

Big Tech, big risk? How education and ideology shape public attitudes toward Big Tech companies

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journals.sagepub.com/home/rap**Tobias Tober¹** , **Marius R. Busemeyer¹** and **Sebastian Koos¹**

Abstract

This paper examines public attitudes toward Big Tech and their relationship to policy preferences in six OECD countries. Drawing on original survey data collected in 2022 from 19,800 respondents in Germany, Japan, Poland, Spain, Sweden, and the United States, we analyze how education and political ideology shape evaluations of large technology firms such as Google, Apple, Meta, Amazon, and Microsoft. Using six survey items on the perceived economic, social, and democratic effects of Big Tech, we identify two weakly correlated attitudinal dimensions: positive and negative evaluations. A cluster analysis reveals five groups of respondents—supporters, skeptics, ambivalent, dismissive, and neutral—highlighting that public opinion on Big Tech is not organized along a single continuum. Bayesian multinomial regression models show that higher education is associated less with outright support than with greater ambivalence, while ideology structures attitudes in distinct ways: skepticism is more pronounced on the left, whereas ambivalence rises especially among highly educated respondents on the right. These attitudinal clusters are closely linked to preferences for regulation and government support. The findings suggest that public opinion toward Big Tech is complex, politically structured, and consequential for policy debates.

Keywords

Big Tech, public opinion, education, political ideology

Public attitudes toward Big Tech

Big Tech companies—such as Google, Apple, Meta, Amazon, and Microsoft—play an increasingly prominent role in economic, social, and political life. Their influence extends far beyond markets, shaping how people access information, engage in political discourse, and interact with institutions. These firms hold considerable power over digital infrastructure, communication platforms, and emerging technologies like artificial intelligence. Given their centrality to contemporary life, understanding how citizens perceive and evaluate the societal impact of Big Tech and how this is related to public support for state regulation or promotion of this industry is a critical question for both scholars and policymakers. Public attitudes may influence regulatory efforts, shape political discourse, and signal broader democratic concerns.

Yet, to our knowledge, there is very little systematic research on the determinants of public attitudes toward Big Tech companies. Existing work in comparative politics and political economy has largely focused on the effects of rapid technological change—such as digitalization and automation—on labor market outcomes, and more recently, on social policy preferences and electoral behavior (for reviews, see [Busemeyer 2022](#); [Gallego and Kurer 2022](#)). Only recently have scholars started to explore the political

¹Department of Politics and Public Administration, University of Konstanz, Germany

Corresponding author:

Tobias Tober, Department of Politics and Public Administration, University of Konstanz, Universitätsstraße 10, 78464 Konstanz, Germany.

Email: tobias.tober@uni-konstanz.de



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cleavages related to the regulation of technological change (Kuo et al., 2026), pointing to the interaction between socio-economic and educational background factors and individual ideology shaping attitudes.

In what follows, we present novel survey data from six OECD countries on public attitudes toward Big Tech and conduct an exploratory analysis of the factors that shape these attitudes. We also demonstrate, briefly, how these attitudes relate to concrete policy preferences regarding the regulation of Big Tech. In selecting our measures of attitudes towards Big Tech, we adopt a pragmatic approach, focusing on statements about expected positive or negative contributions of global tech companies to economic development, society, democracy, or the welfare state, inspired by contemporary debates in academic scholarship and political discussions.

Our analysis starts with a short reflection on the determinants of tech attitudes, building on existing scholarship in comparative political economy. The empirical analysis then reveals two dominant factors—one associated with positive views on Big Tech, the other with negative views—that are, against initial expectations, only weakly correlated. Using cluster analysis we identify five clusters of respondents with different combinations of positive and negative views, highlighting the ambivalence and complexity of such attitudes. Additional analysis shows how these clusters are linked to attitudes on regulating and subsidizing Big Tech. Standard approaches to explaining attitudinal variation can hardly explain our results, specifically in relation to ambivalence, which is why we discuss a potential alternative explanatory framework based on Zaller's influential work on opinion formation (Zaller 1992) in the discussion of the findings.

