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Abstract

This paper analyzes the causal effect of exposure to uncensored environmental reporting on individuals' environmental preferences and pro-environmental behavior. We exploit a natural experiment occurring in the German Democratic Republic, where geographic characteristics determined access to Western TV. Western media provided information on environmental pollution, a topic censored in East German state media. Using individual-level data from the German Socio-Economic Panel, we find a positive and persistent effect of Western TV exposure on environmental concerns and participation in environmental organizations. Complementing these findings, the analysis of county-level data reveals additional changes in pro-environmental behavior. Specifically, we show that Western TV induced GDR citizens to submit complaint letters on environmental issues to local authorities. Furthermore, regions with Western TV access exhibited stronger electoral support for the Green Party in the first two federal elections of reunified Germany. These results highlight the influential role of mass media in shaping both environmental preferences and corresponding behavior.

Keywords: Television; Environmental preferences; Pro-environmental behavior; Natural experiment

JEL classification: N54; P28; Q53

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1 Introduction

Environmental pollution remains one of the central policy challenges of the twenty first century. Its consequences range from climate change and biodiversity loss to health risks associated with air and water contamination (Fuller et al., 2022), making environmental pollution one of the most significant causes of disease and premature death worldwide (Wang et al., 2016, Landrigan et al., 2018). Moreover, a growing body of research highlights that pollution exposure adversely affects individuals' health and long-term labor market outcomes (e.g., Borgschulte et al., 2024, Lubczyk and Waldinger, 2025, Yamada and Narita, 2025). Although many of these impacts are directly observable, others are less visible to individuals in their daily lives, creating information frictions about environmental conditions and their associated risks. Reducing such frictions and improving public awareness is an important objective of environmental policy. Previous research has shown that access to accurate information can influence environmental preferences and behavior (e.g. Madajewicz et al., 2007, Jalan and Somanathan, 2008, Barwick et al., 2024). One way to make environmental-related information accessible is through mass media, which serves as a primary source of information for most people (Huang, 2016).

In this paper, we examine whether access to environmental information through mass media can influence individuals' environmental preferences and pro-environmental behavior. To avoid issues emerging from the self-selection of individuals to different media outlets, we analyze a natural experiment in the German Democratic Republic (GDR). While most GDR citizens had access to Western TV for several decades, which regularly reported about pollution in the GDR, individuals in certain regions of the GDR were not able to receive these programs as their residence was located too far away from the West German transmission masts. We leverage this exogenous variation in television signal reception in our study. First, we analyze survey data collected by the German Socio-Economic Panel (SOEP) revealing that individuals living in regions with former Western TV access are more concerned about the potential consequences of environmental pollution. In addition, they were more likely to be active in environmentally supportive organizations. These findings are robust across several tests, including a geographic regression discontinuity design, controlling for border proximity and regional pollution levels, and addressing potential biases through alternative sample definitions and entropy balancing. Additionally, the results remain robust across alternative specifications of the treatment indicator and when applying an instrumental variable approach utilizing self-reported data on Western TV consumption. Second, we employ administrative county-level data to analyze the impact of Western TV reception on pro-environmental behavior. Our findings show that individuals living in regions with former Western TV reception were more likely to submit complaint letters related to environmental issues to local GDR authorities. Moreover, the same areas exhibit higher voting outcomes for

the Greens (*Bündnis 90/Die Grünen*), a green political party, in the federal elections of reunified Germany. However, the disparity between regions with and without Western TV reception is evident only in the first two elections and disappears within the first decade following the reunification.

Although the reception of Western TV in the GDR represents a historically specific setting, the mechanisms identified in this paper speak to broader debates about environmental communication. The findings illustrate how access to credible and uncensored environmental reporting can reduce information frictions and shape individuals' environmental preferences. These mechanisms are relevant for contemporary contexts in which access to trustworthy information is either constrained, for example through government or institutional control, or where individuals lack the capacity to obtain such information independently. Moreover, in today's media landscape, which is characterized by a growing prevalence of misinformation and disinformation (Broda and Strömbäck, 2024), understanding how transparent and accessible pollution-related information influences environmental awareness and civic engagement remains of central importance.

We make three main contributions to the literature. First, we contribute to the empirical literature examining how media content shapes environmental preferences. Numerous studies have investigated the relationship between media exposure and both environmental concerns and pro-environmental behavior. While several studies find that exposure to environmental information in television and print media is positively associated with greater concern for environmental issues and higher levels of pro-environmental behavior (Shanahan et al., 1997, Mikami et al., 1999, Liu and Li, 2021), Holbert et al. (2003) and Arendt and Matthes (2016) emphasize that this correlation depends on the specific media format (e.g., nature documentaries, news programs, or entertainment TV) and on viewers' prior environmental attitudes. Since individuals tend to consume media content that align with their existing beliefs and preferences, selection effects often make it difficult to establish a causal link (Gentzkow and Shapiro, 2010).

To address this endogeneity, some studies have exploited quasi-experimental settings. For example, Jacobsen (2011) exploits regional variation in the release of Al Gore's environmental documentary *An Inconvenient Truth*. By employing a difference-in-difference design, he finds that individuals residing within a 10-mile radius of a movie theater where the documentary is screened purchase significantly more voluntary carbon offsets. In a similar study, Tu et al. (2020) analyze the unexpected online release of the Chinese documentary *Under the Dome* in February 2015, which reports on environmental pollution by state-owned energy companies and the adverse health effects of air pollution. Utilizing longitudinal data, they report that the documentary significantly increased public awareness of environmental health risks and the willingness to pay for better air pollution controls. Nevertheless, while Qin et al. (2020) confirm that the documentary *Under the*

Dome enhanced public concerns about air pollution, they do not observe any effect concerning protective behaviors, such as wearing face masks or reducing car usage. Overall, the studies of [Jacobsen \(2011\)](#), [Tu et al. \(2020\)](#), and [Qin et al. \(2020\)](#) have shown that media content can impact environmental concerns. While these studies allow a causal analysis of media effects, they focus on information campaigns that take place at a single, specific point in time. Due to this fact, these studies only identify short-term effects on public environmental concerns and pro-environmental behaviors. To the best of our knowledge, the present article is the first to study the impact of access to environmental information through mass media on environmental preferences using a natural experiment with a long-term treatment period of several decades.

Second, this study contributes to the broad empirical literature on environmental information transparency. In recent years, scholars have analyzed the introduction of air quality monitoring programs that disclose information on regional pollution levels to the public. These studies demonstrate that information transparency enhances the avoidance of outdoor pollution exposure ([Barwick et al., 2024](#)), stimulates online searches and purchases of air pollution-related protective products, such as face masks and air filters ([Greenstone et al., 2022](#), [Wang and Zhang, 2023](#)), and promotes individuals' subjective well-being ([Wang et al., 2021](#)). Similarly, [Madajewicz et al. \(2007\)](#), [Jalan and Somanathan \(2008\)](#), and [Pakhtigian et al. \(2024\)](#) show that providing households with information on water quality influences their willingness to avoid health risks, for example, by increasing expenditures on water purification. However, access to extensive information on environmental risks can also cause unintended mental health burdens, particularly during times of environmental degradation ([Xie et al., 2023](#)). Beyond individual behavior, pollution-related information can also affect firm-level decisions. For instance, [Campa \(2018\)](#) shows that newspaper coverage of corporate toxic emissions can lead to subsequent emission reductions in those firms.

A third strand of literature to which we contribute explores media-driven cultural transmission in the GDR. Prior studies have primarily examined how exposure to Western media influenced political attitudes ([Kern and Hainmueller, 2009](#), [Kern, 2011](#), [Crabtree et al., 2015](#), [Friehe et al., 2020](#), [Hornuf et al., 2023](#)) and consumer behavior ([Hyll and Schneider, 2013](#), [Bursztyn and Cantoni, 2016](#), [Bernini and Hartmann, 2025](#)), highlighting the impact of media exposure in shaping individual preferences under authoritarian regimes. We extend this research by shifting the focus to a different policy-relevant dimension: environmental preferences and behavior. In doing so, we link Western media exposure in the GDR not only to individual preferences but also to general public awareness, state censorship, and civic engagement around environmental issues.

This paper proceeds as follows: Section 2 briefly reviews the history of the divided Germany, describes the extent of pollution in the GDR and highlights the role of Western

TV. In Section 3, we introduce the identification strategy. While we analyze the effect of Western TV on environmental preferences using survey data in Section 4, we employ administrative county-level data to study its impact on pro-environmental behavior in Section 5. Finally, Section 6 concludes the paper.

2 Institutional background

2.1 East and West Germany after World War II

In the aftermath of World War II, the former German Reich was divided among the four victorious Allies: the United States, Great Britain, France, and the Soviet Union. While the occupation zone of the Soviet Union consisted of the eastern territories, Western Germany was divided among the other three occupying powers. As in the rest of the country, Berlin, the former capital of the German Reich, was also divided into four occupation zones administered by the Allied forces. Consequently, the western areas of Berlin, controlled by the United States, Great Britain and France, were completely surrounded by the Soviet occupation zone. On May 23, 1949, the Federal Republic of Germany was established, comprising of the three western occupation zones. Only four and a half months later, the GDR emerged from the Soviet occupation zone. While West Germany developed into a parliamentary democracy with a social market economy, the GDR became a socialist state with a one-party system and a state-controlled planned economy. The growing migration of GDR citizens to the West prompted the GDR government to tighten controls along its western border, ultimately leading to the creation of a so-called "restricted zone" (*Sperrzone*) along the inner German border, as well as the construction of the Berlin Wall. In the late 1980s, demonstrations for political freedom increased in the GDR, finally leading to the fall of the Berlin Wall on November 9, 1989 and to the German reunification on October 3, 1990.

2.2 Environmental pollution in the GDR

The Socialist Unity Party of Germany (*Sozialistische Einheitspartei Deutschlands*, SED), the governing party in the GDR, underscored the significance of environmental protection for the welfare of its citizens in Article 15(2) of the GDR Constitution as early as 1974. This action formally designated the preservation of clean air and bodies of water as a state objective ([Federal Agency for Civic Education, 2017](#)). In contrast, the situation in East Germany was completely different. The country's reliance on lignite for energy production, coupled with outdated power plants, resulted in severe air pollution in many regions of the GDR ([Welfens, 1993](#)). Thus, per capita emissions of sulfur dioxide and

particulate matter, for instance, exceeded the values in West Germany by more than 15 times (Buck, 1996). In 1985, the GDR ranked first in Europe in terms of sulfur dioxide and particulate emission (Welfens, 1993). Similarly, bodies of water were also highly polluted, as the chemical industry discharged its untreated effluent water into the rivers and lakes. In 1989, due to high levels of pollution, about 86 % of surface waters were classified as unsuitable for animal husbandry, drinking, or recreational purposes (Buck, 1996). Legal environmental regulations were supposed to stop these developments from occurring. Nevertheless, the government frequently bypassed these regulations to avoid impeding the production of consumer goods. Since the GDR government saw itself in economic competition with West Germany, it prioritized economic development over environmental protection (DeBardeleben, 1988).

2.3 The role of Western TV in the GDR

On February 1, 1987, West Berlin experienced its first major smog alert of the year. While the West German government immediately reacted to the high air pollution with driving bans, the GDR government concealed the severity of pollution from its citizens, claiming that the atmospheric conditions were due to foggy weather (DeBardeleben, 1988). Even though such statements from the government aroused distrust among many East Germans, it remained difficult for them to obtain uncensored information about the actual state of the environment, as the government actively tried to hide the true extent of the pollution from the public in order to prevent the emergence of protest movements (Welfens, 1993, Buck, 1996). For this reason, the SED issued an ordinance in 1983 prohibiting the publication of environmental data by both public institutions and voluntary environmental organizations (Hager, 1992). Moreover, there was no independent reporting in the GDR that could have informed citizens about the state of the environment. The media landscape was characterized by systematic censorship by the SED government, which used newspapers and television broadcasts to support their socialist propaganda (Großmann, 2015). As a result, the work of journalists, authors, and program directors was constantly subject to control and monitoring, and thus, in many cases, violations of environmental regulations went undetected (Kochanowski et al., 2012).

However, the general population was aware of this situation and questioned the credibility of the East German media. Under these circumstances, the inhabitants of the GDR often tried to obtain information from the West. Since the Ministry for State Security (*Ministerium für Staatssicherheit, Stasi*) maintained its own departments in the post offices, where citizens' mail was systematically opened, the flow of information from

family members and friends from the West was limited.¹ While the government also imposed import bans on Western print media and enforced the import bans through strict border controls, the SED was unable to prevent the reception of Western TV programs (Kuschel, 2016). Initial attempts to block the signals from the West German TV towers failed (Boyd, 1983, Kuschel, 2016). Consequently, the only circumstance that prevented the reception of Western broadcasts was the distance from the Western TV towers being too great. Since the West German government built numerous TV towers along the inner German border, as well as in the exclave of West Berlin, the majority of the GDR population lived close enough to one of these transmitters to gain access to Western TV.² As shown in Figure 1, only the northeastern and southeastern regions of the GDR were unable to receive West German programs.

Figure 1 around here

In contrast to the East German media, the broadcasts of the two public West German TV channels, ARD (First German Television, launched in 1954) and ZDF (Second German Television, launched in 1963), were considered trustworthy by the public (Kern and Hainmueller, 2009, Kuschel, 2016). In the 1950s, their influence in the GDR remained limited, as only a small proportion of households owned a TV set. This changed dramatically during the 1960s, as the number of TV sets per 100 households increased from 1.2 in 1955 to 69.1 in 1970 (Statistical Yearbook of the German Democratic Republic, 1990). As TV ownership expanded, ARD and ZDF also sought to reach East German viewers by broadcasting a morning program exclusively for them from 1961 onwards. These developments contributed to the stations' high audience ratings among GDR citizens. By the end of the 1980s, 98 % of households owned a television set, with an average of 1.25 sets per household. With such widespread accessibility, about 85 % of the East German population received and regularly watched West German broadcasts (Förster, 1995, Müller, 2000), which they perceived as their only “window to the world” (Stiehler, 2001). Through this “window”, the citizens of the GDR also learned about forest dieback, the extreme air pollution caused by lignite mining, and the contamination of lakes and rivers by the chemical industry, topics that the state-run media outlets in East Germany did not cover (DeBardeleben, 1988).

¹ The data we use in our main analysis allows us to control for the presence of family members or friends in West Germany, which does not affect our results.

² Western radio broadcasts, particularly those transmitted via long wave (e.g., *Deutschlandfunk*), could generally be received across the entire GDR, independent of Western TV availability. These radio programs primarily offered short auditory news coverage, while Western television combined factual reporting with vivid visual documentation of environmental degradation, a feature empirically shown to enhance memorability and emotional engagement (e.g., Graber, 1990, Powell et al., 2015, Gulliver et al., 2020).

In order to better understand what type of information East German viewers were exposed to, we collected data on the programming of the two public West German TV channels, ARD and ZDF, from 1970 to 1989, using the two online archives of RetroMedia and ShoutWiki. Although these archives do not cover the complete schedule, they provide information on 3,294 broadcast days (1,667 days on ARD and 1,627 days on ZDF), allowing for a representative overview of the environmental-related programming. Appendix E summarizes the most relevant programs. The collected data reveal that environmental issues appeared in a wide variety of formats, ranging from newscasts to investigative documentaries, educational and scientific programs, and public awareness campaigns.

Firstly, daily news programs such as ARD's *Tagesschau* and ZDF's *heute* frequently reported on environmental issues, for example on smog alerts in West Berlin. Such reports informed viewers about measured pollution levels and highlighted associated health consequences. In contrast, GDR state media dismissed these accounts as "false" without addressing the underlying events. The same pattern emerged during the Chernobyl disaster: while East German outlets provided only sparse and sanitized information, Western broadcasters offered extensive coverage of radioactive contamination and its associated health risks (Hübler, 1987, Meyen and Nawratil, 2004, Schumann, 2011).

Secondly, investigative documentaries and political magazines, including ZDF's *Tatsachen* ("Facts") and *Umwelt* ("Environment"), and ARD's *Kennzeichen D* ("License plate D") and *Kontraste* ("Contrasts"), offered longer, case-centered reports that linked visible environmental damage to industrial sources and discussed both ecological and health consequences. These programs provided viewers with a deeper understanding of pollution's causes and often used striking visual evidence. In some cases, they incorporated footage that had been secretly recorded within the GDR. For example, on June 25 1988, environmental activists filmed the toxic-waste dump *Freiheit III* ("Freedom III") and the polluted *Silbersee* ("Silver Lake") in Bitterfeld; three months later, on September 27 1988, *Kontraste* broadcast the footage, vividly documenting pollution inside the GDR (Mitteldeutscher Rundfunk, 2019).

Thirdly, educational and science programs informed their viewers about phenomena such as the ozone hole and species extinction, and how environmental pollution contributes to these phenomena. These formats often refer to the work of environmentalists and environmental protection organizations. With programs such as ARD's *Teletechnikum* and ZDF's *Peter Lustig immer mittendrin* ("Peter Lustig – In the thick of it"), there were also formats that were explicitly aimed at children and adolescents.

Finally, short practice-oriented segments such as ZDF's *Mach mit! Der Umwelt zuliebe* ("Join in! For the sake of the environment") complemented this more explanatory coverage. Aired between 1985 and 1989, the program featured concise three- to five-minute

environmental spots that demonstrated how viewers could adopt environmentally friendly practices, for instance, by reducing household waste or saving electricity.

Taken together, these different program formats combined (i) factual information on pollutant levels and sources, (ii) explicit references to health and environmental risks, and (iii) practical behavioral cues for individual action. This combination of information and imagery may have contributed to greater awareness of environmental problems and an increased demand for environmental protection in areas with access to Western TV.

3 Empirical strategy

3.1 Treatment definition

To investigate whether individuals' environmental preferences can be influenced by access to uncensored news coverage, we take advantage of the fact that some regions in the GDR were able to receive Western TV programs prior to reunification. Since the reception of Western TV exclusively depended on geographic features, we can assume that the access to these programs was exogenous, which allows us to identify a causal effect. Anecdotal evidence and calculations of the West German TV signal based on irregular terrain models indicate that regions without Western TV reception were located in the northeastern and southeastern parts of the GDR (see Figure 1).³ These regions represent the control group in our study, whereas the regions with Western TV reception constitute the treatment group.

3.2 Conditions for identification

To conclude causality, three conditions must be met.

Condition 1: No differences between treatment and control regions

First of all, it is essential that treatment and control regions only differ in their access to Western TV, but not in other characteristics. For this reason, we follow [Bursztyn and Cantoni \(2016\)](#) and use data from the GDR statistical yearbooks to examine whether such differences exist. Panel A in Table A.1 shows that districts (*Verwaltungsbezirke*) in both regions were comparable across a wide range of demographic and economic conditions in the first recorded year in 1955 (before Western TV became popular) and the

³ Such calculations were performed by [Crabtree et al. \(2015\)](#) and [Bursztyn and Cantoni \(2016\)](#). In both studies, the authors use information on all broadcast transmitters operating in West Germany in 1989 from Northern German Broadcasting (*Norddeutscher Rundfunk*).

last year of the GDR period in 1989.⁴ The socio-economic measures include, among others, population density, share of females, suicides per inhabitants, retail sales per capita, students per teacher, and students per class. These indicators are linked to environmental preferences in the literature, as socio-economic conditions and education levels can influence both awareness and the capability to act on environmental issues (e.g., [Aklin et al., 2013](#)). Overall, the findings in Panel A are reasonable, given that the SED focused on the equalization of regional differences ([Hyll and Schneider, 2013](#)). Furthermore, Table A.1 reveals no systematic differences in the change of these measures between 1955 and 1989. Since regional information in the years prior to the introduction of treatment is only available at the district level (*Verwaltungsbezirke*), we analyze additional data at a more granular level in Panel B. Again, counties (*Kreise*) with and without Western TV reception do not indicate any significant differences with respect to education, the provision of medical care, and the share of employees working in industry, agriculture, or services.⁵

In addition to general socioeconomic characteristics, it is also important to assess whether there were systematic differences in environmental pollution. As shown in Table A.1, we find no significant differences in carbon monoxide (Panel A), nitrogen oxides, or respirable dust pollution (Panel B). The same applies to indicators of visible environmental damage, such as the extent of forest dieback or polluted watercourses (Panel A).

To investigate regional differences in pollution more precisely, we collected data on average sulfur dioxide (SO₂) concentrations measured in µg/m³. We obtain the data from NASA’s Modern-Era Retrospective Analysis for Research and Applications Version 2 (MERRA-2) ([Global Modeling and Assimilation Office, 2015](#)), which provides monthly atmospheric pollutant data based on satellite images, using a 0.5° x 0.625° latitude-longitude grid, starting from 1980. Following recent studies (e.g. [Chen et al., 2022](#), [Horz et al., 2023](#)), we aggregate this data at the county level to calculate the average SO₂ concentration for each county. Figure 2a illustrates regional differences in SO₂ levels in 1990, while Figure 2b shows the average SO₂ levels in the period from 1980 to 1989. These figures indicate that both regions with and without Western TV reception contain industrialized areas that have been associated with higher levels of pollution, such as Dresden in the control group and Halle in the treatment group. Similarly, both regions include areas that are agriculturally dominated, less densely populated, and thus less exposed to pollutants, which applies particularly to the northwestern and northeastern

⁴ [Kern \(2011\)](#), [Hyll and Schneider \(2013\)](#), and [Bursztyn and Cantoni \(2016\)](#) report similar results, also indicating that there were no significant differences between treatment and control regions.

⁵ We find no systematic differences between the treated and non-treated counties even when we divide the GDR into a northern and southern subsample and repeat the analysis separately for the north and south.

regions of the GDR.

Figure 2 around here

To gain a better understanding of the development of spatial pollution, Figure A.1a plots the development of average SO₂ concentrations in counties with and without Western TV reception from 1980 to 1990. In both regions, pollution levels decreased over time, exhibiting a similar trend. However, while the pollution levels at the end of the GDR period are relatively similar in both areas, the counties with access to Western TV exhibit slightly higher pollution levels at the beginning of the 1980s.⁶ Consistent with this pattern, the evaluation of monthly dust emission data from 1989 also shows that average dust pollution was comparable between treatment and control regions (see Figure A.1b). The measurements were taken from the [Statistical Yearbook of the German Democratic Republic \(1990\)](#).

Finally, to strengthen the identification strategy, it is crucial to ensure that regions with and without access to Western TV did not differ in their environmental attitudes prior to treatment. As no survey data on environmental preferences exist for the pre-treatment period, we use two historical proxies that previous research has shown to correlate with environmental attitudes: denominational affiliation and political orientation. Specifically, we use data on denominational composition from 1925 and election results from the national Reichstag election in December 1924.⁷

First, [Arbuckle and Konisky \(2015\)](#) and [Sharma et al. \(2021\)](#) document a negative association between religiosity and pro-environmental attitudes, with notable differences across denominational groups such as Protestants, Catholics, and others. Therefore, we test whether East German regions that later differed in Western TV access already exhibited differences in their religious composition prior to the introduction of Western TV. As reported in Panel C of Table A.1, there are no statistically significant differences in the shares of Christians, Protestants, or Jews across treatment and control regions.

Second, [Neumayer \(2004\)](#) and [Torgler and García-Valiñas \(2007\)](#) find that left-wing political orientation is positively correlated with environmental concern. Although environmental parties did not exist during the interwar period, general left-wing voting provides a proxy for progressive political values. Using the Reichstag election results

⁶ As environmental preferences are relatively stable and develop over a long period, differences in past pollution levels might matter. For this reason, in Section 4, we will control for the average pollution levels in the 1980s. Additionally, we apply matching methods and a geographic regression discontinuity design to make control and treatment regions even more comparable regarding historic pollution levels.

