

The Pleasure Principle: Why (Some) People Develop a Taste for Politics

Evidence from a pre-registered experiment

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Abstract

Often, citizens talk politics or watch political shows solely for the pleasure they derive from these activities. Yet, existing theories struggle to explain why (some) individuals engage with politics as an end in itself even if the behavior does not produce any separable instrumental value. Integrating psychological theories from motivation studies, this study deduces a need-based theory of political motivation in order to explain intrinsic political engagement. The model proposes that intrinsic political motivation has roots in the seemingly apolitical processes of need satisfaction which are deeply ingrained in the human psyche. Providing a theoretical framework for existing political science findings, this study argues that citizens seek behaviors they previously experienced as pleasurable. Differences in intrinsic political motivation are therefore theorized to reflect whether political engagement was previously experienced as satisfying basic psychological needs which is argued to predict both whether and how individuals engage with politics. By manipulating need-related situational features before and during political engagement, a pre-registered survey experiment tested the basic tenet that need-related experiences with politics affect the quality and quantity of future activities in the political domain. However, 14 out of 15 analytical tests do not yield the expected evidence in line with the need-based model of political motivation. Showcasing a step-wise approach for dealing with null-results in hypothesis-driven research to assess and increase the information value of the conducted analysis, the presented evidence calls into question the accuracy of the presented theory and the previous insights in psychology and political science on which it was built. This study thus adds a new piece to the puzzle of understanding what does and what does not underlie intrinsic motivation for political engagement.

Pre-Print Notice

This is a study draft that has not yet undergone the peer review process. Feedback is welcome.

Keywords

Political Participation; Civic Engagement; Motivation Studies; Open Science

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1 Introduction

2 Be it for a hobby or a cherished food, some people can trace the origins of their personal taste. In most
3 cases, however, tastes develop over time, progressively and rarely noticed. Like more profane tastes,
4 some citizens have developed a taste for politics; they find pleasure in talking about or reading about
5 political matters. Different from other tastes, finding joy in political engagement is not only a matter
6 of personal inclinations but it has societal implications because valuing something for its inherently
7 rewarding qualities foreshadows frequent and sustained enactment of that activity. If we consider
8 reading and knowing about politics and engaging with the public life as qualities of good citizenship
9 and if it is a goal to promote such qualities among the citizenry, then it is crucial to understand how
10 to foster the taste for politics so that people fulfill their duties as good citizens not merely as a chore
11 but as a source of joy.

12 Admittedly, political engagement out of joy and pleasure is not the only pathway to political
13 action. Citizens engage with politics in order to comply with social pressures, to act in accordance
14 with their inner sense of selves or to make a difference through one's behavior. Political science has
15 much to say about these and other motivational pathways to political engagement all of which posit
16 goals that are separable from the behavior itself (Blais and Daoust, 2020). In contrast, the taste for
17 politics and, more specifically, political engagement as an inherently rewarding experience is not well
18 understood. Although a powerful motivator (Prior, 2019), dedicated studies of political engagement
19 as an end in itself are rare (Hamlin and Jennings, 2011; Opp, 2015; Prior, 2019). As a consequence,
20 political science struggles to explain situational and individual variation in so motivated engagement.
21 That is, we do not have a good understanding of why citizens uniformly experience political action in
22 some environments as more satisfying than in others or why some citizens experience a given en-
23 counter with politics as more enjoyable than other citizens.

The line of literature which is closest to systematically examine the role of joy and other self-sustained drivers in politics are studies on political interest. Political interest is attracting increasing attention as of late, contributing to an empirical and theoretical groundwork for the study of political engagement as its own reward (Bougher, 2017; Shani, 2009). For instance, recent studies showed that curiosity towards politics is rather stable and suggested that dispositional interest in politics has non-political roots (Shani, 2009; Wuttke, 2019a). What is more, these proclivities may have resulted from initially fleeting but repeatedly confirmed situational experiences that made political encounters feel rewarding (Prior, 2019). While these studies help to understand the transition from situational to dispositional political interest, the concept of political interest is not a perfect fit to approach political activities that are enacted for their own sake. Political interest is both too broad a concept as it also subsumes attention towards politics for instrumental material considerations (Prior, 2019) and too narrow a concept as interest is not the only conceivable motivator with inherently satisfying conditions that may drive self-sustained behaviors. Therefore, I suggest taking advantage of the conceptual toolkit of motivation science and to employ the concept of intrinsic motivation for understanding self-sustained engagement in the political domain.

Action for its own sake has long been studied in motivation science under the label of intrinsically motivated behavior (Kruglanski et al., 2018). In the tradition of self-determination theory, for instance, intrinsic motivation is used to describe behaviors that are conducted for their ‘inherently satisfying conditions’ (Ryan and Deci, 2017). Similarly, means-ends-fusion theory conceptualizes a behavior’s degree of intrinsicness as the perceived fusion between the activity and its end (Kruglanski et al., 2018). Adopting this perspective may help to overcome conceptual problems inherent in previous attempts to get a grasp of self-sustained behaviors in the political domain. For instance, one conceptualization that was brought forward to approach inherently satisfying behaviors is to

distinguish between instrumental and expressive behavior (Hamlin and Jennings, 2011). However, considering the inevitability of instrumental motives in social scientific explanations (Marx and Tiefensee, 2015), separating instrumental from non-instrumental motives inadvertently renders intrinsic action as inaccessible to all inquiries that presuppose intentional actors. In contrast, the concept of intrinsic motivation acknowledges that intrinsic behaviors do provide instrumental values but merely considers them as inseparable from the behavior itself and as materializing during the behavior. From this perspective, intrinsically motivated behaviors no longer pose conceptual problems even for actors who follow some instrumental motives. Another prominent distinction is between internal and external motivators (Opp, 2015). Yet, this distinction entails unclear conceptual boundaries because all motivators must be processed internally for eliciting behavioral ramifications. Therefore, the concept of intrinsic motivation avoids theoretical pitfalls compared to other concepts that have previously been used and may prove useful to explain political engagement for its own reward. What is more, the concept of intrinsic motivation provides distinct explanatory value as it helps to distinguish intrinsic motivation from other motivational pathways and thus to predict their distinct behavioral outcomes. For instance, a large body of psychological literature has shown that additional *extrinsic* incentives such as the provision of monetary rewards often increases the propensity to conduct a behavior but at the expense of undermining the afforded efforts (Deci et al., 1999; Kruglanski et al., 2018; Kurzban et al., 2013). In contrast, a distinctive property of intrinsic motivation is to stipulate both the quantity and quality of behavior (Cerasoli et al., 2014). Therefore, understanding how to increase intrinsic political motivation may help to cultivate environments in which citizens not only superficially engage with politics but in which they fully embrace engagement with politics.

