Women matter: The Impact of Gender Empowerment on Abortion Regulation in 18 Countries between 1960 and 2010

Emma Budde and Stephan Heichel
Geschwister-Scholl-Institute of Political Science
Ludwig-Maximilians-University Munich

Abortion regulation is a highly gendered subject matter directly affecting women. Since a liberalization in abortion legislation increases women’s scope for choice in reproduction, and thus should be in the interest of women, we expect gender emancipation expressed as increases in female socio-economic and political power to drive changes in towards the liberality of abortion legislation.

We quantitatively assess the influence of three gender specific explanatory factors on abortion policy. The index that is used as dependent variable is based on a new dataset that thoroughly captures if and under which conditions an abortion can be legally obtained. It represents one of the most fine-grained measurement of the liberality of abortion policy that exists so far. Furthermore, with a sample size of 18 countries, covering a time-span of 50 years (1960-2010), we considerably expand the geographical and temporal scope of previous studies on the subject.

We demonstrate that women’s’ educational advancements, labor force participation as well their representation in national parliaments are strong explanatory factors for abortion regulation’s degree of liberty even when controlling for ‘conventional’ comparative policy variables, like economic development and ‘typical’ morality policy variables, like religion. Whereas gender empowerment factors matter in absolute terms, the gap to male levels of educational advancement and labor force participation seems less relevant.

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1 Introduction

A termination of a pregnancy is not only a difficult and often emotional decision for the woman afflicted. In the spheres of politics and policy-making, the issue has also caused a lot of concern if not ‘trouble’ often involving heated debates, strong agitation and polarization with a clash of irreconcilable positions. Almost all countries in the world have heavily struggled – often more than once – with the question of how to set the legal boundaries for abortions.

Given its outstanding role as one, if not the manifest morality policy (Knill 2013) within morality policy research (e.g. Mooney 1999), it is striking that systematic analyses on the determinants of regulatory liberality vis-à-vis regulatory stringency of abortion and respective changes over time (outside of an US-American context) are still rare.

Existing comparative research in the policy (sub-)field is often of descriptive character (e.g. Outhoorn 1996; Levels et al. 2014). Studies focusing on explaining policy changes mostly look at a small number of states only. In terms of theory they emphasize complex interaction of structural and agency factors rather than looking at selected factors’ impacts only (but see McBride Stetson 2001). So far, there are hardly cross-national studies that systematically test for the role of specific and clearly operationalized independent variables on abortion policy change over time (but see Asal et al. 2008; Gindulis 2002; Minkenberg 2002 although the temporal aspect is not always taken into account).

However, even the latter are often not theory-guided in every respect. Besides, existing large-n-analyses are also characterized by underspecified (i.e. too simply constructed) dependent variables (whereby a lot of empirically relevant changes are disregarded) or otherwise conceptual and measurement ambiguities on the side of the explanandum. They are sometimes even plagued by obvious misclassifications of national regulatory models.

Furthermore, existing large-n studies do not cover a longer time period. However, pivotal first liberalization steps of abortion regulation already occurred (way) before the 1970s which is often considered the decisive decade for the first wave of abortion policy change. This implies that researchers should expand their temporal frame when looking at abortion policy change.

In this paper we depart from these desiderata. We provide a macro-quantitative study of the determinants of abortion regulatory stringency and its change in 18 European countries between 1960 and 2010 (see table 6 in appendix). We apply a transparent conceptualization and operationalization of ‘abortion regulation’ and ‘abortion regulatory change’ along a single dimension, namely the liberal-restrictive-axis that also takes multi-faceted aspects of abortion regulation into account. This concept

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1 The present study was conducted within the project MORAPOL, funded by the ERC Advanced Grant (2010-2016) and led by Prof. Dr. Christoph Knill (LMU Munich).
and measurement is derived from an encompassing data set that was compiled by us based on close examinations of legal changes in all states under scrutiny between (before) 1960 and 2010.

We test for the relevance of a theoretical argument that has emerged in recent decades not only in political science in general, but more so in gender studies and especially gender and politics research. This argument states the increasing societal and political role of women should have an impact on abortion regulation. I.e. we ask if gender emancipation (or gender empowerment) can account for abortion policy change over the long run.

In that, we mainly aim at contributing to morality policy research and cross-national comparative policy analysis integrating them in the same time. Still, we would not downplay the role of specific explanatory factors commonly considered relevant within morality policy research (e.g. religion and the religious-secular cleavage in the party system) by controlling for the explanatory power of respective factors in the empirical models. Nonetheless, we are more interested in the explanatory factors that are more common in large-n quantitative policy research in general and related research strands. In doing that, we also inquire the most crucial issue, namely whether morality policy is indeed different from non-morality policy when it comes to explaining policy change.

We demonstrate that measures of female emancipation are better predictors of abortion policy liberality than conventional variables used in comparative policy research such as parties, economic modernization and institutional constraints. The share of women in parliament, female labor force participation and levels of tertiary education of women all influence reproductive liberality, whereas the size of the gap between men and women in terms of educational advancement and labor force participation is less important.

The paper proceeds as follows: After reviewing the state of the art for abortion policy in terms of conceptualizations, operationalizations, descriptive as well as causal inference in section 2, we present the theoretical framework in the third section. This is followed by a brief elaboration on methodology (4). Afterwards we turn to the presentation of the study’s concept and operationalization of the dependent variable that is abortion regulation, supplemented by some brief remarks on measurements and data employed for independent variables. Section 6 contains the empirical estimations. We end with a brief conclusion and discussion of the results (7).
2 State of the Art

2.1 Change in Abortion Regulation: Concept, Measurement, and Descriptive Inference

The regulation of abortion, like other regulatory policies, is a complex matter which defies using ‘standard indicators’ as a dependent variable common for analyses in various policy areas, most notably economic or social (welfare state) policy. In the latter general or sectoral spending per capita have dominated research as sort of ‘gold standard’ indicators for decades.

This complexity arises from the fact that there are a multitude of options for a state to legally intervene in a woman’s decision to terminate her pregnancy reaching from drastic measures (i.e. a complete prohibition) to procedural requirement of only small interventional magnitude (e.g. the obligation of so-called informed consent). A first general goal in all quantitative attempts to conceptualize and operationalize the dependent variable is, hence, to reduce this complexity albeit not to reduce it too drastically to not overlook (too many) instances of national change.

Within that scope, a first step usually is to identify a small number of general national policy models or ‘regimes’ with three to four values with the goal to bring the latter into an ordinal order reaching from restrictive to liberal. Here, a prevalent approach is to distinguish a prohibitive regime from an indication model, i.e. one in which an abortion is only legal if there are manifest reasons for it, and a term or choice model, i.e. a regulatory approach in which an abortion is already legal, if demanded by a woman and performed relatively early (see for example Brooks 1992: 347, also Glendon 1987: 14).

There is also the argument that, in addition, broader and narrower indication models should be differentiated in between the extremes of prohibition and term model (e.g. Outshoorn 1996: 149, but see already Rolston and Eggert 1994). Others stress that a prohibitive model should be separated from an indication model and a term (choice) model while there are also ‘mixed’ policy approaches that integrate elements of a term model and an indication model mostly because a woman can – in the end – obtain a termination upon request, but needs to justify her decision or declare a state of personal emergency which prevents her from continuing with pregnancy (Obinger-Gindulis 2015: 196 ff.). This idea is also contained in a conceptual approach that basically works with three values only, namely choice model, ‘distress’ model, and indication model, but in which a prohibition (i.e. a largely or completely prohibitive approach) is an exceptional extreme only (Minkenberg 2002: 229, 2003).