⁷ The data are obtained from [Becker et al. \(2020\)](#). Historical counties from 1924/1925 were assigned to treatment and control areas using ArcGIS. In cases where a historical county overlapped both areas, it was assigned to the group covering more than 50% of its total area.

from December 1924, we again find no systematic differences in left-wing vote shares between regions with and without later access to Western TV.

Overall, these historical comparisons support the assumption that treated and control regions did not differ systematically in their pre-existing cultural or political predispositions related to environmental attitudes.

Condition 2: Individuals in the treatment regions actually watched Western TV

It is also essential to verify that those individuals who could potentially receive Western TV, due to their geographic location, actually watched the corresponding programs. First of all, we can rule out that technical differences between West and East German television systems hindered the access to Western TV programs. From a technical perspective, there were no issues in receiving West German programs with East German television sets (Federal Agency for Civic Education, 2016). Moreover, there were no language barriers, since the broadcast content was in German, and the vast majority of the GDR population had access to television sets. By the end of the 1980s, 98 % of households possessed at least one television set, with an average ownership of 1.25 sets per household (Statistical Yearbook of the German Democratic Republic, 1990, Müller, 2000). Survey evidence indicates that most East Germans already consumed Western TV programs in the 1970s and 1980s (Förster, 1995). Using survey data from the Central Institute for Youth Research (*Zentralinstitut für Jugendforschung*), Figure A.2 in the appendix shows that 66 % of respondents living in regions with access to Western TV watched these programs daily, and 26 % watched them several times a week. The respective values for respondents from the control group are 5 % and 9 %, respectively. In addition, only 1 % of respondents in the treatment group reported never watching Western TV programs, compared to 67 % in the control group.⁸

Condition 3: No spatial sorting

Another aspect of great importance to our identification strategy is spatial sorting. Here, it is important to distinguish between spatial mobility before and after reunification. To identify causal effects, we must first rule out the possibility that access to Western TV caused GDR citizens to change their residence before reunification. Due to the centrally planned economy and its long-term production plans, the mobility of labor within the GDR was severely restricted (Kern and Hainmueller, 2009). In addition, the shortage

⁸ We use the “Political climate and social conditions in the GDR 1988/89” survey available at the GESIS data archive (GESIS, ZA6008, 1989). In Figure A.2, the division into people with and without Western TV reception is based on the GDR districts. As these districts contain multiple municipalities, it is possible that the TV signal in some municipalities was strong enough to allow the reception of Western TV even though the average TV signal in the entire district was too weak. This explains why some respondents living in the control region claim to watch Western TV.

of free housing made spatial mobility even more difficult (Hyll and Schneider, 2013). These circumstances resulted in very low levels of migration across county or municipality borders, which continued to decline steadily from the 1950s onwards. For example, the number of migrations across county borders per 100 inhabitants dropped from 4.8 in 1953 to 1.6 in 1970 (Grundmann, 1998, pp. 96–97). In West Germany, the figures were about three times higher in the same period. With this in mind, self-selection of GDR citizens into areas with and without Western TV access seems unlikely.

Finally, we need to consider East-West migration after reunification, since selective out-migration could potentially be a confounder to our estimates. Empirical evidence shows that there was indeed high immigration to West Germany for a short period following reunification from 1989 to 1990. However, this trend quickly subsided from 1991 onwards (Hunt, 2006). More importantly, Bursztyn and Cantoni (2016) report that the East German regions with and without former Western TV reception do not exhibit different migration patterns. Even when differentiating between various age groups, they find no systematic differences in migration behavior. Furthermore, they document similar migration flows between the treatment and control regions that are on a relatively small level. The study by Friehe et al. (2018) arrives at similar results. Consequently, these migration flows are not expected to dilute a potential television effect. Nevertheless, in our main analysis, we focus exclusively on individuals for whom we know their place of residence before the reunification in order to avoid misclassifications of the treatment.

4 The effect of Western TV on environmental preferences

4.1 Data

To investigate the effect of Western TV exposure on environmental preferences, we use data from the German Socio-Economic Panel (SOEP). The SOEP is an annual representative panel study for German households (Goebel et al., 2019, SOEP v39, 2024). We utilize the so-called “East sample”. This sample includes 4,453 individuals from 2,179 households who had already been interviewed in East Germany in 1990, a few months before the official reunification. To analyze the effect of Western TV, we utilize the following three questions:

- (i) *How concerned are you about environmental protection?* Answers on a scale from 1 (*not concerned at all*) to 3 (*very concerned*).
- (ii) *How important is the protection of the natural environment for your well-being and satisfaction?* Answers on a scale from 1 (*unimportant*) to 4 (*very important*).

(iii) *Are you a member of an environmental interest group?* Answer choices: *yes* or *no*.

The first two questions are from the 1990 questionnaire and question (iii) is included in the 1998 questionnaire. We create dummy variables for the first two statements to facilitate the interpretation of our results. For each question, we estimate the following probit model:

$$Y_{icd} = \Phi(\beta_0 + \beta_1 TV_c + \beta_2 \mathbf{X}_i + \mu_d + \epsilon_i), \quad (1)$$

where for questions (i) and (ii), Y_{icd} takes the value one if person i , who lived in the GDR period in county c belonging to district d , is *very concerned* about environmental protection or considers environmental protection as *very important* for their well-being, respectively. In the case of question (iii), Y_{icd} takes the value of one if individual i is a member of an organization dedicated to environmental protection in 1998. \mathbf{X}_i denotes a vector of controls that includes sex, age, age², household size, employment status, education level, logarithm of household income, health satisfaction (measured on an 11-step Likert scale ranging from *completely dissatisfied* to *completely satisfied*), and dummy variables for being single, and for having a migration background. The latter equals one if the individual has a direct or indirect migration background and zero if the person is native. Since regional pollution levels are likely to impact environmental preferences, we also control for the average SO₂ concentration in individual's i county of residence in the respective survey year. This information is taken from the [Global Modeling and Assimilation Office \(2015\)](#) as described in Section 3.2. While μ_d represents district fixed-effects related to the district where the respondent lived during the GDR period, ϵ_i indicates the error term. Finally, Φ denotes the cumulative standard normal distribution function.

Our parameter of interest, β_1 , represents the treatment-control difference in environmental preferences. TV_i takes the value of one if individual i lived during the GDR period in a county with access to Western TV programs. Since the survey occurred before the official reunification, we can assume that individuals lived in the same region during the GDR period where they were interviewed in 1990. The fact that the socialist government highly restricted residential and labor mobility in this period supports this assumption ([Kern and Hainmueller, 2009](#), [Hyll and Schneider, 2013](#)). The data regarding television reception are taken from [Crabtree et al. \(2015\)](#). Following their methodology, we use a signal strength threshold of -86.5 dBm as the critical cutoff.⁹ If the average signal strength in a county exceeded this threshold, we assume that Western TV reception was available in that county. Based on this threshold, in about 88.5 % of the 217 GDR coun-

⁹ [Crabtree et al. \(2015\)](#) apply a Longley-Rice electromagnetic signal propagation model, along with terrain data and information on the location and technical specifications of West German TV transmitters, to estimate signal strength.

ties, the signal strength was sufficient to facilitate Western TV reception.¹⁰ Individuals living in these counties represent the treatment group, whereas the inhabitants of the remaining counties constitute the control group. Figure 3 illustrates the treatment and control areas.¹¹ As we cannot clearly assign respondents whose first interview took place after 1990 to the treatment and control group, we limit our sample to those who took part in the survey in 1990.

Figure 3 around here

We present summary statistics for our estimation sample for the 1990 survey wave in Table 1.¹² Overall, Panel A shows that individuals in the treatment and the control group hardly differ in most socioeconomic characteristics. However, we find that individuals in the treatment group have a lower level of education and income. Nevertheless, the magnitudes of these differences are rather negligible. On average, participants in the control group have three more months of education (2.3% compared to the overall mean), a monthly household income that is 45 Euros higher, and a slightly smaller household size (4.4% compared to the overall mean).¹³ To address these differences, we extend our baseline specification by estimating a geographic regression discontinuity design in Section 4.2, restricting the sample to individuals living within 50 km of the treatment–control border.¹⁴ Panel B of Table 1 shows that, in this restricted sample, the disparities in household size and income between treated and non-treated individuals disappear. In contrast, the difference in average SO₂ levels slightly increases because the geographic RDD excludes some areas within the treated region, such as the industrial area around Halle, which exhibit higher pollution levels.

¹⁰The entire territory of the GDR was divided into 14 administrative units called districts (*Verwaltungsbezirke*), with East Berlin added as the 15th in 1961. Each district (except East Berlin) was subdivided into counties (*Kreise*), amounting to 217 in total. After reunification in 1990, the districts were dissolved and replaced by six federal states (*Bundesländer*) to align East German administration with that of West Germany. The counties largely remained in place at this stage. Figure A.3 in the appendix illustrates the relationship between counties, districts, and federal states.

¹¹Overall, the treatment definition corresponds very closely to that of [Bursztyn and Cantoni \(2016\)](#), who conduct the signal estimation at the municipality level. Since the SOEP data only contains information concerning the county of residence before the year 2000, we allocate the treatment at the county level.

¹²A total of 4,453 individuals were surveyed in 1990. For 87 of these individuals, information on their place of residence is missing, implying that they cannot be assigned to the treatment or control group. In addition, information on educational attainment (46), household income (65), health satisfaction (17), and relationship status (2) is missing for other individuals. As a result, our final estimation sample contains 4,236 individuals from 2,094 households. Of these 4,236 individuals, 2,602 from 1,598 households also participated in the 1998 survey used to investigate memberships in environmental interest groups.

¹³Previous research has shown that Western TV reduced fertility rates, which might explain the lower average household size among individuals living in regions with Western TV reception ([Hartmann, 2024](#)).

¹⁴In addition, we conduct further robustness tests by applying entropy balancing and matching methods in Section 4.3.

Table 1 around here

In Table A.2, we compare the summary statistics for the 1990 survey wave, which are used for the first two outcomes (environmental concerns and the importance of environmental protection), with those for the 1998 survey wave, which we use for the analysis of memberships in environmental interest groups. This comparison reveals a few notable differences. Since our analysis only includes individuals who were part of the sample in the initial survey in 1990, the average age in 1998 is significantly higher. The difference is roughly 7 years. Accordingly, the proportion of pensioners is also higher (11.9 percentage points). In addition, average income increased and average SO₂ concentrations decreased between 1990 and 1998.

4.2 Main results

Panel A in Table 2 shows results of probit regressions and reports average discrete probability effects. For each outcome variable, we first estimate a model, which only contains the treatment indicator, TV_i . Following this, we add the vector of controls, X_{it} , while in the final specification, we include district fixed-effects. Our results in columns (1) to (3) suggest that people living in counties with former Western TV coverage are more likely to be concerned about environmental protection. While the coefficient of the Western TV dummy is highly significant in the first two columns it is marginally significant once we add district fixed-effects (p-value = 0.051). Nonetheless, the treatment–control difference in column (3) is 9.2 percentage points, which represents a meaningful difference, corresponding to 15.6% of the sample mean.¹⁵ Table A.3 reports the entire regression results, including the control variables. In addition to the treatment effect, we find a negative and highly significant relationship between an individual’s health satisfaction and concerns about environmental protection. Given that individuals with pre-existing conditions or poorer overall health are more susceptible to the adverse effects of pollution, this finding is not surprising (Deryugina et al., 2019, 2021). In addition, column (2) shows that the regional SO₂ concentration has a significant and positive impact on environmental concerns. However, this relationship turns insignificant once district fixed-effects are included.

Columns (4) to (6) show that individuals exposed to Western TV perceive the protection of the environment as more important to their well-being. The difference between the treatment and control group is 9.3 percentage points, which corresponds to 14.8% to

¹⁵The statistical significance indicators in Table 2 are based on unadjusted p-values. As a robustness check, we applied the Benjamini–Hochberg false discovery rate procedure to the treatment effects in the preferred specifications, reported in columns (3), (6), and (9). The substantive conclusions remain unchanged.

the sample mean. Furthermore, the estimates show a significant but non-linear effect of an individual’s age and negative coefficients for household income and years of education. The latter two findings might indicate that people with higher levels of education and greater financial resources are better able to avoid exposure to pollution or minimize its negative effects, which diminishes the relevance of collective environmental protection for their own well-being.

Lastly, column (9) indicates a positive and significant relationship between Western TV reception and the likelihood of being a member of an organization dedicated to environmental protection. On average, respondents living in treated regions are 2.3 percentage points more likely to be active in environmental interest groups. In addition, we find that males and respondents with more years of education are more likely to be a member of such groups, which is in line with previous studies (e.g. [Aklin et al., 2013](#), [Mohai, 2014](#)).¹⁶

Table 2 around here

While the fully saturated model addresses numerous observable differences between treatment and control groups, there may still be concerns regarding potential biases resulting from any remaining disparities between regions with and without Western TV. These differences can potentially exacerbate sensitivity to biases arising from unobservable factors. To address these concerns, we adopt the concept of a geographic regression discontinuity design (RDD), as outlined by [Keele and Titiunik \(2015\)](#). We implement this design by comparing individuals without access to Western TV with those who live in regions where the TV signal is just strong enough to allow for the reception of those TV programs. To achieve this, we restrict our treatment group to respondents living in counties within 50 km of a county without access to Western TV, reducing our overall sample by 67 %. Figure A.4 illustrates the approach. This implies that we now compare individuals who live in close spatial proximity to each other and differ only in the exposure to the treatment. Panel B in Table 1 reveals that this procedure improves the covariate balance between the treatment and control group. Overall, Panel B in Table 2 shows that our results hardly change when using the geographic RDD sample. The magnitude of the estimated treatment effects is slightly smaller than in the baseline specification. We report the full regression results in Table A.4 in the appendix.

¹⁶ While most studies find that women behave more pro-environmentally than men, [Tindall et al. \(2003\)](#) and [Hunter et al. \(2004\)](#) show that men and women differ in their engagement in “public” versus “private” environmental-related behaviors. Women are more likely to participate in household-based pro-environmental activities such as recycling, while men tend to engage more in public-facing environmental activism, including protests. This might explain the lower involvement of women in environmental interest groups.

So far, we assess the impact of Western TV reception on environmental concerns and on the perceived importance of environmental protection for individual well-being using binary indicators that capture strong concern or high importance. While this approach facilitates the interpretation of the results, pooling response categories may conceal important aspects of the Western TV effect. Therefore, in Table A.5 in the appendix, we extend this analysis by employing ordered probit models that incorporate all response categories. In both the full and geographic RDD sample, exposure to Western TV reduces the probability of expressing no or moderate concern for environmental protection, while significantly increasing the likelihood of being very concerned. Similarly, the treatment raises the probability of considering environmental protection as very important for individual well-being, while reducing the probabilities of the remaining response categories (*very unimportant*, *less important*, and *important*). This pattern suggests that Western TV exposure shifted the distribution of environmental attitudes, consistent with the idea that exposure both strengthened existing attitudes and activated concern among previously less engaged individuals.

4.3 Robustness checks

In this section, we briefly summarize several additional tests that we perform to verify the robustness of our main findings. In addition, we utilize survey data from the late 1980s to demonstrate that the treatment effects can be observed already prior the fall of the Iron Curtain. Moreover, using this data set allows the adoption of an instrumental variable approach and the exploration of additional aspects of environmental policy preferences, such as attitudes toward the usage of nuclear energy.

Robustness checks regarding the main specification

Although the geographic RDD in Panel B in Table 2 mitigates the concern that heterogeneity based on unobservables alters our results, we conduct additional robustness tests in Appendix C, which we briefly summarize here. First, we address potential imbalances in observable characteristics between individuals with and without access to Western TV using entropy balancing, coarsened exact matching, and propensity score matching. As shown in Table C.1, we find consistent treatment effects across all methods. In Table C.2, we consider alternative sample definitions where we exclude (i) respondents that relocated in the two years prior to the reunification in order to reduce the risk of potential misassignments of individuals to the treatment and control group, (ii) individuals that migrated to West Germany in the years after the reunification, or (iii) respondents that live in close proximity to the inner German border or in the Berlin area. In Table C.3, we examine whether the estimated effects of Western TV exposure might be confounded by other factors correlated with both Western TV reception and environmental prefer-

ences. To address these potential confounders, we expand the vector of control variables to include (i) the distance between respondents' residence and the West German border, (ii) additional indicators of environmental pollution beyond SO₂ as well as historical pollution exposure, (iii) measures of regional economic structure, including GDP per capita, unemployment, and sectoral composition, and (iv) information on religious affiliation.¹⁷ Finally, Table C.4 documents that the main findings are robust to alternative specifications of the treatment indicator.

Instrumental variable analysis

To examine the impact of exposure to Western TV, we have solely relied in our main analysis on the exogenous variation in the Western TV signal. To further assess the robustness of our findings and to explore additional aspects of environmental policy preferences, we now employ survey data that captures self-reported Western TV consumption, which was gathered prior to the fall of the Berlin Wall by the Central Institute for Youth Research (*Zentralinstitut für Jugendforschung*).¹⁸ The surveys conducted by the Central Institute for Youth Research were classified during the GDR era, but were released and made accessible to the public after reunification (Kern and Hainmueller, 2009). Instead of relying on face-to-face interviews, they used unmarked questionnaires that were completed in larger groups and then collected in sealed urns, to ensure the respondents' anonymity (Friedrich, 1990). Given these measures, it is reasonable to assume that respondents did not expect their identities to be traced. This can be seen in their critical responses to questions that directly concern the GDR and its regime. For example, more than 60 % of respondents indicated they would prefer to live in a country other than the GDR. Despite these efforts, preference falsification cannot be entirely ruled out. It is, however, unlikely that the levels of preference falsification systematically differ between individuals in the treatment and the control group (Kern and Hainmueller, 2009). Since we are not trying to identify the actual levels of environmental awareness but rather examine the difference between both groups, our estimated treatment effects should be unbiased.

The survey was targeted at students from universities, colleges, and vocational schools in seven out of the fourteen districts of the GDR. A total of 3,918 people aged 18 to 34 participated in this survey.¹⁹ In addition to the respondents' socioeconomic information, the survey contains a question on how regularly the respondent watched West German TV. The respondents could answer this question on the following scale: *never*,

¹⁷Since Western TV exposure could have influenced religious beliefs, we use historical data on denominations from the 1939 census. During the 1980s, church congregations in the GDR played a prominent role in advocating environmental protection (Federal Agency for Civic Education, 2017).

¹⁸We use the "Living Conditions and Value Orientations of Students 1989" survey available at the GESIS data archive (GESIS, ZA6070, 1989).

¹⁹We excluded three individuals who were 55, 72, and 89 years old. Since the survey is only directed at students, it is not representative of the entire population in the GDR.

rarely, once a week, several times a week, or daily. Since the survey also includes the respondent's district of residence, we can link the self-reported Western TV consumption to the exogenous variation in the Western TV signal.²⁰ We follow the approach of [Hyll and Schneider \(2013\)](#), [Hennighausen \(2015\)](#), and [Hornuf et al. \(2023\)](#) and exploit that the average Western TV signal in the entire GDR district of Dresden was too weak to receive Western TV broadcasts. Finally, the survey covers several attitudinal questions about environmental preferences. Specifically, participants were asked the following three questions:

- (i) *How much do you personally feel threatened by the pollution and poisoning of the natural environment?* Answers on a scale from 1 (*not at all*) to 5 (*very strong*).
- (ii) *When you think about the period until the year 2000, how confident are you about preserving the natural environment?* Answers on a scale from 1 (*not at all*) to 5 (*totally*).
- (iii) *To what extent do you have confidence in the SED's environmental policy?* Answers on a scale from 1 (*not at all*) to 6 (*very strong*).

To facilitate the interpretation of our results, we pool the response categories to obtain a binary indicator for each question. For the first two questions, we combine the two response categories that express a high level of concern about pollution and environmental protection. For the third question, which has one additional response category, we group the three levels of agreement and disagreement, respectively, to distinguish between trust and distrust in the SED's environmental policy.

Since Western TV, unlike state television in East Germany, reported intensively on the reactor disaster in Chernobyl (see Section 2.3), we further examine whether attitudes toward nuclear power generation differ between individuals with and without Western TV exposure, using two additional survey questions to capture concerns regarding nuclear energy usage:

- (iv) *How much do you personally feel threatened by nuclear power plants?* Answers on a scale from 1 (*not at all*) to 5 (*very strong*).
- (v) *Do you think the nuclear power generation in the GDR should be expanded to replace other energy sources?* Answers on a scale from 1 (*not at all*) to 6 (*totally*).

For question (iv), we again group the two response categories that express a high level of concern. Regarding question (v), we combine the three levels of agreement and disagreement, respectively.

²⁰Since the allocation of study places was based on public demand planning (*staatlicher Bedarfsplanung*), it is unlikely that Western TV reception influenced the students' university choices ([Mitteldeutscher Rundfunk, 2022](#)).

Since watching Western TV is endogenous, we estimate two-stage least squares regressions for each of the five statements. In these analyses, living in a district with a sufficiently strong TV signal to receive Western TV, $Signal_i$, serves as an instrument for Western TV consumption, TV_i . The first and second stage equations are shown in Equation 2 and 3, respectively.

$$TV_i = \gamma_0 + \gamma_1 Signal_i + \gamma_2 X_i + \epsilon_i, \quad (2)$$

$$Y_i = \beta_0 + \beta_1 TV_i + \beta_2 X_i + \epsilon_i, \quad (3)$$

where $Signal_i$ indicates a binary indicator equal to one if the average TV signal was high enough to enable the reception of Western TV, and TV_i denotes the self-reported frequency with which the individual watched Western TV, ranging from never (1) to daily (5). Y_i represents one of the five binary indicators. The coefficient of interest, β_1 , captures the effect of Western TV exposure on environmental preferences. While ϵ_i represents the error term, X_i denotes a vector of individual-level controls that includes the respondent's sex, age, age², and dummy variables for being single, and having children. In addition, it captures the monthly disposable income and the qualification level of the respondent's mother. The monthly disposable income comprises scholarships, payments from parents, spouses, or relatives, income from secondary employment, and social support. We present descriptive statistics in Table A.7.

Table 3 presents the estimated effect of Western TV consumption on the respondents' assessment of the five statements. For each statement, we include the control variables stepwise. We start from a parsimonious specification, which does not include any control variable. In the second step, we incorporate the additional individual-level controls mentioned above.

Table 3 around here

All specifications in Table 3 show a statistically significant and positive impact of Western TV signal reception on an individual's frequency of watching Western TV in the first stage. The F-statistics are well above 10, indicating that the IV is not weak. Focusing on the second stage, our results in columns (1) and (2) show a positive and significant relationship between Western TV consumption and the perception of pollution as a threat. The estimates in columns (3) and (4) indicate that participants who are more exposed to Western broadcasts are less likely to believe that preserving the natural environment is possible. Moreover, our results indicate that watching Western TV regularly decreases the likelihood of trusting the SED's environmental policy. Finally, the estimates in columns (7) to (10) reveal that individuals regularly exposed to Western TV are more likely to

express concern about nuclear power plants and less likely to support expanding nuclear power generation in the GDR. The fact that the size of the treatment indicator changes only marginally with the addition of control variables supports the robustness of our results.

While the analysis of this dataset allows for the combination of self-reported Western TV consumption and exogenous variation in the TV signal, there are also some important limitations. First, the survey is not representative for the entire GDR population as it includes only students. Secondly, the survey only covers seven of the fourteen districts of the GDR. For example, only one of the two areas without access to Western TV (the district of Dresden) was part of the survey. Finally, the survey only includes the district of residence and not the county of residence requiring the allocation of respondents to the treatment and control group at a rather aggregated level, which might introduce measurement error. This is illustrated in Figure A.5, in which we compare respondents' self-reported Western TV consumption with their district of residence. For example, while 52 % of respondents in the Dresden district stated that they almost never watch Western TV (compared to only 25 % in the treatment group), 20 % nevertheless reported watching these programs at least several times per week.²¹

4.4 Heterogeneity of the main results

In the subsequent analysis, we investigate whether the impact of Western TV varies across subgroups.²² At first, we focus on potential gender differences by repeating our main estimations separately for males and females. Figure 4 suggests that exposure to Western TV has influenced both males and females in a similar vein. However, the effect on environmental concerns is slightly more pronounced among male respondents.