Explaining the origins of intrinsic political motivation departs from the simple idea -often called the pleasure principle (Freud, 1961; Higgins, 2012)- that human beings enact activities they

previously experienced as satisfying. To explain the resulting question of what we experience as pleasurable, this study proposes basic psychological needs as the theoretical centerpiece. Building upon existing motivation theories that employ basic psychological needs for identifying the properties of inherently satisfying behaviors (Dweck, 2017; Maslow, 1970; Ryan and Deci, 2017), this study joins a growing political science literature that identifies nonpolitical origins of political engagement (Bougher, 2017; Galais, 2018; Holbein, 2017; Holbein et al., 2019; Prior, 2019; Shani, 2009). Integrating these motivation theories and applying their insights to the political domain, the need-based theory of political motivation posits that seemingly apolitical processes of need satisfaction, which are deeply ingrained in the human psyche predict which political acts citizen experience as inherently satisfying. Specifically, political activities are expected to elicit sensations of joy or gratification when conducted in need-satisfying contexts. Individual differences in intrinsic motivation, then, derive from past need-related experiences with politics and reflect a person's expectations towards the anticipated need satisfaction that future encounters will provide. In this vein, a taste for politics echoes whether people experienced previous encounters with politics as satisfying their basic psychological needs and thus as inherently satisfying.

In order to test the predictions of the need-based model of political motivation, in a survey experiment situational contexts were manipulated to induce more or less need satisfaction to then assess consequences for whether participants sought out political information during the survey and how they processed these information that were conveyed in a video clip. Against expectations, respondents in the need-supportive and need-thwarting experimental conditions did not differ substantially in the quality or quantity of political engagement. Multiple follow-up analyses were conducted to strengthen the confidence that these reported findings represent a decisive falsification of the proposed theory that are unlikely to result from alternative explanations. Showcasing how to engage with

null-results in hypothesis-testing research, these analyses show that imperfect measurement of outcomes, treatment heterogeneity, low power or survey attrition cannot explain the absence of the expected findings. Yet, various manipulation checks reveal that not all experimental conditions meet the conditions for a decisive hypothesis test. Nonetheless, this experiment fails to provide any consistent evidence in line with the theoretical prediction, suggesting the refutation of most derived hypotheses. This study thus cannot offer a definitive explanation of intrinsic political motivation. Yet, considering the scant knowledge about political engagement as an end in itself, the proposed theory and the demonstrated findings may thus serve as a stepping stone to inform further research on this crucial topic of research.

Political motivation and Basic Needs

We seek activities that made us feel good in the past (Silvia, 2005; Skinner, 1976). Different lines of thought in psychological science acknowledge the relevance of the pleasure principle both in classical (Freud, 1961; Skinner, 1976) and contemporary work (e.g., Milyavskaya et al., 2018b). While useful as a starting point, explaining behavior solely by the pleasure principle merely pushes the explanatory burden one rung down the ladder as it begs the question of why some activities are experienced as pleasurable, and others are not. Moreover, the crucial aspect of individual differences remains unresolved. I propose to overcome this explanatory deficit by combining the pleasure principle's theoretical proposition with additional insights from motivation science on core desires that drive human behavior.

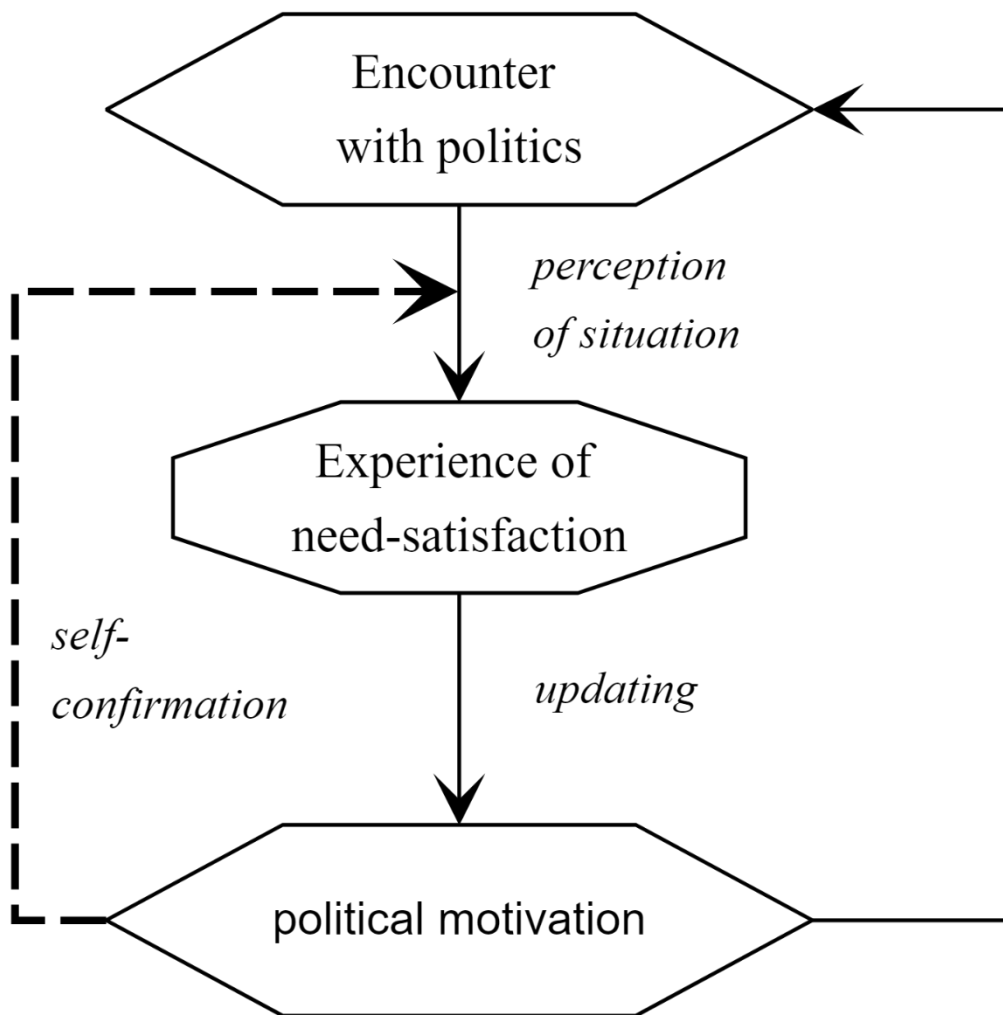
What kind of behaviors do human beings find satisfying and are therefore likely to be pursued again? Along with a burgeoning literature on human universals in other life domains (Bloom, 2011; Christakis, 2019; Mehr et al., 2019), there is a growing consensus that human beings share certain 'core motives' (Fiske, 2014) or 'psychological needs' (Ryan and Deci, 2017). While disagreement

persists about essential concept characteristics and about the resulting list of supposedly universal motivational propensities (Dweck, 2017; Higgins, 2012; Kruglanski et al., 2018; Ryan and Deci, 2017; Sheldon et al., 2001), a functionalist definition of basic needs has proven useful for exploiting universal motivators in applied research. Understanding basic psychological needs as „areas of chronically high value that are critical to well-being and optimal development” (Dweck, 2017) allows the abduction of a list of needs, based on observed empirical regularities. Human desires thus qualify as basic psychological needs if they are found irreducible to other needs and if they can be shown to be of high value for optimal functioning and well-being across cultures and life stages (Dweck, 2017; Ryan and Deci, 2017). One basic need that is acknowledged by most motivation theories (Bandura, 2010; Dweck, 2017; Higgins, 2012; Ryan and Deci, 2017) is the need for competence, which goes back to early work by White (1959) and Piaget (1952) who argued that from childhood onwards human beings express the desire to feel efficacious and impactful in the world. Another need that has roots in early writings on the human condition (Ryan and Deci, 2017), particularly concerning human beings as political persons who are embedded in larger groups (Blühdorn, 2019), is the need for autonomy. Advocated most prominently by self-determination theory (Ryan and Deci, 2017), the human “desire to self-organize experience and behavior and to have activity be concordant with one’s integrated sense of self” (Deci and Ryan, 2000: 231) is argued to drive human behavior across cultures and life stages (Chen et al., 2014; Sheldon et al., 2001). Although no list of basic needs is definitive, a large pile of prior research thus suggests the existence of universal needs for competence and autonomy so that, all else equal, activities that are coupled with elements which satisfy these needs are experienced more positively than without the experience of need satisfaction.

