):2065–2104.

Cooray, A. and Potrafke, N. (2011). Gender inequality in education: Political institutions or culture and religion? *European Journal of Political Economy*, 27(2).

Dahl, G. B., Kostadam, A., and Rooth, D. (2021). Does integration change gender attitudes? the effect of randomly assigning women to traditionally male teams. *The Quarterly Journal of Economics*, 136(2):987–1030.

Diekmann, A., Jann, B., Przepiorka, W., and Wehrli, S. (2014). Reputation formation and the evolution of cooperation in anonymous online markets. *American Sociological Review*, 79(1):65–85.

European Institute for Gender Equality (2022). Gender equality index 2022: The covid-19 pandemic and care. https://eige.europa.eu/publications/gender-equality-index-2022-covid-19-pandemic-and-care.

Fehr, E. and Gächter, S. (2002). Altruistic punishment in humans. *Nature*, 415(6868):137–40.

Fernández, R. (2007). Women, work, and culture. *Journal of the European Economic Association*, 5(2-3):305–332.

Fryer, Roland G., J. and Levitt, S. D. (2010). An empirical analysis of the gender gap in mathematics. *American Economic Journal: Applied Economics*, 2(2):210–40.

Ganetz, H. and Lindqvist, L. (2020). Brave women sound the alarm – representations of men and women in the swedish media coverage of #metoo. *Journalistica*, 1:14–46.

Giavazzi, F., Petkov, I., and Schiantarelli, F. (2019). Culture: persistence and evolution. *Journal of Economic Growth*, 24:117–154.

Giuliano, P. (2020). Gender and culture. *Oxford Review of Economic Policy*, 36(4):944–961.

Gnambs, T. and Kaspar, K. (2015). Disclosure of sensitive behaviors across self-administered survey modes: a meta-analysis. *Behavior Research Method*, 47:1237–1259.

Goldin, C. and Katz, L. (2002). The power of the pill: Oral contraceptives and women's career and marriage decisions. *Journal of Political Economy*, 110(4):730–770.

Gächter, S. and Herrmann, B. (2011). The limits of self-governance when cooperators get punished: Experimental evidence from urban and rural russia. *European Economic Review*, 55(2):193–210.

Haagsma, R. and Mouche, P. (2013). Egalitarian norms, economic development, and ethnic polarization. *Journal of Comparative Economics*, 41(3):719–744.

Hainmueller, J. (2012). Entropy balancing for causal effects: A multivariate reweighting method to produce balanced samples in observational studies. *Political Analysis*, 20(1):25–46.

Hartley, J. and Askanius, T. (2020). Activist-journalism and the Norm of Objectivity: Role Performance in the Reporting of the #MeToo Movement in Denmark and Sweden. *Journalism Practice*, 15:1–18.

Henley, J. and Flood, A. (2018). Nobel prize in literature 2018 cancelled after sexual assault scandal. *The Guardian.* [The Guardian; posted 12-May-2018. https://www.theguardian.com/books/2018/may/04/nobel-prize-for-literature-2018-cancelled-after-sexual-assault-scandal].

Ho, H.-A., Martinsson, P., and Olsson, O. (2022). The origins of cultural divergence: evidence from vietnam. *Journal of Economic Growth*, 27:45–89.

Hoff, K. and Stiglitz, J. E. (2010). Equilibrium fictions: A cognitive approach to societal rigidity. *American Economic Review*, 100(2):141–146.

Hoff, K. and Stiglitz, J. E. (2016). Striving for balance in economics: Towards a theory of the social determination of behavior. *Journal of Economic Behavior Organization*, 126:25–57.

Horne, C. (2009). The rewards of punishment: A relational theory of norm enforcement. *Stanford, CA: Stanford University Press.*

Ioannidis, J. P. A., Stanley, T. D., and Doucouliagos, H. (2017). The power of bias in economics research. *The Economic Journal*, 127:F236–F265.