Next, we conduct a cohort analysis to see if the influence of Western TV differs with respect to the age of the respondents. As younger individuals may have less solidified views on environmental issues, they may be more responsive to information via TV content. Splitting the sample by the median age of 40 suggests that the influence of Western TV on environmental concerns is more pronounced among younger respondents. In contrast, Western TV exposure similarly affects the perceived importance of environmental

²¹ The fact that the survey is only aimed at students who presumably have greater spatial flexibility (e.g., due to regular family visits) may contribute to this distribution. This might explain why the distribution shown in Figure A.2, which is not limited to students, shows a more pronounced difference. However, the survey data used in Figure A.2 does not contain information on environmental preferences.

²² We exclude memberships in environmental interest groups from this analysis, as it was first included in the SOEP in 1998, leaving us with 2,602 observations, of which only 2.3 % are members of such groups. This number is insufficient to examine meaningful subgroup comparisons.

protection for well-being across both age groups.

Figure 4 around here

Another aspect that might influence the relationship between Western TV exposure and environmental preferences is the socio-economic background of individuals. For this reason, we examine whether the treatment effects vary between individuals with different levels of education and other positions in the income distribution. Figure 4a reveals that individuals with lower levels of education exhibit a stronger increase in environmental concern when exposed to Western TV. A similar pattern exists in Figure 4b. While respondents with a household income below the median express greater concerns when exposed to information on pollution through Western TV, we do not observe a corresponding income-dependent difference in how they link environmental protection to their well-being. One possible explanation is that lower-income households are less able to take measures to mitigate the adverse effects of pollution (e.g., due to restricted residential choices or limited access to healthcare) and therefore react more strongly to information about pollution in the media.

Next, we analyze whether local pollution levels influence the effect of Western TV. Individuals living in highly polluted regions might react more strongly to the information provided by Western TV, as they are particularly affected by the negative consequences of pollution. Conversely, where pollution is highly visible, individuals may recognize its severity without external information, diminishing the added informational value of Western TV. In fact, anecdotal evidence supports this interpretation, suggesting that in some high-pollution areas, residents could immediately recognize the implications of pollution and therefore detect the misinformation in the East German state media (e.g., [Federal Agency for Civic Education, 2017](#), [Mitteldeutscher Rundfunk, 2020](#)). Examining whether the treatment effects differ between individuals living in regions with higher or lower SO_2 levels shows positive estimates for both groups. However, Figures 4a and 4b indicate that the effects are slightly more pronounced among individuals living in less polluted regions, suggesting that uncensored reporting played a particularly important role in shaping environmental awareness where the consequences of pollution were not directly observable.

As discussed in Section 3.2, the southeastern regions, which were more industrialized, differed substantially from the more agricultural northeastern regions without Western TV access. To assess whether the treatment effects are comparable across both parts of the GDR, we estimate our main specification separately for a northern and a southern

subsample.²³ As shown in Figures 4a and 4b, we find similar treatment effects in both regions.

Finally, the impact of Western TV on environmental preferences likely depended on individuals' prior attitudes toward the GDR regime. Citizens with close ties to the state apparatus or higher satisfaction with the socialist system may have been less responsive to Western broadcasts. Recent evidence even shows that access to uncensored news can polarize people even more if the content contradicts their own beliefs (Enikolopov et al., 2025). In contrast, those already disillusioned with the regime could have been particularly receptive to critical information from the West. To examine whether such heterogeneity existed in our setting, we compare treatment effects across (i) respondents who were more or less satisfied with life in the GDR and (ii) individuals employed within the state administration or public sector versus those outside it. While we find no notable differences in Figure 4b, environmental concerns appear unaffected by Western TV among individuals working for the GDR government or in the public sector. This pattern may reflect that members of the state apparatus were already informed about environmental conditions through internal channels, or that strong ideological commitment to the regime made them less receptive, or even resistant, to information presented by Western TV.

Overall, Figure 4 does not suggest that the reception of Western TV only influenced the environmental preferences of certain subgroups. If anything, the treatment effects appear somewhat more pronounced among individuals with lower socioeconomic status. However, the large number of subgroup comparisons raises concerns regarding multiple hypothesis testing. We therefore interpret these heterogeneity results as descriptive and suggestive evidence rather than as precisely estimated subgroup differences.

4.5 Dynamics of the TV effect

A key question is whether the differences between the individuals with and without former Western TV exposure will endure or wane over time in reunified Germany. As the reunification unfolded in 1990, individuals living in regions without former reception now gained access to Western TV, raising the expectation of a convergence in preferences between treatment and control groups. Nevertheless, prior research has yielded conflicting findings on this matter. Within this context, the study of Bursztyn and Cantoni (2016) document an influence of Western TV on individuals' consumption habits, albeit one that diminishes by the end of the 1990s. Delving into the impact of Western TV on East Germans' beliefs concerning success in life, Hennighausen (2015) offers additional evidence

²³The northern subsample includes the districts of Berlin, Frankfurt, Magdeburg, Neubrandenburg, Potsdam, Rostock, and Schwerin, while the southern subsample consists of Chemnitz, Cottbus, Dresden, Erfurt, Gera, Halle, Leipzig, and Suhl.

of convergence, meaning that differential access to Western TV becomes less relevant over time. By analyzing crime rates in East Germany, [Friehe et al. \(2018\)](#) also document a waning effect of Western TV over time in reunified Germany. In contrast, [Hornuf et al. \(2023\)](#) and [Slavtchev and Wyrwich \(2023\)](#) report enduring disparities between both groups concerning xenophobic attitudes and the likelihood of pursuing self-employment, respectively, even 25 years after the harmonization of TV content.

To examine the persistence of the TV effect, we make use of the panel structure of the SOEP data and follow individuals over time. However, it is essential to reiterate that we can only consider respondents who participated in the survey in 1990 since we cannot clearly assign individuals whose first interview took place in subsequent years to the treatment and control groups. Since restricting the sample to individuals who participated in 1990 may cause an attrition bias over time, we limit the analysis to the first decade after reunification. While respondents are asked about their concerns regarding environmental protection every year during this period, the question of whether individuals consider environmental protection essential to their well-being was only included in the survey in 1990, 1991, 1994, 1998, and 1999.²⁴

To get a first impression of the temporal development of the effect, we estimate random-effects probit models for both outcomes and report the results in Table A.6. Compared to the 1990 cross-section analysis in Table 2 the magnitude of the coefficients is substantially smaller, providing a first indication of a decreasing difference between both groups over time.²⁵ To explore potential dynamic effects more profoundly, we estimate linear probability models where we interact the treatment indicator with a dummy variable indicating either the first (1990-1995) or the second half of the 1990s (1996-2000).²⁶ In Figures 5a and 5b, we illustrate the predicted likelihood of being concerned about environmental protection and perceiving environmental protection as essential for well-being, respectively, for the treatment and the control region over time. In the underlying estimates, we use the set of control variables including district fixed-effects from our preferred empirical specification, as in Table 2. Both figures show a negative trend over time and provide evidence of a convergence of both groups.

Figure 5 around here

²⁴During the 1990s, respondents were only asked about membership in an environmental organization in 1998. Therefore, this outcome is not included in this analysis.

²⁵We arrive at the same conclusion if we employ pooled probit models.

²⁶[Friehe et al. \(2018\)](#) use a similar approach to study the potential dynamics of the effect of Western TV on crime rates.

4.6 Alternative mechanisms

Our findings indicate that exposure to Western TV shaped East Germans' environmental preferences by providing credible information on pollution and its consequences. Nonetheless, other mechanisms could also account for the observed rise in environmental concerns and the perceived importance of environmental protection. In this subsection, we examine four alternative explanations: i) repeated exposure to negative news affecting emotions or general concerns beyond pollution, ii) exposure to forms of collective action and established networks, iii) changes in personality traits or risk- and time preferences, and iv) reduced exposure to GDR propaganda. Across all analyses, we find no empirical evidence supporting these alternative channels.

Exposure to negative news

Another possibility is that the estimated effects did not arise specifically from environmental reporting, but from Western TV's broader and more transparent coverage of social issues, including negative events that East German media tended to ignore. Repeated exposure to such critical reporting could have shaped viewers' emotions and increased their general level of concern, not only about pollution, but also about social and political conditions more broadly. To test whether our findings simply reflect a higher baseline of pessimism or general concern, we conduct several placebo analyses using survey data from the SOEP and the Central Institute for Youth Research ([GESIS, ZA6070, 1989](#)). These tests examine whether Western TV exposure affected emotions or concerns unrelated to environmental issues.

First, we analyze East Germans' emotional states, including whether respondents felt overwhelmed by current societal conditions, were optimistic or pessimistic about the future, or experienced loneliness. Panel A of Table A.9 shows that individuals with access to Western TV are not more likely to report these emotions than those in the control group. Moreover, Western TV reception does not affect respondents' confidence in their future professional, financial, or family prospects. Second, we examine concerns unrelated to environmental topics, such as maintaining peace, job security, immigration, computer technology, overpopulation, and HIV. As reported in Panel B of Table A.9, we find no significant relationship between exposure to Western TV and any of these concerns.

Taken together, these results suggest that the observed differences in environmental preferences (particularly the heightened concern about pollution) are not driven by Western TV audiences being generally more exposed to negative or critical news than viewers of East German state media.

Exposure to forms of collective action and established networks

Another potential mechanism is that Western TV promoted collective action by exposing East Germans to examples of civic engagement and established networks in the West. Rather than directly influencing environmental preferences through information, Western broadcasts might have encouraged citizens to organize collectively or to voice dissatisfaction with political or social conditions. If this social-mobilization channel were relevant, we would expect Western TV exposure to increase participation not only in environmental organizations but also in other forms of civic engagement unrelated to environmental issues.

To test this possibility, Table A.10 examines whether Western TV reception is associated with participation in a range of alternative organizations. Specifically, we consider memberships in trade unions, trade associations, and cooperatives, as well as involvement in neighborly-help or citizens' groups. We also analyze the frequency of volunteering, participation in church activities, and general interest in politics. Across all outcomes, we find no systematic relationship between Western TV exposure and these broader forms of civic or social participation.

Changes in personality traits and non-environmental-related preferences

Another potential mechanism is that exposure to Western TV altered East Germans' risk or time preferences, factors known to influence environmental attitudes (Milfont and Gouveia, 2006). Previous studies document persistent differences in risk (Heineck and Süßmuth, 2013) and time preferences (Friehe and Pannenberg, 2020) between East and West Germans, suggesting that exposure to Western values through television could have shaped environmental concerns indirectly by affecting these preferences. To test this hypothesis, we first examine whether Western TV exposure is associated with individuals' self-reported risk preferences using data from the SOEP.²⁷ Columns (1) and (2) of Table A.11 show no significant relationship between Western TV exposure and either risk tolerance or impatience, regardless of whether these preferences are measured continuously (Panel A) or as binary indicators (Panel B).

A related hypothesis is that media exposure could have influenced personality traits. Prior research shows that media use can affect dimensions such as openness and agreeableness (Xue et al., 2018), both of which are predictive of pro-environmental behavior (Pavalache-Ilie and Cazan, 2018). We therefore test whether Western TV exposure affected these traits using the Big Five personality measures.²⁸ Columns (3) and (4) of

²⁷Information on risk and time preferences is available in the SOEP only from 2004 and 2008, respectively. Consequently, these analyses rely on smaller samples.

²⁸Details on the construction of these measures are provided in Table B.1 in the appendix.

Table A.11 reveal no significant association between TV exposure and either openness or agreeableness.

Finally, [Bechtel et al. \(2019\)](#) show that reciprocal and altruistic individuals are more likely to support climate protection policies. While the more individualistic content on Western TV could, in principle, have reduced altruistic or reciprocal tendencies, columns (5) to (8) of Table A.11 show no such effects. Specifically, Western TV exposure neither affects respondents' valuation of altruism and helping others (columns (5) to (6)) nor their positive or negative reciprocity (columns (7) to (8)).²⁹

Overall, these results suggest that Western TV did not lead to persistent changes in East Germans' personality traits, risk attitudes, or time preferences, reinforcing the interpretation that the observed effects on environmental preferences stem from informational rather than psychological channels.

Crowding out of propaganda exposure

Finally, another potential explanation is that East Germans' environmental preferences were primarily shaped by domestic propaganda, which systematically downplayed the significance and risks of environmental pollution. In this context, Western TV may have induced a *crowding-out effect* ([Campa and Serafinelli, 2019](#)) by expanding access to alternative TV channels and thereby reducing exposure to state-controlled broadcasts. To test whether our results simply reflect lower consumption of East German media, we control for individual-level proxies of propaganda exposure beyond media use. Following [Campa and Serafinelli \(2019\)](#) and [Hartmann \(2024\)](#), we use three indicators: (i) employment in the GDR's state apparatus, (ii) satisfaction with democracy in the GDR, and (iii) support for the PDS party, the successor to the SED founded in 1989. The underlying assumption is that individuals who were ideologically aligned with, or directly employed by, the regime were more frequently exposed to its propaganda. Column (1) in Table A.12 reproduces the baseline specification, columns (2) to (4) add each proxy separately, and column (5) includes all three simultaneously. Across all specifications, we find no evidence that environmental preferences are driven by differential exposure to GDR propaganda. Moreover, including these proxies hardly changes the estimated coefficient of the treatment indicator.

²⁹Table B.1 in the appendix describes the underlying SOEP questions for altruism and reciprocity.

5 The effect of Western TV on pro-environmental behavior

5.1 Western TV reception and election results for the Greens

The preceding analysis has focused on environmental concerns and attitudes. This section examines whether exposure to Western TV influenced actual behavior. To mitigate concerns about social desirability bias in survey responses, we rely on administrative county-level data. Specifically, we assess whether pre-reunification access to Western TV affected the electoral success of the Greens (*Bündnis 90/Die Grünen*) in federal elections following reunification.³⁰ One advantage of using electoral data is that individuals cast their votes anonymously and are incentivized to express their actual preferences, given that their votes have real political implications.

Given that individuals with Western TV access express stronger environmental concerns and are more likely to be active in environmental organizations, we expect these individuals to be more inclined to support the Greens in federal elections. To test this hypothesis, we employ the following linear random-effects model:

$$GV_{it} = \beta_0 + \beta_1 TV_i + \beta_2 X_{it} + \gamma_t + \delta_i + Z_i + \epsilon_{it}, \quad (4)$$

where GV_{it} denotes the Green Party vote share in county i and federal election year t .³¹ The treatment variable TV_i equals one if county i had access to Western TV before the reunification. Consequently, β_1 represents our coefficient of interest and captures the treatment-control difference in the vote share of the Green Party. X_{it} is a vector of time-varying county-level controls, γ_t indicates election-year fixed-effects, and δ_i denotes district fixed-effects. Z_i is the county-specific random-effect, i.e., the difference between the average election result in county i and the average election result in Eastern Germany. Finally, ϵ_{it} is the error term.

We use electoral data from the Federal Returning Officer (*Bundeswahlleiter*). Since our previous results indicate that the impact of Western TV diminished over time, we focus on the first three federal elections in reunified Germany that took place in 1990, 1994, and 1998. In line with our prior analysis, the treatment assignment relies on the

³⁰The East German Green Party (*Grüne Partei in der DDR*, from September 1990 *Die Grünen*) was founded on February 9, 1990. In the 1990 federal election, the East German Green Party formed a joint list together with Alliance 90 (*Bündnis 90*). The East and West German Green parties merged on December 3, 1990, and subsequently merged with Alliance 90 on May 14, 1993.

³¹We use a linear random-effects model as it allows us to identify non-time varying factors such as TV reception. Based on Breusch-Pagan Lagrangian Multiplier tests, we favor using linear random-effects models instead of pooled OLS. However, all findings presented in this subsection hold if we employ pooled ordinary least squares regressions.

TV signal strength data from [Crabtree et al. \(2015\)](#). Figure 3 depicts the treatment and control regions.

The vector of controls, X_{it} , includes logarithmic population density, the share of females, the share of foreign residents, and the birth rate, measured by the number of births per 1,000 inhabitants. In addition, we include a binary indicator that identifies urban counties (*kreisfreie Städte*), considering the stronger electoral support for the Greens in urban areas ([Stroppe and Jungmann, 2022](#)).³² We also control for religious composition using historical denominational shares from 1939 to avoid endogeneity. To capture local economic characteristics, we include county-level unemployment rates and GDP per capita. Panel A of Table A.8 reports summary statistics. Overall, the counties in the treatment and control group hardly differ in their demographic and economic characteristics. However, counties with Western TV access exhibit a slightly lower unemployment rate (7.19 % in the treatment group and 7.65 % in the control group) and a marginally higher share of females (52.14 % in the treatment group and 51.72 % in the control group). Although these differences are relatively small, we will apply a geographic RDD as an additional robustness test.

Table 4 around here

Table 4 presents the results for the election years from 1990 to 1998. Column (1) contains only the treatment indicator and election-year fixed-effects. Column (2) adds demographic and economic controls, while column (3) includes district fixed-effects. Consistent with the hypothesis, counties with former Western TV access exhibit a significantly higher vote share for the Greens. The estimates in column (3) indicate a treatment-control difference of 0.38 percentage points, a 9.24 % increase relative to the sample mean of 4.14 %. In addition, we find positive correlations for population density, unemployment rates, and the local birth rate. The latter is consistent with studies showing that environmental attitudes can be influenced by individuals' concern for the future well-being of subsequent generations ([Dupont, 2004](#), [Hoyos et al., 2009](#)). Higher election results in areas with higher unemployment may relate to the Greens political goals, which included expanding social security. Moreover, urban counties exhibit, on average, higher vote shares for the Greens. In contrast, we observe a negative correlation between the share of votes for the Green Party and the local proportion of foreigners, as well as the historical proportion of the population belonging to a religion. The latter is consistent with the study re-

³²In Germany, the federal states are divided into administrative units called counties (*Kreise*), which correspond to the NUTS-3 level. While a county usually encompasses multiple municipalities, most cities with more than 100,000 inhabitants maintain an independent status outside the county system. These entities are designated as urban counties.

sults of Arbuckle and Konisky (2015) and Sharma et al. (2021), documenting a negative association between religiosity and pro-environmental attitudes.

Columns (4) to (6) analyze each election separately, showing that the differences between both groups gradually diminish over time and vanish in the 1998 election.³³ Similar to the analysis of the survey data in Section 4.5, we find evidence of convergence of preferences within the first decade after reunification. The coefficient in column (4) implies that Western TV access during the GDR period increased the vote share of the Greens in the 1990 election by 0.59 percentage points, representing a 10.9 % increase relative to the sample mean in 1990. The fact that the Greens received 6.2 % of the votes in East Germany emphasizes the role of Western TV in the Greens surpassing the five-percent threshold required for parliamentary representation.³⁴

Robustness checks in Table D.1 confirm that our main results hold when using a geographic RDD, extending the control vector to include (i) distance to the West German border, (ii) historical SO₂ levels, and (iii) turnout, as well as when applying alternative signal thresholds or sample restrictions (e.g., excluding counties near the inner German border or the Berlin area).³⁵

Finally, in Table D.2, we examine whether the reception of Western TV influenced the election results of other parties. In line with previous studies, we find that access to Western TV reduced support for far-right and far-left parties in East Germany (Friehe et al., 2020, Hornuf et al., 2023). Moreover, Western TV reception is associated with a lower vote share for the Christian Democratic Union of Germany (CDU, *Christlich Demokratische Union Deutschlands*), the incumbent governing party in 1990. In contrast, the Social Democratic Party (SPD, *Sozialdemokratische Partei Deutschlands*) and the Free Democratic Party (FDP, *Freie Demokratische Partei*) receive higher vote shares in treated regions. Overall, these patterns indicate that Western TV exposure contributed to a broader shift in political preferences. Consequently, although the higher vote share of the Greens aligns with the findings of Section 4, we cannot rule out that part of this increase reflects more general political realignments rather than exclusively heightened concern for environmental issues.

5.2 Western TV reception and complaint letters

We next examine an alternative form of environmentally motivated behavior: the submission of complaint letters (*Eingaben*) to local GDR authorities. In the GDR, citizens

³³There is also no significant treatment effect in the subsequent federal elections.

³⁴The five percent threshold is the minimum percentage of the votes needed for a political party to be represented in the German parliament (*Bundestag*). In 1990, the five-percent threshold applied separately to East and West Germany. Thus, success in either region ensured representation in the parliament.

³⁵In these robustness test, we focus our main specification from column (3) in Table 4.

had the legal right to submit complaint letters to express their discontent about specific conditions in their daily lives. From the government’s point of view, this system was intended to understand the concerns of its citizens and to solve issues at an individual level before they developed into more significant protest movements.

The Potsdam Grievance Statistic File contains data on the number and topics of around 7.8 million complaint letters submitted to local GDR authorities between 1970 and 1989 (Fabian Class and Krawietz, 2018, Albrecht et al., 2020). We construct a county-year panel for 201 East German counties over the period from 1980 to 1989. During this period, an average of 3.8 % of letters addressed environmental issues. We combine this data with county-level information from the Statistical Yearbooks of the GDR.

We consider two outcome measures: the share of letters addressing environmental concerns and the volume of environmental complaints per 100,000 inhabitants and day.³⁶ The vector of controls includes a county’s population size and density, the share of females, the historical share of inhabitants with a religious affiliation in 1939, savings per capita, and a binary indicator differentiating between urban and rural counties. Following Horz et al. (2023) we also control for average annual SO₂ levels to account for local pollution exposure.³⁷ Panel B of Table A.8 provides descriptive statistics.

Table 5 around here

Table 5 reports our results. Column (2) indicates that Western TV reception increases the share of environmental complaint letters by 1.1 percentage points, corresponding to 29 % of the sample mean. In addition, in column (5), we observe a significantly higher number of environmental complaints among GDR counties with Western TV access. For a county like Dessau, with around 100,000 inhabitants, a coefficient of 0.101 translates into roughly 36 additional complaint letters per year. Similar to the study of Horz et al. (2023), we find a positive relationship between the local SO₂ concentrations and environmental complaints

Applying a geographic RDD in columns (3) and (6), which restricts the sample to counties within 100 km of the treatment boundary, yield smaller coefficients. While the treatment effect on complaint volume remains statistically significant, the effect on the letter share is no longer significant (p-value = 0.151). Additional robustness checks indicate that the results robust when using alternative TV signal strengths to define the

³⁶The number of letters for each county is usually given either annually (from January to December) or semiannually (from January to June and July to December). As half-year values are missing in some cases, we weigh the number of letters with the duration of the reporting period of a spell in days.

³⁷In contrast to our estimations in Section 5.1, we do not control for a county’s birth rate, as this information is not available for all years in the period from 1980 to 1989. If we include the birth rate as an additional control variable and run the estimations for the available years, the results remain similar.

treatment indicator or when excluding counties located along the inner German border or in the Berlin area. However, controlling for the distance to the West German border reduces statistical significance (p-value = 0.109 for the share of letters and p-value = 0.169 for letter volume). All estimations are reported in Table D.3.