Based on the idea that need-satisfying activities are experienced as more pleasurable and are therefore more likely to be re-enacted in various life domains, it is conceivable that the degree to

which activities fulfill basic psychological needs may also help to explain inherently gratifying behaviors in the political domain. In this vein, the origins of intrinsic political motivation, that is the propensity for embracing and enjoying an activity, is argued to lie in previous need-related political experiences (see Figure 1). More specifically, the expectations and beliefs derived from previous need-related encounters with politics feed into a person's level of political motivation and determine one's approach to politics in the future (Dweck, 2017). Previous political science findings support this notion and can be re-interpreted along the lines of a need-based model of political motivation. For instance, multiple political science findings have shown that respondents who were randomly induced to fail political knowledge questions subsequently report lower levels of political interest (Bishop, 1987; Prior, 2019; Schwarz and Schuman, 1997). From a need-based perspective, these findings can be understood as previous experiences with the political domain which thwarted or satisfied the need for competence, thereby fostering or undermining a person's intrinsic motivation towards that domain. Consequently, when political engagement has previously contributed to satisfying our basic needs such as the need for competence then we will want more of it.

153 Figure 1. Need-based model of political motivation



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155

156 How can we reconcile the proposition that universal basic needs determine the degree of pleasure
157 provided by an activity with the observation that the motivation to enact a specific political behavior
158 is not universal but varies remarkably between individuals? Notably, certain situational characteris-
159 tics uniformly facilitate need satisfaction, reflecting that they are more or less conducive to need sat-
160 isfaction. For instance, providing a rationale or giving a sense of choice usually contributes to the
161 satisfaction of a persons' need for autonomy (Chatzisarantis et al., 2012; Deci et al., 1994; Nelson et

al., 2015; Patall et al., 2008; Spray et al., 2006). Importantly, however, individuals make different experiences with politics as some will experience politics in a more need-satisfying context than others. These prior experiences will then feed into the tally of politics-related beliefs and expectations which form a person's level of domain-specific motivation. Cohort studies suggest that these mechanisms are most forceful during the impressionable years of adolescence when individuals do not yet hold crystallized attitudes towards the political domain (Prior, 2019; Wuttke, 2019a). Yet, there is no reason not to assume that, to a lower degree, these mechanisms may be at play throughout the entire life course, changing one's level of political motivation in reaction to new need-supportive or need-thwarting experiences with politics.

What is more, once motivational proclivities towards politics have crystallized in a person, we may expect a self-confirmatory psychological tendency through which expectations create perceived reality (Murayama, 2019), thereby exacerbating already existing differences in political motivation (self-confirmation, see Figure 1). It is well known that individuals experience a glass of wine as more delightful when the individuals were manipulated to believe tasting a high-quality wine (Bloom, 2011). Similarly, citizens who have developed favorable attitudes towards politics may be more likely than others to see their expectations of political engagement as an enjoyable activity confirmed even when engaging in the same political activity. This proposition is consistent with political science evidence that exogenously induced political encounters stimulate political interest more strongly among individuals with favorable predispositions towards politics (Prior, 2019). Hence, a self-reinforcing feedback loop may foster the polarization of individual differences of political motivation, seemingly confirming a person's expectations about whether it is valuable to engage with politics.

Because individual differences in political motivation are argued to be ultimately rooted in need-related experiences, need-satisfying experiences with politics help explain why individuals want

185 to engage with politics for its own sake. Interestingly, as need-satisfying experiences give more reason
186 to again experience the satisfaction associated with behavior, need-related activities change a person's
187 goals. In the wake of perceiving a behavior as serving need-fulfilling goals, fusion occurs between the
188 general goal of need-fulfillment and the specific reasons for conducting the behavior (Figure 2). No-
189 tably, the degree to which fusion occurs between goals and reasons for action is the definition of in-
190 trinsicallity of action (Kruglanski et al., 2018). In other words, the more a person perceives political
191 engagement as serving need-fulfilling goals, the more political engagement is enacted for no other
192 reason than the behavior's inherent need-satisfying conditions. Hence, intrinsic political motivation
193 is at its maximum when need-fulfilling goals and behavioral reasons fully align, for instance, when
194 someone watches a political TV show solely for the activities' inherently need-satisfying properties.

195

196 Figure 2. Updating of Domain-Related Mental Representations after Need-Supportive Experiences



Understanding the link between need satisfaction and intrinsic motivation paves the way not only to explain *whether* but also *how* behavior is enacted. According to the law of low effort, when facing otherwise identical behavioral choices, individuals usually opt for the more effortless route (Kurzban, 2016). However, as intrinsic motivation is characterized by the fusion between an activity and its end, the logic of effort minimization does not apply to intrinsically motivated individuals. Instead of minimizing the invested effort, individuals embrace the activity they enact for its inherently satisfying conditions. This is consistent with political science evidence that curiosity towards politics goes along with more effortful processing and deeper understanding of political affairs (Prior, 2019). Consequently, intrinsic motivation does not only go along with a strong inclination to enact a behavior but enacting a behavior for its own sake entails doing it effortfully and attentively rather than superficially.

The present study

Procedures

The need-based theory of political motivation is tested in a survey-experiment in which participants' motivation to engage with politics is assessed in varying situational contexts that provide higher or lower degrees of need satisfaction. In the experiment, political engagement refers to the consumption of political media, more specifically to an online video that respondents watch during survey participation. Quantity refers to the participants' choice of watching political media content over seemingly non-political alternatives. Quality refers to the level of cognitive involvement when processing political media content.

The experiment consists of a two-arm design (see Supplement 1 for a consort diagram), in which those two basic psychological needs are manipulated that studies have identified as crucial for fostering intrinsic motivation (Ryan and Deci, 2017): 1) the need for autonomy which seeks self-

endorsed and volitional action and which is thwarted in the face of external coercion, 2) the need for competence which seeks the experience of effectance and mastery and which is thwarted in the face of pervasive overload.