Many research pieces remain at that level of conceptualization/operationalization of the dependent variable without further inquiring into detailed aspects of the regulations applicable at each of the main levels (e.g. Minkenberg 2002). Albeit early research had already stressed the relevance of further regulatory details for abortion policy conceptualization and measurement, like the exact time limit expressed in the maximum gestation week until which a pregnancy termination upon request could
be obtained for assessing the degree of liberality of choice models (for a brief overview on this research see Mazur 2002: 137 ff.)

Quantitative approaches going beyond such basic categorical measurements are still very rare as far as cross-national comparisons are concerned. A notable exception still constituting to some extent the state of the art in terms of operational sophistication is Gindulis (2002; 2003; but see recently also Levels et al. 2014). The author develops an 8-levels additive index in which she not only works with seven main categories in addition to a complete prohibition that are more differentiated than those found previously (e.g. four types of indication). What is remarkable is that she also acknowledges the need to include sub-differentiations – here with respect to cost coverage – at each of the seven levels separately that are, hence, weighted less than shifts from one of the major levels to another. Such indices that are composed of a higher number of values are at the same time suitable for more sophisticated data analyses.

Even though comparative quantitative analyses for the U.S., meaning sub-national comparisons with U.S.-states or U.S.-state-years as the unit of analyses, are much higher in number and usually more sophisticated in terms of research design, time coverage, data quality and methods, studies working with some type of combined abortion policy are also rather seldom in this context (for an overview of relevant research also covering measurement aspects as well as such an index see Camobrecbo and Barnello 2008; also Kreitzer 2015). What is instead much more common is either to work with single ‘pro-abortion’ or ‘anti-abortion’ policies, like mandatory parental notification or state funding of abortions for low income women, as the dependent variable or to employ respective aggregates, i.e. mostly count data (see Kreitzer 2015 for an overview and example).

In qualitative social science studies of abortion policy (e.g. Lovenduski and Outshoorn1986; Stetson 2001; Htun 2003; Blofield 2006; Halfmann 2011) authors mostly refrain from working with specifically conceptualized let alone ‘measured’ dependent variables. However, this should not be perceived as a weakness, but is rather due to the nature of qualitative comparative stressing complexities of regulations as well as the importance of elaborating on the pathways to final policy outputs.

As an overall assessment it seems fair arguing that albeit remarkable achievements have been made when it comes to conceptualizing and operationalization of the dependent variable ‘abortion regulation’ for (quantitative) comparative analyses, there is still the need for further sophistication in terms of preciseness. The same holds true regarding a correct classification of national models – where there are still remarkable inconsistencies in the literature – based on thorough scrutiny of national legal developments in light of law changes in other states. I.e. often a correct assessment is only possible based on clear criteria, but also when considering what kind of change had happened
elsewhere. What is especially needed is to integrate more relevant ‘procedural obstacles’- aspects – details that are so far often lacking in comparative studies – in aggregated figures to appropriately determine their interference intensity for a woman concerned. Recent descriptive inference analyses have convincingly demonstrated the tremendous importance of such seemingly ‘neglectable’ regulatory tools not only for detecting policy change, but also establishing more fine-graded national ‘models’ (e.g. Levels et al. 2014). This would also refer to such procedural aspects nowadays uncommon in most of the countries, but which have existed in the past (e.g. spousal notification and approval).

2.2 Change in Abortion Regulation: Theoretical Approaches and Causal Inference

From the perspective of this analysis and when scrutinizing research from a theoretical and causal inference point of view, existing studies can be grouped along three major lines. One research strand locates the regulation of abortion within ‘classic’ comparative policy (or political economy) analysis. In that, relevant studies attempt to explain the (relative) strictness or liberality of national regulation by using ‘conventional’ theoretical approaches and respective operationalized figures (e.g. Asal et al. 2008; Gindulis 2003). These are economic development or modernization in a more general understanding (thus also including aspects like economic sector change, educational expansion and workforce participation especially of women), democracy, party competition in terms of the left-right-distinction, institutional constraints (such as strong judicial review) or internationalization (e.g. in terms of ratification of relevant human rights treaties). A particular focus within that scope is on the role of social mobilization and interest groups, most notably women’s rights activism, but also physicians’ roles (e.g. McBride Stetson 2001 for a qualitative example, also Halfmann 2011).

A second major theoretical perspective is morality policy analysis (see in general for example Tatalovich 1997; Engeli and Varone 2011; Hennig 2012). When conceptualized and operationalized for quantitative inquiry research from this theoretical perspective is interested to what extent abortion regulation could be explained with relevant independent variables. These are religion (in terms of the population shares belonging to what type of congregation, the degree of actual religious practice, but also the religion-state relationship ), a religious-secular party cleavage, most notably in terms of the existence and the strength of religious-conservative parties, public opinion, and also mobilization and special interests. For the latter, the focus is, however, more on the role of religious and especially Christian activism, including special activism targeting abortion (e.g. Minkenberg 2002, 2003).

Third, there are also studies that attempt to integrate both major perspectives – i.e. even though the theoretical focus is mostly either general comparative policy or morality policy analysis, relevant
independent variables from the ‘other’ major theoretical perspective are nonetheless at least included as control factors in empirical estimations.

Besides, cross-national studies which are still low in number could be differentiated from those comparative studies focusing on abortion policy (change) in the U.S. States. The latter research strand has a much longer tradition and has until now produced a vast amount of single contributions that could be located in all of the major traditions. But what justifies a separate view on comparative subnational U.S.-American research is the fact that this research often includes relevant independent variables (like issue specific public opinion or finer measurements of religious adherence) that are often omitted on cross-national analysis due to lacking longitudinal data for these factors.

2.2.1 Cross-national Studies

The rare quantitative cross-national studies on abortion regulation stress the importance of independent variables from the general comparative policy and the morality policy research tradition. Gindulis (2002; 2003) finds that especially left-wing political parties in government are a significant predictor of abortion regulation’s high(er) degree of liberality (see also Brookes 1992 strongly confirming this result for earlier developments) whereas political institutions play no or only a minor role when selected institutions are taken into account. Modernization seems to be a prerequisite here (see also Asal et al. 2008 for a strong confirmation of the role of socio-economic and modernization factors for explaining worldwide shifts to more liberal abortion regulation). On the other hand, an influential Catholic church combined with strong Christian-conservative parties in power, economic underdevelopment and powerful institutional veto players explain why abortion regulations is rather strict or ‘stucks’ at a less liberal level. Remarkably, measures of female societal and political empowerment proved to be insignificant in all models tested.

Minkenberg (2002, 2003), focusing on the specific role of different operationalizations of ‘religion’ as explanatory variables, finds especially Catholicism to be a highly relevant explanatory factor for abortion policy if combined with actual religiosity of the populations. If these variables are stronger, abortion regulation tends to be stricter and it is especially less likely that the regulatory level moves beyond a ‘distress’-model (which would be largely equivalent to an indication model in other conceptualizations; see also Asal et al. 2008 for a worldwide sample study confirming the statistically negative impact of the share of Catholics on abortion regulation’s liberality). Like Gindulis (2002, 2003), he rather downplays the role of women’s activism. Brooks (1992), however, cannot confirm that Catholicism is relevant for explaining abortion regulation up until about 1990.
2.2.2 Sub-national Studies: Abortion Regulation in U.S. States

As indicated above, comparative sub-national research an abortion regulation in the U.S. equally stresses the importance of explanatory factors from a general comparative policy as well as a morality policy perspective (see Kreitzer 2015: 41 ff. for a recent thorough review of the literature). However, socio-economic variables – being integral to the first research tradition – are mostly de-emphasized as they often proved to be insignificant predictors. Instead, abortion regulation is strongly responsive to (especially moral conservative) public opinion and religious forces which are operationalized differently at the state level. Here, it is especially the religiosity of constituencies that matter. This underscores the relevance of the morality policy perspective.