Jayachandran, S. (2015). The roots of gender inequality in developing countries. *Annual Review of Economics*, 7(1):63–88.

Jones, S. (2009). Dynamic social norms and the unexpected transformation of women's higher education, 1965–1975. *Social Science History*, 33(3):247–291.

Kessler, A., Kennair, L. E., Grøntvedt, T., Bjørkheim, I., Drejer, I., and Bendixen, M. (2020). The Effect of Prototypical #MeToo Features on the Perception of Social-Sexual Behavior as Sexual Harassment. *Sexuality & Culture*, 24:1271–1291.

Kleven, H. and Landais, C. (2017). Gender inequality and economic development: Fertility, education and norms. *Economica*, 84(334):180–209.

Legewie, J. (2013). Terrorist events and attitudes toward immigrants: A natural experiment. *American Journal of Sociology*, 118(5):1199–1245.

Lenth, R. (2001). Some practical guidelines for effective sample size determination. *The American Statistician*, 55(3):187–193.

Lister, R. (2009). A nordic nirvana? *Social Politics: International Studies in Gender, State Society*, 16(2):242–278.

Manikonda, L., Beigi, G., Kambhampati, S., and Liu, H. (2018). #Metoo Through the Lens of Social Media. *In R. Thomson, C. Dancy, A. Hyder, H. Bisgin (Eds.), Social, cultural, and behavioral modeling. Springer International Publishing*, pages 104–110.

Metcalfe, R., Powdthavee, N., and Dolan, P. (2011). Destruction and distress: Using a quasi-experiment to show the effects of the september 11 attacks on mental well-being in the united kingdom. *The Economic Journal*, 121(550):F81–F103.

Miho, A., Jarotschkin, A., and Zhuravskaya, E. (2020). Diffusion of gender norms: evidence from stalin's ethnic deportations. *SSRN WP*, (3417682).

Moricz, S. (2019). Using artificial intelligence to recapture norms: Did #metoo change gender norms in sweden? *arXiv*.

Morrisson, C. and Jütting, J. (2005). Women's discrimination in developing countries: A new data set for better policies. *World Development*, 33:1065–1081.

Muñoz, J., Falcó-Gimeno, A., and Hernández, E. (2020). Unexpected event during survey design: Promise and pitfalls for causal inference. *Political Analysis*, 28(2):186–206.

Newman, B., Merolla, J. L., Shah, S., Lemi, D. C., Collingwood, L., , and Ramakrishnan, S. K. (2021). The trump efect: An experimental investigation of the emboldening efect of racially infammatory elite communication. *British Journal of Political Science*, 51(3):1138–1159.

Nilsson, B. and Lundgren, A. (2021). The #metoo movement: Men and masculinity in swedish news media. *Journal of Men's Studies*, 29(1):8–25.

Nollenberger, N., Rodríguez-Planas, N., and Sevilla, A. (2016). The math gender gap: The role of culture. *American Economic Review*, 106(5):257–61.

Norton, S. W. and Tomai, A. (2009). Religion and female educational attainment. *Journal of Money Credit and Banking*, 41:961–986.

Oksanen, A., Kaakinen, M., Minkkinen, J., Räsänen, P., Enjolras, B., and Steen-Johnsen, K. (2020). Perceived societal fear and cyberhate after the november 2015 paris terrorist attacks. *Terrorism and Political Violence*, 32(5):1047–1066.

Ortiz, R. R. and Smith, A. M. (2022). A social identity threat perspective on why partisans may engage in greater victim blaming and sexual assault myth acceptance in the #metoo era. *Violence Against Women*, 28(5):1302–1325.

Ostrom, E. (2000). Collective action and the evolution of social norms. *Journal of Economic Perspectives*, 14(3):137–158.