At the beginning of the survey, respondents participated in a political knowledge quiz with manipulated difficulty and manipulated competence feedback (*need for competence manipulation*). Following the knowledge quiz, participants had the chance to watch a video during the survey, receiving four media options to choose from (two political, two seemingly apolitical). Each video option is described verbally, containing ostensibly different media content (e.g., political option: “Political Video on Social Policy”; seemingly apolitical option: “YouTube-Video: Funny Old Man”). Importantly, despite the four options, all individuals watched the identical video because the different choice descriptors merely refer to different facets of the media content (a comedian delivering a 30-seconds stand-up set on a political topic). Therefore, indicators measured after media consumption are not influenced by differences in video content but only by differences in how the content was individually processed, depending on the experimentally manipulated need-related situational characteristics. The questionnaire page to choose the media content also contained the *need for autonomy manipulation* which frames the respondents’ choice as either volitional or externally enforced. After choosing and watching the video, the outcome variables were measured and the respondents were debriefed.

Experimental Conditions

Need for competence manipulation. Participants in the need-for-competence-supportive (thwarting) condition were induced to feel efficacious (inefficacious) with regards to the political domain, thereby facilitating (undermining) situational satisfaction of the need for competence (Milyavskaya

et al., 2018a). Following previous work (Bishop, 1987; Bowey et al., 2015; Preece, 2016; Schwarz and Schuman, 1997), a politics quiz and competence feedback was used to induce domain-related need-satisfaction of competence. Specifically, participants in the need-for-competence-supportive (thwarting) condition received easier (more difficult) questions. In addition, they were given manipulated feedback of domain-related knowledge that is allegedly far above (below) average.

Need for autonomy manipulation. When offering the choice between media options, participants assigned to the *control group* received no further information other than the instruction to choose one video. Following previous work (Kadous and Zhou, 2019), on the preceding questionnaire page, participants in the *need-for-autonomy-supportive condition* were prompted to explain the importance of political awareness, which should raise the salience of self-endorsed reasons for political media consumption and thus facilitate volitional choices of political media content. Following previous work (Grant and Berry, 2011; Patall et al., 2008), participants in the *no-choice condition* read that they were assigned to a group of respondents that is not allowed to freely choose from all videos but must watch a political video to receive the monetary incentive for survey participation.

Hypotheses

Importantly, all respondents watch the identical political video and receive identical descriptions on the media content. Therefore, on the surface, the value of watching the political video should not differ across experimental conditions. From a rational choice perspective with narrow rationality (Hamlin and Jennings, 2011; Marx and Tiefensee, 2015; Opp, 2015), one might expect that participants will make identical media choices independent of experimental conditions and will process the video in the same way. One might even expect higher motivation to watch and process political content in need-thwarting conditions as individuals who are induced to perceive themselves as having

below-average political knowledge should derive higher marginal utilities from information acquisition. In contrast, the need-based theory of political motivation predicts that political encounters in need-supportive contexts will stimulate a person's intrinsic motivation to re-engage with politics, thereby promoting whether and with how much effort they will engage with politics in the future.

Both the competence and autonomy manipulations are predicted to influence respondents' need-related expectations and beliefs about whether politics serves need-fulfilling goals, which will then materialize as individual differences in intrinsic motivation to choose and effortfully process the political media content. Hence, depending on the previous need-related experiences with politics, participants in each experimental condition will experience the video differently, albeit watching identical content. Specifically, the competence-manipulation can be understood as changing prior need-related experiences with politics. The autonomy-manipulation can be understood as changing need-related perceptions of the current situation in which the political activity unfolds. Both experimental arms have in common that respondents in the respective need-satisfying conditions will perceive the political media content as more in line with need-fulfilling goals than respondents in the need-thwarting conditions. As a consequence, by manipulating previous domain-related experiences or current situational perceptions, both manipulations change the perceived intrinsically of the political activity under observation.

H1: Need-supportive situational contexts increase intrinsic political motivation.

Because need-supportive experiences shape beliefs and expectations, need-supportive experiences shape whether a future activity is anticipated to serve need-fulfilling goals. Reflecting this self-confirmatory tendency, individuals who previously experienced their encounters with politics as need-

satisfying are more likely to seek encounters with politics than individuals with previous need-thwarting experiences.

H2a: Individuals who previously experienced the political domain as satisfying their need for competence, want to engage with politics more frequently than individuals with need-thwarting domain-related experiences.

Similarly, we also expect a positive effect of the autonomy-supportive priming on the frequency of political engagement compared to the control group.

H2b: Individuals in an autonomy-supportive context want to engage with politics more frequently than individuals in neutral situational contexts.

Resembling most everyday situations of political media consumption, no information of immediate relevance is conveyed the experiment's video. As the personal stakes are not very high, outcome-oriented considerations presumably do not carry much weight in the inclination to invest cognitive efforts into watching the experiment's political video (Green and Shapiro, 1994). In contrast, the degree of intrinsicallity of the behavior is likely to matter because individuals who experience the activity as aligned with need-fulfilling goals will engage in the activity for its own sake, therefore bypassing the human inclination for effort minimization.

H3a: Individuals who previously experienced the political domain as satisfying their need for competence, are more inclined to effortfully process the political information conveyed in the video than individuals with need-thwarting domain-related experiences.

H3b: Individuals in autonomy-supportive contexts are more inclined to effortfully process the political information conveyed in the video than individuals in neutral situational contexts. The no-choice condition plays a unique role as the manipulation serves to test the relevance of distinguishing quantity and quality of motivation. Here, we expect that coercion into political engagement will be effective in increasing the frequency of political engagement among respondents. Yet, compared to the control group who received no autonomy-thwarting message, individuals in the no-choice experimental group are expected to invest fewer efforts into the political activity they feel coerced into. In other words, need-thwarting motivational stimuli may increase the quantity of political engagement but at the cost of undermining its quality.

H4: Forcing individuals into political engagement will increase the frequency of political engagement but will decrease the level of cognitive involvement.

Methods

Ethics Statement

This study was approved by the Ethics Board of the University of Mannheim. Participants were provided informed consent and were debriefed at the conclusion of the study (see Supplement 2 for study materials).

Measures

Dependent variables.

To strengthen the robustness of the statistical tests, this study complements self-reported measures of the outcome variable with cognitive and behavioral measures to assess the motivational processes that underlie the participant's choice for or against political engagement during the survey (see S2).

While these measures tap into different mental representations and cognitive processes, we expect effects of similar strength across all types of measurement.

Intrinsic Motivation. To assess intrinsic motivation, one behavioral and one self-reported measure is used. Four items, adopted from the Intrinsic Motivation Inventory (Sample item: “*I enjoyed watching this video very much*”), were aggregated into an unweighted summary index. Following the free-choice paradigm (Cerasoli et al., 2014), the behavioral measurement queries whether respondents voluntarily want to watch another similar video after the survey is concluded.

Quantity of Political Engagement. Measured as the respondent’s choice to watch either a video with political content or a video seemingly without any political content.