Partisanship is also often found to be relevant, with Democratic rule in the States (executive and legislative) being associated with more liberal abortion policy and especially successful blockade of restriction attempts – a finding that is more in line with a general comparative policy view.

Besides, the U.S.-American literature also stresses the importance of descriptive representation of women in politics (mostly measured as the degree of women’s strength in state legislatures) for abortion regulation. However, more recent research emphasizes that this should be handled with caution as the impact of this variable strongly depends on what kind of operationalization of the dependent variable is employed and if one tests for the effect of Democratic female legislators only (ibid.). This independent variable so far has rather been neglected in cross-national large-n studies (but see Asal et al. 2008 and Gindulis 2002, where the estimation is, however, not reported).

2.2.3 Overall Assessment

Albeit attempts have been made to integrate theories from the major traditions with those less common in comparative abortion policy research, like structural and female empowerment approaches, in a single analytical framework for explaining abortion regulation in cross-national perspective (e.g. Asal et al. 2008), such quantitative studies are cross-sectional only and employ an underspecified operationalization of the dependent variable that lacks detail. Furthermore, more sophisticated methodological analyses that combine cross-sectional and longitudinal data remain rare or are quite old in the meantime (e.g. Gindulis 2002, 2003) – i.e. they are unable to take the remarkable dynamic of abortion policy change into account which unfolded in the first decade of the 21st century.

Besides, most studies so far have refrained from extending the geographical scope beyond Western Europe or the core OECD-world. However, this would be important for testing if the relevant independent variables identified so far remain powerful explanatory variables in other contexts. Still other studies – albeit being ‘large-n’ – do not employ statistical analyses for drawing causal inference (Brooks 1992; Minkenberg 2002). Overall we still largely lack theoretically guided, systematic
(statistical) analyses that allow for rigorous testing of the role of specific explanatory factors in the presence of other (competing) independent variables in order to achieve a greater degree of corroborated explanatory evidence. This would especially refer to advanced analyses that combine conventional comparative and morality policy theoretical frameworks with further theoretical approaches not yet established for the explanation of abortion regulation. This contribution aims at closing this research gap.

3 Theory and Hypotheses

3.1 Gender Emancipation/Empowerment

The theoretical framework of this contribution focuses on the impact of a set of (potentially important) explanatory factors that – albeit they are not completely neglected in existing research (see section 2) – have been treated rather ‘stepmotherly’ in quantitative analyses of abortion regulation taking into account developments across space and time. This is a gender perspective or more precisely a gender or female empowerment/emancipation perspective. This gender empowerment theoretical approach – on the one hand – is more encompassing in scope, i.e. it extends beyond stressing either general or specific women’s rights activism as expressed in social mobilization and interest group formation as well as agitation around the abortion issue (albeit the latter might become an important intervening variables for which we do, however, not test). This means that the theoretical construct rather emphasizes the underlying economic and societal forces that might – among other impacts – result in an increased women’s activism towards the abortion issue. On the other hand, the theory also stresses the direct representation of women in the political sphere – hence in the relevant decision-making platforms – as crucial. Similarly, this theoretical perspective somehow ‘bridges’ intervening forces that might have resulted in an increased presence of women in politics. We are interested to what extent a change and here mostly an increase in female empowerment is able to explain abortion regulation between 1960 and 2010 in the 18 countries included in this study.

Albeit gender empowerment as a (social science) concept in a more general sense has – of course – a long tradition in gender and gender and politics research it was not until the mid-1990s that the concept was specified more clearly and especially operationalized. The United Nations Development Program (UNDP) defined the concept as increasing the share of women in the sphere of political decision making with respect to the legislative as well as the executive (administrative) branch, in the sphere of economic decision-making and with respect to female economic independence and especially in terms of achieving the same level of earned income as compared to men. The UNDP also presented quantified indicators how to measure gender empowerment (see Ismail et al. 2011 for a

\[\text{2} \] Both combined versions of the two terms are used interchangeably in this paper.
brief discussion). Although we will not employ the very same indicators (see also section 5.2) we nonetheless principally adhere to that concept that became dominant during the last two decades.

The theoretical framework presented here rests on some core assumptions. These are that we conceive abortion regulation to be at least a strong gender related issue (meaning that it needs not necessarily be defined as an exclusive gender issue). In that women should tend (on average) to be more interested in liberalization of existing rules as especially (very) restrictive regulations are perceived to be against female core interests of reproductive self-determination, (maternal) health and bodily autonomy (or integrity). We would also assume that women prefer a very liberal regulatory model over any less liberal model, i.e. a choice-model.

3.1.1 Educational Empowerment

A first cornerstone of female emancipation in a society is educational attainment, i.e. a development that increases women’s overall level of education with the proponents’ goal to achieve (at least) equal footage with men. Greater education attainment is first and foremost a prerequisite for a greater representation of women in the spheres of political and economic decision-making and also necessary to increase economic independence thereby establishing the basis for rising incomes.

But there are also more direct links feasible why educational attainment should impact the regulation of abortion. A higher level of education is usually affiliated with an increased level of information gathering and also a greater interest in societal and political developments. Better informed citizens – i.e. not only women – are usually better equipped to understand political processes especially in democratic polities and how decision-making functions in the latter (and can, hence, be influenced even from ‘below’). This refers not only to lobbying activities in a narrower sense, but already to interest formulation and aggregation as prerequisites possibly (also) leading to electoral choices. In short, better educated women should be better able to advance their interests in a society and political system as compared to less educated women.

This basic causal mechanism should not be perceived as exclusive, i.e. at least several supplementary mechanisms that work within that general mechanism are feasible. For example, especially the early years of abortion policy (change) discourse were often characterized by framing abortion as a medical, i.e. a maternal health problem. At the same time, medical progress made (especially early) abortions a saver procedure for women and hence a more acceptable method of family planning from a woman’s point of view. We would expect that such knowledge transmission also impacting preference formation is more likely the higher the level of education of a woman.

Another possible mechanism especially relevant for abortion regulation are policy developments abroad. As could be observed, there is an enormous variance with respect to when did states achieve
opportunities (major) abortion liberalization steps (see section 6.1). As better educated persons are on average also more cosmopolitan and mobile, we would expect that they are also better informed about regulations elsewhere. Since a more liberal regulation of abortion in another (democratic) state could be perceived as a strong de-legitimizing factor within the stricter regulating states we would expect that this de-legitimization works more effectively the more (female) citizens are aware of this fact.

Besides, a higher level of educational attainment creates more economic and ‘life-course’-opportunities for women and is therefore associated with higher opportunity costs of having children and hence lower fertility (Engelhardt & Prskawetz 2004: 41). This should also result in a stronger demand for liberal abortion regulations.

We formulate hypotheses 1a and 1b accordingly:

**H1a.** The higher the degree of women’s educational attainment in a country, the more liberal the abortion legislation.

**H1b.** The smaller the difference between men and women in terms of educational attainment in a country, the more liberal the abortion legislation.

### 3.1.2. Economic Empowerment

A second major pillar of female emancipation is economic empowerment. Although the concepts of educational and economic empowerment might be perceived as closely related, they are not necessarily congruent. This implies that for economic empowerment different or additional causal mechanism between gender empowerment and abortion regulation become relevant. There are also more direct causal mechanisms that are particularly or mostly relevant for economic empowerment. Nonetheless, other causal chains to abortion regulation follow in a similar manner from economic as well as educational empowerment.

First of all, as indicated above, one of the central life course opportunities of educational empowerment for women is pursuing a professional career. Under these circumstances having children implies higher opportunity costs for women being employed or self-employed (Engelhardt & Prskawetz 2004: 41). This does not necessarily create a sole demand for the legal opportunity to opt for or against children as such during life. What is also (or perhaps even more crucial) is the demand for a right when to have children during life course, i.e. at an ‘optimal’ point considering personal economic constraints and ambitions on the side of a woman.