6 Conclusion

This paper investigates how exposure to environmental information via mass media influences individuals' environmental preferences and related behaviors. Our causal identification relies on the exogenous variation in the reception of Western TV programs in the GDR, which was determined by geographic features. In contrast to the East German state media, Western TV reported openly on environmental pollution in the GDR. Survey evidence from the late 1980s and the early 1990s indicates that Western TV not only informed GDR citizens about pollution caused by the state-owned industry but also evoked environmental awareness and an understanding of the adverse health consequences of pollution. In addition, access to Western TV enabled the GDR population to detect misinformation on pollution in the government's propaganda, leading to substantially lower trust in the authorities' environmental policies. With this finding, we also contribute to the literature on the potential backfire effects of censorship ([Adena et al., 2015](#), [Gläßel and Paula, 2020](#)). Our study further reveals that access to pollution-related information increased the likelihood that individuals became involved in environmental interest groups. This finding is highly relevant as these groups strongly influenced the democracy movement in the late 1980s and eventually contributed to the fall of the Berlin Wall and German reunification ([Beleites, 2016](#)). Finally, using two administrative datasets, we show that providing pollution-related information enhanced the likelihood of individuals expressing their dissatisfaction with pollution to local GDR authorities and increased the vote share of the Green Party in the first federal elections in reunified Germany.

Overall, the generalizability of our findings should be treated with caution. Although our empirical design ensures high internal validity, concerns remain regarding external validity. The GDR context was characterized by a highly polarized media landscape in which citizens could choose only between state-controlled broadcasts and a small number of Western channels. This situation differs markedly from today's fragmented media environment, where individuals can access information from many sources across multiple platforms. For this reason, the effects of comparable exposure through one single medium are likely smaller and more heterogeneous in a contemporary context. At the same time, the underlying mechanism identified in this study, namely that media can reduce environmental-related information frictions or counteract biased information when

reliable information is scarce, remains relevant beyond the historical case. This applies particularly to contexts in which access to trustworthy information is constrained or where individuals lack the resources or knowledge to obtain such information independently. In such environments, transparent and accessible pollution-related information can shape individuals' understanding of environmental issues and influence their willingness to engage in pro-environmental actions.

Nevertheless, to derive precise policy implication, future research is needed to evaluate how these findings translate to other contexts, such as settings involving shorter treatment durations or different media environments. While most previous studies only examine the correlation between media consumption and environmental preferences or only identify short-term causal effects of information campaigns, this natural experiment allows us to document causal long-term implications. Besides the extensive treatment period, persistent effects could originate from intergenerational transmission of attitudes towards environmental issues. Indeed, numerous studies point to an intergenerational transmission of environmental attitudes ([Grønhøj and Thøgersen, 2009](#), [Casaló and Escario, 2016](#), [Katz-Gerro et al., 2020](#)). However, our data sets do not allow us to examine such effects, representing a remaining empirical question for future research.

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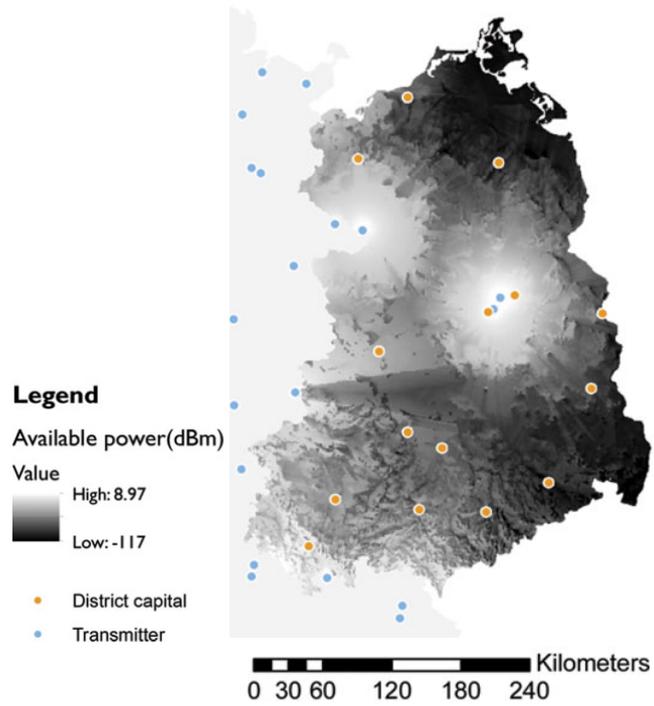
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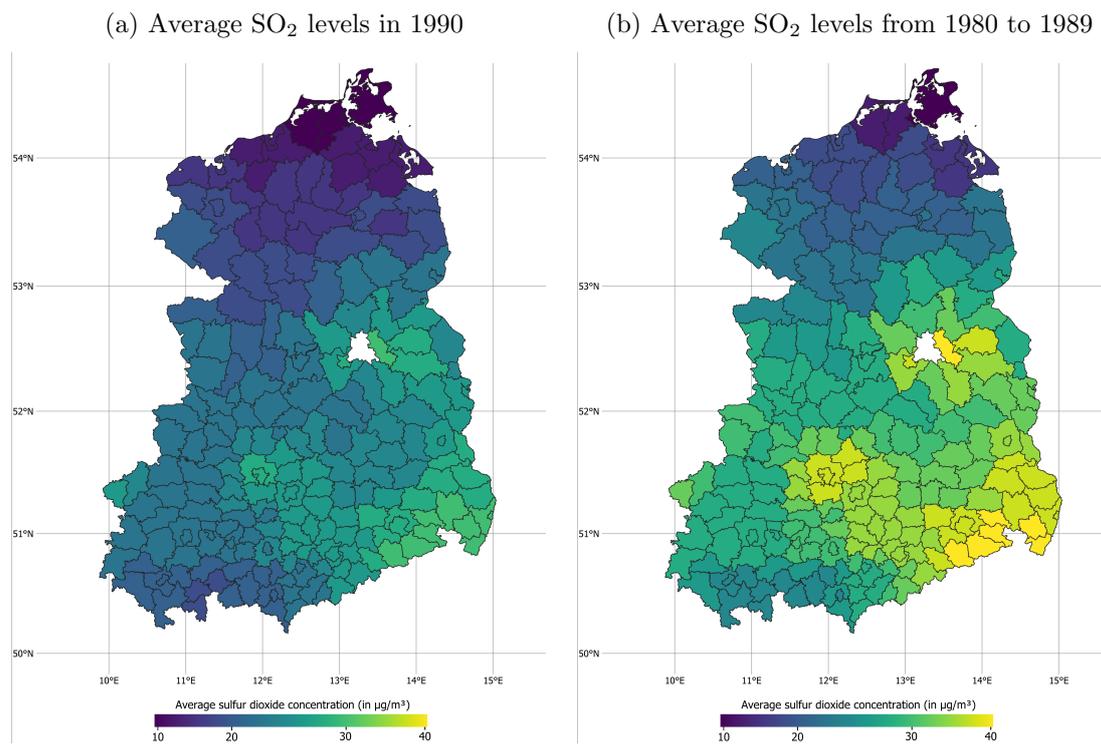
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Figure 1: Reception of Western TV in the GDR



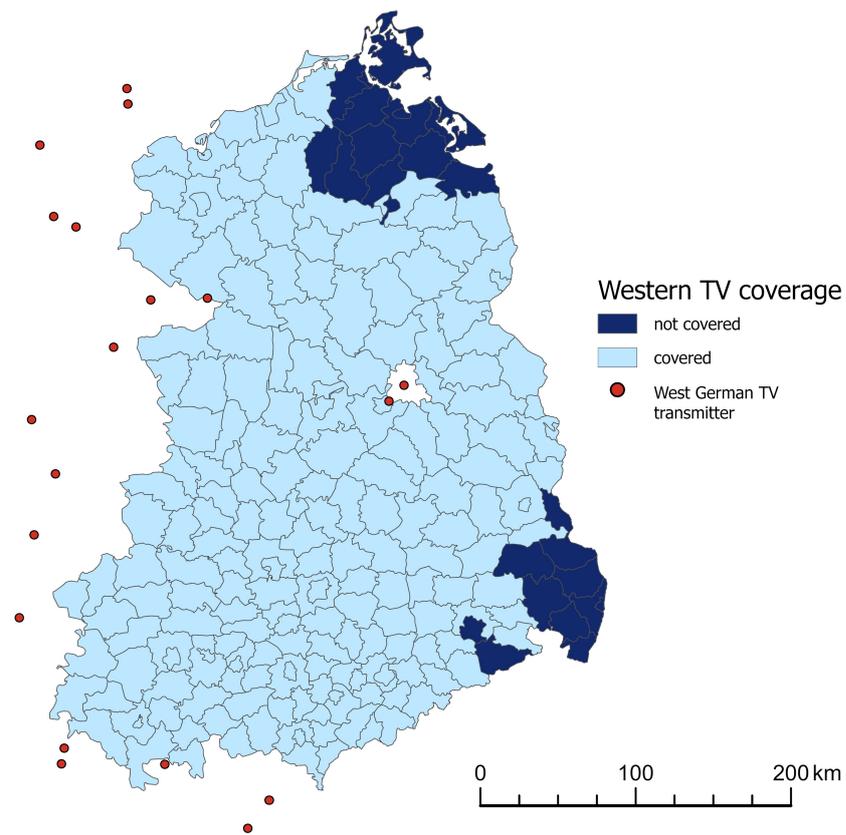
Note: This figure shows the Western TV coverage in East Germany in 1989. Each blue dot represents a West German TV transmitter. In bright areas, there was a higher signal strength and thus better television reception. In contrast, there was minimal to no reception in dark areas. The orange dots represent East Berlin and the 14 district capitals. This map is reproduced and slightly modified from [Crabtree et al. \(2015\)](#).

Figure 2: Regional pollution levels across GDR counties



Notes: Figure (a) shows the average SO₂ concentration measured in µg/m³ at the county level in 1990. Figure (b) illustrates the average SO₂ concentration at the county level in the period from 1980 to 1989. Data source: [Global Modeling and Assimilation Office \(2015\)](#).

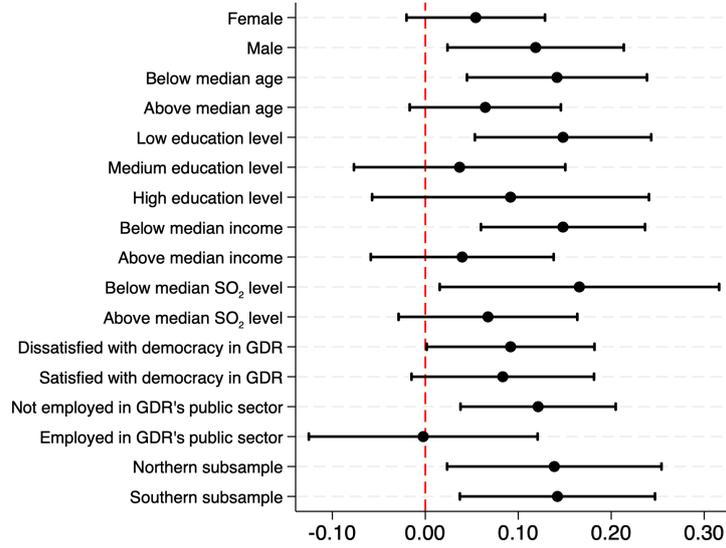
Figure 3: Reception of Western TV across GDR counties



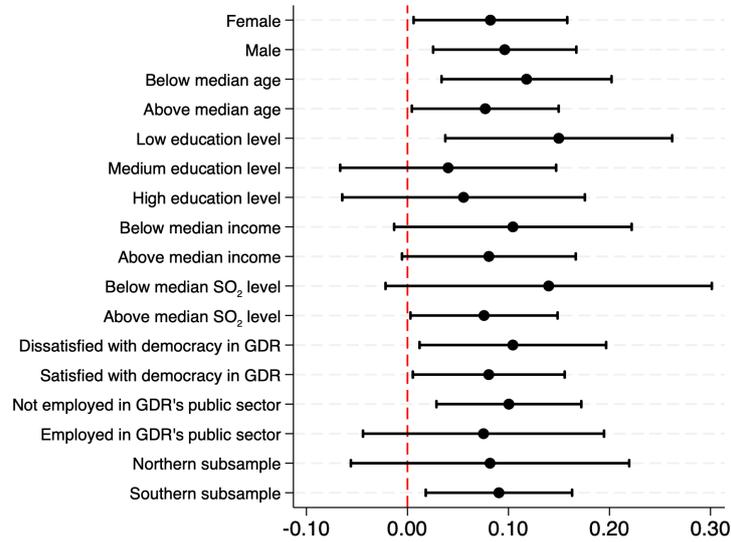
Notes: East German counties with and without access to Western TV before reunification based on a -86.5 dBm cutoff. Darker counties represent the control area with no reception (25 counties) and lighter counties represent the treatment area with sufficient signal strength (192 counties). County boundaries are shown as gray lines and West German TV transmitters are illustrated by red dots.

Figure 4: Effect heterogeneity

(a) Concerned about environmental protection



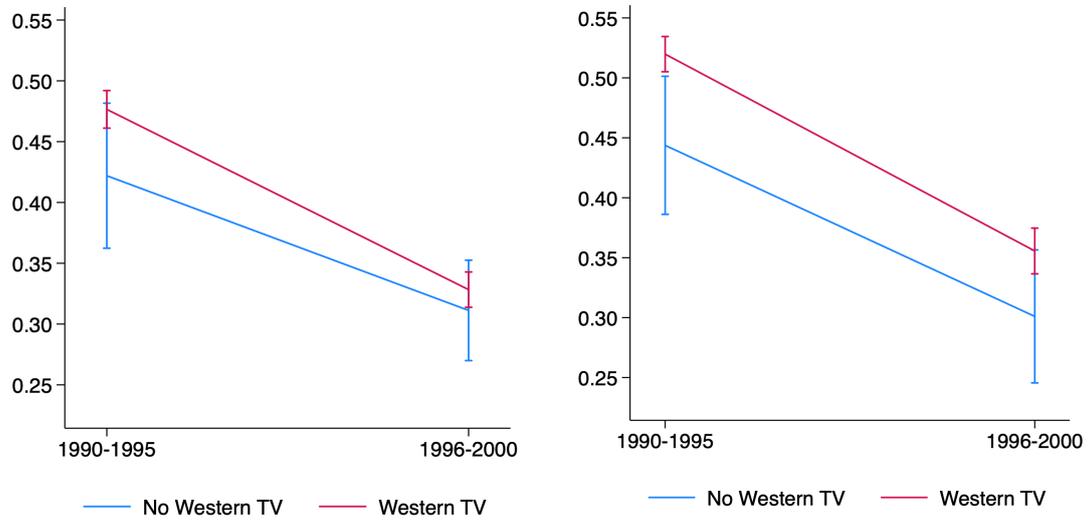
(b) Environmental protection important for own well-being



Notes: This figure displays the estimated effects of Western TV exposure across different subsamples. Each row corresponds to a separate probit model that includes the full set of control variables used in our main specification. Except for the regional splits into North and South, all estimations include district fixed effects. In the Northern and Southern subsamples, there is little within-district variation in treatment. Standard errors are clustered at the county level. The confidence intervals shown are set at the 90 % level of statistical significance. Data source: [SOEP v39 \(2024\)](#), survey year 1990.

Figure 5: Dynamics of the Western TV effect

(a) Concerned about environmental protection (b) Environmental protection important for well-being



Note: The figure shows the predicted likelihood of being concerned about environmental protection (a) and perceiving environmental protection as essential for well-being (b), respectively, for the treatment and the control region over time. The confidence intervals shown are set at the 90 % level of statistical significance. Linear random-effects models include the set of control variables used in our main specification including district fixed-effects. Standard errors are clustered at the county level. Data source: [SOEP v39 \(2024\)](#), survey year 1990 to 1999.

Table 1: Summary statistics

	All observations		Western TV		No Western TV		(3) - (5)
	Mean (1)	S.D (2)	Mean (3)	S.D (4)	Mean (5)	S.D (6)	Difference (7)
<i>Panel A: Overall sample</i>							
Dependent variables:							
Concerns about environmental protection	0.589	0.492	0.604	0.489	0.486	0.500	0.118***
Environmental protection important for own well-being	0.629	0.483	0.642	0.479	0.538	0.499	0.104***
Member of environmental interest group	0.023	0.149	0.025	0.157	0.003	0.057	0.022**
Explanatory variables:							
Female	0.526	0.499	0.524	0.499	0.537	0.499	-0.013
Age	42.353	16.109	42.456	16.125	41.656	15.997	0.800
Single	0.171	0.376	0.171	0.376	0.172	0.378	-0.001
Household size	3.087	1.173	3.069	1.177	3.207	1.135	-0.137**
Migration background	0.033	0.178	0.033	0.179	0.031	0.174	0.002
Health satisfaction	6.731	2.631	6.717	2.636	6.826	2.596	-0.110
Years of education	11.766	2.169	11.732	2.136	11.996	2.369	-0.265***
Full-time	0.684	0.465	0.680	0.467	0.711	0.454	-0.031
Part-time	0.096	0.295	0.098	0.298	0.082	0.275	0.016
Not working	0.074	0.262	0.073	0.260	0.082	0.275	-0.009
Retired	0.146	0.353	0.149	0.356	0.124	0.330	0.025
Household income (log.)	6.766	0.461	6.761	0.458	6.803	0.482	-0.042**
Avg. SO ₂ level 1990 (µg/m ³)	24.517	4.364	24.499	3.721	24.639	7.357	-0.140
Western TV region	0.871	0.335	1.000	0.000	0.000	0.000	
<i>Observations</i>	4236		3689		547		
<i>Panel B: Geographic RDD sample</i>							
Dependent variables:							
Concerns about environmental protection	0.539	0.499	0.573	0.495	0.486	0.500	0.087***
Environmental protection important for own well-being	0.590	0.492	0.624	0.485	0.538	0.499	0.085***
Member of environmental interest group	0.017	0.130	0.026	0.158	0.003	0.057	0.026***
Explanatory variables:							
Female	0.525	0.500	0.518	0.500	0.537	0.499	-0.020
Age	42.400	15.831	42.879	15.715	41.656	15.997	1.223
Single	0.165	0.372	0.161	0.368	0.172	0.378	-0.011
Household size	3.182	1.180	3.166	1.208	3.207	1.135	-0.041
Migration background	0.026	0.161	0.024	0.152	0.031	0.174	-0.008
Health satisfaction	6.717	2.587	6.646	2.581	6.826	2.596	-0.180
Years of education	11.791	2.202	11.658	2.077	11.996	2.369	-0.338***
Full-time	0.702	0.458	0.695	0.461	0.711	0.454	-0.016
Part-time	0.079	0.271	0.078	0.268	0.082	0.27	-0.005
Not working	0.078	0.268	0.075	0.264	0.082	0.275	-0.007
Retired	0.141	0.348	0.152	0.359	0.124	0.330	0.027
Household income	6.793	0.459	6.786	0.444	6.803	0.482	-0.017
Avg. SO ₂ level 1990 (µg/m ³)	24.230	5.894	23.966	4.706	24.639	7.357	-0.673**
Western TV region	0.608	0.488	1.000	0.000	0.000	0.000	
<i>Observations</i>	1397		850		547		

Notes: This table shows summary statistics of the estimation sample in 1990. In columns (1) and (2), we show statistics for the overall sample, in columns (3) and (4) for respondents being exposed to Western TV, and in columns (5) and (6) for respondents without Western TV exposure. Column (7) shows the difference in means between columns (3) and (5). Panel A includes the main estimation sample. Panel B shows the summary statistics for the Geographic RDD sample, which only includes individuals who either live in counties without Western TV reception or in counties with Western TV reception that are within 50 km of a control county. Figure A.4 illustrates the approach. The information on memberships in environmental interest groups comes from the 1998 questionnaire. Data sources: [SOEP v39 \(2024\)](#), survey year 1990 and 1998, and [Global Modeling and Assimilation Office \(2015\)](#).

Table 2: The effect of Western TV on environmental preferences

<i>Dep. variable:</i>	Concerns about environmental protection			Environmental protection important for own well-being			Member of environmental interest group		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<i>Panel A: Baseline results</i>									
Western TV region	0.118** (0.052)	0.118*** (0.045)	0.092* (0.047)	0.104*** (0.031)	0.094*** (0.034)	0.093** (0.041)	0.022*** (0.005)	0.022*** (0.005)	0.023*** (0.005)
Controls	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
District fixed-effects	No	No	Yes	No	No	Yes	No	No	Yes
<i>Summary statistics of dep. variable:</i>									
Mean	0.589	0.589	0.589	0.629	0.629	0.629	0.023	0.023	0.023
S.D.	(0.492)	(0.492)	(0.492)	(0.483)	(0.483)	(0.483)	(0.149)	(0.149)	(0.149)
Pseudo R ²	0.005	0.014	0.026	0.004	0.027	0.035	0.016	0.073	0.098
Observations	4224	4224	4224	4226	4226	4226	2602	2602	2602
<i>Panel B: Geographic RDD</i>									
Western TV region	0.087 (0.056)	0.091** (0.046)	0.087* (0.047)	0.085** (0.038)	0.072* (0.039)	0.091** (0.041)	0.027*** (0.007)	0.028*** (0.007)	0.023*** (0.006)
Controls	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
District fixed-effects	No	No	Yes	No	No	Yes	No	No	Yes
<i>Summary statistics of dep. variable:</i>									
Mean	0.539	0.539	0.539	0.590	0.590	0.590	0.019	0.019	0.019
S.D.	(0.499)	(0.499)	(0.499)	(0.492)	(0.492)	(0.492)	(0.136)	(0.136)	(0.136)
Pseudo R ²	0.005	0.029	0.034	0.005	0.041	0.045	0.063	0.219	0.236
Observations	1393	1393	1393	1394	1394	1394	732	732	732

Notes: This table shows results from probit models and reports average discrete probability effects. Panel A uses the main estimation sample. In Panel B, we apply a geographic regression discontinuity design and only include individuals who either live in counties without Western TV reception or in counties with Western TV reception that are within 50 km of a control county. Figure A.4 illustrates the approach. Controls include: sex, age, age², household size, health satisfaction, number of years of education, employment status, household income, average regional SO₂ concentration, and dummy variables for being single and having a migration background. Columns (3), (6), and (9) include district fixed-effects. Standard errors are clustered at the county level and shown in parentheses. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Data source: [SOEP v39 \(2024\)](#), survey year 1990 for columns (1) to (6) and 1998 for columns (7) to (9). Table A.3 and Table A.4 report the full set of results including estimates for the covariates.

Table 3: Instrumental variable approach

<i>Dep. variable:</i>	Concerns about environmental pollution		Confidence about environmental protection		Trust in the SED's environmental policy		Concerns about nuclear power plants		Nuclear power generation should be expanded	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<i>Second stage:</i>										
Western TV consumption	0.039* (0.023)	0.045** (0.023)	-0.085*** (0.028)	-0.096*** (0.028)	-0.083*** (0.027)	-0.090*** (0.027)	0.060*** (0.019)	0.062*** (0.019)	-0.086*** (0.021)	-0.084*** (0.021)
<i>First stage:</i>										
Western TV region	0.761*** (0.045)	0.774*** (0.045)	0.761*** (0.045)	0.772*** (0.045)	0.758*** (0.045)	0.769*** (0.045)	0.760*** (0.045)	0.772*** (0.045)	0.761*** (0.045)	0.772*** (0.045)
F statistic	282.223	290.184	282.380	289.213	279.615	286.394	281.001	288.480	281.916	288.662
Controls	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Mean of outcome	0.816		0.420		0.317		0.153		0.796	
S.D. of outcome	0.387		0.494		0.465		0.360		0.403	
Mean of IV	0.823		0.824		0.824		0.824		0.823	
S.D. of IV	0.381		0.381		0.381		0.381		0.381	
Observations	3741		3751		3739		3740		3742	

Notes: This table shows results from two-stage least squares regressions using the Western TV signal reception, *Western TV region*, as the instrumental variable for Western TV consumption. Control variables include sex, age, age², a dummy variable for being single, a dummy variable for having children, log. monthly income, and the qualification level of the respondent's mother. Heteroskedasticity-robust standard errors are shown in parentheses. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Data source: [GESIS, ZA6070 \(1989\)](#).