Petty, R. and Briñol, P. (2010). Attitude structure and change: Implications for implicit measures. *In book: Handbook of implicit social cognition: Measurement, theory, and applications. Chapter: Attitude structure and change: Implications for implicit measures. New York: Guilfold Press*, pages 335–352.

Pollack, E. (2019). Sweden and the #MeToo movement. Interactions: Studies in Communication. *Studies in Communication & Culture*, 10(3):185–200.

Przepiorka, W., Szekely, A., Andrighetto, G., Diekmann, A., and Tummolini, L. (2022). How norms emerge from conventions (and change). *Socius: Sociological Research for a Dynamic World*, 8.

Putnam, R. (1993). Making democracy work: Civic traditions in modern italy. *Princeton, NJ: Princeton Univ. Press.*

Scarborough, W., Sin, R., and Risman, B. (2019). Attitudes and the stalled gender revolution: Egalitarianism, traditionalism, and ambivalence from 1977 through 2016. *Gender & Society*, 33(2):173–200.

Siim, B. and Borchorst, A. (2008). Tracks, intersections and dead ends. *Ethnicities*, 8(3):322–344.

Smerdon, D., Offerman, T., and Gneezy, U. (2020). Everybody's doing it: on the persistence of bad social norms. *Experimental Economics*, 23(2):392–420.

Smith, A. and Ortiz, R. (2021). Metoo social media engagement and perceived hypersensitivity in the workplace. *Communication Studies*, 72:1–16.

Szekely, A., Lipari, F., Antonioni, A., Paolucci, M., Sánchez, A., Tummolini, L., and Andrighetto, G. (2021). Evidence from a long-term experiment that collective risks change social norms and promote cooperation. *Nature communications*, 12(1):5452.

Szekeres, H., Shuman, E., and Saguy, T. (2020). Views of sexual assault following #MeToo: The role of gender and individual differences. *Personality and Individual Differences*, 166:110203.

Tabellini, G. (2008). Institutions and culture. *Journal of the European Economic Association*, 6:255–294.

Tübbicke, S. (2022). Entropy balancing for continuous treatments. *Journal of Econometric Methods*, 11(1):71–89.

Voigtländer, N. and Voth, H. (2012). Persecution perpetuated: the medieval origins of anti-semitic violence in nazi germany. *The Quarterly Journal of Economics*, 127(3):1339–1392.

Wallace, D., Cesar, G., and Hedberg, E. C. (2018). The effect of survey mode on socially undesirable responses to open-ended questions: A mixed methods approach. *Field Methods*, 30(2):105–123.

Williamson, O. (2000). The new institutional economics: Taking stock, looking ahead. *Journal of Economic Literature*, 38(3):595–613.

Xie, J., Sreenivasan, S., Korniss, G., Zhang, W., Lim, C., and Szymanski, B. (2011). Social consensus through the influence of committed minorities. *Physical Review E.*, 86(011130).

Young, H. (2015). The evolution of social norms. *Annual Review of Economics*, 7(1):359–387.

Young, H. P. (1998). Social norms and economic welfare. *European Economic Review*, 42(3):821–830.

Zhao, Q. and Percival, D. (2016). Entropy balancing is doubly robust. *Journal of Causal Inference*, 5.

6 Appendix

In this section, I provide a detailed description of the Jean Arnault scandal. In addition, I conduct a series of additional robustness tests to assess the plausibility of the results obtained in the previous section. For simplicity, I mainly use the RDD estimation in all specifications (re-weighted sample with the optimal bandwidth of 20 days). Some of these robustness tests include re-estimating the RDD with a regression adjustment procedure, running different placebo tests, estimating multiple bandwidths to check the sensitivity of the estimates, and estimating falsification tests with other outcome variables.