Second, women’s economic empowerment not only has the goal to break with tradition female role models that had been prevalent in the vast majority of states in the past, but is at the same time a central expression or even an incarnation of this break. This abandoning of traditional role models might not necessarily imply that economically active women refrain from having children (albeit this is
an empirical reality for an ever larger share of women in Western societies during the last decades). But this role model shift certainly excludes the option to have many children for the vast majority of women concerned who cannot afford high economic investments in external child care. This should at the same time work towards women’s demand for abortion liberalization.

Finally, to some extent there is also a more ‘classic’ political economy causal chain involved in that works from ‘the top’ rather the ‘below’. This is a causal mechanism that was especially relevant in state socialist regimes characterized by often early and far-reaching liberalizations. Albeit such liberalizations ‘from the top’ were often framed as ‘modern social policy’ for the benefits of working mothers, there was of course also a clear interest of state elites’ in a high integration of women in the labor market for economic development purposes. In that, giving women the right to choose was seen as helpful in order to achieve that goal, e.g. to prevent a drop-out of women from the labor force at a sub-optimal point in time (see for example the prominent Eastern German case; Harsch 1997).

Economic empowerment is conceived to be first and foremost expressed as economic independence and closing the salary gap to men (see above). Labor market participation of women is a prerequisite for this. We formulate hypothesis 2 accordingly:

\[H2a:\text{ The higher the share of women in a country who participate in the labor market, the more liberal the abortion legislation.}\]

\[H2b:\text{ The smaller the difference between men and women in terms of labor market participation, the more liberal the abortion legislation.}\]

### 3.1.3 Political Empowerment

The third crucial element of the concept of gender empowerment is political empowerment. This element directly corresponds to the one applied by UNDP (see above). The basic logic behind this resulting in a causal mechanism to abortion regulation is quite straightforward. The more women are directly represented in the (decisive) decision-making bodies, the higher the chances that women’s interests are advanced and finally pushed through, e.g. by taking them into account on all levels of the decision-making process. In that regard, a ‘critical mass’ argument is also often raised. It means that reaching a certain numerical threshold is to some extent a prerequisite for effective female interest representation (e.g. Swiss et al. 2012). This implies that it is the mere numerical representation of women that entails a so-called substantive representation.

The gender and politics literature discusses whether the simple numerical representation of women is sufficient to advance women’s interest or whether this numerical representation indeed expresses a so-called substantive representation of female interest that is rather considered to be crucial (see as a brief summary Saward 2008; also Celis 2008; Mackay 2008), we nonetheless argue that numerical
representation already matters. Studies have demonstrated that women are indeed the crucial actors for setting a parliamentary, but also governmental agenda for issues considered to be mostly or overwhelmingly gender-related (e.g. Celis 2006; Swiss et al. 2012; Schulze 2013). We would, hence, expect that more women in the legislature should – already – make a difference beyond the question whom these women represent or for what issues these women stand for. Following from that we formulate hypothesis 3:

H3. The higher the participation of women in political decision making in a country, the more liberal the abortion legislation.

4 Methods

Abortion regimes vary over time and between countries. Our theoretical interest in not restricted to either the variance over time or the variance between countries. Therefore, we collected data on abortion regulations in 18 countries over 50 years. Accordingly, we are dealing with time-series cross-sectional (TSCS) data. As this type of data typically violates some assumptions concerning the distribution of errors that form a precondition for an OLS regression to deliver an unbiased estimation, some corrections need to be specified. As our main model serves a pooled ordinary least square (OLS) regression with Panel Corrected Standard Errors (PCSE) combined with a Prais Winsten AR(1) correction. This main model will be complemented by two specifications that add either fixed country effects (FE) or a time variable to the main model. The two additional model specifications each shed light on a separate part of the variance we are interested in and are used as a robustness to test our main model.

Characteristic for TSCS data is the observation of a limited number of units over a relatively long timespan (Beck and Katz 1995: 634). Not untypical for comparative policy scholarship, our units of analysis are countries that are observed on a yearly basis.

TSCS data3 have several advantages that include the circumvention of the common problem of a too small n. Through pooling, that is the observations from all units are estimated by the same regression

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3 At first view not dissimilar to panel data, TSCS differs from panel data in several important aspects. Panel data usually include a high number of cases and a low number of waves. These cases are drawn as a sample from a larger population. This means the individual unit is of no interest to the researcher but the mean effects of a treatment for an underlying population is of main interest (Beck 2001: 273). For TSCS data the opposite is the case. Usually a limited number of cases is investigated over a relatively long period of time. The cases do not represent a random sample and all inferential interest concerns the selected cases and not a population (ibid.). Therefore standard panel analysis methods are inappropriate for the use on TSCS data, because the former are designed for a small T but require a large N (Beck 2001: 274). A method for TSCS data has to work well with a large T and a small N.
estimation (Beck & Katz: 636), a comparatively high $n$ can be reached. Another merit of this type of data is that it enables us to explain variance over time and between countries in the same model. A pure time series analysis or a pure cross-sectional analysis would each only be able to analyze one of these variances (Fink 2008: 73; also Podesta 2002).

However, the spatial and temporal dynamics characteristic for TSCS data bring some challenges to the statistical analysis. The usage of a simple pooled OLS regression is impeded by the often occurrence of serially correlated errors and (panel) heteroscedasticity (Beck 2001: 275; Plümper et al. 2005: 329). The typical error structure of TSCS data needs to be taken into account in the model specification because a simple OLS would yield inefficient estimates and incorrect standard errors (Beck 2001: 275).

However, there is no standard procedure for dealing with the challenges of TSCS data. Several possible pathways each have their own advantages and disadvantages, whereas no perfect solution exists. Instead the researcher needs to carefully evaluate several suboptimal options guided by theoretical considerations.

We account for serially correlated errors through a Prais-Winsten AR(1) correction as suggested by Plümper et al. (2005). Another common procedure for freeing the data from serial autocorrelation is the inclusion of the lagged dependent variable (LDV) into the model (Beck & Katz 1995; Beck 2001; Keel & Kelly 2006). However, the inclusion of a LDV has been criticized recently (Achen 2001; Plümper et al. 2005). In our case the decision is clear because our dependent variable exhibits a clear trend, which means a LDV would absorb large parts of the variance of the dependent variable (Wenzelburger et al. 2014: 135). We opt for the Prais-Winsten transformation because “[…] whenever the dependent variable is trend-ridden and the researcher believes that the explanatory variables can explain the trend,” this procedure is preferable to the inclusion of a LDV (Plümper et al. 2005: 349).

In order to account for heteroscedasticity, panel-corrected standard errors (PSCE) are applied. This is a broadly accepted approach in time-series cross-sectional analysis (Beck and Katz 1995). Since often unit heterogeneity is the cause for panel heteroscedasticity, another prominent but not undisputed approach is to include fixed country effects (FE) into the model. FEs are the mathematical equivalent of inserting a dummy variable for each country into the model. Thereby FEs absorb cross-national difference and as a result, the model examines only changes over time within countries (Plümper and Troeger 2007: 124). An FE specification alone would be inappropriate in our case because our theoretical interest also aims at level differences between countries. Therefore a model including FEs will mainly be reported as a robustness test to our main model.

Finally, a common procedure to control for a time trend in time series data is the inclusion of a time count variable (see for example Busemeyer 2009). However, as Box-Steffensmeier et al. (2014: 18)
note: “Rarely is any meaningful justification offered for using this particular (linear deterministic) representation of trends.” Furthermore the authors warn that the causal inferences derived via the inclusion of a time variable will be prone to error (ibid.: 19). Apart from the econometric perspective, from a theoretical point of view, in our case the inclusion of a time variable absorbs most of the variance within countries and therefore “looses” part of our variance of interest. Hence a specification that includes a control for time trends will only be reported as an additional robustness test for our main model specification.