Preliminary considerations

There is large literature in comparative political economy on the individual and contextual determinants of attitudes towards the welfare state, the organization of markets, and powerful market actors (for an overview, see Busemeyer, 2024; Kumlin et al. 2021). Broadly speaking, this literature highlights the role of material self-interest, norms and values, and institutional (typically country-level) factors. We expect that this framework can be extended to the study of public evaluations of Big Tech as a set of powerful economic actors whose activities generate economic benefits, but also distributional and political consequences. In this perspective, attitudes towards large tech companies can be understood as shaped above all by individuals' positions in the knowledge economy and by their ideological orientations, while material circumstances and institutional environments provide important background conditions.

A first key factor is education. Previous research shows that highly educated individuals tend to be more supportive of policies that expand the reach of the knowledge

economy, for example, through investments in digital technology or human capital (Busemeyer et al. 2025; Kuo et al., 2026). Education is important not only because it is associated with labor-market advantages in technology-intensive economies, but also because it may foster greater familiarity with digital technologies and stronger confidence in innovation-driven growth. As individuals who are, on average, better positioned to benefit from technological change, the highly educated should therefore be more positively inclined towards large tech companies. By contrast, lower levels of education may be associated with greater skepticism, either because of weaker attachment to the knowledge economy or because the disruptive consequences of technological change are perceived more strongly.

A second key factor is ideology. Research on welfare state attitudes has long emphasized the importance of partisan and ideological orientations, with individuals on the left generally being more critical of markets and business power than those on the right. Applied to Big Tech, this suggests that left-leaning individuals should be more likely to view large tech companies critically, given concerns about corporate concentration, inequality, and the political power of private firms. For the political right, however, the expectation is more ambiguous. On the one hand, right-leaning individuals may hold more market-friendly and business-oriented views, which should translate into more positive evaluations of large tech companies. On the other hand, rapid technological change has also been identified as a driver of support for right-wing populism (Anelli et al. 2021), which may foster distrust of the social and cultural transformations associated with digital capitalism. Ideology is therefore likely to matter, but not always in a linear way, especially on the right.

Finally, education and ideology may also interact. Education is likely to shape not only individuals' material position in the knowledge economy, but also how ideological orientations translate into evaluations of Big Tech. Among highly educated individuals on the political right, market-friendly views and a comparatively advantageous position in the digital economy may reinforce each other, leading to more positive evaluations of large tech companies. Among the highly educated left, by contrast, greater familiarity with the digital economy may coexist with stronger concerns about corporate concentration, inequality, and private power, potentially producing a more ambivalent or critical stance. Among less educated individuals, ideological differences may be less likely to take the form of explicit evaluations of corporate concentration or market power and may instead be expressed through more general support for, or skepticism towards, technological change. Thus, education may condition the effect of ideology, making the relationship between left-right orientation and attitudes towards Big Tech more complex than a simple linear divide.

Other factors may also shape public evaluations of Big Tech, but they are expected to play a more secondary role in our framework. Income, for instance, may matter independently of education, as higher-income individuals may benefit more directly from the opportunities generated by the digital economy. Institutional context may also influence attitudes. Previous research on policy feedback shows that the institutional set-up of the welfare state shapes micro-level attitudes (Béland et al. 2022). Since our survey covers countries with different welfare regimes and political economy models, one might expect somewhat more favorable views of Big Tech in more liberal political economies such as the United States and possibly Japan, and more critical attitudes in more regulated and coordinated market economies in Europe, including Germany, Sweden, Spain, and Poland.

Overall, these expectations remain exploratory given the limited previous research on attitudes towards Big Tech companies. Nevertheless, they suggest that education and ideology may be central to explaining variation in public evaluations of Big Tech. We therefore focus on these two variables in the empirical analysis, while also accounting for other relevant factors like income and institutional context.