6.1   The Jean Arnault Scandal

On November 24, 2017, the newspaper Dagens Nyheter published the testimonies of 18 women claiming to have been raped, sexually assaulted or harassed by photographer Jean-Claude Arnault, a leading cultural figure in Sweden and the husband of Swedish Academy member Katarina Frostenson. These accusations concerned sexual abuse behaviors over a period of more than 20 years. He denied all the alleged incidents, many of which were said to have been perpetrated at properties owned by the Academy or at his literary club. Three days after the story broke, even though Jean Claude Arnault was not a member of the Academy himself, the organisation voted unanimously to break all ties with him and his enterprises.

The Jean Arnault scandal was a highly salient event in the Swedish society. In the weeks that followed, multiple campaigns and debates made front page news in most leading media outlets (Pollack, 2019). The scandal triggered a discussion about systematic, gender-related violence and harassment.

This event also reinforced the academy's reputation as a traditional and patriarchal institute, which became a dominant topic in the public sphere. Many members of the academy tried to withdraw from their permanent positions, including Ms Frostenson and the Academy's head, Prof Sara Danius. As a result of this loss of credibility, King Carl XVI Gustaf decided to postpone the 2018 Nobel Prize for Literature to ensure the survival of the Academy (Henley and Flood, 2018).[25]

Subsequently, the Swedish prime minister, Stefan Löfven, proposed a new law on December 14, 2017, that would recognize non-explicit consensual sex as rape, even when no threats of violence or force are used. The law came into force on July 1st, 2018. This removal of the requirement for prosecutors to prove the use or threat of violence or coercion led to a significant rise in rape convictions of 75% (Batha, 2020).

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[25]The Swedish royal family also expressed their condemnation of the scandal.

The Jean Arnault scandal was preceded by a wave of social campaigns against sexual harassment and sexual abuse, mainly attributed to the viral spread of the #MeToo movement. While this social movement led to a public discussion about systematic gender violence in Swedish society, the overall population's awareness of the issue was relatively small (Pollack, 2019; Nilsson and Lundgren, 2021).[26] Therefore, I argue that the Jean Arnault scandal was still an unexpected event and its specific timing was nowhere near foreseeable.

6.2 Distribution of Responses

Fig. A1 shows the frequency of each response for the outcome of interest employing the 20 days bandwidth in Sweden. The figure reveals that in the treatment group, the frequency of the maximum category response increased. Consequently, the number of respondents who selected the lowest category had experienced a decrease. Fig. A2 shows the density of responses for both Sweden and Denmark before and after the scandal using the whole sample. As expected, individuals in Sweden reported a higher value after the Arnault scandal, while Danish respondents displayed the opposite behavior.