Quality of Political Engagement. Quality of political engagement will be assessed with a subjective measure, an objective measure, and a behavioral measure. The subjective measure is the unweighted summary index of two items assessing respondents’ perception of the invested efforts while watching the video (sample item: “*I watched the video very attentively*”). As objective measurement on the quality of cognitive processing, we assess whether respondents correctly answer three open-answered questions about the elaborations on social policy in the video. The open-ended responses were classified based on a detailed codebook (see Supplement 3) by a coder who was unaware of the respondents’ treatment conditions. The resulting outcome measure is an additive index gauging the number of correct responses a respondent has provided. As behavioral measurement, whether respondents have prematurely skipped the video is used (time on questionnaire page).

Manipulation Checks

Competence treatment. Unweighted summary index of two items measuring internal political efficacy

(sample item: “*It is often difficult for me to understand political issues in detail*”).

Autonomy treatment. On the no-choice treatment, one item assesses whether respondents felt pres-

sured to watch the video. On the autonomy-supportive treatment, one item assesses whether respond-

ents feel they can recall many reasons for engaging with politics.

Power Analysis

Pre-registered power analyses suggest that with a total sample size of $N=1,500$, effects can be detected

at power at or greater than .95 even when effects size are considerably smaller than suggested by

previous studies. Detailed information is reported in Supplement 4.

Pre-registered analysis plan

To estimate treatment effects, linear regression analyses with robust standard errors and one-sided

hypothesis tests were conducted. To reduce variance of the dependent variables and thus to increase

the efficiency of the effect estimates (Lin, 2013), the following pre-treatment covariates are included

in all analysis models along with multiplicative terms with the treatment indicator: Pre-treatment

levels of self-reported political motivation, device type, device operating system, rank of political

knowledge within the experimental group. In case of missing values on any covariate, sample means

(continuous variables)/modes (categorical variables) were be used for imputation. As linear regres-

sions are also applicable to estimate experimental treatment effects for binary outcome variables and

as their results are easier to interpret than coefficients from logistic regressions (Gomila, 2019), linear

regressions were be conducted for all outcome variables.

Because multiple measurement instruments were employed to assess the concepts of interest and because multiple hypotheses will be tested, in total 16 statistical tests are conducted. Supplement 5 documents which indicators and statistical tests are employed for testing each hypothesis. Whereas the expected positive effect of the no-choice conditions on the quantity political engagement does not refer to a need-related stimulus, all remaining 15 tests can be understood as testing the tenet that need-related experiences predict whether and how a person will engage with politics.

The survey questionnaire and the stimulus were programmed using the software UniPark (files attached as Supplementary Material). Based on simulated responses on the survey questionnaire, an analysis pipeline was pre-preregistered (see Supplement 6). The analysis pipeline contains all data processing steps and pre-specifies the data analysis, thereby largely eliminating researchers' degree of freedom (Wuttke, 2019b), see <https://osf.io/24xyq>. Deviations from the pre-registered analysis pipeline that became necessary after data collection due to errors in the original scripts are documented in the analysis scripts.

Participants

The target population is the German online population who is entitled to vote. Participants were be drawn from the Respondi Panel, which is a heterogenous online access panel with about 70.000 active participants who were recruited offline and online. Socio-demographic quotas (age, education, gender) were used to recruit a sample of 1,500 respondents that resembles the target population on the sociodemographic criteria.

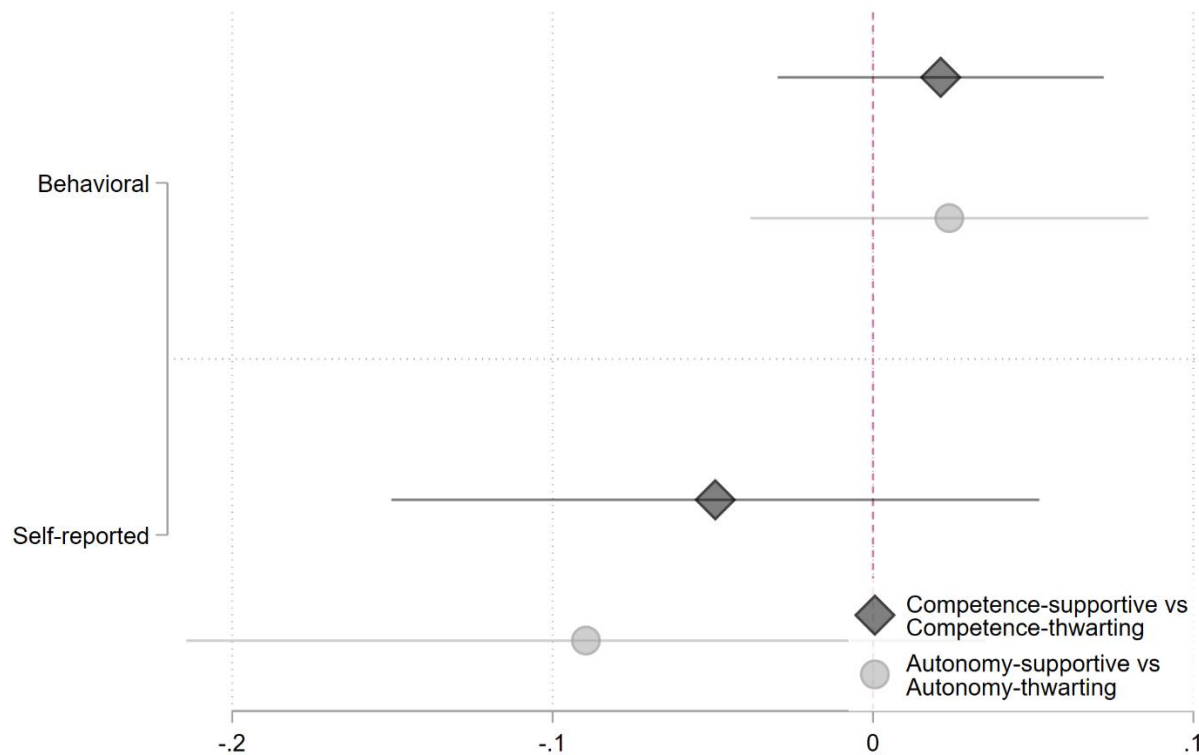
Exclusion Criteria

All respondents with completed interviews were included except straightliners who, on all matrix batteries, select all responses from the same row. The survey included an attention check that filter out respondents who did not select the instructed response option in one of the survey questions.

Results

To examine whether need-supportive or need-thwarting experiences with politics affect whether and how citizens engage with politics, we separately examine treatment effects on the various outcome variables. Starting with intrinsic motivation, Figure 3 shows how experimentally induced satisfaction of the needs for competence and autonomy affects self-reported and behavioral measures of intrinsic motivation for political engagement. Based on linear regression models, Figure 3 shows predicted mean differences between the need-supportive and need-thwarting treatment groups in each experimental arm. Against expectations, no statistically significant differences between the treatment conditions emerge. The consistent lack of treatment effects across conditions and outcome measures on intrinsic motivation refutes hypotheses 1, according to which need-supportive situational contexts would increase intrinsic political motivation. Apparently, whether individuals recently had a positive experience with the political domain had no ramifications on the intrinsic motivation for subsequent encounters with politics. Because increased intrinsic motivation was anticipated to function as the psychological precursor to hypothesized downstream effects on the quality and quantity of engagement, these null effects may thus foreshadow absent effect of need-satisfaction also on the remaining outcome variables.