Empirical strategy

We draw on data from an original survey commissioned by the authors and fielded by the survey firm Kantar Public in June and July 2022 across six OECD countries: Germany, Japan, Poland, Spain, Sweden, and the United States. The survey includes 3300 respondents per country (19,800 in total),

selected using quota sampling based on gender, age (18–64), and education to reflect national population structures.

Public perceptions of global technology companies

To measure how individuals perceive the societal impact of Big Tech companies, we included the following six items in the survey: *In the past decade, global technology companies such as Amazon, Apple, Google, Facebook, and Microsoft have become important players in today's economies. To what extent do you agree or disagree with the following statements?*

- (1) Global technology companies provide useful services to the general population.
- (2) Global technology companies undermine the national welfare state, for example, by not paying taxes.
- (3) Global technology companies promote innovation and economic development.
- (4) Global technology companies weaken labor standards.
- (5) Global technology companies have become so powerful, and they are a threat to our democracy.
- (6) Global technology companies aid democracy by providing a digital space for unrestricted democratic debate.

Respondents expressed their opinions on a five-point Likert scale, ranging from (1) *strongly disagree* to (5) *strongly agree*. Further descriptive details are provided in [Section A.2.1](#) of the Appendix.

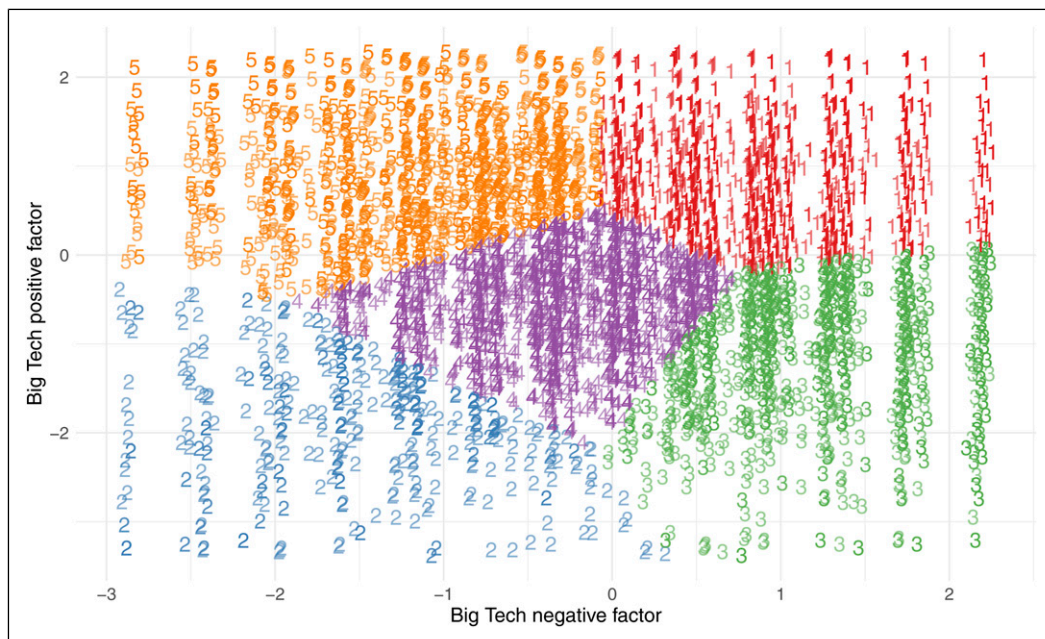


Figure 1. Big Tech negative and Big Tech positive factor scores with five k-means clusters.