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[26]The Placebo analysis displayed on Table 7 support the hypothesis that it was the Jean Arnault scandal and not the #MeToo movement that drove the main results.
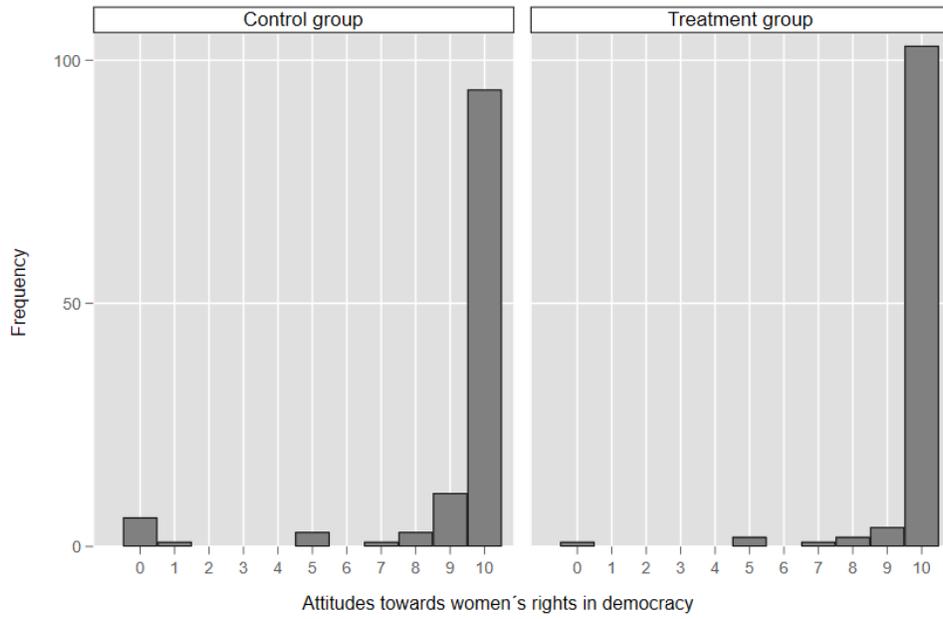
Fig. A1. Distribution of responses in the treatment and control groups using the 20 days bandwidth in Sweden.
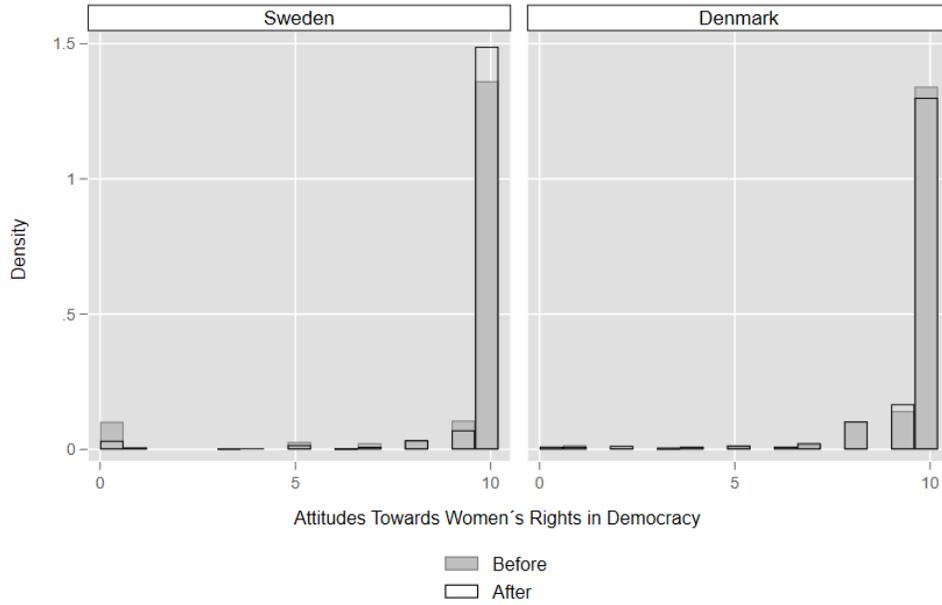
Fig. A2. Attitudes toward women's rights in Sweden and Denmark before and after the Arnault Scandal.