Table 4: Western TV and election results of the Greens

<i>Dep. variable:</i>	Voting outcome for the Greens in federal elections					
	Panel			Cross-section		
		1990–1998		1990	1994	1998
	(1)	(2)	(3)	(4)	(5)	(6)
Western TV region	0.456* (0.260)	0.471*** (0.149)	0.382*** (0.148)	0.588** (0.251)	0.419** (0.174)	0.235 (0.146)
Log. population density		0.489*** (0.078)	0.424*** (0.083)	0.278* (0.141)	0.205** (0.098)	0.121 (0.113)
Females (%)		−0.340*** (0.087)	−0.204 (0.150)	−0.187 (0.208)	−0.015 (0.206)	0.134 (0.220)
Foreigners (%)		−0.339*** (0.081)	−0.284*** (0.075)	0.180 (0.315)	−0.004 (0.106)	0.196* (0.108)
Birth rate		0.216*** (0.051)	0.187*** (0.053)	0.084* (0.048)	0.056 (0.177)	0.277 (0.205)
Religious affiliation in 1939 (%)		−0.065*** (0.020)	−0.042** (0.018)	−0.041 (0.029)	−0.046*** (0.017)	−0.034** (0.015)
Urban county		1.263*** (0.247)	1.340*** (0.236)	2.172*** (0.357)	0.845*** (0.215)	0.947*** (0.205)
Unemployment rate (%)		0.022 (0.014)	0.063*** (0.017)	−0.318 (0.363)	0.271*** (0.061)	−0.056*** (0.022)
GDP per capita		0.250*** (0.071)	0.623 (0.402)	0.267 (0.476)	0.079 (0.204)	0.101 (0.132)
Avg. SO ₂ level		0.059*** (0.018)	0.046 (0.031)	0.059 (0.043)	−0.022 (0.039)	0.014 (0.043)
Election fixed-effects	Yes	Yes	Yes	No	No	No
District fixed-effects	No	No	Yes	Yes	Yes	Yes
<i>Summary statistics:</i>						
Mean of dep. variable	4.136	4.136	4.136	5.415	3.654	3.339
S.D. of dep. variable	(1.512)	(1.512)	(1.512)	(1.514)	(1.063)	(0.973)
Between R ²	0.021	0.556	0.664			
R ²				0.638	0.754	0.735
Observations	651	651	651	217	217	217

Notes: Columns (1) to (3) show results from GLS random-effects models, while the estimates in columns (4) to (6) are based on OLS regressions. Standard errors are clustered at the county level and shown in parentheses. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 5: Western TV and complaint letters

<i>Dep. variable:</i>	Share of letters related to environmental protection (in %)			Number of letters related to environmental protection (per 100,000 capita and day)		
	(1)	(2)	(3)	(4)	(5)	(6)
Western TV region	1.368*** (0.428)	1.104** (0.432)	0.671 (0.467)	0.121*** (0.032)	0.101*** (0.034)	0.062* (0.034)
Log. population density		-0.140 (0.138)	0.085 (0.179)		-0.033*** (0.012)	-0.008 (0.013)
Females (%)		-0.067 (0.048)	-0.338* (0.176)		0.002 (0.004)	-0.022 (0.016)
Pollution size (in 10,000)		-0.022** (0.011)	-0.014 (0.012)		-0.000 (0.002)	0.001 (0.001)
Religious affiliation in 1939 (%)		-0.054 (0.046)	-0.114 (0.080)		-0.007 (0.005)	-0.008 (0.007)
Savings (in 10,000) per capita		0.384** (0.163)	0.612*** (0.224)		0.031** (0.016)	0.038** (0.015)
Avg. SO ₂ level		0.078*** (0.027)	0.059** (0.029)		0.004* (0.002)	0.003 (0.002)
Year fixed-effects	Yes	Yes	Yes	Yes	Yes	Yes
GRD design	No	No	Yes	No	No	Yes
<i>Summary statistics:</i>						
Dep. variable	3.810 (3.735)	3.810 (3.735)	3.270 (3.557)	0.264 (0.309)	0.264 (0.309)	0.215 (0.262)
Between R ²	0.026	0.121	0.117	0.023	0.125	0.106
Observations	1885	1885	1137	1885	1885	1137

Notes: Results are based on linear random-effects models. The dependent variable in columns (1) to (3) is the share of complaint letters related to environmental protection, which relates the number of letters on environmental issues to the county's total number of letters in a given year. In columns (4) to (6), the dependent variable is the number of complaint letters related to environmental protection per 100,000 capita and days. Standard errors are clustered at the county level and shown in parentheses. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Data source: Albrecht et al. (2020), period: 1980–1988.

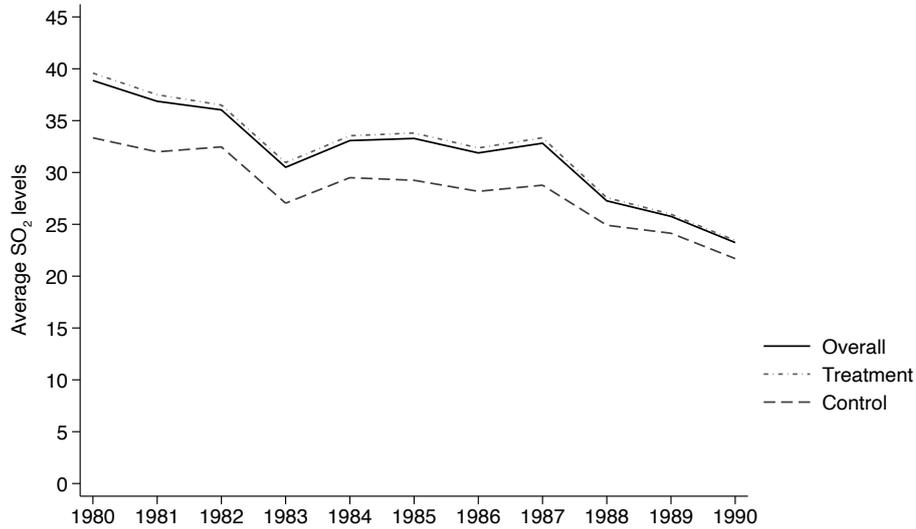
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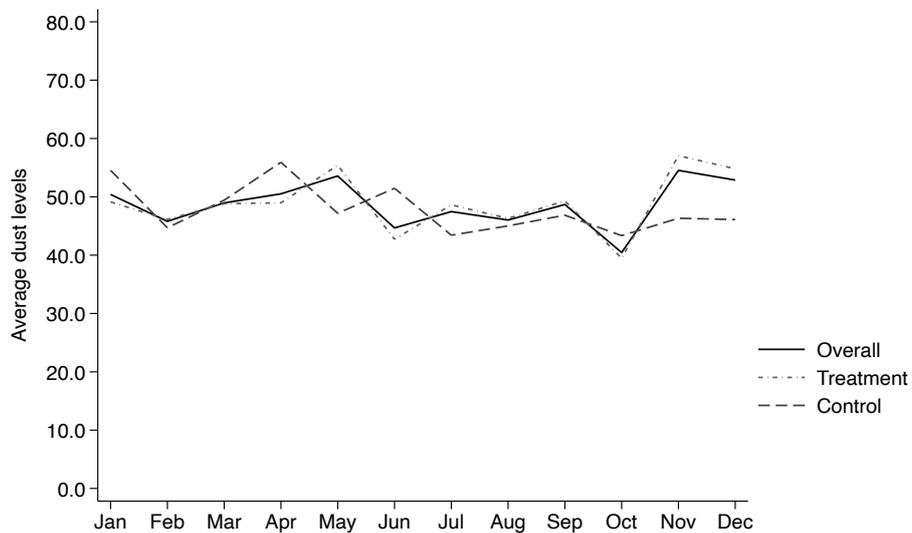
A Additional figures and tables

Figure A.1: Pollution levels in treatment and control regions

(a) Development of SO₂ levels between 1980 and 1990

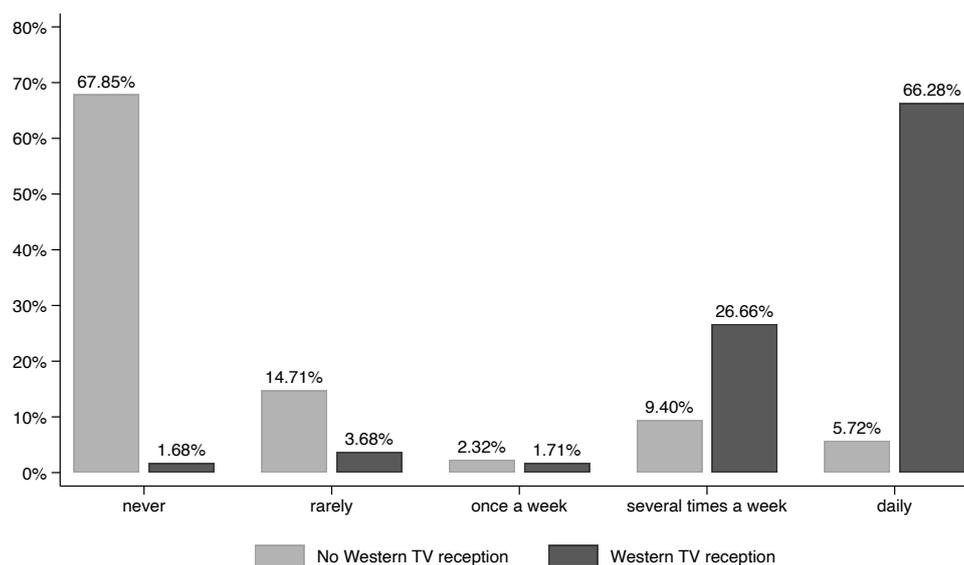


(b) Monthly development of dust pollution in 1989



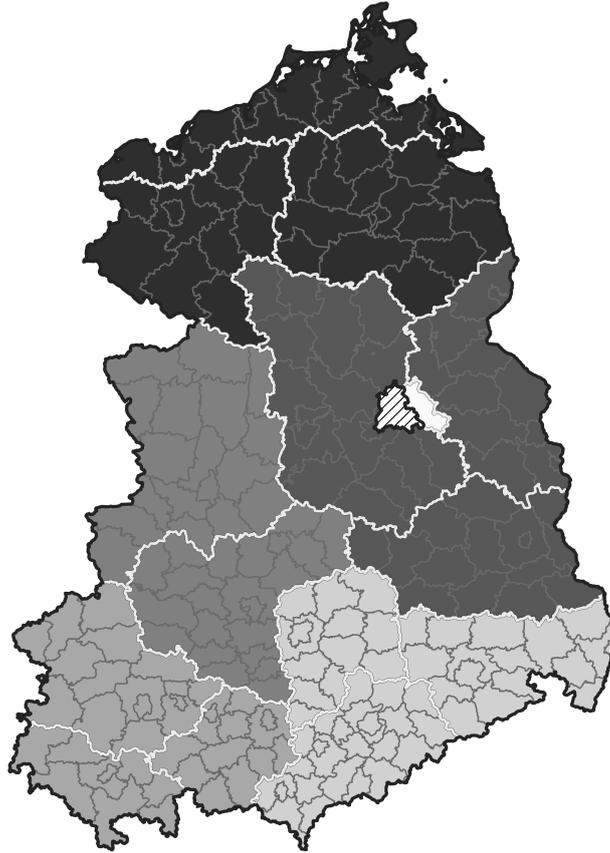
Notes: Figure A.1a shows the development of the average SO₂ levels from 1980 to 1990 for all East German counties and separately for the counties with and without Western TV access. Figure A.1b shows the monthly development of dust levels in the year 1989 for all East German counties and separately for the counties with and without Western TV access. Data sources: [Statistical Yearbook of the German Democratic Republic \(1990\)](#) and [Global Modeling and Assimilation Office \(2015\)](#).

Figure A.2: Western TV consumption in treatment and control districts (1988/89)



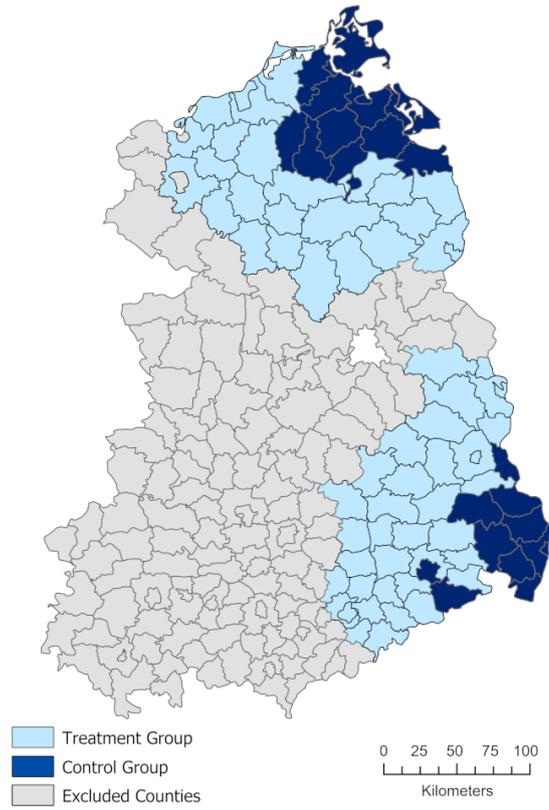
Notes: This figure shows how regularly individuals in the treatment (with Western TV reception) and control (without Western TV reception) districts watched Western TV. This computation is based on 3,480 individuals interviewed in the survey “Political Climate and Social Conditions in the GDR 1988/89” (*Politisches Klima und gesellschaftliche Bedingungen in der DDR 1988/89*), which the Central Institute for Youth Research conducted between late 1988 and early 1989. Data source: [GESIS, ZA6008 \(1989\)](#).

Figure A.3: Administrative boundaries in East Germany



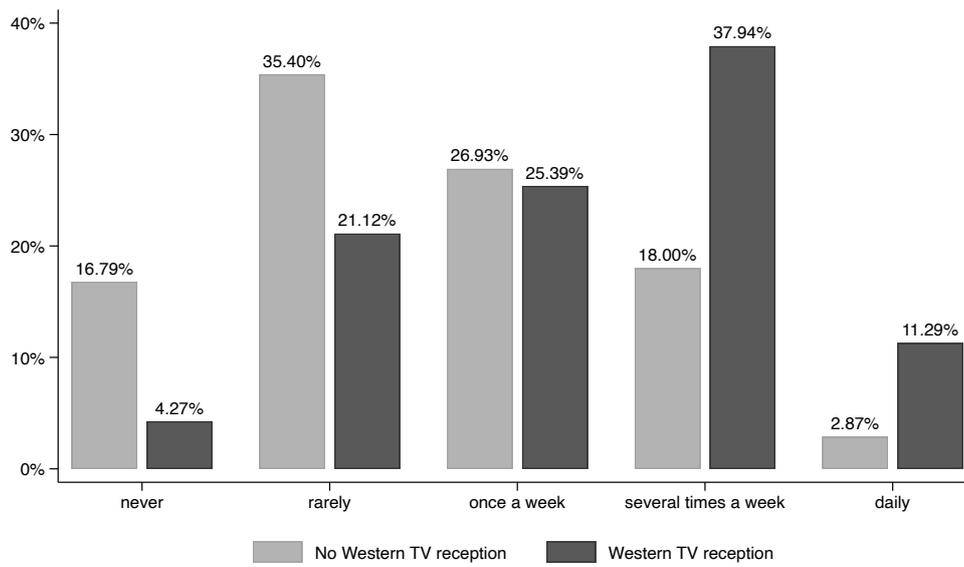
Notes: This figure shows the different administrative boundaries in East Germany. The GDR was divided into 14 administrative units called districts (*Verwaltungsbezirke*), with East Berlin added as the 15th in 1961. The district boundaries are shown with thick white lines. Each district (except East Berlin) was subdivided into counties (*Kreise*), illustrated by thin black lines. After reunification in 1990, the districts were dissolved and replaced by six federal states (*Bundesländer*), which are shown in different shades of gray. West Berlin, which did not belong to the GDR, is shown with dashed lines.

Figure A.4: Geographic regression discontinuity design



Notes: This figure shows East German counties with and without access to Western TV before reunification based on a -86.5 dBm cutoff. Treated counties outside a radius of 50 km from at least one county of the control group are marked in gray and excluded from the analysis in Panel B in Table 2.

Figure A.5: Western TV consumption in treatment and control districts (1989)



Notes: This figure shows how regularly individuals in the treatment (with Western TV reception) and control (without Western TV reception) districts watched Western TV. This computation is based on 3,918 individuals interviewed in the survey “Living conditions and moral orientations of students 1989” (*Lebensbedingungen und Wertorientierungen von Studenten 1989*), which the Central Institute for Youth Research conducted in spring 1989. Data source: [GESIS, ZA6070 \(1989\)](#)

Table A.1: Regional characteristics between treatment and control regions

	Treatment Area	Control Area	Difference		
	mean	mean	difference	se	p-value
<i>Panel A: District differences</i>					
1955					
Share of women (%)	57.20	57.04	0.16	0.93	0.87
Share of population below 18 (%)	26.70	27.41	-0.71	1.61	0.67
Population density	207.17	203.18	3.99	74.20	0.96
Infant mortality	49.79	42.72	7.07	4.41	0.14
Suicides per 100,000 inhabitants	26.01	24.87	1.14	4.46	0.80
Retail sales per capita	1680.42	1684.31	-3.89	80.86	0.96
Employed in agriculture (%)	22.79	26.83	-4.04	9.53	0.68
Employed in industry (%)	23.63	28.91	-5.28	9.16	0.58
Employed in trade (%)	10.59	10.86	-0.27	0.30	0.38
Students per teacher	17.13	17.02	0.11	0.38	0.78
Students per class	25.31	25.56	-0.25	0.57	0.67
1989					
Share of women (%)	52.11	51.90	0.21	0.53	0.70
Share of population below 18 (%)	22.42	23.82	-1.40	1.01	0.19
Population density	176.14	181.24	-5.10	58.65	0.93
Infant mortality	7.78	6.83	0.95	0.50	0.08
Suicides per 100,000 inhabitants	27.70	26.37	1.33	1.70	0.45
Retail sales per capita	7544.16	7836.19	-292.03	188.77	0.15
Employed in agriculture (%)	11.31	13.50	-2.19	4.34	0.62
Employed in industry (%)	39.47	33.41	6.06	6.90	0.40
Employed in trade (%)	9.68	10.30	-0.62	0.63	0.35
Students per teacher	12.34	12.91	-0.57	0.28	0.07
Students per class	20.30	20.89	-0.59	0.37	0.13
Carbon monoxide	27.60	27.85	-0.25	9.96	0.98
Share of forest area moderately to severely damaged (%)	20.11	18.18	1.93	4.92	0.70
Share of watercourses unusable for humans or livestock supply (%)	22.37	30.01	-7.64	6.90	0.29
1955–1989: Trends					
Share of women (%)	-5.00	-5.03	0.03	0.61	0.96
Share of population below 18 (%)	-4.31	-3.72	-0.59	0.75	0.44
Population density	-24.77	-17.32	-7.45	15.75	0.65
Infant mortality	-42.13	-36.07	-6.06	4.45	0.20
Suicides per 100,000 inhabitants	1.97	1.83	0.14	3.42	0.97
Retail sales per capita	5869.42	6147.95	-278.53	193.05	0.18
Employed in agriculture (%)	-11.93	-13.66	1.73	4.95	0.73
Employed in industry (%)	5.70	5.00	0.70	2.57	0.79
Employed in trade (%)	-0.87	-0.59	-0.28	0.54	0.61
Students per teacher	-4.71	-4.09	-0.62	0.49	0.23
Students per class	-4.90	-4.64	-0.26	0.81	0.75
<i>Panel B: County differences in 1988</i>					
Share of women (%)	52.05	51.96	0.09	0.39	0.81
Share of population at working age (%)	64.79	64.23	0.56	0.46	0.22
Employed in industry (%)	36.77	35.41	1.36	2.40	0.57
Employed in agriculture (%)	11.57	10.70	0.87	3.10	0.78
Employed in crafts and constructions (%)	9.70	10.01	-0.31	0.60	0.60
Employed in services and transport (%)	39.17	40.47	-1.30	2.59	0.62
Medical doctors per 10,000 inhabitants	24.13	22.59	1.54	3.65	0.68
Dentists per 100,000 inhabitants	72.01	73.65	-1.64	6.54	0.80
College (%)	21.80	22.14	-0.34	1.64	0.84
Skilled (%)	60.98	60.14	0.84	1.13	0.46
Unskilled (%)	13.05	13.57	-0.52	0.49	0.29
Respirable dust	49.44	45.59	3.86	12.17	0.75
Nitrogen oxides	9.92	9.22	0.70	3.06	0.82
<i>Panel C: County differences 1910, 1924, and 1925</i>					
Protestant share in 1925 (%)	91.19	90.75	0.44	1.14	0.70
Catholic share in 1925 (%)	5.19	6.36	-1.17	1.03	0.26
Jewish share in 1910 (%)	0.22	0.22	0.00	0.05	0.99
Left vote share in 1924	40.70	39.03	1.67	1.42	0.24

Notes: Panel A shows differences between districts (*Verwaltungsbezirke*) with and without Western TV reception. Population-weighted averages. The data used in Panel A comes from the statistical yearbooks of the GDR ([Statistical Yearbook of the German Democratic Republic, 1955, 1990](#)). Panel B shows differences between counties with and without Western TV reception. The data used in Panel B and C comes from [Crabtree et al. \(2015\)](#) and [Becker et al. \(2020\)](#), respectively.

Table A.2: Summary statistics for 1990 and 1998

	Overall sample				Geographic RDD sample			
	1990		1998		1990		1998	
	Mean (1)	S.D (2)	Mean (3)	S.D (4)	Mean (5)	S.D (6)	Mean (7)	S.D (8)
Western TV region	0.871	0.335	0.881	0.324	0.608	0.488	0.582	0.494
Female	0.526	0.499	0.530	0.499	0.525	0.500	0.538	0.499
Age	42.353	16.109	49.397	14.417	42.400	15.831	49.702	14.405
Single	0.171	0.376	0.109	0.312	0.165	0.372	0.117	0.322
Household size	3.087	1.173	2.769	1.141	3.182	1.180	2.853	1.145
Migration background	0.033	0.178	0.040	0.196	0.026	0.161	0.032	0.177
Health satisfaction	6.731	2.631	6.096	2.073	6.717	2.587	6.178	1.991
Years of education	11.766	2.169	12.047	2.285	11.791	2.202	12.033	2.284
Full-time	0.684	0.465	0.495	0.500	0.702	0.458	0.462	0.499
Part-time	0.096	0.295	0.071	0.257	0.079	0.271	0.078	0.269
Not working	0.074	0.262	0.169	0.375	0.078	0.268	0.182	0.386
Retired	0.146	0.353	0.265	0.441	0.141	0.348	0.278	0.448
Household income	6.766	0.461	7.468	0.432	6.793	0.459	7.467	0.432
Avg. SO ₂ level	24.517	4.364	11.393	2.129	24.230	5.894	11.708	3.104
Observations	4236		2602		1397		732	

Notes: This table shows summary statistics of the estimation sample. We show statistics for the overall sample in 1990 in columns (1) and (2) and for 1998 in columns (3) and (4). Columns (5) to (8) show the summary statistics for the Geographic RDD sample, which only includes individuals who either live in counties without Western TV reception or in counties with Western TV reception that are within 50 km of a control county. Figure A.4 illustrates the approach. Data sources: [SOEP v39 \(2024\)](#), survey year 1990 and 1998, and [Global Modeling and Assimilation Office \(2015\)](#).