5 Concepts, Operationalization and Data

5.1 Dependent Variable

As indicated in section two, there are manifold options to conceptualize and – finally – to measure national abortion regulation – not exclusively, but mostly – in terms of the latter’s liberality versus stringency. This is, among other reasons, due to the complex or at least multi-facetted nature of abortion policy that could hardly be adequately expressed with overtly simplistic classifications like ‘legal’ or ‘illegal’. In fact, only in a small number of states during the last 100 years or so have abortions indeed been either completely illegal not to mention completely legal in the sense of being really unrestricted.

Thus, the basic challenge here is finding the optimum or at least an acceptable compromise between, on the one hand, a too complex and, on the other hand, a too simplistic, ‘light-weighted’ conceptualization and measurement. This is no easy task. Whereas a complex or very detailed concept and measurement would be able to capture even the smallest regulatory change (e.g. the lowering of the maximum week of gestation during which an abortion could still be performed legally from the 23rd to the 22nd) and in that more or even all single change events over time it would require tremendous efforts not only with respect to data collection, but also data processing and especially information coding. Besides, it would also involve a vast number of difficult decisions.

On the other hand, rather simple and single-facetted concepts to distinguish national abortion policy approaches, as could be found in the literature (see section two) constantly run the risk of overlooking the (vast) majority of regulatory changes and, as a result, creating (mostly) time-invariant measures that are of little use for more sophisticated empirical tests.

At the same time, an adequate conceptualization and measurement should encapsulate all regulatory facets considered relevant into one single dimension in order to express regulatory liberality/stringency. Finally, for the purpose employing the concept as dependent variables in statistical models one also needs to end up with preferably one single figure (only).
Taking all these challenges into account, it becomes obvious that a ‘perfect’ approach is impossible. Nonetheless, researches could and should strive for more ambition, comprehensiveness and preciseness than currently observable in the empirical literature. That is what we do here.

After having thoroughly reviewed the relevant (especially legal) comparative literature in the field as well as after having studied the courses of national legal change we opt here for exactly such a ‘middle way’. Approaching the issue from the perspective of a single adult woman who pursues a legal termination of her pregnancy under a theoretically defined constellation (e.g. a termination early during gestation) we argue there are three main levels of regulatory intervention intensity by the state with respect to a woman’s wish to end her pregnancy.

First, the most crucial regulatory aspect and in that ‘first’ (1) level to consider is whether an abortion is – indeed – completely illegal, whether it is bound to reasons, which means indication-based, or whether it is available upon the pregnant woman’s request (choice) – the latter at least during the first pregnancy weeks. Obviously, a total prohibition is the most restrictive form at level 1. The several indications could also be brought in an order reaching from the most restrictive – an abortion is solely allowed to save the woman’s life – to the most liberal – an abortion is also allowed for personal and/or social reasons (circumstances) which are assumed to make bringing the child to term unbearable for the woman. A choice-model is the most liberal form at level 1.

It is important to note that we assume a choice model to exist even though a woman is still obliged to give reasons for her decisions and/or to declare a state of personal emergency provided that it is not specified what would be acknowledged as such reasons or what would constitute such a state of personal emergency. An additional requirement is that it is legally not foreseen to scrutinize the woman’s reasons nor to check if she is indeed in a state of personal emergency. In that a choice model in our conceptualization goes beyond pure or de jure ‘abortion on demand’. However, as long as the self-declaration of a woman is still necessarily based on specified, i.e. pre-defined and listed reasons for an abortion, we assume an (albeit very liberal) social indication model rather than a choice model.

The second relevant regulatory aspect to consider which forms level two (2) is the time-component, i.e. the time-limit expressed as maximum gestation week up to which an abortion could legally be performed given if the most liberal basic form available at level 1 is a certain indication or choice.4 We opt for four different stages of stringency that are oriented on the abortion trimesters which are themselves crucial for determining the viability threshold of a fetus. The most restrictive time limit allows for legal terminations only within the boundaries of the first trimester whereas the most liberal stage is the absences of a time limit, i.e. the legal option to terminate a pregnancy until the beginning

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4 Obviously, the time period aspect is irrelevant for total prohibition.
of labor. Given that missing a time limit can turn an abortion from being legal to illegal, we argue that it is clearly justified to assign this aspect the status of the second most important regulatory facet.

The third regulatory level – i.e. the one with the least intensive intervention character – could be termed ‘procedural requirements’ or ‘hurdles’. Several aspects are equally taken into account here forming four major blocs a level 3. Those are: 1) approval requirements by medical and related personnel, 2) approval requirements by family members, 3) the degree of mandatory consultation a woman has to undergo and 4) cost coverage by public health care or insurance. One might argue that these four blocs could also be ordered. We would argue that this is certainly possible, but it would always be difficult if not impossible to justify. Is cost coverage by the public sector always more important in terms of intervention intensity than strict consultation requirements that involve a mandatory waiting period or a directional advice seeking procedure? Perhaps this would be true for an indigent woman, but an effluent woman with private health insurance might find it more burdensome – and in that more restrictive – undergoing an advising in which she is pressured to opt for the child given that she could afford it. Hence, given the danger of arbitration here, we refrain from ordering the regulatory aspects at level 3.

All three levels form a three-digit additive index in which the information for each of the three levels forms the basis for one of the digits reaching from left to right. As a result the value for level 1 counts more than the one for level 2 while the figure for level 2 is mathematically more important than the one for level 3. Table 7 in the appendix summarizes the concept and measurement of the dependent variable also providing the respective figures that reach from 1 (completely unrestricted) to 7 (totally prohibited). Figure 1 visualizes the development of the abortion index in our sample countries.

Figure 1. Abortion index in 18 countries, 1960-2010

Note: Data source: Knill 2015
5.2 Independent Variables

The most important independent variables in our analysis are the operationalization of the three facets of women’s emancipation we focus on: educational, political and economic empowerment.

As a measure of educational empowerment we use the share of the female population (over 25 years old) that has completed tertiary education. As argued in the theory section, we assume highly educated women to be not only more in favor of reproductive choice, but also to be more likely to successfully advocate for abortion rights. Accordingly, we expect the share of women that have completed tertiary education to be positively associated with the liberality of abortion legislation (or negatively associated with the abortion index which measures abortion legislation restrictiveness).

If we think of female empowerment as the advancement of women in relation to men, an alternative operationalization for educational empowerment is the percentage difference of completed tertiary education between men and women. We expect high sex differences in educational attainment to be negatively associated with the liberality of abortion regimes.

A straightforward way of operationalizing women’s political empowerment is using the share of seats held by women in national parliaments. We expect a high share of women in the legislative body to be positively associated with the liberality of abortion legislation.

Economic empowerment is measured as the labor force participation rate of women. Labor force participation is an adequate proxy for economic empowerment since it is essentially a measure of the degree of departure from the traditional bread-winner model. While the latter keeps women in absolute economic dependence from their husbands, working for wages is the first step for economic independence for women. We expect labor force participation to be positively associated with liberal abortion regimes.

We also include several variables in our models as controls. We control for economic development (GDP per capita), religion (denominational composition and state church relationship), partisan difference (cabinet seats of left and liberal parties) and institutional hurdles (political constraints). In the two additional model specifications we also control for a time trend via the inclusion of a time count variable and for country differences via the inclusion of country dummies (fixed country effects).

