

Does TV Consumption Affect Health and Well-being? Evidence from a Natural Experiment on the German Public

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Introduction

The implications of modern technology for social change fascinate the scientist and the layperson alike. One technological development has found its way into people's lives and today receives the attention of many for hours each day: television. It comes as no surprise that the sceptics of this technological advancement promote the common belief that research has provided convincing evidence on the negative implications of watching television for the individual. However, a critical review of the literature yields a very different conclusion. The most seminal and often-cited studies on individual well-being do not establish causal evidence and, in fact, do not even claim to do so. This is true for both the medical literature (e.g. Hancox et al. 2004) and for the few existing economic contributions on well-being (e.g. Frey et al. 2007). Researchers typically observe all kinds of problems in the lives of those who spent much time on watching TV, but the direction of causality is unclear. The problem here is that it is extremely difficult to manipulate some people's television consumption in significant ways to measure potential implications in comparison to a random group of unaffected individuals.

Methodology

At that point, a methodological approach that receives increasing popularity among economists comes into play. Regional heterogeneity in the provision of media during their implementation period can trigger differences in TV consumption that arguably are free of selectivity issues. Our study follows the idea of using technology-induced variation in TV consumption between individuals living in different regions within one country by employing an instrumental variable approach. The happenstance that we exploit took place in the mid-1980s when Germany lifted a ban on private television. While TV consumption had already reached high levels in other countries, the average German still watched less than two hours of television per day. In the sequel, the legalization of private television brought up new channels that increased consumption significantly. However, citizens in many areas of the country did not watch any of these new programs due to reception problems, as the responsible public institution failed to establish satellite or cable TV in a timely manner. Hence, the officials of the emerging TV channels looked for other ways to reach the German households, and they found a way that establishes our natural experiment: terrestrial frequencies that by chance were still open. All across Germany, there are dozens of transmitter stations that were built in the 1960s and up to this day provide the country with free terrestrial TV signals.

Data

Thanks to available technical data from official records, we can determine broadcast signals from all transmitters in Germany in the late 1980s. We use special software that recent studies also have

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used, based on the so-called Longley-Rice signal propagation model, to identify regions with reception and those without as exact as possible. We merge these technical calculations with data from the German Socio-Economic Panel (SOEP) study on the municipal level. As the SOEP provides researchers with such regional indicators, we can compare how people's behavior responds in areas for which we calculate private TV reception compared to areas for which we do not find that a signal came across. The SOEP data gives us information on people's time use for a typical day regarding a large set of possible activities, including employment, housework, TV viewing and more, which establishes our manipulation check. Importantly, there is a question on life satisfaction and several questions on health, routinely include in the SOEP questionnaires, as our outcome variables of interest.

Preliminary Findings

The results show that people living in counties for which we calculated reception of private television broadcast using our transmitter software significantly increased their TV consumption. In order to address our research objective, we start with reduced form results. In a second step, we exploit the availability of longitudinal data on the endogenous activity of interest, so that, as our main approach, we conduct a fixed-effects IV approach with television consumption as the dependent variable on the first stage. Thereby, we look at changes in the reception for each German county and how individual TV viewing and life satisfaction reacts. Our private channel television signal instrument significantly increases TV consumption on the first stage of the IV model, so that we can report large F statistics exceeding common thresholds. This framework allows interpreting the results on the second stage as causal effects of significantly but exogenously increased TV consumption, in addition to reduced form results other media-focused studies without such manipulation check have to rely on (e.g. Yanagizawa-Drott 2015).

We find that not one of the health indicators responds to the increase in watching TV. This suggests that previous studies without causal identification exaggerate the negative impact of television for those outcomes. Most strikingly, for people's life satisfaction, we actually find a significantly positive effect. These findings explain why television consumption is one of the most popular activities, despite the social costs like reduced political participation that others studies about natural experiments have revealed: People actually gain from it in terms of utility, at least in the short run, and do not suffer apparent impairments from turning on the television more often.

How the Presentation will Initiate Conversation

We reject previous interpretations of the cross-sectional evidence, when researchers understand TV consumption as an example for irrational behavior and discuss potential self-control problems. From an individual perspective, TV consumers' behavior is indeed rational, while, however, the society as a whole seems to suffer. Arguably, the picture that emerges out of our investigation with television as an attractive but dangerous drug makes the social problems that result from it probably even more intriguing.