Table A4 in the Appendix presents the results of an exploratory factor analysis (based on the minimum-residual method with oblique rotation). Parallel analyses conducted on the pooled sample and within each country consistently indicate a two-factor structure, as only the first two observed eigenvalues exceed their simulated counterparts (see Tables A1 and A2 in the Appendix). Items capturing negative evaluations of Big Tech load strongly on the first factor, while items capturing positive evaluations load strongly on the second. The correlation between the two factors is low ($\rho_{\text{Factor1,Factor2}} = 0.1$), suggesting that positive and negative evaluations are largely independent.

Figure 1 illustrates the joint distribution of these two dimensions by plotting individuals' factor scores against each other. We use *k*-means clustering as a descriptive tool to identify recurring combinations of positive and negative evaluations in this two-dimensional space. Importantly, the resulting clusters should not be interpreted as positions along a single underlying scale, but rather as distinct configurations of attitudes across the two dimensions.

We identify five clusters. Individuals with high positive and low negative scores (3739 respondents) are labeled Big Tech *supporters*. Those with high scores on both dimensions (5114 respondents) are labeled *ambivalent*, reflecting the simultaneous endorsement of positive and negative evaluations. Individuals with high negative and low positive scores (2123 respondents) are classified as *skeptics*. A smaller group with low scores on both dimensions (685 respondents) is labeled *dismissive*, indicating a general rejection of both positive and negative characterizations of Big Tech.

Finally, the largest group (8140 respondents) forms a central cluster with values close to the midpoint on both dimensions. We label this group *neutral*, as respondents in this cluster tend to neither agree nor disagree with the statements. This distinguishes them from the ambivalent group, which expresses agreement with both positive and negative evaluations, and from the dismissive group, which tends to reject both.

Education

Education is measured using a three-level categorical variable based on the International Standard Classification of Education (ISCED). Low education corresponds to attainment up to lower secondary education (ISCED levels 0–2), medium education includes post-secondary non-tertiary education as its upper limit (ISCED levels 3–4), and high education encompasses all forms of tertiary education (ISCED levels 5–8).

Political ideology

We measure political ideology using an eleven-point self-placement scale, where respondents rate themselves from (1) *left* to (11) *right*.

Statistical models

To investigate how education, ideology, and their interaction influence the likelihood of membership in one of the five Big Tech attitude clusters identified above, we estimate Bayesian multinomial logistic regression models. We employ two specifications: one without interaction terms, focusing on the independent effects of education and ideology (see Equation (1) in the Appendix), and one that includes an interaction between the two variables (see Equation (2) in the Appendix). Both models account for potential nonlinearities in ideological effects by incorporating the squared term of the left-right ideological scale. Additional information on control variables and modeling decisions is provided in Sections A.2.2–A.2.3 of the Appendix.

Results

We focus on three quantities of interest when presenting the results. Specifically, we report estimates for our main explanatory variables: education, ideology, and their interaction (full results for all predictors are presented in Figure A3 in the Appendix). To provide a more intuitive interpretation of the logit coefficients, we calculate average predicted probabilities. These probabilities are derived by holding the main variables of interest at fixed values while allowing the remaining variables to vary across all observed values in the dataset. Predicted probabilities are computed from 1000 posterior draws for computational efficiency; repeating the prediction step with a larger number of draws yields virtually identical results (differences are negligible and within Monte Carlo error).

The top row of Figure 2 illustrates the average predicted probabilities of belonging to one of the five clusters, conditional on education (Panel A) and political ideology (Panel B). These results are derived from a model without interaction terms (see Equation (1) in Appendix).

Interestingly, Panel A suggests that higher levels of education are associated with a greater probability of belonging to the ambivalent group, which holds both positive and negative views of Big Tech. The probability of membership in the ambivalent cluster increases from 22% to 33% between individuals with low and high levels of education. At the same time, the probability of being neutral decreases from 43% to 30%. We observe only minor changes in the probabilities of belonging to the remaining three clusters: the probabilities of belonging to the skeptics and supporters increase slightly (by approximately 2 and 3 percentage points, respectively), whereas the probability of being dismissive decreases slightly (by approximately 4 percentage points). Thus, contrary to our preliminary expectations, more highly educated respondents are only slightly more likely to hold positive views of Big Tech, but substantially more likely to hold ambivalent views.