Table A.3: Baseline results: Full regression table

<i>Dep. variable:</i>	Concerns about environmental protection			Environmental protection important for own well-being			Member of environmental interest group		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Western TV region	0.118** (0.052)	0.118*** (0.045)	0.092* (0.047)	0.104*** (0.031)	0.094*** (0.034)	0.093** (0.041)	0.022*** (0.005)	0.022*** (0.005)	0.023*** (0.005)
Female		-0.013 (0.014)	-0.011 (0.014)		0.010 (0.013)	0.012 (0.013)		-0.025*** (0.006)	-0.025*** (0.005)
Age		0.006** (0.003)	0.007** (0.003)		0.017*** (0.003)	0.017*** (0.003)		0.002 (0.002)	0.002 (0.001)
Age ²		-0.000** (0.000)	-0.000*** (0.000)		-0.000*** (0.000)	-0.000*** (0.000)		-0.000 (0.000)	-0.000 (0.000)
Single		0.028 (0.027)	0.035 (0.028)		0.024 (0.024)	0.028 (0.023)		0.005 (0.012)	0.002 (0.012)
Household size		-0.009 (0.013)	-0.010 (0.012)		0.017 (0.011)	0.015 (0.011)		-0.001 (0.004)	-0.001 (0.004)
Migration background		0.008 (0.045)	0.005 (0.044)		-0.032 (0.044)	-0.035 (0.044)		0.005 (0.019)	0.004 (0.017)
Health satisfaction		-0.012*** (0.003)	-0.012*** (0.003)		0.004 (0.003)	0.004 (0.003)		-0.001 (0.001)	-0.001 (0.001)
Years of education		-0.000 (0.005)	0.002 (0.004)		-0.023*** (0.004)	-0.020*** (0.004)		0.003*** (0.001)	0.003*** (0.001)
Part-time		-0.004 (0.028)	-0.010 (0.028)		0.022 (0.024)	0.018 (0.024)		0.009 (0.016)	0.006 (0.015)
Not working		0.019 (0.029)	0.022 (0.029)		0.008 (0.030)	0.009 (0.030)		0.012 (0.009)	0.012 (0.009)
Retired		-0.039 (0.039)	-0.036 (0.037)		-0.035 (0.037)	-0.034 (0.036)		-0.003 (0.008)	-0.002 (0.008)
Household income		0.023 (0.027)	0.028 (0.027)		-0.090*** (0.025)	-0.085*** (0.024)		-0.001 (0.007)	-0.001 (0.007)
Avg. SO ₂ level		0.007** (0.003)	0.005 (0.005)		0.001 (0.003)	-0.002 (0.006)		-0.002 (0.001)	0.001 (0.003)
District fixed-effects	No	No	Yes	No	No	Yes	No	No	Yes
<i>Summary statistics of dep. variable:</i>									
Mean	0.589	0.589	0.589	0.629	0.629	0.629	0.023	0.023	0.023
S.D.	(0.492)	(0.492)	(0.492)	(0.483)	(0.483)	(0.483)	(0.149)	(0.149)	(0.149)
Pseudo R ²	0.005	0.014	0.026	0.004	0.027	0.035	0.016	0.073	0.098
Observations	4224	4224	4224	4226	4226	4226	2602	2602	2602

Notes: This table shows results from probit models. Omitted variable: full-time employed. Columns (3), (6), and (9) include district fixed-effects. Standard errors are clustered at the county level and shown in parentheses. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Data source: SOEP v39 (2024), survey year 1990 for columns (1) to (6) and 1998 for columns (7) to (9).

Table A.4: Geographic regression discontinuity design: Full regression table

<i>Dep. variable:</i>	Concerns about environmental protection			Environmental protection important for own well-being			Member of environmental interest group		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Western TV region	0.087 (0.056)	0.091** (0.046)	0.087* (0.047)	0.085** (0.038)	0.072* (0.039)	0.091** (0.041)	0.027*** (0.007)	0.028*** (0.007)	0.023*** (0.006)
Female		-0.018 (0.023)	-0.019 (0.024)		0.008 (0.019)	0.007 (0.020)		-0.044*** (0.009)	-0.043*** (0.008)
Age		0.010** (0.005)	0.010** (0.005)		0.023*** (0.005)	0.023*** (0.006)		0.005 (0.003)	0.005 (0.003)
Age ²		-0.000*** (0.000)	-0.000*** (0.000)		-0.000*** (0.000)	-0.000*** (0.000)		-0.000 (0.000)	-0.000* (0.000)
Single		-0.036 (0.045)	-0.043 (0.043)		0.006 (0.048)	-0.001 (0.047)		-0.001 (0.018)	-0.002 (0.017)
Household size		-0.039*** (0.015)	-0.039*** (0.015)		-0.019 (0.015)	-0.021 (0.014)		-0.010 (0.006)	-0.007 (0.006)
Migration background		-0.017 (0.087)	-0.028 (0.085)		-0.010 (0.091)	-0.021 (0.090)			
Health satisfaction		-0.011** (0.006)	-0.011* (0.006)		0.006 (0.007)	0.006 (0.007)		0.001 (0.002)	0.001 (0.003)
Years of education		0.008 (0.007)	0.008 (0.007)		-0.027*** (0.009)	-0.027*** (0.009)		0.001 (0.002)	-0.000 (0.002)
Part-time		0.000 (0.056)	-0.008 (0.056)		0.066 (0.048)	0.064 (0.050)		0.049 (0.039)	0.050 (0.039)
Not working		0.021 (0.053)	0.019 (0.054)		0.041 (0.054)	0.043 (0.055)		0.010 (0.009)	0.008 (0.009)
Retired		0.025 (0.055)	0.025 (0.054)		0.012 (0.063)	0.016 (0.061)		0.024 (0.023)	0.025 (0.021)
Household income		0.040 (0.038)	0.031 (0.040)		-0.034 (0.040)	-0.031 (0.039)		0.013 (0.009)	0.011 (0.010)
Avg. SO ₂ level		0.009** (0.004)	0.000 (0.011)		0.004 (0.003)	-0.001 (0.011)		-0.002 (0.002)	-0.002 (0.004)
District fixed-effects	No	No	Yes	No	No	Yes	No	No	Yes
<i>Summary statistics of dep. variable:</i>									
Mean	0.539	0.539	0.539	0.590	0.590	0.590	0.019	0.019	0.019
S.D.	(0.499)	(0.499)	(0.499)	(0.492)	(0.492)	(0.492)	(0.136)	(0.136)	(0.136)
Pseudo R ²	0.005	0.029	0.034	0.005	0.041	0.045	0.063	0.219	0.236
Observations	1393	1393	1393	1394	1394	1394	732	732	732

Notes: This table shows results from probit models. We apply a geographic regression discontinuity design and only include individuals who either live in counties without Western TV reception or in counties with Western TV reception that are within 50 km of a control county. Figure A.4 illustrates the approach. Omitted variable: full-time employed. Columns (3), (6), and (9) include district fixed-effects. Standard errors are clustered at the county level and shown in parentheses. Significance levels: $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Data source: [SOEP v39 \(2024\)](#), survey year 1990 for columns (1) to (6) and 1998 for columns (7) to (9).

Table A.5: Alternative specification using ordered probit models

	Baseline sample		Geographic RDD sample	
	Coefficient (1)	Marginal effect (2)	Coefficient (3)	Marginal effect (4)
<i>Panel A: Concerns about environmental protection</i>				
Western TV region	0.230** (0.104)		0.219** (0.106)	
Not concerned		−0.015* (0.008)		−0.015* (0.008)
Somewhat concerned		−0.073** (0.032)		−0.069** (0.033)
Very concerned		0.088** (0.040)		0.084** (0.041)
<i>Summary statistics of dep. variable:</i>				
Mean		2.563		2.508
S.D.		(0.546)		(0.560)
Pseudo R ²		0.027		0.036
Observations		4224		1393
<i>Panel B: Environmental protection important for own well-being</i>				
Western TV region	0.243** (0.101)		0.240** (0.104)	
Very Unimportant		−0.003* (0.002)		−0.003* (0.002)
Less Important		−0.017** (0.009)		−0.016* (0.008)
Important		−0.071** (0.029)		−0.072** (0.030)
Very Important		0.091** (0.039)		0.090** (0.039)
<i>Summary statistics of dep. variable:</i>				
Mean		3.593		3.552
S.D.		(0.564)		(0.576)
Pseudo R ²		0.029		0.035
Observations		4226		1394

Notes: Columns (1) and (3) show the coefficient of the Western TV region dummy based on ordered probit models, while columns (2) and (4) report the marginal effects for each level of the respective dependent variable. All models include the preferred set of control variables described in Section 4.1 and district fixed-effects. Standard errors are clustered at the county level and shown in parentheses. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Data source: [SOEP v39 \(2024\)](#), survey year 1990.

Table A.6: Western TV reception using random-effects probit models

<i>Dep. variable:</i>	Concerns about environmental protection			Environmental protection important for own wellbeing		
	(1)	(2)	(3)	(4)	(5)	(6)
Western TV region	0.066** (0.033)	0.067** (0.030)	0.045 (0.030)	0.065** (0.026)	0.059** (0.029)	0.073** (0.034)
Controls	No	Yes	Yes	No	Yes	Yes
District fixed-effects	No	No	Yes	No	No	Yes
<i>Summary statistics of dep. variable:</i>						
Mean	0.424	0.424	0.424	0.458	0.458	0.458
S.D.	(0.494)	(0.494)	(0.494)	(0.498)	(0.498)	(0.498)
Log. pseudolikelihood	-18205.847	-18186.576	-18165.460	-9748.370	-9640.380	-9618.437
Observations	32204	32204	32204	16481	16481	16481

Notes: The table shows results from random-effects probit models and reports average discrete probability effects. Columns (2), (3), (5), and (6) include the preferred set of control variables described in Section 4.1 and year fixed-effects. Columns (3) and (6) include district fixed-effects. Standard errors are clustered at the county level and shown in parentheses. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Data source: SOEP v39 (2024). Columns (1) to (3) include the survey waves from 1990 to 1999, and columns (4) to (6) contain the 1990, 1991, 1994, 1998, and 1999 waves.

Table A.7: Summary statistics of GDR survey data

	Mean	Std. dev.	Min	Max	N
Dependent variables					
Concerns about environmental pollution (dummy)	0.82	0.39	0.00	1.00	3741
Confidence about environmental protection (dummy)	0.42	0.49	0.00	1.00	3751
Trust in the SED's environmental policy (dummy)	0.32	0.47	0.00	1.00	3739
Concerns about nuclear power plants (dummy)	0.15	0.36	0.00	1.00	3740
Nuclear power generation should be expanded (dummy)	0.80	0.40	0.00	1.00	3742
Explanatory variables					
Western TV consumption	0.70	0.46	0.00	1.00	3753
Western TV region	0.82	0.38	0.00	1.00	3753
Female	0.52	0.50	0.00	1.00	3753
Age	21.72	1.80	18.00	34.00	3753
Children	0.08	0.27	0.00	1.00	3753
Single	0.77	0.42	0.00	1.00	3753
Log. monthly income	5.84	0.44	0.00	7.54	3753
Qualification of mother:					
No vocational education	0.03	0.16	0.00	1.00	3753
Skilled labor	0.41	0.49	0.00	1.00	3753
College degree	0.34	0.47	0.00	1.00	3753
University degree	0.22	0.42	0.00	1.00	3753

Notes: This table shows descriptive statistics (means, standard deviation, minimum and maximum value). *N* refers to the number of observations. Data source: [GESIS, ZA6070 \(1989\)](#).

Table A.8: Summary statistics of county-level data

	Mean	Std. dev.	Min	Max	N
<i>Panel A: Election data set used in Section 5.1</i>					
Dependent variable					
Share of votes for the Greens (%)	4.14	1.51	1.73	11.43	651
Explanatory variables					
Western TV region	0.88	0.32	0.00	1.00	651
Log. population density	5.02	0.97	3.37	8.27	651
Share of females (%)	51.58	0.74	50.25	53.91	651
Share of foreigners (%)	1.37	0.99	0.15	12.70	651
Religious affiliation in 1939 (%)	94.78	3.78	78.81	99.41	651
Urban county	0.12	0.32	0.00	1.00	651
Unemployment rate (%)	13.64	4.99	6.20	23.63	651
GDP per capita	12.28	3.67	6.57	25.09	651
Log. distance to Inner German border	4.16	1.01	0.00	5.50	651
Avg. SO ₂ concentration	14.97	6.56	4.80	31.33	651
Avg. SO ₂ concentration from 1980 to 1989	29.51	5.68	12.05	38.79	651
<i>Panel B: Complaint letter data set used in Section 5.2</i>					
Dependent variables					
Share of complaint letters (%)	3.81	3.73	0.00	29.46	1885
Number of complaint letters (per 100,000 capita and day)	0.26	0.31	0.00	2.14	1885
Explanatory variables					
Western TV region	0.91	0.29	0.00	1.00	1885
Log. population density	5.01	1.09	3.58	9.15	1885
Share of females (%)	52.37	1.13	43.78	83.47	1885
Population in 10,000	7.92	10.46	2.03	128.45	1885
Religious affiliation in 1939 (%)	94.13	3.94	77.91	99.35	1885
Urban county	0.12	0.33	0.00	1.00	1885
Savings (in 100,000) per capita	1.57	1.02	0.01	8.99	1885
Avg. SO ₂ concentration	32.86	7.16	13.59	50.45	1885

Notes: This table shows descriptive statistics (means, standard deviation, minimum and maximum value). *N* refers to the number of observations.

Table A.9: Emotions and general concerns

<i>Panel A: The effect of Western TV on emotions and perceptions</i>						
<i>Dep. variable:</i>	Confident about own					
	Feeling overwhelmed (1)	Pessimistic about the future (2)	Feeling lonely (3)	professional development (4)	financial situation (5)	family development (6)
Western TV region	0.030 (0.027)	0.000 (0.055)	-0.024 (0.034)	-0.001 (0.009)	0.001 (0.013)	0.016 (0.011)
<i>Summary statistics of dep. variable:</i>						
Mean	0.285	0.378	0.176	0.956	0.882	0.927
S.D.	(0.452)	(0.485)	(0.381)	(0.206)	(0.323)	(0.260)
Pseudo R ²	0.036	0.030	0.069	0.006	0.028	0.033
Observations	4208	4220	4204	3745	3742	3741
Survey year	1990	1990	1990	1989	1989	1989
<i>Panel B: The effect of Western TV on concerns</i>						
<i>Dep. variable:</i>	Concerned about					
	maintaining peace (1)	job security (2)	immigration (3)	computer technology (4)	human overpopulation (5)	HIV (6)
Western TV region	-0.010 (0.028)	-0.025 (0.032)	0.024 (0.031)	0.002 (0.009)	-0.001 (0.012)	0.007 (0.014)
<i>Summary statistics of dep. variable:</i>						
Mean	0.817	0.821	0.863	0.044	0.081	0.110
S.D.	(0.387)	(0.383)	(0.344)	(0.205)	(0.273)	(0.313)
Pseudo R ²	0.020	0.022	0.056	0.011	0.015	0.014
Observations	4222	3244	2569	3739	3735	3742
Survey year	1990	1990	1999	1989	1989	1989

Notes: This table shows results from probit models and reports average discrete probability effects. The data source for columns (1) to (3) is [SOEP v39 \(2024\)](#). The estimations in these columns include district fixed-effects and the preferred set of control variables described in Section 4.1. The data source for columns (4) to (6) is [GESIS, ZA6070 \(1989\)](#). The estimations in these columns include the set of control variables used in Table 3. In columns (1) to (3), standard errors are clustered at the county level and shown in parentheses. Columns (4) to (6) show heteroskedasticity-robust standard errors. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table A.10: Networks

<i>Dep. variable:</i>	Membership in			Frequency of				
	Trade union (1)	Trade association (2)	Cooperative (3)	Volunteering (4)	Neighborly help (5)	Citizens group (6)	Church attendances (7)	Interest in politics (8)
Western TV region	0.050 (0.048)	-0.037 (0.026)	0.026 (0.029)	-0.036 (0.072)	0.004 (0.080)	-0.065 (0.082)	-0.011 (0.065)	-0.022 (0.042)
<i>Summary statistics of dep. variable:</i>								
Mean	0.695	0.076	0.100	1.538	2.556	1.270	1.374	0.514
S.D.	(0.460)	(0.265)	(0.300)	(0.937)	(0.883)	(0.654)	(0.746)	(0.500)
R ²				0.087	0.077	0.086	0.057	
Pseudo R ²	0.095	0.109	0.113					0.096
Observations	4126	3541	3590	4128	4191	4106	4143	4233

Notes: Columns (1), (2), (3), and (8) show results from probit models and report average discrete probability effects, while columns (4) to (7) show results from OLS regressions. The dependent variables in columns (1) to (3) are dummy variables that equal one if the respondent is a member of the respective organization. The dependent variables in columns (4) to (7) measure how regularly a person engages in the respective activity. Respondents could answer on the following scale: *never*, *less than once a month*, *every month*, or *every week*. In column (8), the dependent variable is a dummy variable that equals one if a person is interested in politics. All models include the preferred set of control variables described in Section 4.1 and district fixed-effects. Standard errors are clustered at the county level and shown in parentheses. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Data source: SOEP v39 (2024), survey year 1990.

Table A.11: Personality traits, social, risk and time preferences

<i>Dep. variable:</i>			Personality traits		Altruism		Reciprocity	
	Risk seeking (1)	Impatience (2)	Openness (3)	Agreeableness (4)	Desirability of altruism (5)	Selflessness (6)	Positive reciprocal (7)	Negative reciprocal (8)
<i>Panel A: Continuous measure</i>								
Western TV region	0.159 (0.196)	-0.028 (0.274)	0.090 (0.121)	0.007 (0.116)	-0.194 (0.125)	0.045 (0.092)	-0.126 (0.157)	0.211 (0.168)
<i>Summary statistics of dep. variable:</i>								
Mean	4.461	6.121	4.389	5.454	9.456	5.721	5.911	3.145
S.D.	(2.125)	(2.091)	(1.148)	(0.976)	(1.131)	(1.154)	(0.895)	(1.454)
R ²	0.111	0.031	0.080	0.084	0.023	0.049	0.037	0.079
Observations	2033	1622	1909	1917	4229	3370	1922	1923
<i>Panel B: Binary indicator</i>								
Western TV region	0.052 (0.049)	-0.023 (0.067)	0.057 (0.051)	0.009 (0.059)	-0.022 (0.048)	0.010 (0.034)	-0.087 (0.083)	0.048 (0.059)
<i>Summary statistics of dep. variable:</i>								
Mean	0.536	0.473	0.475	0.385	0.741	0.286	0.429	0.452
S.D.	(0.499)	(0.499)	(0.499)	(0.487)	(0.438)	(0.452)	(0.495)	(0.498)
Pseudo R ²	0.057	0.019	0.040	0.042	0.021	0.043	0.023	0.038
Observations	2033	1622	1909	1917	4229	3370	1922	1923

Notes: Panel A shows results from OLS regressions, while Panel B report average discrete probability effects from probit models. In column (1) of Panel A, the dependent variable is self-reported risk preference, measured on a scale from 0 (*very risk-averse*) to 10 (*very risk-seeking*). Column (2) uses self-reported patience as the dependent variable, measured from 0 (*very patient*) to 10 (*very impatient*). Columns (3) and (4) correspond to the Big Five personality traits *openness* and *agreeableness*. The dependent variable in column (5) measures the perceived desirability of altruism on a 0–10 scale, with higher values indicating greater desirability. Column (6) captures the importance respondents assign to helping others before thinking of themselves on a 1–7 scale. Columns (7) and (8) measure positive and negative reciprocity, respectively, on a 1–7 scale. In Panel B, we use dummy variables equal to one if a respondent reports a value above the sample mean of the corresponding continuous measure. All models include the preferred set of control variables described in Section 4.1 and district fixed-effects. Standard errors are clustered at the county level and shown in parentheses. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Data source: SOEP v39 (2024), survey year 2004 for column (1), 2008 for column (2), 2005 for columns (3), (4), (7), and (8), 1990 for column (5), and 1993 for column (6).

Table A.12: Crowding out of propaganda exposure

	(1)	(2)	(3)	(4)	(5)
<i>Panel A: Concerns about environmental protection</i>					
Western TV region	0.092* (0.047)	0.091* (0.047)	0.112** (0.050)	0.094** (0.046)	0.109** (0.048)
Satisfaction with GDR		0.005 (0.012)			0.008 (0.013)
PDS support			-0.074 (0.057)		-0.071 (0.059)
Public sector				0.002 (0.022)	-0.001 (0.024)
<i>Summary statistics:</i>					
Dep. variable	0.589 (0.492)	0.588 (0.492)	0.595 (0.491)	0.589 (0.492)	0.595 (0.491)
Pseudo R ²	0.026	0.026	0.026	0.026	0.025
Observations	4224	4212	3493	4039	3338
<i>Panel B: Environmental protection important for own well-being</i>					
Western TV region	0.093** (0.041)	0.092** (0.041)	0.144*** (0.041)	0.096** (0.040)	0.147*** (0.040)
Satisfaction with GDR		-0.001 (0.013)			-0.002 (0.015)
PDS support			-0.007 (0.056)		-0.015 (0.055)
Public sector				0.035* (0.018)	0.031 (0.019)
<i>Summary statistics of dep. variable:</i>					
Mean	0.629	0.629	0.629	0.623	0.621
S.D.	(0.483)	(0.483)	(0.483)	(0.485)	(0.485)
Pseudo R ²	0.035	0.035	0.043	0.037	0.044
Observations	4226	4215	3494	4040	3339
<i>Panel C: Member of environmental interest group</i>					
Western TV region	0.023*** (0.005)	0.023*** (0.005)	0.023*** (0.005)	0.024*** (0.005)	0.024*** (0.005)
Satisfaction with GDR		0.004 (0.004)			0.004 (0.005)
PDS support			0.001 (0.014)		0.002 (0.016)
Public sector				0.007 (0.007)	0.005 (0.007)
<i>Summary statistics of dep. variable:</i>					
Mean	0.023	0.023	0.023	0.023	0.024
S.D.	(0.149)	(0.149)	(0.149)	(0.151)	(0.152)
Pseudo R ²	0.098	0.100	0.098	0.100	0.102
Observations	2602	2592	2506	2502	2403

Notes: Columns (1) to (5) report average discrete probability effects from probit models for the variables *Western TV region*, *PDS support*, and *Public sector* and average marginal effects for *Satisfaction with democracy*. All models include the preferred set of control variables described in Section 4.1 and district fixed-effects. Standard errors are clustered at the county level and shown in parentheses. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Data source: SOEP v39 (2024), survey year 1990 for Panel A and B and 1998 for Panel C.