The GDP per capita is included in order to ensure that our results are not driven by simple economic modernization. Religion is often argued to be of importance for abortion regime liberality. Catholic countries have been shown to regulate more restrictively than protestant countries (Castles 1994; Minkenberg 2002, 2003). Therefore, we include the yearly share of the population belonging to the
Catholic denomination. This is a significant improvement to earlier research, operationalizing Catholicism as a dummy variable (Castles 1994, 1998) or a time invariant measure (Minkenberg 2002, 2003). Since we use yearly data on the national share of Catholics (5-year intervals, linearly imputed), this figure is also an (admittedly crude) measure of secularization⁵. Additionally, religious influence is controlled for via the inclusion of a measure for state-religion closeness. We expect Catholicism to be the more influential (that is negatively affecting abortion liberalty) the closer the state-religion relationship. Therefore an interaction term between Catholicism and state-religion relationship will be included as a control variable in our models.

**Partisan influence**, as a classical variable in comparative policy scholarship (Schmidt 2002), is controlled for via the inclusion of a variable representing left and liberal parties’ strength in national governments. Since parties belonging to left and liberal party families tend to have socially progressive stands on issues such as abortion (Gindulis 2002: 318), we expect them to positively influence the liberty of abortion regimes. The variable is constructed in the form of a dynamic measurement of cabinet shares based on moving averages in order to properly account for cabinet changes.

Finally, the measure of partisan influence is complemented by the inclusion of a measure of political constraints, because institutions can limit the room for maneuver of political actors (Schmidt 2002). Therefore an interaction term of left and liberal parties in government and political constraints in included in the analysis (among others that have explicitly modelled this sort of interaction is Fink 2008: 79f.)

Table 2 provides summary statistics for all variables used in the analysis.

**Table 2: Summary Statistics**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min</th>
<th>Max</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abortion-index</td>
<td>3.305425</td>
<td>1.806387</td>
<td>1.4</td>
<td>7</td>
<td>N = 918</td>
</tr>
<tr>
<td></td>
<td>1.95685</td>
<td>1.35385</td>
<td>1.2</td>
<td>5</td>
<td>n = 18</td>
</tr>
<tr>
<td>Women in Parliament (ln)</td>
<td>2.415621</td>
<td>.9286731</td>
<td>-1.203973</td>
<td>3.85651</td>
<td>T = 51</td>
</tr>
<tr>
<td></td>
<td>.5926767</td>
<td>1.42775</td>
<td>3.31042</td>
<td></td>
<td>n = 18</td>
</tr>
<tr>
<td></td>
<td>.7217601</td>
<td>-.4767432</td>
<td>4.327278</td>
<td></td>
<td>T-bar = 48.3333</td>
</tr>
<tr>
<td>Tertiary education, women (ln)</td>
<td>1.380337</td>
<td>1.038147</td>
<td>-1.89712</td>
<td>3.445852</td>
<td>N = 918</td>
</tr>
<tr>
<td></td>
<td>.4992715</td>
<td>.1681814</td>
<td>2.061274</td>
<td></td>
<td>n = 18</td>
</tr>
<tr>
<td></td>
<td>.9176427</td>
<td>-.768545</td>
<td>3.012605</td>
<td></td>
<td>T = 51</td>
</tr>
<tr>
<td>Female labor force participation (ln)</td>
<td>3.995181</td>
<td>.2589608</td>
<td>2.98851</td>
<td>4.416441</td>
<td>N = 820</td>
</tr>
<tr>
<td></td>
<td>.1794673</td>
<td>.3717714</td>
<td>4.262494</td>
<td></td>
<td>n = 18</td>
</tr>
<tr>
<td></td>
<td>.1903554</td>
<td>.3036253</td>
<td>4.451009</td>
<td></td>
<td>T-bar = 45.5556</td>
</tr>
</tbody>
</table>

⁵ Often researchers use ‘Church attendance rates’ derived from the European Value Survey (EVS) as a measure for secularization. However, time coverage of the EVS is insufficient for our analysis.
### 6 Empirical Analyses and Results

In all models presented in tables 3 and 4, the abortion index as presented in section 5.1 serves as the dependent variable. As independent variables all models include the share of women in parliament, levels of tertiary education and labor force participation. These focal variables are complemented through the inclusion of controls for the GDP per capita, Catholicism, the state religion relationship, left and liberal parties in government, and interaction terms for Catholicism and state religion.

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relationship on the one hand, and left and liberal parties and institutional constraints on the other hand.

Overall we report three model blocs. Each bloc contains three models labeled as “a”, “b” and “c” that only differ from each other in terms of the concrete operationalization of the focal independent variables. While the “a”-models include the operationalization of educational and economic emancipation as using only figures on the female sex, “b”-models include the difference between men and women in terms of educational attainments, and in “c”-models the sex difference in labor force participation is reported.

Table 3: Determinants of abortion policy restrictiveness, 1960-2010

<table>
<thead>
<tr>
<th></th>
<th>1(a)</th>
<th>1(b)</th>
<th>1(c)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women in Parliament (ln)</td>
<td>-0.230*</td>
<td>-0.202*</td>
<td>-0.234*</td>
</tr>
<tr>
<td></td>
<td>(0.0965)</td>
<td>(0.0987)</td>
<td>(0.0970)</td>
</tr>
<tr>
<td>Tertiary education, women (ln)</td>
<td>-0.265*</td>
<td>-0.218</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.126)</td>
<td></td>
<td>(0.136)</td>
</tr>
<tr>
<td>Female labor force participation (ln)</td>
<td>-1.464**</td>
<td>-1.788***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.476)</td>
<td>(0.482)</td>
<td></td>
</tr>
<tr>
<td>Difference in tertiary education men</td>
<td>-0.0460</td>
<td></td>
<td></td>
</tr>
<tr>
<td>and women (ln)</td>
<td></td>
<td>(0.0856)</td>
<td></td>
</tr>
<tr>
<td>Difference in labor force</td>
<td></td>
<td></td>
<td>0.459**</td>
</tr>
<tr>
<td>participation men and women (ln)</td>
<td></td>
<td></td>
<td>(0.175)</td>
</tr>
<tr>
<td>GDP per capita</td>
<td>0.00000496</td>
<td>-0.0000160</td>
<td>-0.00000158</td>
</tr>
<tr>
<td></td>
<td>(0.0000132)</td>
<td>(0.0000134)</td>
<td>(0.00000130)</td>
</tr>
<tr>
<td>Catholicism</td>
<td>-0.367</td>
<td>-0.203</td>
<td>0.000394</td>
</tr>
<tr>
<td></td>
<td>(1.300)</td>
<td>(1.427)</td>
<td>(1.309)</td>
</tr>
<tr>
<td>Left and Liberal Parties in Government</td>
<td>-0.454</td>
<td>-0.488</td>
<td>-0.465</td>
</tr>
<tr>
<td></td>
<td>(0.303)</td>
<td>(0.311)</td>
<td>(0.303)</td>
</tr>
<tr>
<td>Interaction Catholicism &amp; State</td>
<td>1.098*</td>
<td>0.995+</td>
<td>0.978*</td>
</tr>
<tr>
<td>religion closeness</td>
<td>(0.484)</td>
<td>(0.544)</td>
<td>(0.491)</td>
</tr>
<tr>
<td>Interaction Institutional Constraints</td>
<td>0.694</td>
<td>0.743</td>
<td>0.701</td>
</tr>
<tr>
<td>&amp; Left and Liberal Parties</td>
<td>(0.505)</td>
<td>(0.515)</td>
<td>(0.505)</td>
</tr>
<tr>
<td>Institutional Constraints (reversed)</td>
<td>-0.579</td>
<td>-0.627+</td>
<td>-0.615+</td>
</tr>
<tr>
<td></td>
<td>(0.370)</td>
<td>(0.379)</td>
<td>(0.370)</td>
</tr>
<tr>
<td>State religion closeness</td>
<td>0.111</td>
<td>0.164</td>
<td>0.161</td>
</tr>
<tr>
<td></td>
<td>(0.301)</td>
<td>(0.315)</td>
<td>(0.303)</td>
</tr>
<tr>
<td>_cons</td>
<td>9.216***</td>
<td>10.46***</td>
<td>1.889</td>
</tr>
</tbody>
</table>