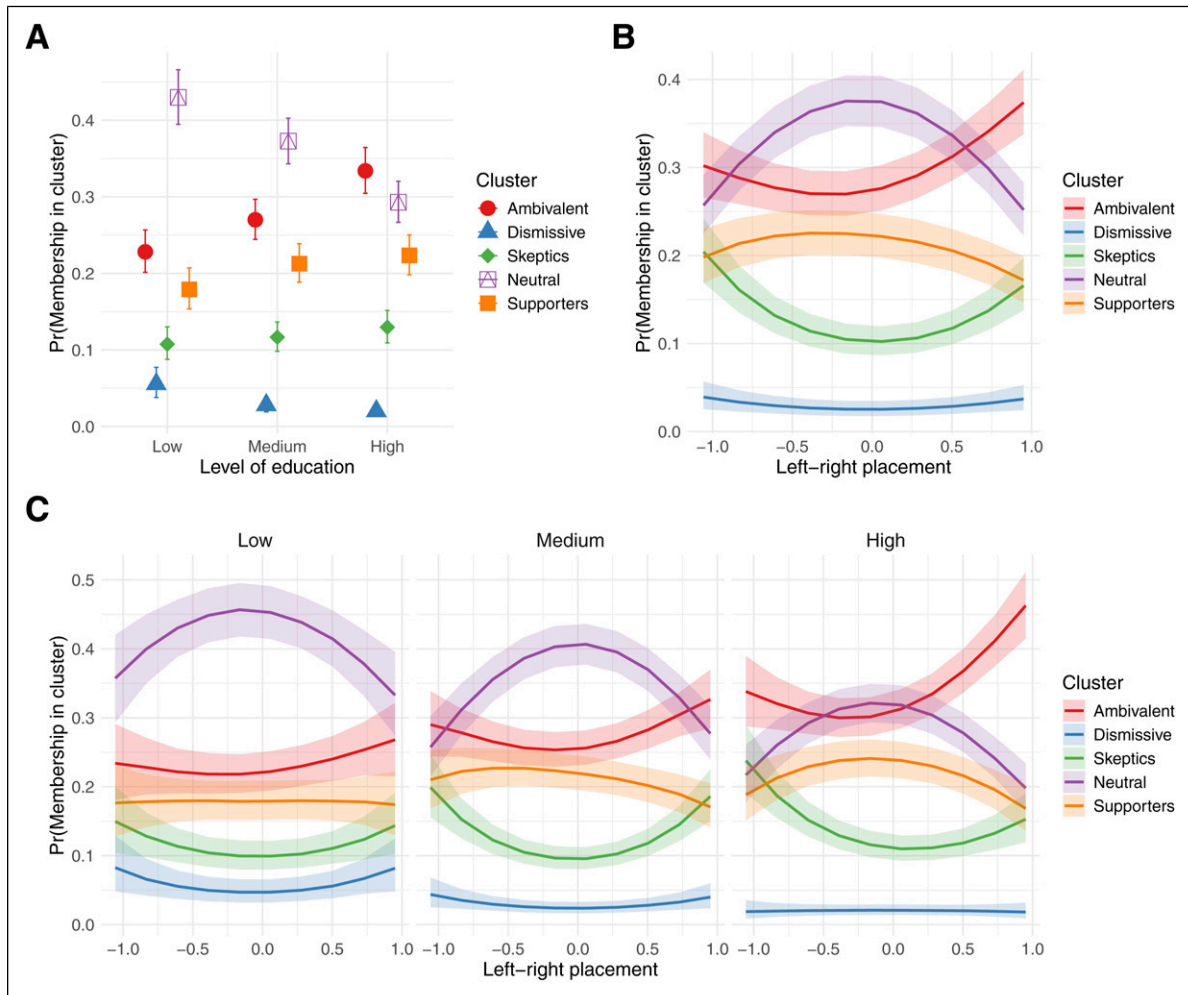


Figure 2. Predicted probability of cluster membership: (a) education, (b) ideology, and (c) their interaction.