Figure 3. Need-related treatment effects on intrinsic motivation

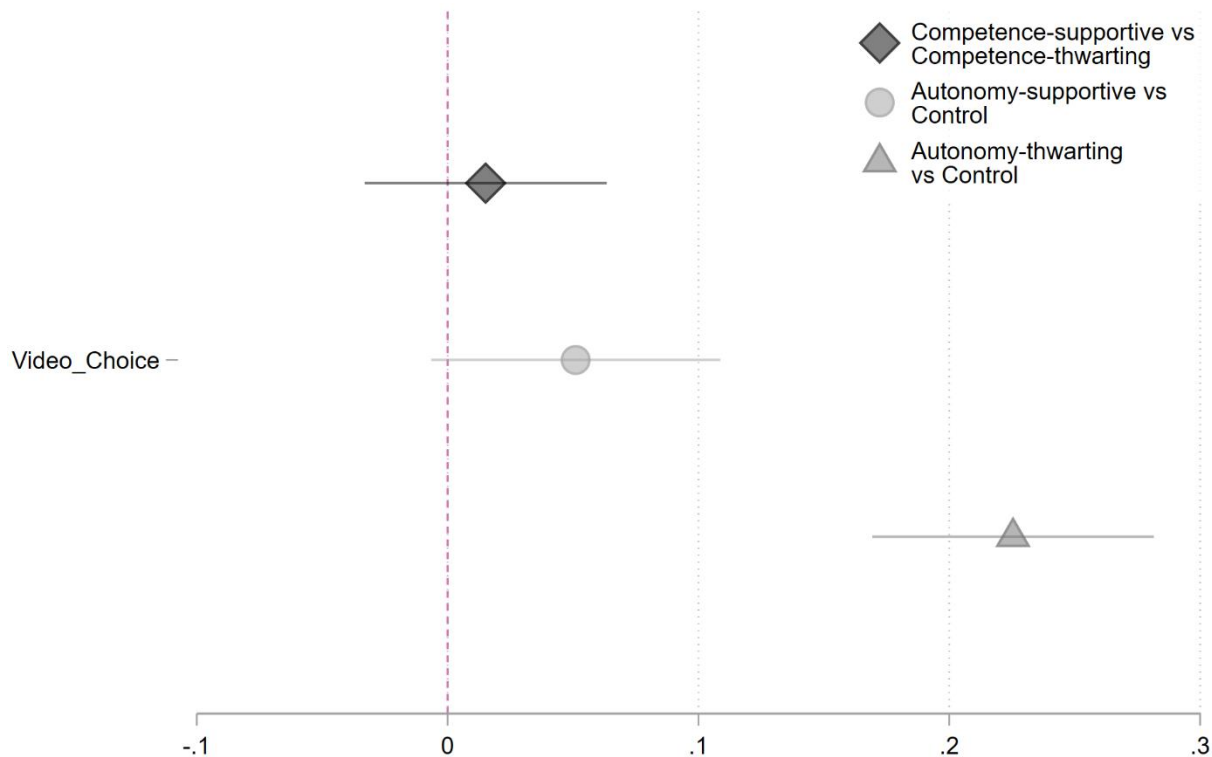


Note: Predicted mean differences from linear regression analyses. Behavioral measure: dummy variable; self-reported measure: z-score standardized.

Figure 4 shows whether previous domain-related need satisfaction affected the quantity of political engagement, that is the decision for or against watching a video with political content. Whether respondents were induced to receive political knowledge feedback that did or did not satisfy their need for competence apparently made no discernible difference in their inclination to choose political over non-political media content. Similarly, the confidence interval of the autonomy-supportive treatment effect's estimate also includes zero. However, for the autonomy-supportive treatment, a one-tailed significance test yields a statically significant difference with the control group ($p=.041$). 53.9 [49.6–58.2, 95% CI] percent of respondents in the autonomy-supportive condition who were prompted to

rehears intrinsic reasons for political engagement chose the political media option. In comparison, a slightly lower share of respondents (47.0 [39.6–58.2] percent) chose the political options when further instructions were given. These mean differences correspond to cohen's $d = .14$; a small effect size by conventional standards which corresponds to having to treat 24 individuals in order to stipulate one additional person in the autonomy-supportive condition to choose a political video compared to the control group (Gruijters and Peters, 2017). There is thus partial evidence for behavior-eliciting effects of the autonomy-supportive stimulus, but these effects are not robust and smaller than expected. In combination with the expected but absent effect of the competence-related manipulation, overall, these results thus do not yield consistent evidence for the notion that individuals with previous need-supportive experiences with politics are more likely to seek political encounters than individuals who experienced politics as undermining their basic psychological needs.

Figure 4. Need-related treatment effects on quantity of political engagement



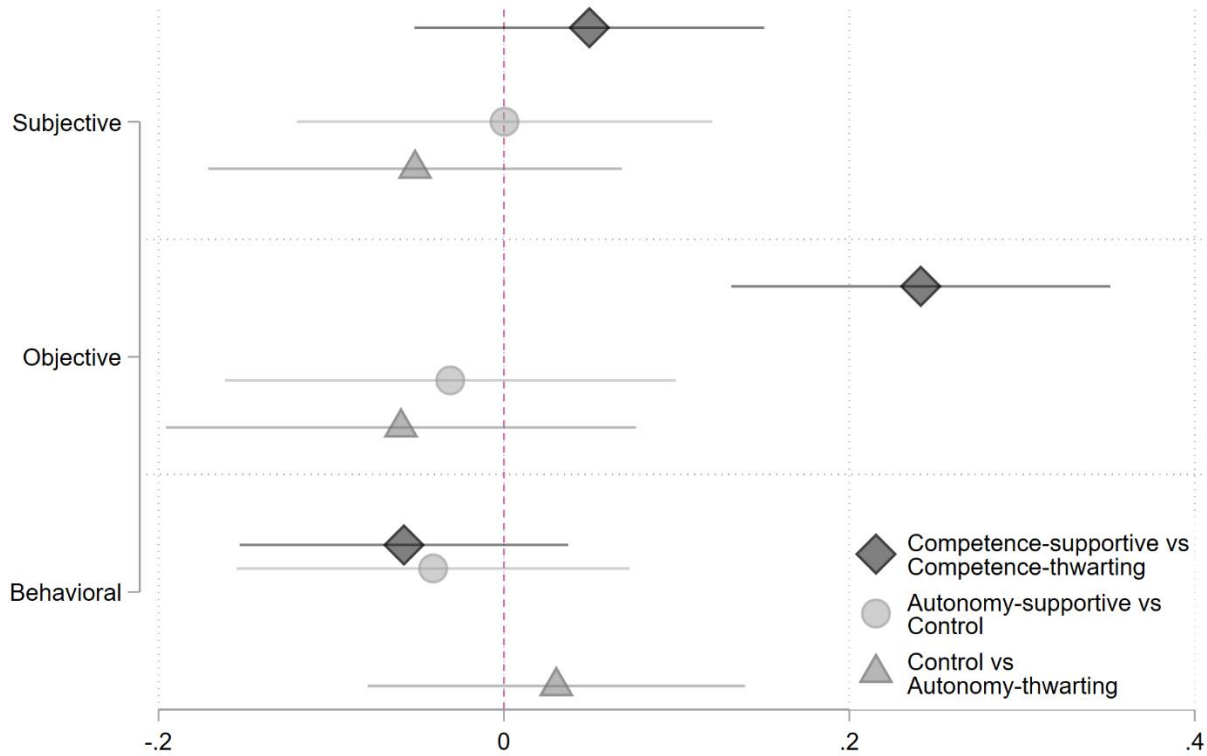
Note: Predicted mean differences from linear regression analyses. Outcome variable is dichotomous.