Although it seems like a viable option, we refrained from inserting any independent variables with a time lag. Since no exact time delay can be deducted from a theoretical perspective, introducing for example a uniform time lag of one year for all independent variables would be equally theoretically unfounded as not introducing one at all. Therefore we opted for the more simple specifications without any time lags.
Table 4: Fixed effects and time trend controlled models

<table>
<thead>
<tr>
<th></th>
<th>2 FE (a)</th>
<th>2 FE (b)</th>
<th>2 FE (c)</th>
<th>3 TC (a)</th>
<th>3 TC (b)</th>
<th>3 TC (c)</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>768</td>
<td>724</td>
<td>768</td>
<td>768</td>
<td>724</td>
<td>768</td>
</tr>
<tr>
<td>$R^2$</td>
<td>0.378</td>
<td>0.367</td>
<td>0.374</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Standard errors in parentheses
+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$
The model blocs differ in the econometric means that are employed to account for the peculiarities of our data. The main weight of our arguments rests on bloc one (table 2) as we believe these models (pooled OLS with PSCE and Prais-Winsten transformation, see section 4) represent the most appropriate specifications for our type of data and theoretical interest. In bloc two (table 3), fixed country effects were added and the models of bloc 3 (table 3) include a time count variable to control for a time trend. The latter two blocs serve two purposes. On the one hand they can be seen as a robustness check of our main models. However, they also shed light on different parts of the variance of interest and therefore make for interesting complementary inferential insights. Through the inclusion of fixed effect the variance between countries gets absorbed leaving the results representing only the variance within countries over time. The time trend bloc does the opposite as the time count variable absorbs most of the within country variance, leaving us with a clearer picture of level differences between countries.

The results of model 1a show a statistically significant association in the expected direction between all the focal independent variables and the abortion index. The share of women in parliament has a negative influence on abortion regime restrictiveness. On a 95 percent significance level, an increase of one percent of women in parliament results, on average, in a decrease on the abortion index of 0.0023\(^8\). The direction of influence remains consistent throughout all models, however it remains only moderately significant in one of the fixed effect models (2b) and in one of the time trend-controlled specifications (3c). Despite the mixed evidence in blocks 2 and 3 the results do seem to point into the direction that more women in parliament result in more liberal abortion legislation. Therefore hypothesis 3 can be confirmed.

Concerning educational empowerment, model 1a suggest that a high share of women’s tertiary education is negatively associated with the restrictiveness of abortion regimes. On a 95 percent significance level, a one percent increase in women with a higher education degree results on average in a 0.00265 decrease of the abortion index (and therefore in an increase in abortion liberality). The direction of influence remains consistent and highly significant throughout the fixed effect models (2a, 2c) and the size of the coefficient even triples when FEs are included. This suggests that the main effect of women’s tertiary education on abortion legislation can be found in the development within countries over time. This finding is supported by the results of the time trend controlled models (3a, 3c). In these models the estimated direction of the effect changes as the coefficients become positive. Theoretically it is highly implausible that an increase in women education results in a decrease in the liberality of abortion legislation. This surprising finding can be explained through differences in national

\(^8\) Note that since the natural logarithm of the independent variables were used, the reported coefficients need to be divided by 100 for the interpretation.
educational systems. For example Ireland, by far the most restrictive abortion regulator in our sample, has one of the highest rates of women’s tertiary education as higher education can be obtained there free of charge. We conclude that in a context of heterogeneous educational systems, level differences in women’s tertiary education between countries cannot explain cross national variance. However women’s rising education levels within countries drive the liberality of abortion regimes. This confirms hypothesis 1a.

The picture is altered when only the differences between men and women in terms of tertiary education are inserted into the regression. In none of the models that include the educational differences between men and women the results become significant (1b, 2c, 3b). Other than for the actual level of female education, our results clearly reject hypothesis 1b, i.e. that educational differences between men and women influence abortion legislation.

Female labor force participation outperforms all other focal independent variables in terms of effect size and statistical significance. Model 1a suggests on a 99.9 percent significance level that a one percent increase of the female labor force rate results on average in a 0.01464 decrease in the abortion index restrictiveness. Throughout all model specifications the negative association between the female labor force rate and abortion restrictiveness remains robust. However, especially in the time trend controlled models (3a, 3b) significance levels are lower and the effect size is only half as strong as in the main models (1a, 1b). Overall this suggests that female labor force rates are a good predictor for abortion liberality but the effect is more pronounced within countries than in a cross national perspective. Hypothesis 2a can therefore be verified.

The results for the sex differences in labor force participation rates only become significant in the main model (1c) and do not reach conventional significance level in the complementary specifications (2c, 3c). As expected, model 1 suggests that the smaller the difference between men and women in terms of participating in the labor force, the more liberal the abortion regime. However, the effect size is only one third of the size of the effect that is reported when we look at women’s labor market figures alone, independent from men (model 1c). Similar to the findings on tertiary education, what women do as a group seems to be more important to abortion legislation than the scope of differences between men and women. But dissimilar to the education variables, the results for the labor force suggest that sex differences do exert an influence, despite the effect being rather small. Considering that the significance levels do not remain robust throughout two out of three specifications, we only conclude a partly confirmation of hypothesis 2b.

As regards our control variables we note that only the religious variables display significant effects. While Catholicism alone only yields significant results in the fixed effect specification (models 2a, 2b,
2c), unsurprisingly suggesting that a high share of Catholics tend to go hand in hand with restrictive abortion legislation, the interaction between state religion relations only brings significant results in our main models (model 1a, 1b, 1c) and the time trend controlled specifications (model 3a, 3b, 3c). This at first sight paradoxical finding can be interpreted as follows. The decrease of religious affiliation to Catholicism (secularization) within countries over time is associated with abortion regimes becoming more liberal. Unsurprisingly state church relations, being a mainly time constant variable, do no influence this secularization effect within countries. However, when we look at level differences between countries, as is the case partly in our main models (1a, 1b, 1c) and mostly in the time trend controlled models (3a, 3b, 3c), we find that the state religion relationship moderates the strength in which a high percentage of Catholics in a country can exert influence on abortion legislation. Overall the results confirm previous findings on the impeding influence of Catholicism on abortion legislation (see Minkenberg 2002; Asal et al. 2008).

Although the coefficients of government participation of left and liberal parties point in the expected direction of such parties being positively associated with abortion liberality, the effect is only consistently significant in the fixed effect specifications (models 2). It seems like left and liberal party participation in government goes some way to explain the liberality of abortion laws within countries, but cannot account for level differences between countries. This finding is contrary to existing research that found a strong party effect on abortion laws (Gindulis 2002, 2003; Brookes 1992).

Concerning the GDP per capita, only few of the models show a mildly significant influence of the economic development on abortion laws. Paradoxically, the ones that do (model 2a, 2c to 3c) attest a very small but positive influence of economic development on abortion restrictiveness. This is theoretically highly implausible and can be disregarded considering the insignificance of GDP effects in our main models. Therefore we can conclude that the liberality of abortion regimes is not a simple function of economic modernization. This runs contrary to previous research that found economic modernization to be of importance for abortion liberality (Asal et al. 2008; however see Gindulis 2002 who also did not find GDP to be of importance either).

Overall the results show that economic modernization does not drive abortion regulations to become more liberal. Equally left and liberal parties in government appear to be less important than previous research has found. Our results suggest that when variables of women’s emancipation are included in the analysis, they perform better than conventional explanations of policy change in abortion policy.