B Variable Definitions and Sources

Table B.1: Variable description

Variable	Description and source
<i>Main regressors</i>	
Western TV consumption	Ordinal variable indicating how regularly an individual watched Western TV. Possible answers: <i>never, rarely, once a week, several times a week, or daily</i> . Source: GDR survey.
Western TV region	Binary indicator equal to 1 if an individual lived in an area where Western TV was technically accessible during the GDR period. In the GDR survey analysis, accessibility is assigned at the district (<i>Verwaltungsbezirk</i>) level; in the SOEP analysis, at the county (<i>Kreis</i>) level. A county is classified as having access if the average predicted TV signal exceeds or is equal to -86.5 dBm. Source: Crabtree et al. (2015) .
<i>Survey data analysis: Main outcome variables</i>	
Concerns about environmental pollution	Dummy indicator equal to 1 if an individual expresses a high level of concern about pollution. Source: GDR survey.
Concerns about environmental protection	Ordinal variable measuring how concerned an individual is about environmental protection on a three-point Likert scale ranging from 1 (<i>not concerned at all</i>) to 3 (<i>very concerned</i>). A second variable is defined as a dummy indicator equal to 1 if an individual is <i>very concerned</i> about environmental protection. Source: SOEP.
Concerns about nuclear power plants	Dummy indicator equal to 1 if an individual expresses a high level of concern about nuclear power plants. Source: GDR survey.
Confidence about environmental protection	Dummy indicator equal to 1 if an individual is optimistic regarding the protection of the environment. Source: GDR survey.
Environmental protection important for own well-being	Ordinal variable measuring how important an individual perceives environmental protection for their well-being on a four-point Likert scale ranging from 1 (<i>very unimportant</i>) to 4 (<i>very important</i>). A second variable is defined as a dummy indicator equal to 1 if an individual perceives environmental protection as <i>very important</i> for their well-being. Source: SOEP.
Member of environmental interest group	Dummy indicator equal to 1 if an individual is a member of an environmental interest group. Source: SOEP.
Nuclear power generation should be expanded	Dummy indicator equal to 1 if an individual favors the expansion of nuclear power generation. Source: GDR survey.
Trust in the SED's environmental policy	Dummy indicator equal to 1 if an individual trusts the environmental policy of the SED. Source: GDR survey.
<i>Survey data analysis: Additional variables</i>	
Age	This variable measures the age of the respondent. Source: GDR survey and SOEP.
Altruism	Altruism is measured using two survey question: (i) How desirable it is for a respondent to be there for others (measured on eleven-point Likert scale, with higher values express higher desirability) and (ii) How important it is for a respondent to help other people without thinking of themselves (measured on seven-point Likert scale, with higher values express higher importance). We also construct dummy indicators equal to 1 if an individual is altruistic, defined by an altruism score above the sample median. Source: SOEP.
Avg. SO ₂ level	This variable measures the average annual SO ₂ concentration on the county-level. Source: Global Modeling and Assimilation Office (2015) .
Children	Dummy indicator equal to 1 if an individual has children. Source: GDR survey.
Church attendances	The variable measures how often an individual attends church on a four-point Likert scale ranging from 1 (<i>never</i>) to 4 (<i>at least once a week</i>). Source: SOEP.
Citizens group	The variable measures how often an individual participates in citizens' groups on a four-point Likert scale ranging from 1 (<i>never</i>) to 4 (<i>at least once a week</i>). Source: SOEP.
Concerned about computer technology	Dummy indicator that is equal to 1 if a person is concerned about computer technology. Source: GDR survey.

Concerned about HIV	Dummy indicator that is equal to 1 if a person is concerned about HIV. Source: GDR survey.
Concerned about human overpopulation	Dummy indicator that is equal to 1 if a person is concerned about human overpopulation. Source: GDR survey.
Concerned about immigration	Dummy indicator that is equal to 1 if a person is concerned about immigration. Source: SOEP.
Concerned about job security	Dummy indicator that is equal to 1 if a person is concerned about job insecurity. Source: SOEP.
Confident about own family situation	Dummy indicator that is equal to 1 if a person is confident about their family situation. Source: GDR survey.
Confident about own financial situation	Dummy indicator that is equal to 1 if a person is confident about their financial situation. Source: GDR survey.
Confident about own professional development	Dummy indicator that is equal to 1 if a person is confident about their professional development. Source: GDR survey.
Distance to West Germany	This variable measures the logarithm of the distance between an individual's county of residence before reunification and the closest point on the West German border. Authors' own calculation using SOEP and ArcGIS.
Employment status	This variable consists of four dummy indicators equal to 1 if an individual is i) full-time employed, ii) part-time employed, iii) not working, and iv) retired. Source: SOEP.
Feeling lonely	Dummy indicator that is equal to 1 if a person feels lonely. Source: SOEP.
Feeling overwhelmed	Dummy indicator that is equal to 1 if a person feels overwhelmed. Source: SOEP.
Female	Dummy indicator equal to 1 if an individual is female. Source: GDR survey and SOEP.
Health satisfaction	This variable measures an individual's satisfaction with their health on an eleven-point Likert scale ranging from 0 (<i>completely dissatisfied</i>) to 10 (<i>completely satisfied</i>). Source: SOEP.
Household size	This variable measures the number of people living in the respondent's household. Source: SOEP.
Impatience	This variable measures an individual's time preference on a eleven-point Likert scale ranging from 0 (<i>very patient</i>) to 10 (<i>very impatient</i>). We also construct a dummy indicator equal to 1 if an individual is impatient, defined by a impatient score above the sample median. Source: SOEP.
Income	In the analysis of the GDR survey data, this variable measures the logarithm of the monthly net income. In the analysis of the SOEP data, this variable measures the logarithm of the monthly net income of the household. Source: GDR survey and SOEP.
Interest in politics	Dummy indicator equal to 1 if an individual is interested in politics. Source: SOEP.
Membership in cooperative	Dummy indicator equal to 1 if an individual is a member of a cooperative. Source: SOEP.
Membership in trade association	Dummy indicator equal to 1 if an individual is a member of a trade association. Source: SOEP.
Membership in trade union	Dummy indicator equal to 1 if an individual is a trade union member. Source: SOEP.
Migration background	Dummy indicator equal to 1 if an individual has a direct or indirect migration background and 0 if an individual is a native. Source: SOEP.
Neighborly help	The variable measures how often an individual participates in neighborly help on a four-point Likert scale ranging from 1 (<i>never</i>) to 4 (<i>at least once a week</i>). Source: SOEP.
PDS support	Dummy indicator equal to 1 if an individual supports the political party PDS. Source: SOEP.
Personality traits	For <i>openness</i> , respondents are asked to what extent they agree with the following three statements, measured on a scale from 1 (<i>not at all</i>) to 7 (<i>absolutely</i>): I see myself as someone who (i) is original, comes up with new ideas, (ii) values artistic, aesthetic experiences, and (iii) has an active imagination. For <i>agreeableness</i> , agreement with the following three statements is used: I see myself as someone who (i) is sometimes somewhat rude to others, (ii) has a forgiving nature, and (iii) is considerate and kind to others. For statement (i), the response scale is reversed to make it comparable with the other two statements. The mean value of the three responses is used to compute both personality traits. Source: SOEP.
Pessimistic about own future	Dummy indicator that is equal to 1 if a person is pessimistic about their future. Source: SOEP.
Public sector	Dummy indicator equal to 1 if an individual was employed in the GDR's state apparatus or public service. Source: SOEP.

Qualification level: Mother	This measures the highest degree obtained by the respondent’s mother and differentiates between i) university degree, ii) college degree, iii) vocational degree, and iv) no degree. Source: GDR survey.
Reciprocity	Positive reciprocity is derived from the average agreement with the following three statements, measured on a scale from 1 (<i>does not apply to me at all</i>) to 7 (<i>applies to me perfectly</i>): (i) If someone does me a favor, I am prepared to return it, (ii) I go out of my way to help somebody who has been kind to me in the past, and (iii) I am ready to assume personal costs to help somebody who helped me in the past. The following three statements are used to capture negative reciprocity: (i) If I suffer a serious wrong, I will take revenge as soon as possible, no matter what the cost, (ii) If somebody puts me in a difficult position, I will do the same to him/her, and (iii) If somebody offends me, I will offend him/her back. Source: SOEP.
Religious affiliation	Dummy indicator that is equal to 1 if a person belongs to a religious denomination. Source: SOEP.
Risk seeking	This variable measures an individual’s risk preference on a eleven-point Likert scale ranging from 0 (<i>very risk-averse</i>) to 10 (<i>very risk-seeking</i>). We also construct a dummy indicator equal to 1 if an individual is risk-seeking, defined by a risk score above the sample median. Source: SOEP.
Satisfaction with GDR	This variable measures an individual’s satisfaction with the democracy in the GDR on a four-point Likert scale ranging from 1 (<i>very dissatisfied</i>) to 4 (<i>very satisfied</i>). Source: SOEP.
Single	Dummy indicator equal to 1 if an individual is single. Source: GDR survey and SOEP.
Volunteering	The variable measures how often an individual volunteers on a four-point Likert scale ranging from never to at least once a week. Source: SOEP.
Years of education	This variable measures the number of years of education. Source: SOEP.

County level data analysis: Main outcome variables

Complaint letter share	This variable measures the share of complaint letters related to environmental protection. Source: Albrecht et al. (2020) .
Complaint letter volume	This variable measures the number of complaint letters related to environmental protection per 100,000 capita and day. Source: Albrecht et al. (2020) .
Green votes	This variable measures the voting outcome of the Green party in federal elections. Source: The Federal Returning Officer.

County level data analysis: Additional variables

Avg. SO ₂ level	This variable measures the average annual SO ₂ concentration on the county-level. Source: Global Modeling and Assimilation Office (2015) .
Birth rate	This variable measures the total number of live births per 1,000 inhabitants. Source: Statistical yearbooks of the German federal states.
Females	This variable measures the share of females. Source: Statistical yearbooks of the German federal states.
Foreigners	This variable measures the share of foreigners. Source: Statistical yearbooks of the German federal states.
GDP per capita	This variable measures the GDP in €1,000 per inhabitants. Source: Statistical yearbooks of the German federal states.
Population density	This variable measures the number of inhabitants per km ² . Source: Statistical yearbooks of the German federal states.
Religious affiliation in 1939	This variable measures the share of the population with an religious affiliation in 1939. Source: Statistical yearbook of the German Reich.
Unemployment rate	This variable measures the percentage of the labor force that was unemployed. Source: Statistical yearbooks of the German federal states.
Urban county	This dummy variable equals 1 if the respective county is an urban district (<i>kreisfreie Stadt</i>) and zero if it is a rural district (<i>Landkreis</i>). Source: Statistical yearbooks of the German federal states.

C Robustness checks for survey data analysis

C.1 Heterogeneity and sample definition

Heterogeneity based on observable characteristics

Although Table 1 suggests that the covariate balance between individuals in regions with and without Western TV access is generally good, particularly in the geographic RDD, individuals in the treatment region tend to have lower education levels. To ensure this imbalance does not bias our estimated treatment effects, we replicate our main results using entropy balancing, as described by [Hainmueller \(2012\)](#). This method achieves covariate balance by weighting each observation in the control group such that the moments of the covariates in the control group match those of the treatment group. We consider the first three moments of the covariates (mean, variance, and skewness).³⁸ Figure C.1 presents the covariate balance using the balanced sample, while column (1) of Table C.1 reports the estimates using the entropy balancing weights. In line with our previous findings, Western TV access significantly increases the likelihood of individuals being concerned about environmental protection, considering environmental protection important for their well-being, and becoming involved in environmental interest groups. Moreover, the effect size remains largely unchanged compared to our main estimates in Table 2. Finally, columns (2) and (3) of Table C.1 confirm that our results remain mostly unaffected when balancing covariates using a coarsened exact matching algorithm or propensity score matching.³⁹ Only when coarsened exact matching is applied does the effect of Western TV on environmental concerns become statistically insignificant (p-value = 0.113).

Sample definition

While our setting is unlikely to suffer from sample selection bias, one might worry that West German influences spread more quickly to East German regions near the inner German border between the fall of the Berlin Wall in November 1989 and the SOEP interviews in summer 1990. To ensure that our findings are not driven by respondents living near the inner German border, we exclude individuals residing in counties adjacent to the inner German border. Column (1) of Table C.2 shows that this exclusion hardly changes our results. Beyond potential spillover effects at the border, shifts in environmental attitudes may have spread from Berlin, influencing nearby regions more rapidly. To address this, we omit respondents from Berlin and the nine counties bordering it. Column (2)

³⁸For the SO₂ concentration, only the first moment is adjusted to ensure convergence.

³⁹Entropy balancing is implemented via the Stata package *ebalance* ([Hainmueller and Xu, 2013](#)). The CEM algorithm, as described in [Iacus et al. \(2012\)](#), is applied using the Stata command *cem*. We match on the following characteristics: sex, age, single, migration background, household size, and years of education. Propensity score matching is conducted with the *teffects psmatch* command in Stata.

in Table C.2 indicates that this does not affect our results. Additionally, in column (3), we demonstrate robustness by excluding individuals who moved to West Germany after 1990. Lastly, to prevent misallocation of respondents to the treatment or control group, we exclude those who changed residence in the two years before reunification. As shown in column (4), this restriction hardly changes our findings. Only the effect of Western TV on environmental concerns turns statistically insignificant (p-value = 0.108).

C.2 Controlling for potential confounders

Border distance to West Germany

A key concern is that the treatment effects presented in the main analysis may be driven by the greater distance of the control regions from the West German border rather than Western TV reception. To address this, we calculate the distance between an individual's county of residence and the nearest point on the West German border, incorporating this border distance as an additional control variable in columns (1), (3), and (5) in Panel A of Table C.3. By doing so, our results hardly change compared to the findings reported in Table 2. As an alternative approach, we examine whether proximity to the West German border can explain differences in environmental preferences within the treated counties. Consequently, we re-estimate the regression from columns (1), (3), and (5) using only treated individuals. Apart from the specification on environmental group membership, the distance to the West German border has no explanatory power (see columns (2), (4), and (6)). This provides further reassurance that our results are not driven by spurious correlations with border proximity.

Regional Pollution Levels in the 1980s

At the beginning of the 1990s, small-scale data on environmental pollution in the former GDR were largely unavailable. For this reason, the main specification controls only for regional SO₂ concentrations, for which consistent measurements exist before and after reunification from the same data source. In columns (1), (3), and (5) of Panel B in Table C.3, we extend the analysis by adding regional data on respirable dust and nitrogen oxides levels for 1988, obtained from [Crabtree et al. \(2015\)](#). The results show that respirable dust has a significant and positive effect on environmental concern and the perceived importance of environmental protection. Consistent with the main results in Table 2, Western TV exposure continues to significantly increase environmental concerns, the perceived importance of environmental protection for well-being, and the likelihood of membership in environmental organizations. Importantly, the magnitude of the estimated coefficients remains virtually unchanged.

So far, these specifications control for pollution levels measured close to the survey period. However, environmental preferences are relatively stable over time, suggesting

that historical pollution exposure may also matter. As illustrated in Figure A.1a, regional differences in SO₂ concentrations between areas with and without Western TV access were somewhat larger in the early 1980s than at the end of the decade. To account for this, columns (2), (4), and (6) of Panel B in Table C.3 additionally include the average SO₂ concentration for the 1980–1989 period. The inclusion of this variable does not affect the estimated effect of Western TV exposure.

Taken together, these additional specifications confirm that the main findings are robust to the inclusion of alternative pollution indicators and historical exposure measures, suggesting that the estimated treatment effect is not driven by omitted variation in local environmental conditions.

Regional economic structure

Another regional characteristic that may shape environmental preferences is the local economic development and industry composition. Individuals living in regions whose economic output relies heavily on industry may hold different views on environmental protection than those in predominantly agricultural areas and may also respond differently to environmental-related TV content. However, as with environmental data, small-scale information on regional economic performance and industrial composition in East Germany during the early 1990s is limited.

In columns (1), (3), and (5) of Panel C, we add controls for GDP per capita and the unemployment rate. These variables are only available at the state level, with the earliest data referring to 1991. We therefore use the 1991 values as proxies for 1990. Including these controls hardly affects the estimated Western TV effect.

In columns (2), (4), and (6), we further include county-level information on the shares of employees working in industry and agriculture, respectively, using data from [Crabtree et al. \(2015\)](#) for 1988. Again, the estimated Western TV coefficients hardly change. Column (6) indicates a positive association between a higher agricultural employment share and membership in environmental organizations.

Taken together, these results suggest that differences in regional economic conditions or industrial composition do not drive the estimated effects of Western TV exposure.

Religious affiliation

During the 1980s, church congregations in the GDR played an active role in environmental protection efforts ([Federal Agency for Civic Education, 2017](#)), making regional variation in religious affiliation a potentially important factor in shaping environmental attitudes. Some areas of Eastern Germany, such as the state of Thuringia, had notably higher shares of Protestant church members than other parts of the GDR. However, since religious affiliation may itself be endogenous to Western TV exposure, including an individual's

current religious affiliation risks introducing a bad control problem. To address this concern, we use historical data from the May 17, 1939 census, which reports the share of Protestants at the county level.⁴⁰ As shown in Panel D of Table C.3, the historical Protestant share is not significantly associated with environmental preferences.⁴¹

C.3 Alternative specification of the treatment indicator

In line with previous studies, we use a binary measure of Western TV access and classify a county as treated if its average TV signal strength exceeds the threshold of -86.5 dBm (e.g., [Crabtree et al., 2015](#)). As a first step, Table C.4 shows that the results remain stable when the required signal strength is increased to -82.5 dBm or -80.0 dBm. Figure C.2 illustrates how the classification of treated and control counties changes at these higher thresholds. As expected, raising the signal cutoff gradually attenuates the estimated treatment effects, since some regions that could in fact receive Western TV are now classified as untreated.

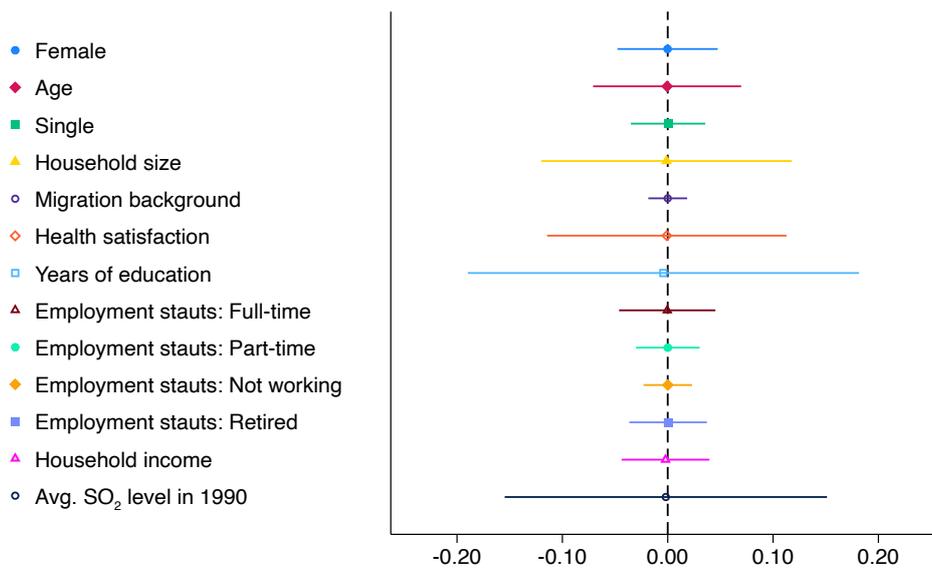
To examine the effect of a lower signal threshold, we rely on municipality-level TV signal strength data from [Bursztyrn and Cantoni \(2016\)](#) and aggregate these to the county level using population weights. Population data for the 7,528 municipalities that existed in 1990 are obtained from the Federal Statistical Office of Germany (*Statistisches Bundesamt*). In this additional robustness test, a county is considered treated if its average signal level exceeds -88.0 dBm. As reported in Table C.4, the estimated coefficients for the Western TV dummy are slightly larger than those obtained with the -86.5 dBm threshold. Lowering the threshold further (e.g., to -90.0 dBm) reduces the effect size again, as this assigns counties to the treatment group that were, in reality, unable to receive Western TV.⁴²

⁴⁰The data, originally recorded at the smaller administrative district level (*kleinere Verwaltungsbezirke*) of the German Reich, is matched to county-level data. See [Statistisches Reichsamt \(1941\)](#).

⁴¹This conclusion remains unchanged when controlling for respondents' current religious affiliation.

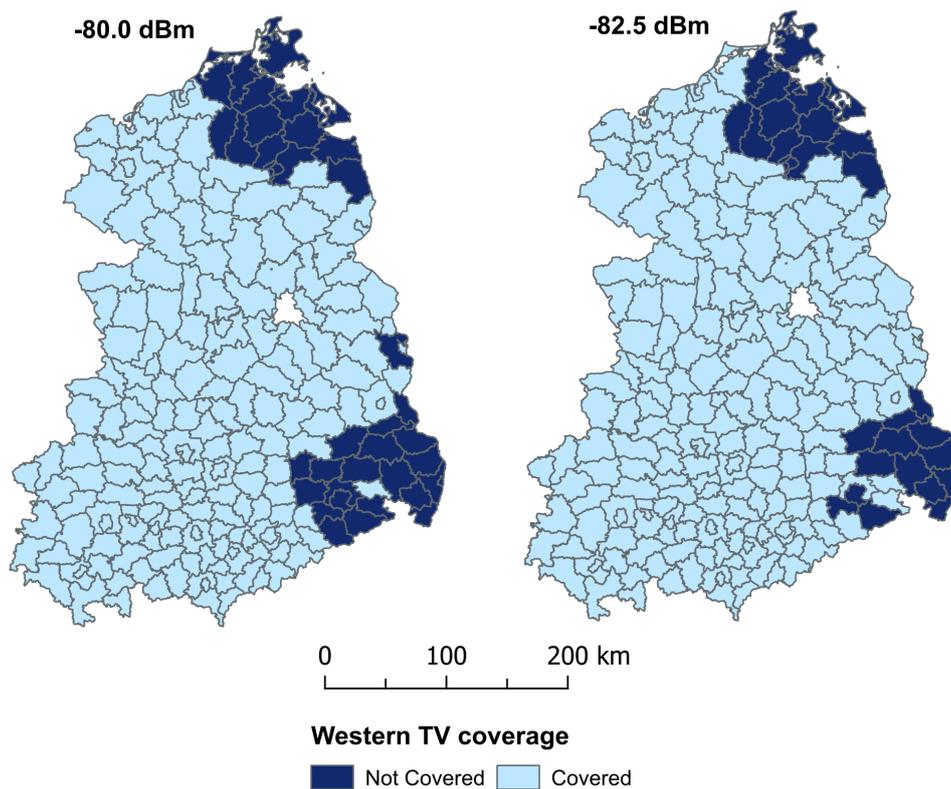
⁴²The results are available upon request.

Figure C.1: Covariate balance using entropy balancing weights



Notes: Balance in the values of the covariates in the 1990 survey wave. The figure presents the estimated coefficients from bivariate regressions in which the treatment indicator is used as explanatory variable. Entropy balancing weights are applied. Entropy balancing is implemented using the Stata package *ebalance* (Hainmueller and Xu, 2013). The variables age and health satisfaction are standardized in this figure for presentation reasons. The confidence intervals shown are set at the 95 % level of statistical significance. Data source: SOEP v39 (2024), survey year 1990.

Figure C.2: Variation of Western TV signal cutoffs



Notes: East German counties with and without access to Western TV prior to reunification based on different TV signal thresholds (-80.0 dBm and -82.5 dBm). Darker counties represent the control area with no reception and lighter counties represent the treatment area with sufficient signal strength. County boundaries are shown as gray lines.

Table C.1: Robustness: Balancing of covariates

	Entropy balancing	Coarsened exact matching	Propensity score matching
	(1)	(2)	(3)
<i>Panel A: Concerns about environmental protection</i>			
Western TV region	0.095*** (0.036)	0.100 (0.063)	0.127*** (0.026)
<i>Summary statistics of dep. variable:</i>			
Mean	0.589	0.589	0.589
S.D.	(0.492)	(0.492)	(0.492)
Observations	4224	3072	4224
<i>Panel B: Environmental protection important for own well-being</i>			
Western TV region	0.087** (0.035)	0.111** (0.045)	0.122*** (0.026)
<i>Summary statistics of dep. variable:</i>			
Mean	0.629	0.630	0.629
S.D.	(0.483)	(0.483)	(0.483)
Observations	4226	3071	4226
<i>Panel C: Member of environmental interest group</i>			
Western TV region	0.025*** (0.007)	0.024*** (0.006)	0.023*** (0.004)
<i>Summary statistics of dep. variable:</i>			
Mean	0.023	0.021	0.023
S.D.	(0.149)	(0.144)	(0.149)
Observations	2602	1279	2602

Notes: Each Panel refers to one dependent variable. Column (1) shows results from entropy balancing to improve the covariate balance between the treatment (Western TV region) and control (no Western TV region) groups by weighing observations from the control group such that the moments (mean, variance, skewness) of the covariates are equal between both groups. Only the first moment is adjusted for the SO₂ concentration. We replicate the probit models from Table 2 using the post-balancing samples and report average discrete probability effects. Figure C.1 reports the outcome of the matching procedure for the covariates in 1990. Entropy balancing is implemented using the Stata package *ebalance* (Hainmueller and Xu, 2013). In column (2), we apply coarsened exact matching (CEM). The CEM algorithm, as described in Iacus et al. (2012), is implemented using the Stata command *cem*. We match on the following characteristics: sex, age, single, migration background, household size, and years of education. In column (3), we implement propensity score matching using the *teffects psmatch* command in Stata. All models include the preferred set of control variables described in Section 4.1. Columns (1) and (2) include district fixed-effects. In column (3), we do not include district fixed-effects since multiple districts would predict the treatment status perfectly. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Data source: SOEP v39 (2024), survey year 1990 for Panel A and B and 1998 for Panel C.