Effect sizes are considerably larger and clearly distinguishable from zero for the third treatment condition, in which respondents were told that other media options existed but which they were not allowed to choose for reasons outside their control. Respondents in the forced-choice (need-thwarting) condition chose a political video much more frequently than the control group (70.2% [66.2–74.3, 95% CI] vs. 47.0% [42.7–51.2], $p \leq 0.0001$). That the experimental stimulus thus often elicited the intended behavioral response may not surprise, and this test does not serve as a test of the need-based model of political motivation. Our main interest in the effects of the autonomy-thwarting condition was on potential downstream consequences concerning *how* a behavior is conducted when it is

enacted against the person's authentic will. Figure 5 reports on these down-stream effects on the quality of behavior.

Figure 5 shows effects on the depth of respondents' engagement with the video using three different outcome measures. Eight out of eight experimental tests do not show the expected effects of need-related experiences with politics on the quality of a person's engagement with politics. No statistically significant effects emerge on self-reported levels of effortful engagement (subjective measure). Similarly, there is no evidence that prior need-related experiences with politics had any discernable consequences for whether respondents skipped the political video or watching it at full length (behavioral), again suggesting that need-related experiences had no ramifications for how the video was processed cognitively. The exception from the array of null effects is that respondents in the competence-supportive condition could more accurately recall political arguments from the video compared to respondents who were induced to feel politically incompetent. Out of three knowledge questions, respondents in the need-thwarting condition accurately respond to 2.1 [1.9–2.3, 95% CI] questions about the video compared to 2.2 [1.9–2.3] in the need-supportive condition ($p < 0.0001$, one-sided). This corresponds to an effect size of Cohen's $d = 0.17$ which indicates a small treatment effect. The rather small effect size is also apparent when considering that differences of this size imply that the distribution of the number of correct responses overlaps for 93 percent of respondents in both treatment conditions. Another way to get a grasp of the effect size is to consider that there is a 55 % chance that a person picked at random from the treatment group will have a higher score than a person picked at random from the control group; hence, only slightly larger than chance. Notwithstanding this one significant, small effect, the bigger picture emerging from these findings does not provide much evidence for the hypothesis that previous need-supportive experiences with politics foster the inclination for deeper cognitive involvement when processing political information.

Figure 5. Need-related treatment effects on quality of political engagement



Note: Predicted mean differences from linear regression analyses. Scale of subjective measure: 1-5, objective measure: 0-3, behavioral measure: z-score standardized.

What are we to make out of the two significant findings against the broader pattern of null results?

Above, multiple tests were reported on the same hypothesis based on the reasoning to thereby assess

the robustness of the experimental findings to different variants of measurement and treatment in-

ductions. For an overall assessment of the evidence base, it is thus the question whether these two

test successes should be considered meaningful signals or statistical flukes that result from the mul-

tiplicity of tests. With the pre-registered alpha of 0.05,¹ the probability of incorrectly rejecting one null

¹ In total, 16 statistical tests were conducted but we exclude the significant no-choice effect on behavioral frequency here because this test does not concern the main theoretical argument.

hypotheses with 15 tests is $1 - (1 - 0.05)^{15} = 53.7\%$. Hence, without accounting for multiple comparisons it is more likely than not to observe a statistically significant effect estimate even when all hypothesized effects are truly absent. When employing the conservative Holm-Bonferroni strategy to adjust for multiple comparisons, the previously significant p-value of autonomy-supportive treatment on video choice increases to $p=.57$. Yet, the effect of competence-supportive treatment on the objective measure of behavioral quality remains highly significant at $p=.0001$. Altogether, in 14 out of 15 decisive tests the null hypothesis of no effects of need-related treatments on political motivation could not be refuted. Only one test yields findings that are in line with the proposed theory. What does this large array of null results imply for the credibility of the proposed theory?

Interestingly, post-hoc analyses show strong correlations between intrinsic motivation and the quantity and quality of engagement (e.g., Pearson's R of self-reported intrinsic motivation and subjective quality of engagement $=.67$), suggesting that intrinsic motivation indeed elicits the expected downstream effect on whether and how political behavior is conducted. Yet, the theory's central tenet that need-satisfying previous encounters stimulated intrinsic political motivation and the respective behavioral outcomes received little empirical support. Considering that only one small, theory-congruent effect was found while one test after the other failed to provide the hypothesized evidence for the need-based model of political motivation, the most straightforward conclusion is to consider the derived theory as refuted. However, as no empirical test can prove a hypothesis true, no pattern of null results necessarily commands the refutation of an hypotheses as long as explanations other than the absence of real effect can also explain our failure to observe such effects in the experiment. In the remainder, I therefore systematically test measurement problems, design deficiencies, lack of statistical power and treatment heterogeneity as potential sources of type II errors. The more certain we can be that none of these issues prematurely lead us to reject the theorized hypotheses

although they are true, the more confident we can be that, indeed, the presented null findings warrant the conclusion that the proposed theory does not adequately describe how intrinsic motivation comes about.

Measurement considerations concern the notion that the experiment might have elicited real theory-consistent effects, yet the measurement instruments we to capture these effects, rendering the experiment unhelpful in disentangling whether the hypothesized effects exist or not.

One plausible scenario is that treatment effects were present, and even so consequential that they caused some individuals to prematurely terminate the survey before the outcome variable was measured. As these attrition biases are well-documented in the field-experimental literature (Gerber and Green, 2012), the pre-registration plan contained the presumption that the no-choice condition might lead some participants to cancel survey participation. However, there is no evidence for differences in survey completion between respondents in the no-choice or the control group ($p=.91$). Yet, differences in survey completion become apparent when comparing both need-for-competence manipulations ($p<.00001$). Among respondents who received encouraging feedback 92.7% [91.0–95.0, 95% CI] completed the survey. When respondents were told that their political knowledge is far below-average, only 85.1% [82.6–87.6] made it to the end of the survey. To the extent that attrition is correlated with the respondent's potential outcomes, the excludability assumption is violated, and the experimental estimates are biased (Gerber and Green, 2012). Potentially, the treatment could have driven those respondents to terminate the survey early, who would also have been most susceptible to treatment effects on substantive outcome variables. Whereas attrition may thus have biased treatment estimates, it is unlikely that these survey dropouts explain most of the null effects because the difference in attrition rates by competence conditions is so low. Therefore, average treatment effect would remain insignificant or small even if we impute extreme treatment effects on the outcome

variables instead of missing values, as can be shown with simulation analysis. For instance, simulating that all respondents in the need-thwarting conditions with outcome missing values would have decided against watching political content ($N=37$), the competence manipulation would have yielded a small, barely significant effect on engagement frequency (Cohen's $d=0.06$, imputed $p\text{-value}=.04$; original $p\text{-value}=.26$; both one-sided). The effect on the behavioral measure of intrinsic motivation remains just above the significance threshold after replacing all missing values of the concerned respondents in the need-thwarting condition with low motivation scores of 0 (imputed $p\text{-value}=.06$; original $p\text{-value}=.21$). Value imputation on continuous outcome variables shows that in extreme scenarios treatment-induced attrition could have hidden highly significant treatment effects, but these scenarios with extreme value imputation are unlikely and the effect sizes would remain small (see Supplement 7 for analysis on continuous variables). Altogether, there is the possibility that attrition bias may have caused false negatives as systematic survey dropout could have rendered some truly statistically significant treatment effects as non-significant but attrition bias seems unlikely to have overshadowed substantive treatment effects with meaningful effect sizes.