7 Conclusion and Discussion

Do women matter for abortion regulation liberalisation? They do. In this article we looked at the explanatory value of measures of women’s emancipation/empowerment for the liberalisation or
restrictiveness of abortion regulations in 18 countries over a period of 50 years. We assessed whether or not political, economic and educational empowerment can be found to be statistically associated with a very fine grained abortion index, which we constructed as the dependent variable for the analysis. With such an abortion index we exceed previous measures of abortion liberality/restrictiveness in terms of capturing regulatory change and complexity. Our findings are summarized in Table 5.

Table 5: Summary of Results

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Variable</th>
<th>Confirmed (+) / Rejected (-)</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1a</td>
<td>Tertiary Education, women</td>
<td>+</td>
</tr>
<tr>
<td>H1b</td>
<td>Tertiary Education, sex difference</td>
<td>-</td>
</tr>
<tr>
<td>H2a</td>
<td>Labor force participation rate, women</td>
<td>+</td>
</tr>
<tr>
<td>H2b</td>
<td>Labor force participation, sex difference</td>
<td>+/-</td>
</tr>
<tr>
<td>H3</td>
<td>Women in parliament</td>
<td>+</td>
</tr>
</tbody>
</table>

We found increasing educational empowerment within countries, as measured in levels of women’s tertiary education, to drive national abortion liberality (H1a). However, level differences of women’s education between countries cannot explain cross national variance in reproductive liberality. Neither can the difference in terms of educational attainment between men and women (H1b). The picture is altered when it comes to economic empowerment as measured through labor force participation rates. The female labor force participation rate is the strongest predictor of abortion liberality amongst our focal variables, within and between countries (H2a). Furthermore, the sex differences in labor force participation exerts a small but significant influence on abortion laws in some of our models. However, the effect appears to be smaller and considering the limited significance in our robustness test models, we can only claim mixed evidence in this regard (H2b). Overall, women’s educational and economic empowerment makes a difference for reproductive rights, mostly irrespective of men’s status in those areas. Finally, our results suggest that a higher share of women in parliament tend to go hand in hand with more liberal abortion regimes (H3). It is interesting to note that the latter result was obtained despite controlling for left and liberal parties in government. While previous research has found the effect of women in parliament to be actually an effect of (or overshadowed by) the strength of left parties (Gindulis 2002: 329), we find women in the legislature to matter even when we control for partisan influence. Our results even suggest that generally women matter more than parties when it comes to the regulation of abortion. It is important to note that our results represent average effects over a long time period and a relatively large sample size. That means it is undisputable that in some cases parties can and do matter in abortion regulation. This was the case, for example, in Greece where
a left government liberalized abortion laws as early as in the 1980s or in Spain where a left government liberalized abortion in the late 2000s.

Analogous to partisan influence, we did not find economic modernization to have an impact on abortion laws. In this regard we support the findings of Gindulis (2002: 323) who only found a very limited effect of modernization on abortion policy in only some countries of her sample. Like previous studies, we confirm a statistically negative impact (positive in our estimations) of the role of Catholicism, but also of state-religion closeness on abortion regulation’s level of liberality. However, this effect strongly depends on model specifications and appears less obvious than previously assumed. We conclude that when it comes to abortion policy, gender specific factors, and to a lesser degree religion, are better explanations of liberalility than conventional variables of comparative policy scholarship such as parties, institutions and modernization. Morality policies are indeed different, but this ‘difference’ deviates from that found in previous studies.
References:


d=MDG&f=seriesRowID%3A557.

**Appendix:**

Table 6: Countries included in Analyses

<table>
<thead>
<tr>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
</tr>
<tr>
<td>Belgium</td>
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<tr>
<td>Denmark</td>
</tr>
<tr>
<td>Finland</td>
</tr>
<tr>
<td>France</td>
</tr>
<tr>
<td>Germany</td>
</tr>
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<td>Greece</td>
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<tr>
<td>Ireland</td>
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<tr>
<td>Italy</td>
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<td>Norway</td>
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<td>Poland</td>
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<tr>
<td>Portugal</td>
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<td>Russia</td>
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<tr>
<td>Spain</td>
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<td>Sweden</td>
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<td>Switzerland</td>
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<td>United Kingdom</td>
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Total: 18
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<thead>
<tr>
<th>Model</th>
<th>Value</th>
<th>Gestation Time Limit</th>
<th>Value</th>
<th>Procedural Hurdles</th>
<th>Value</th>
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<tbody>
<tr>
<td>Total Prohibition</td>
<td>7</td>
<td>Up to 12th week</td>
<td>.8</td>
<td>Medical Expert Approval</td>
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<tr>
<td>Medical indication (life only)</td>
<td>6</td>
<td>Up to 16th week</td>
<td>.6</td>
<td>3 Persons/Committee/State Agency</td>
<td>.03</td>
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<tr>
<td>Medical indication (health)</td>
<td>5</td>
<td>Up to 24th week</td>
<td>.4</td>
<td>2 Persons/2 Persons plus</td>
<td>.02</td>
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<tr>
<td>Criminal or Foetal Indication</td>
<td>4</td>
<td>More the 24th, but not 40th week</td>
<td>.2</td>
<td>1 Person</td>
<td>.01</td>
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<tr>
<td>Criminal and Foetal Indication</td>
<td>3</td>
<td>Up to 40th week (Unrestricted)</td>
<td>.0</td>
<td>Husband/Genitor Rights</td>
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<tr>
<td>Social/Personal Situation (‘Distress’) Indication</td>
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<td></td>
<td>Notification (only)</td>
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<td></td>
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<td></td>
<td></td>
<td>None</td>
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<tr>
<td>Term Model (Choice)</td>
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<td></td>
<td>Mandatory Consultation</td>
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<td>Directional/Consultation Hurdles</td>
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<td>Not directional/No Consultation Hurdles</td>
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<td>Cost Coverage</td>
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<td>No</td>
<td>.02</td>
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<td></td>
<td>Partial/if Indigence</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Full</td>
<td>.00</td>
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</table>

Note: Levels 1 and 2 assign a two-digit value expressing the regulatory stringency as a result. Procedural Hurdles (level 3) is in itself an additive index whereas the final score here is added to the value calculated for levels 1 and 2.
Data Sources (and Definitions):

*Tertiary Education completed, women:* Share of female population over 25 years old that has completed tertiary education. Source: Barro-Lee data v. 2.0, 06/14 (Barro and Lee 2013).

*Women in Parliament:* Yearly percentage of parliament seats held by women. Sources: Inter-Parliamentary Union (IPU); World Bank Development Indicators; UN Data; ICPSR Data Holdings

*Female Labor Force Participation:* Number of females working part or full-time or actively seeking employment at ages 15–64 divided by the total female population aged 15–64. Source: OECD Statistics; Comparative Welfare Data Set (Brady et al. 2014).

*GDP per Capita:* PPP Converted GDP Per Capita (Laspeyres), derived from growth rates at 2005 constant prices. Source: Penn World Table Version 7.1.

*Catholicism:* Share of total population belonging to the Catholic denomination. Source: World Religion Project (WRP) Version 1.1

*State Church Relationship:* The state’s stance on religion as either hostile, cooperating or state religion. Source: MORAPOL Research Project

*Left and Liberal Partisan Government:* Share of cabinet seats held by left or liberal parties. Source: Heichel et al. 2015

*Political Constraints:* The measure of political constraints estimates the feasibility of policy change (the extent to which a change in the preferences of any one actor may lead to a change in government policy). Source: Political constraint index (POLCON) dataset (Henisz 2002, 2013).

*Abortion Index.* Source: MORAPOL Research Project (Knill 2015)