Table C.2: Robustness: Sample definition

	Excluding individuals			
	living at the inner German border	living in the Berlin area	moving to West Germany after 1990	who changed residence between 1988 and 1990
	(1)	(2)	(3)	(4)
<i>Panel A: Concerns about environmental protection</i>				
Western TV region	0.083* (0.047)	0.085* (0.047)	0.092** (0.046)	0.077 (0.048)
<i>Summary statistics of dep. variable:</i>				
Mean	0.592	0.594	0.587	0.585
S.D.	(0.491)	(0.491)	(0.492)	(0.493)
Pseudo R ²	0.033	0.029	0.029	0.030
Observations	3781	3725	4011	3778
<i>Panel B: Environmental protection important for own well-being</i>				
Western TV region	0.087** (0.042)	0.088** (0.042)	0.083** (0.043)	0.092** (0.040)
<i>Summary statistics of dep. variable:</i>				
Mean	0.628	0.640	0.631	0.638
S.D.	(0.483)	(0.480)	(0.483)	(0.481)
Pseudo R ²	0.042	0.037	0.034	0.031
Observations	3783	3726	4011	3780
<i>Panel C: Member of environmental interest group</i>				
Western TV region	0.026*** (0.005)	0.023*** (0.004)	0.025*** (0.005)	0.023*** (0.004)
<i>Summary statistics of dep. variable:</i>				
Mean	0.023	0.022	0.023	0.022
S.D.	(0.150)	(0.146)	(0.151)	(0.148)
Pseudo R ²	0.122	0.108	0.107	0.113
Observations	2290	2299	2432	2199

Notes: The table shows results from probit models and reports average discrete probability effects. Each Panel refers to one dependent variable. In column (1), we exclude the respondents from all counties that are located directly on the inner German border. Column (2) omits the respondents from Berlin and the nine counties that surround Berlin. In column (3), we remove people who state in the follow-up surveys that they have moved to West Germany. Column (4) excludes respondents who changed their residence in the two years before the first SOEP interview in 1990. All models include the preferred set of control variables described in Section 4.1 and district fixed-effects. Standard errors are clustered at the county level and shown in parentheses. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Data source: SOEP v39 (2024), survey year 1990 for Panel A and B and 1998 for Panel C.

Table C.3: Robustness: Further controls

<i>Dep. variable:</i>	Concerns about environmental protection		Environmental protection important for own well-being		Member of environmental interest group	
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Panel A: Distance to the West German border</i>						
Western TV region	0.094** (0.048)		0.094** (0.041)		0.022*** (0.005)	
Distance to West Germany (log.)	0.008 (0.017)	0.011 (0.018)	0.001 (0.019)	0.004 (0.020)	-0.007* (0.004)	-0.009** (0.004)
<i>Summary statistics of dep. variable:</i>						
Mean	0.589	0.604	0.629	0.642	0.023	0.025
S.D.	(0.492)	(0.489)	(0.483)	(0.479)	(0.149)	(0.157)
Pseudo R ²	0.027	0.023	0.035	0.033	0.102	0.087
Observations	4224	3677	4226	3680	2602	2292
<i>Panel B: Environmental indicators</i>						
Western TV region	0.089* (0.047)	0.081* (0.047)	0.089** (0.040)	0.082* (0.042)	0.023*** (0.005)	0.023*** (0.005)
Respirable dust in 1988	0.004** (0.002)		0.005*** (0.002)		0.000 (0.000)	
Nitrogen oxides in 1988	-0.005 (0.007)		-0.007 (0.012)		0.002 (0.001)	
Avg. SO ₂ from 1980-1989		0.031 (0.026)		0.031 (0.025)		-0.001 (0.002)
<i>Summary statistics of dep. variable:</i>						
Mean	0.589	0.589	0.629	0.629	0.023	0.023
S.D.	(0.492)	(0.492)	(0.483)	(0.483)	(0.149)	(0.149)
Pseudo R ²	0.028	0.027	0.037	0.036	0.100	0.098
Observations	4224	4224	4226	4226	2602	2602
<i>Panel C: Regional economic structure</i>						
Western TV region	0.094** (0.044)	0.098** (0.047)	0.095** (0.041)	0.090** (0.041)	0.023*** (0.005)	0.023*** (0.004)
GDP per capita	-0.013 (0.068)		-0.120 (0.077)		-0.039 (0.031)	
Unemployment rate (%)	-0.054* (0.030)		-0.031 (0.025)		-0.001 (0.001)	
Employees in agriculture (%) in 1988		-0.001 (0.001)		0.000 (0.001)		0.001** (0.000)
Employees in industry (%) in 1988		-0.001 (0.001)		0.001 (0.001)		-0.000 (0.000)
<i>Summary statistics of dep. variable:</i>						
Mean	0.589	0.589	0.629	0.629	0.023	0.023
S.D.	(0.492)	(0.492)	(0.483)	(0.483)	(0.149)	(0.149)
Pseudo R ²	0.027	0.027	0.036	0.035	0.100	0.106
Observations	4224	4224	4226	4226	2602	2602
<i>Panel D: Religious affiliation in 1939</i>						
Western TV region	0.092* (0.047)	0.090* (0.048)	0.093** (0.041)	0.093** (0.041)	0.023*** (0.005)	0.023*** (0.005)
Share of Protestants in 1939 (%)		0.002 (0.002)		0.000 (0.001)		-0.000 (0.000)
<i>Summary statistics of dep. variable:</i>						
Mean	0.589	0.589	0.629	0.629	0.023	0.023
S.D.	(0.492)	(0.492)	(0.483)	(0.483)	(0.149)	(0.149)
Pseudo R ²	0.026	0.027	0.035	0.035	0.098	0.099
Observations	4224	4224	4226	4226	2602	2602

Notes: This table shows results from probit models and reports average discrete probability effects for the Western TV dummy and average marginal effects for the remaining variables. All models additionally include the preferred set of control variables described in Section 4.1 and district fixed-effects. Standard errors are clustered at the county level and shown in parentheses. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Data source: SOEP v39 (2024), survey year 1990 for columns (1) to (4) and 1998 for columns (5) and (6).

Table C.4: Robustness: Variation of the TV-signal threshold

<i>Dep. variable:</i>	Concerns about environmental protection			Environmental protection important for own well-being			Member of environmental interest group		
	-88.0 m dBm (1)	-82.5 dBm (2)	-80.0 dBm (3)	-88.0 dBm (4)	-82.5 dBm (5)	-80.0 dBm (6)	-88.0 dBm (7)	-82.5 dBm (8)	-80.0 dBm (9)
<i>Panel A: Without district fixed-effects</i>									
Western TV region	0.175*** (0.044)	0.109*** (0.041)	0.095*** (0.036)	0.118*** (0.041)	0.065** (0.033)	0.074** (0.031)	0.021*** (0.005)	0.017*** (0.006)	0.013** (0.006)
<i>Summary statistics of dep. variable:</i>									
Mean	0.589	0.589	0.589	0.629	0.629	0.629	0.023	0.023	0.023
S.D.	(0.492)	(0.492)	(0.492)	(0.483)	(0.483)	(0.483)	(0.149)	(0.149)	(0.149)
Pseudo R ²	0.016	0.014	0.013	0.027	0.026	0.026	0.067	0.066	0.063
Observations	4224	4224	4224	4226	4226	4226	2602	2602	2602
Survey wave	1998	1990	1990	1990	1990	1990	1990	1998	1998
<i>Panel B: Including district fixed-effects</i>									
Western TV region	0.149*** (0.054)	0.087** (0.044)	0.061 (0.050)	0.109** (0.047)	0.035 (0.041)	0.067 (0.049)	0.020*** (0.006)	0.017** (0.007)	0.010 (0.010)
<i>Summary statistics of dep. variable:</i>									
Mean	0.589	0.589	0.589	0.629	0.629	0.629	0.023	0.023	0.023
S.D.	(0.492)	(0.492)	(0.492)	(0.483)	(0.483)	(0.483)	(0.149)	(0.149)	(0.149)
Pseudo R ²	0.028	0.026	0.026	0.035	0.034	0.034	0.035	0.091	0.088
Observations	2602	4224	4224	4226	4226	4226	2602	2602	2602

Notes: The table shows results from probit models and reports average discrete probability effects. The TV signal cutoff level in columns (1), (4), and (7) is -88.0 dBm, in columns (2), (5), and (8) is -82.5 dBm, and in columns (3), (6), and (9) -80.0 dBm. All models include the preferred set of control variables described in Section 4.1. Standard errors are clustered at the county level and shown in parentheses. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Data source: [SOEP v39 \(2024\)](#), survey year 1990 for columns (1) to (6) and 1998 for columns (7) to (9).

D Robustness checks for county-level data analysis

Table D.1: Western TV and election results of the Greens (robustness)

<i>Dep. variable:</i>	Voting outcome for the Greens in federal elections (1990–1998)							
	GRD design	Exclusion of counties		Further controls			TV-signal threshold	
	50 km radius (1)	bordering West Germany (2)	Berlin area (3)	Border distance (4)	Historic SO ₂ levels (5)	Turnout (6)	-82.5 dBm (7)	-80.0 dBm (8)
Western TV region	0.496*** (0.150)	0.397*** (0.154)	0.389*** (0.149)	0.435*** (0.158)	0.388*** (0.150)	0.410*** (0.152)	0.426*** (0.140)	0.491*** (0.155)
Log. border distance				0.115 (0.080)				
Avg. SO ₂ (1980-1989)					-0.014 (0.026)			
Turnout (%)						-0.021* (0.012)		
<i>Summary statistics:</i>								
Mean of dep. variable	3.943	4.164	4.094	4.136	4.136	4.136	4.136	4.136
S.D. of dep. variable	(1.501)	(1.562)	(1.452)	(1.512)	(1.512)	(1.512)	(1.512)	(1.512)
Between R ²	0.680	0.698	0.632	0.672	0.664	0.656	0.667	0.670
Observations	261	573	621	651	651	651	651	651

Notes: Results are based on GLS random-effects models. In column (1), we apply a geographic regression discontinuity design and only include counties without Western TV reception and counties with Western TV reception that are within 50 km of a control county. Column (2) excludes counties that are located on the inner German border, while column (3) omits Berlin and the nine counties surrounding Berlin. In column (4), we expand the set of control variables to include the log. distance between each county and the border to West Germany. Column (5) contains the average regional SO₂ level from 1980 to 1989 as an additional control variable. In column (6), we add the turnout to the vector of controls. While in columns (1) to (5), the TV signal threshold for constructing the treatment indicator is -86.5 dBm, which represents our main specification, the cutoff level in column (7) is -82.5 dBm and in column (8) -80.0 dBm. Additional control variables include log. population density, share of females, share of foreigners, birth rate, share of the population with a religious affiliation 1939, unemployment rate, GDP per capita, average SO₂ levels in the election year, and a dummy variable differentiating between urban and rural counties. In addition, all columns include election and district fixed-effects. Standard errors are clustered at the county level and shown in parentheses. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table D.2: Western TV and election results

<i>Dep. variable:</i>	Voting outcome					
	Greens (1)	CDU (2)	SPD (3)	FDP (4)	Left-wing parties (5)	Right-wing parties (6)
Western TV region	0.382*** (0.148)	-5.113*** (0.957)	5.832*** (1.022)	0.768*** (0.190)	-1.306*** (0.491)	-0.265** (0.116)
<i>Summary statistics:</i>						
Mean of dep. variable	4.136	37.820	30.851	6.556	15.785	2.809
S.D. of dep. variable	(1.512)	(9.976)	(8.365)	(5.169)	(5.705)	(2.063)
Between R ²	0.664	0.831	0.871	0.797	0.741	0.685
Observations	651	651	651	651	651	651

Notes: This table shows results from random-effects models. Left-wing parties include: *Bund Sozialistischer Arbeiter* (BSA), *Kommunistische Partei Deutschlands* (KPD), *Marxistisch-Leninistische Partei Deutschlands* (MLPD), *Partei des Demokratischen Sozialismus* (PDS), *Sozialistische Gleichheitspartei* (PSG), and *Spartakist-Arbeiterpartei Deutschlands* (SpAD). Right-wing parties include: *Bund freier Bürger - Offensive für Deutschland* (BFB), *Bürgerrechtsbewegung Solidarität* (BüSo), *Deutsche Volksunion* (DVU), *Nationaldemokratische Partei Deutschlands* (NPD), *Patrioten für Deutschland*, and *Republikaner* (REP). Additional control variables include log. population density, share of females, share of foreigners, birth rate, share of the population with a religious affiliation 1939, unemployment rate, GDP per capita, average SO₂ levels in the election year, and a dummy variable differentiating between urban and rural counties. In addition, all columns include election and district fixed-effects. Standard errors are clustered at the county level and shown in parentheses. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table D.3: Western TV and complaint letters (robustness)

	Exclusion of counties		TV-signal threshold		Distance to West Germany (5)
	bordering West Germany (1)	in the Berlin area (2)	-82.5 dBm (3)	-80.0 dBm (4)	
<i>Panel A: Share of letters</i>					
Western TV region	0.974** (0.446)	1.091** (0.448)	1.320*** (0.378)	1.324*** (0.335)	0.781 (0.487)
Log. border distance					-0.239* (0.131)
Controls	Yes	Yes	Yes	Yes	Yes
Year fixed-effects	Yes	Yes	Yes	Yes	Yes
<i>Summary statistics:</i>					
Dep. variable	3.739 (3.713)	3.823 (3.777)	3.810 (3.735)	3.810 (3.735)	3.810 (3.735)
Between R ²	0.136	0.120	0.134	0.141	0.132
Observations	1630	1789	1885	1885	1885
<i>Panel B: Number of letters</i>					
Western TV region	0.083** (0.035)	0.096*** (0.037)	0.119*** (0.029)	0.111*** (0.028)	0.055 (0.040)
Log. border distance					-0.034** (0.017)
Controls	Yes	Yes	Yes	Yes	Yes
Year fixed-effects	Yes	Yes	Yes	Yes	Yes
<i>Summary statistics:</i>					
Dep. variable	0.252 (0.289)	0.267 (0.313)	0.264 (0.309)	0.264 (0.309)	0.264 (0.309)
Between R ²	0.146	0.125	0.134	0.137	0.147
Observations	1630	1789	1885	1885	1885

Notes: Results are based on from random effects model. The dependent variable in Panel A is the share of complaint letters related to environmental protection, which relates the number of letters on environmental issues to the county's total number of letters in a given year. In Panel B, the dependent variable is the number of complaint letters related to environmental protection per 100,000 capita and days. Control variables include: Log. population density, share of females, population size (in 10,000), share of population with a religious affiliation in 1939, savings (in 10,000) per capita, and avg. SO₂ concentration. Standard errors are clustered at the county level and shown in parentheses. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Data source: [Albrecht et al. \(2020\)](#), period: 1980–1988.

E Content analysis of Western TV channels

Table E.1: Examples of TV shows covering environmental issues

Title	Channel	Type	Airtime	Timeline	Description
<i>Regular TV shows on environmental topics</i>					
Globus	ARD	Scientific magazine	Sunday afternoon, 30 minutes per episode	1982–2002	TV science magazine alternating between topics from the fields of <i>nature and the environment</i> and <i>research and technology</i> . For example, the episode aired on June 1, 1983, titled “The Poisoning of Our Soils,” addressed groundwater contamination caused by illegally disposed waste and the harmful effects of chemical fertilizers used in agriculture.
Mach mit – der Umwelt zuliebe	ZDF	Environmental spots	Monday evening, 3–5 minutes per episode	1985–1989	Short environmental spots that demonstrated how viewers could act in an environmentally conscious way, for instance, by reducing household waste or saving electricity.
Mensch und Natur	ZDF	Environmental magazine	Sunday afternoon, 30 minutes per episode	1986–1987	Series on ecological issues, environmental problems, and scientific phenomena. For example, on November 29, 1987, the program dealt with the phenomena of the greenhouse effect and the ozone hole.
Peter Lustig immer “mit- tendrin”	ZDF	Environmental magazine	Saturday afternoon, 25 minutes per episode	1989–1997	The show was aimed at children and adolescents and dealt with topics related to the environment, pollution, and environmental protection.
Tatsachen	ARD	TV report	Sunday afternoon, 30 minutes per episode	1973–1984	Reports on incidents of environmental pollution and on the work of environmental activists. For example, the broadcast of September 23, 1984, addressed the issue of cross-border sulfur emissions.
Umwelt	ZDF	TV report	Saturday afternoon, 30 minutes per episode		Magazine series dealing with environmental protection issues and the role of industry in environmental pollution. For example, on January 18, 1986, the program dealt with the topic of smog.
Unternehmen Arche Noah	ARD	Scientific magazine	Wednesday afternoon, 30 minutes per episode	1986–1993	The producers visit people around the world who are committed to protecting the environment, highlighting the challenges they have to overcome.
<i>Non-regular TV shows on environmental topics</i>					
Alarmplan für die Erde	ZDF	TV report	Sunday, from 9:30– 10:15 p.m.	June 18, 1972	Report on the United Nations Conference in Stockholm, highlighting the difficulties of global environmental protection.
Das letzte Gefecht um die Regenwälder Brasiliens und ihre Bewohner	ARD	TV documentary	Monday, from 9:10– 10:00 p.m.	November 13, 1989	TV documentary by Immo Vogel on the extent and causes of environmental destruction in the Amazon rainforest and the consequences for species extinction.

Examples of TV shows covering environmental issues (*continued*)

Title	Channel	Type	Airtime	Timeline	Description
Ein Platz für Menschen	ZDF	Talk show	Sunday, from 3:30–3:55 p.m.	November 29, 1970	Talk show addressing visions of the future landscape. Nature conservationist Prof. Bernhard Grzimek outlines his plans and concepts for fostering a balanced and sustainable environment.
Kein Grund zur Unruhe	ARD	TV movie	Sunday, from 3:25–4:55 p.m.	January 9, 1977	TV movie on the subject of environmental protection written by Axel Block and produced by Peter Bringmann.
Schmetterlinge gibt's nicht mehr	ZDF	TV report	Tuesday, from 1:15–3:25 p.m.	September 19, 1989	TV report on the use of chemical fertilizers and pesticides on species extinction.
Schmutz ohne Grenzen	ARD	TV docudrama	Sunday, from 10:25–11:10 p.m.	March 1, 1987	Environmental fairy tale, produced by Martin Graff, about a man named Fritz and his companion, a bear called Oskar, who travel from the Rhine's Alpine source to its mouth in Rotterdam. Combining elements of reportage and fiction, the film portrays industrial pollution and river contamination as a cross-border environmental crisis.
Schöner leben – oder überleben?	ZDF	TV documentary	Sunday afternoon	August to September, 1976	The five-part documentary series addressed the problems that arose in the 1970s due to factors such as raw material shortages, energy demand, and environmental destruction, and attempted to identify possible solutions.
Smog	ARD	TV movie	Tuesday, from 10:25–11:55 –a.m.	February 5, 1974	Dystopian drama about a fictional smog disaster in Germany's Ruhr region, caused by human activity and based on a screenplay by Wolfgang Menge. Some viewers believed the pseudo-documentary to be real.
Umwelt Shanghai	ARD	TV report	Thursday, from 6:50–7:35 p.m.	May 23, 1974	TV report on China's attendance at the 1972 United Nations Conference on the Human Environment in Stockholm, produced by Roshan Dhunjibhoy. The report focuses on the Chinese economic system and its environmental impact.
Zwischen Zorn und Hoffnung	ARD	TV report	Saturday, from 1:45–2:30 p.m.	June 25, 1978	This TV report showed a portrait of environmentalist Hubert Weinzierl and the German NGO <i>Bund für Umwelt und Naturschutz Deutschland</i> (Friends of the Earth Germany).

Regular TV shows occasionally covering environmental topics

ARD-Ratgeber	ARD	Consumer magazine	Monday morning (15 minutes) and Sunday afternoon (30 minutes).	1971–2014	The consumer magazine was divided into various subject areas, such as health, law, and technology. For example, the episode aired on September 16, 1985, offered practical tips on how individuals could contribute to environmental protection.
Blauer Montag	ARD	TV report	Monday afternoon, 30 minutes per episode	1987–1990	TV program with reports and interviews on a specific topic. For example, on September 5, 1988, the program featured a report on environmentalist Karl Partsch, who campaigns for the protection of flora and fauna in the Alps.

Examples of TV shows covering environmental issues (*continued*)

Title	Channel	Type	Airtime	Timeline	Description
Brennpunkt	ARD	Newscast	Irregular	Since 1971	A complement to ARD news programming, used when current events generate high information demand that regular short newscasts cannot meet. On June 27, 1984, a report on air pollution in East and West Germany was broadcast.
Heute	ZDF	Newscast	Several times a day, 20 minutes per episode	Since 1963	<i>Heute</i> is the main news program of ZDF.
Heute-Journal	ZDF	News magazine	Weekdays, 15–30 minutes per episode	Since 1978	<i>Heute-Journal</i> provides in-depth coverage of individual news topics, offering detailed background information and interviews.
Kennzeichen D	ZDF	Political magazine	Wednesday or Friday noon (until 1984) and Thursday noon (since 1985), 45 minutes per episode	1971–2001	A political magazine addressing topics concerning both German states, intended to present an authentic portrayal of everyday life on both sides of the inner-German border. For example, the episode of May 24, 1984, examined the issue of air pollution.
Kontraste, Monitor, and Panorama	ARD	Political magazine	Three TV magazines, broadcast alternately every Thursday from 9:45–10:15 p.m.	Kontraste (since 1968), Monitor (since 1965), Panorama (since 1961)	Three independent political TV magazines with different focuses: Kontraste (relations between West and East Germany), Monitor (German domestic politics), and Panorama (broader range of topics). On September 27, 1988, Kontraste aired a report on environmental pollution in the Bitterfeld region of the GDR. The report includes video footage produced by East German environmental activists.
Report	ARD	Political magazine	Tuesday evening, 45 minutes per episode	Mainz (since 1966), München (since 1962)	<i>Report Mainz</i> and <i>Report München</i> cover current political events and are broadcast alternately on Tuesdays.
Tagesschau	ARD	Newscast	Several times a day, 20 minutes per episode	Since 1952	<i>Tagesschau</i> is the main news program of ARD.
Tagesthemen	ARD	Newscast	Once per day, 20–35 minutes per episode	Since 1978	Unlike the <i>Tagesschau</i> , which is intended to provide only a news overview, the <i>Tagesthemen</i> aims to offer viewers additional information.
Teletechnikum	ARD	Scientific magazine	Monday or Friday afternoon, 45 minutes per episode	1969–1983	Science program focusing on children and adolescents, covering topics from the fields of the environment, natural sciences, and technology. For example, in one episode, <i>Teletechnikum</i> reported on environmental damage caused by improper waste disposal and discussed the negative effects of waste incineration.

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