Panel B shows the average marginal effect of political ideology. The probability of belonging to the neutral cluster is highest among individuals who place themselves at the center of the left-right scale and declines substantially toward both ends. Among those who identify as left of center, this decline in neutrality is primarily associated with an increased likelihood of belonging to the skeptic cluster—with a predicted increase of about 10 percentage points between centrists and those at the far left. On the right side of the scale, skepticism also increases, but less sharply, with a rise of about 6 percentage points at the far right. Instead, decreasing neutrality on the right is more strongly associated with increased ambivalence, which grows by about 10 percentage points from the center to the far-right end of the scale. Again, supporters and dismissive clusters show less pronounced variation.

Panel C in the second row of Figure 2 shows the interaction between education and political ideology, based on Equation (2) in the Appendix. Across all education levels, the probability of being neutral peaks at the

ideological center and drops toward the extremes, with overall neutrality decreasing as education increases. Among the less educated, changes in neutrality do not translate into a clear pattern for the other clusters. For those with medium education, reduced neutrality is linked to a notable rise in skepticism at both ends of the spectrum (about 10 percentage points). Among the highly educated, this pattern persists on the left but is much weaker on the right. Instead, ambivalence rises sharply on the far right in this group, with probabilities increasing by about 16 percentage points from center to right. There is also some evidence of an inverse-U-shaped relationship between ideology and membership in the cluster of supporters among the highly educated, with the sharpest decline occurring on the right.

While we find broadly similar patterns across countries, there are some interesting differences that we discuss in the Appendix and are depicted in Figures A4 and A5. We also show in the Appendix that our results are robust to the inclusion of three variables measuring technology use at home and at work (see Figure A6).

Relationship between Big Tech attitudes and policy preferences

In [Section A.3](#) of the Appendix, we present an additional analysis linking Big Tech attitudes to policy preferences, illustrating their relevance for understanding public support for regulatory interventions. We measure preferences in two ways: (1) support for increased regulation of global Big Tech companies and (2) support for greater political and economic support for these companies (see [Section A.3.2](#) for measurement details). We then assess whether membership in the five Big Tech attitude clusters predicts these policy views (see [Section A.3.3](#) for modeling details). We expect supporters to favor government backing over regulation, skeptics to strongly prefer regulation and oppose support, ambivalents to favor both, the dismissive to oppose both, and neutrals to remain undecided. These expectations are illustrated in [Figure A8](#) in the Appendix.

Our findings confirm that public attitudes toward Big Tech are not merely symbolic but are closely linked to concrete policy preferences. Generally, 38% of respondents are in favor of more regulation of Big Tech firms, while roughly 20% are against this, with the rest being undecided (42%). At the same time almost 32% are in favor of more economic and political support for the firms, with 19% against this and the rest undecided (49%). [Figure A9](#) in the Appendix shows that ambivalent individuals tend to support both regulation (72%) and government support (46%). In comparison, Big Tech skeptics strongly favor regulation (82%) but largely oppose government support (65%), while supporters show low support for regulation (23%) but stronger support for government backing (40%). Dismissive individuals generally oppose both policies, whereas neutral individuals tend to remain undecided.

Concluding discussion

Taken together, our findings offer preliminary but meaningful insights into the dynamics of public attitudes toward Big Tech. Drawing on the extensive literature on individual attitudes in political economy (Busemeyer, 2024), we focused on the role of education and ideology. Consistent with our expectations, we find clear evidence that political ideology structures attitudes towards technology companies. On the left, declining neutrality is primarily replaced by skepticism, which aligns with longstanding concerns about corporate concentration and its societal impacts. On the right, declining neutrality is associated with both skepticism and ambivalence, suggesting a more conflicted response. Yet, our findings on the association of education with different attitudinal clusters clearly contradict our initial expectations that more highly educated people will be more supportive of Big Tech. This finding highlights the need for more complex theoretization of the relationship

between education and attitudes toward Big Tech, going beyond established theories in political economy.