6.3   Regional Imbalances

Figs. A.3 and A.4 show the regional imbalances between control and treatment groups for Sweden and Denmark respectively. The balance tests indicate that even when relying on the 20 days bandwidth, there are still some statistically significant imbalances in the regions of Östra Mellansverige and Mellersta Norrland for the Swedish data. With respect to the Danish data, only the region of Nordjylland displays a statistically significant imbalance when using the 20 days bandwidth. Moreover, when relying on a narrower bandwidth (10 days) these imbalances tend to be corrected, although some other covariate differences become even larger.
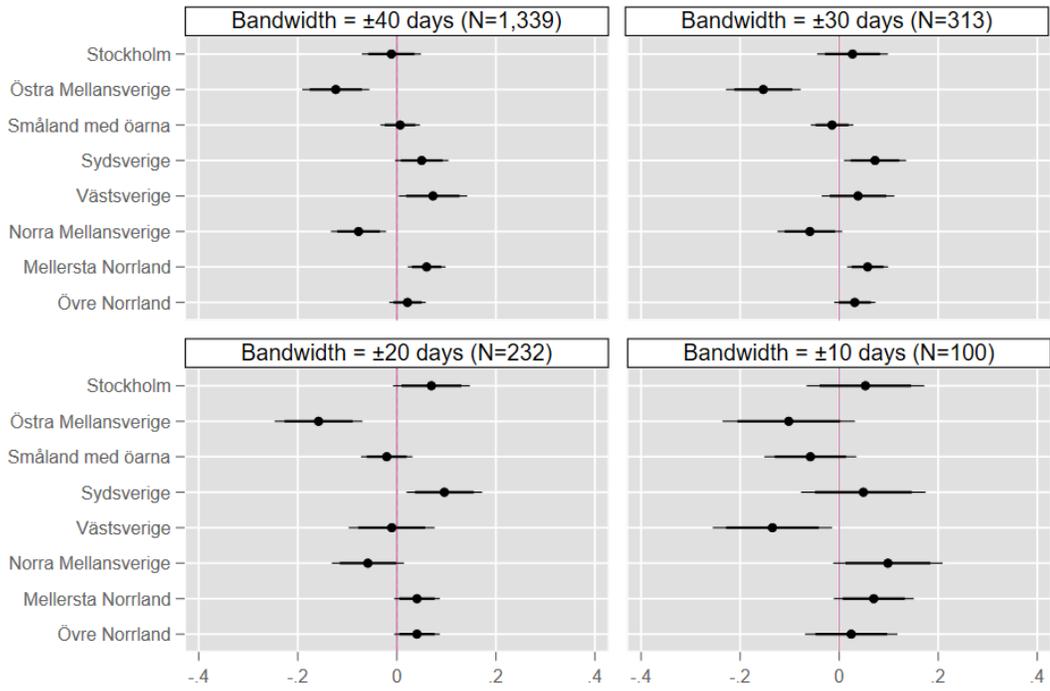
Fig. A3. Balance tests: Regional differences between the control and treatment using multiple bandwidths in Sweden.
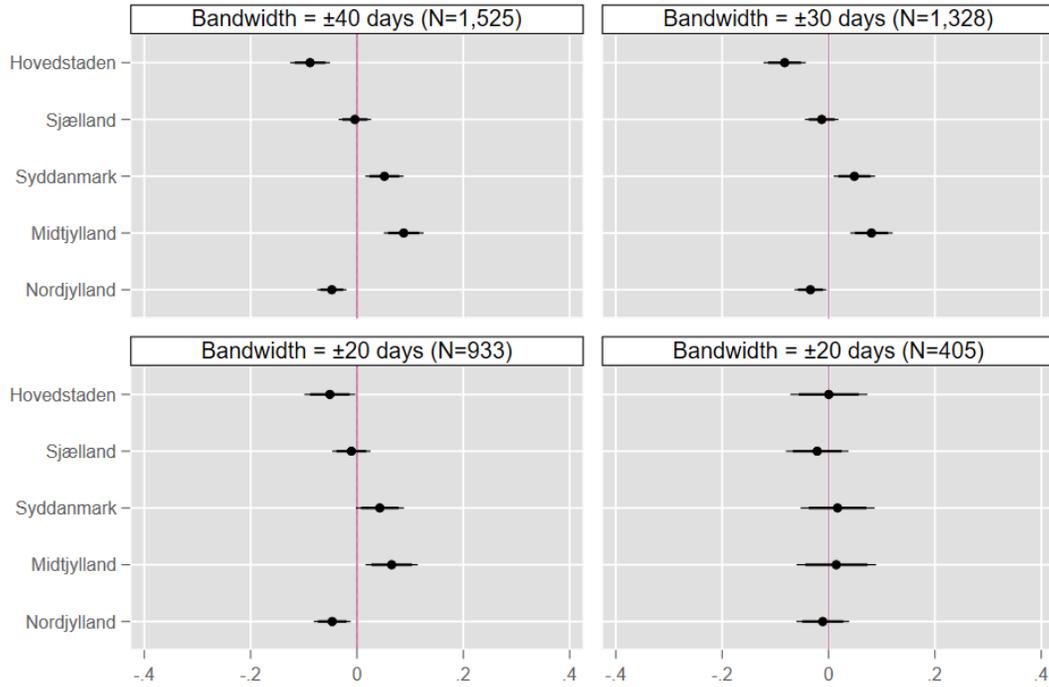
Figure A4: Balance tests: Regional differences between the control and treatment using multiple bandwidths in Denmark.