The interaction between education and ideology reveals interesting patterns as well. Among the highly educated, ideological differences become more pronounced. Skepticism increases on the left, while ambivalence becomes more prevalent on the right. This asymmetry is consistent with the idea that educated individuals on the right may experience tension between their market-oriented values and growing concerns about Big Tech's role in shaping public discourse and culture. In contrast, highly educated individuals on the left appear to hold more resolved, and often more critical, views.

Finally, we find that patterns of Big Tech attitudes are meaningfully related to policy preferences, as expected. Cluster membership predicts distinct positions on both regulation and government support, suggesting that public attitudes—though often ambivalent—are nonetheless consequential for how individuals think about policy options in this domain. These results indicate that mass attitudes toward Big Tech may play a role in shaping broader patterns of public opinion, which in turn have the potential to influence elite discourse and policy decision-making, at least indirectly.

As indicated above, our results indicate a need for more refined theories of attitude formation, in particular with regard to the group of the ambivalent. [Zaller \(1992\)](#), for instance, suggests that it is the interplay between information exposure and individual predispositions, which shapes opinion formation. According to his Receive-Accept-Sample (RAS) model, opinions are not fixed expressions of preference, but are formed through the interaction between the arguments individuals encounter and the cognitive or motivational filters they use to process them ([Zaller 1992](#)). Following this approach, it could be argued that political awareness increases exposure to competing arguments. Our findings support the idea that education, as a proxy for political sophistication, fosters more complex and sometimes internally conflicted attitudes—particularly on issues where elite cues are mixed. This idea of regarding education not merely as a marker of socio-economic status as is common in political economy scholarship, but as a factor contributing to the formation of ambivalent and party contradictory attitudes could be interesting to pursue further.

For sure, our theoretical account remains incomplete in important ways. First, besides indicating socio-economic status, education also proxies for a range of related constructs—including income, cognitive sophistication, and digital literacy—that may generate distinct mechanisms. Disentangling these is beyond the scope of the present analysis but warrants attention in future work.

Second, our account does not fully engage with motivated reasoning as an alternative or complementary process. Highly educated partisans may not simply encounter more arguments; they may actively sort into ideologically congenial information environments, reinforcing rather than complicating their prior views ([Druckman et al. 2012](#);

Druckman et al. 2018). This would suggest that the ambivalence we observe among highly educated right-leaning individuals reflects not a balanced exposure to competing considerations, but rather a specific tension between market-friendly predispositions and culturally conservative concerns about Big Tech—a form of value conflict rather than informational ambivalence.

Third, our analysis implicitly assumes that elite and partisan cues about Big Tech follow broadly similar patterns across the six countries in our sample. Given the considerable variation in how political parties and media systems frame issues of tech regulation across national contexts, this assumption may not always hold and likely introduces heterogeneity into our estimates that country fixed effects only partially capture.

In sum, our findings offer an initial contribution to understanding the political psychology of Big Tech attitudes. Future research could build on this work by examining how these patterns evolve over time, how they are shaped by (changing) elite cues or real-world events, and whether similar dynamics emerge in other national contexts. While much remains to be explored, our results highlight the value of treating ambivalence not as a source of error or confusion, but as a meaningful outcome that reflects the complexity of contemporary public opinion.

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ORCID iDs

Tobias Tober  <https://orcid.org/0000-0001-7237-2936>

Marius R. Busemeyer  <https://orcid.org/0000-0003-4085-1689>

Sebastian Koos  <https://orcid.org/0000-0001-6739-1649>

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Supplemental material

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