6.4 Regression Adjustment Estimation

In this section, I combine the entropy balancing weights with a multivariate regression adjustment that includes all the observed confounders used in the weights estimation. This is called the Doubly Robust Estimator of the causal treatment effect (Zhao and Percival, 2016). Using this regression adjustment ensures that after the sample has been balanced, the treatment estimation suffers almost no distortions. In addition, this technique reduces bias in the estimation and improves the precision of the results (Zhao and Percival, 2016).

In Table A1, the effects of the Jean Arnault scandal on Swedish attitudes, using the 20-day bandwidth, are re-estimated including all the confounders employed for the entropy balance. In Column (1), the treatment coefficient is slightly larger (0.659) than the one obtained in Table 4 (0.599) in terms of magnitude, although they are both statistically significant. Similarly, the coefficient for Column (2), 0.842, which includes the interaction term, is slightly smaller than the one obtained in Table 4 (0.890). These results support the original results, with a possible small underestimation of the results in Table 3 which would further support the hypothesis that the Jean Arnault scandal quickly shifted gender social norms in Sweden.

Table A.1. Effects of the Arnault scandal in Sweden with regression adjustment.

	±20 days bandwidth	
	(1)	(2)
Treatment	0.659*	0.842
	(0.291)	(0.628)
Days		0.009
		(0.049)
Treatment X Days		-0.040
		(0.052)
Age (years)	-0.032*	-0.033*
	(0.016)	(0.015)
Education (level)	0.155*	0.146
	(0.077)	(0.077)
Employed	-0.235	-0.164
	(0.513)	(0.489)
Student	0.149	0.198
	(0.554)	(0.535)
Retired	0.811	0.883
	(0.758)	(0.776)
Female	0.182	0.171
	(0.264)	(0.264)
Married	0.047	0.047
	(0.298)	(0.306)
Native	0.269	0.278
	(0.405)	(0.396)
Interest in Politics	0.235	0.239
	(0.171)	(0.169)
Observations	214	214
R^2	0.200	0.204

Standard errors in parentheses,* $p < 0.05$.

6.5 Estimation of Multiple Bandwidths and Falsification Tests based on other outcome variables

Next, Table A.2 shows the estimated effect of the Jean Arnault scandal in Sweden, using some of the multiple bandwidths considered in the balance tests summarized in Figs. 3 and 4. The table replicates the main estimation model summarized in Column (3) in Table 4, which includes region-fixed effects and entropy balancing weights. Before estimating these models, I re-estimated the entropy balancing weights for each bandwidth. The results show that the magnitude of the effect is larger when the narrow ± 10 days bandwidth is used, compared to the results obtained with the ± 20 days bandwidth (see Column 3 in Table 4). However, when using the ± 10 days bandwidth, I find that the effect no longer reaches conventional levels of significance, which may be because of the small sample size (only 89 observations).

Table A2. Effects of the Arnault Scandal with different bandwidths in Sweden

	± 40 days		± 30 days		± 10 days	
	(1)	(2)	(3)	(4)	(5)	(6)
Treatment	0.134	0.229	0.050	1.060*	1.240	1.820
	(0.207)	(0.345)	(0.253)	(0.417)	(0.631)	(1.270)
Days		0.011		-0.0142		-0.123
		(0.012)		(0.017)		(0.152)
Treatment X Days		-0.036		-0.053		0.124
		(0.018)		(0.031)		(0.169)
Observations	387	387	288	288	89	89
RR^2	0.079	0.089	0.110	0.142	0.146	0.158
Region Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Reweighted Sample	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors in parentheses, * $p < 0.05$.

Finally, I also test if the Arnault scandal had any impact on two other attitudinal measures that are similar to the outcome of interest but should not be directly affected by the scandal itself. These variables measure attitudes toward homosexuality support and opinions regarding the legality of abortion.[27]

The first of these variables is selected in order to capture changes in preferences related to general left-wing attitudes. The second variable indirectly captures attitudes towards women rights, but from a different mechanism since it is potentially related to different religious beliefs that should not be directly affected by the Jean Arnault scandal. The results of these tests are

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[27]The responses ranged+ between 1 and 10, where 10 represents the belief that homosexuality and abortion can always be justified, while 1 means homosexuality and abortion can never be justified

summarized in Table A.3. The effects of the treatment indicator are not statistically significant at any conventional level when using these alternative outcomes.

Table A.3. Falsification Tests with different outcome variables using the ±20 days bandwidth for Sweden.

	Homosexuality support		Abortion support	
	(1)	(2)	(3)	(4)
Treatment	-0.137	0.221	0.252	0.032
	(0.412)	(0.836)	(0.385)	(0.728)
Days		-0.005		0.040
		(0.052)		(0.048)
Treatment X Days		-0.028		-0.063
		(0.072)		(0.063)
Observations	210	210	208	208
R^2	0.078	0.080	0.041	0.047
Region Fixed-Effects	Yes	Yes	Yes	Yes
Reweighted Sample	Yes	Yes	Yes	Yes

Standard errors in parentheses.

6.6 Heterogeneous Treatment Effects

Table A.4 reports the RDD results using the optimal bandwidth and the re-weighted sample estimation for different subsets of the population in order to determine which group deviated most in their attitudes after the Arnault Scandal. The first columns display the analysis by gender, in which a dummy variable, with values equal to 0 for males and one for females, is interacted with the treatment coefficient. The coefficient for females in Column (1) reports an average increase of 0.443 for women. The interaction term for Column (1) suggests that the positive sign of the treatment is less positive for females compared to males. However, none of these results are statistically significant.

The second column reports the analysis for those individuals aged 53 years and over (the median age of the respondents for the 20 days bandwidth). Hence, a dummy variable with values equal to 1 for those individuals above the threshold age is included. A negative statistically significant impact is found. It shows that for older respondents, the treatment is associated with a negative shift of, on average, 1.124 units. The interaction term suggests that the effect of the treatment will be even more negative at increasing levels of age.

Finally, Column 3 shows the analysis for those individuals with a high level of education. That is, individuals with an education level larger than 4 (the median level of the education

variable in this sample) are captured with a value equal to 1 in a dummy variable.[28] The coefficient is positive and equals 0.633. In addition, the interaction term suggest that the treatment becomes less positive with increasing levels of education. However, none of these coefficients are statistically significant.

Table A.4: Heterogeneous Treatment Effects using the ±20 days bandwidth for Sweden.

	Females	Older People	High-level Education
	(1)	(2)	(3)
Treatment	0.673	0.226	0.661
	(0.478)	(0.251)	(0.466)
Female	0.443		
	(0.515)		
Treatment X Female	-0.062		
	(0.559)		
Older People		-1.124*	
		(0.556)	
Treatment X Older People		0.885	
		(0.622)	
High-level Education			0.633
			(0.516)
Treatment X High-level Education			-0.091
			(0.543)
Observations	214	214	214
R^2	0.139	0.167	0.148
Region Fixed Effects	Yes	Yes	Yes
Reweighted Sample	Yes	Yes	Yes

Standard errors in parentheses, * $p < 0.05$.

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[28]The educational level is captured as an ordered categorical variable ranging from 1 to 8.

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