A second measurement problem that might overshadow true treatment effects is unreliable measures of the relevant outcomes. Although the study relied on established and validated measurement approaches to assess intrinsic motivation (self-reported intrinsic motivation: Ryan et al., 1991, behavioral intrinsic motivation: Ryan and Deci, 2017), it is possible that these measures were less reliable in the present survey context. Low reliability rates would be problematic because they add noise to the observed values which impair the capacity to find traces of treatment effects in the outcome measures. Specifically, multi-item measures could suffer from low internal consistency but analyses show high reliability scores of the self-reported intrinsic motivation measures (Omega total: .87 [.85, .88], Cronbach's alpha: .86 [.85, .87], see McNeish, 2018). The objective measure of behavioral

quality is particularly vulnerable to reliability problems as it required manual coding of the participants' open-ended responses. To assess coding reliability, 270 randomly selected responses were classified by a second coder. A comparison of both coders' classification yields very high reliability rates (agreement rates for each response item: 93%, 93%, 98%; kappa: 0.86, 0.86, 0.96). Altogether, these results foster our confidence that low reliability of the outcome measures appears not to a major problem for capturing potential treatment effects. Up to now, therefore, the analysis demonstrated the possibility that measurement issues may have slightly biased the experimental findings in one way or another but major flaws were neither detected concerning neither survey attrition nor instrument reliability.

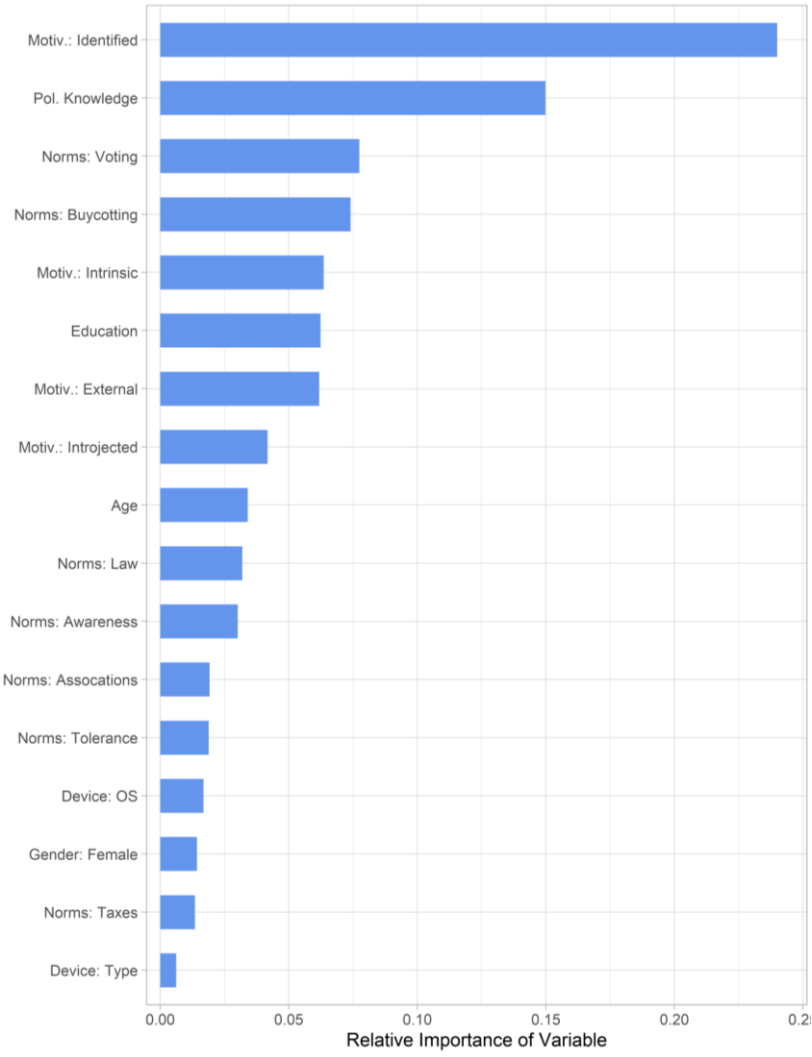
All preceding analyses focused on average treatment effects, yet it is conceivable that treatment effects materialized only in some subgroups. At the extreme, the experiment could have yielded opposite effects depending on a background variable which offset each other when analyzing the sample as a whole. For instance, the susceptibility to situational influences on political motivation might depend on a person's dispositional motivational propensities. To examine potential treatment heterogeneity depending on these and other potential moderators, one option is running a vast number of regression analyses with various model specifications that account for the numerous possible interacting influences of the variables of interest. However, such approach runs into various problems of overfitting, statistical power, computational problems and exacerbates the problem of multiple comparisons mentioned above (van Klaveren et al., 2019). Data-driven strategies make more efficient use of the data and are thus better suited for this kind of exploratory analysis. Therefore, I employ a machine learning technique –causal forests (Athey et al., 2019; Wager and Athey, 2018)– that was specifically developed for the purpose of discovering treatment heterogeneity in experimental settings. As an ensemble model, causal forests consist of decision trees that partition the data on relevant

covariates by their ability to explain heterogeneity in a quantity of interest such as the treatment effect. Like other random forests model, causal forest split the data into training and test datasets. In addition, the causal forest model entails another split of the training dataset called the honesty approach that enables the calculation of asymptotically normal estimates and thus to report 95% confidence intervals. Due to the sample splits, causal forests thus work best with larger sample sizes, yet it is the best available option to explore potential treatment effects also in medium-sized samples as it does not overfit the data and yields interpretable and reliable estimates.

To implement causal forest models, I assigned 60% of respondents to a training data set with twelve attitudinal variables (four dimensions of political motivation, seven indicators of citizenship norms, political knowledge) three socio-demographic variables (age, sex, education) and two technical para variables (device type, operating system), all of which were measured before a treatment was administered. The learned model is then administered on the test dataset to predict heterogeneous treatment effects on unused data (for more information on model specification, see Supplement 8; I follow the implementations by Reimer and Chelton, 2019; White, 2018).

To demonstrate how the methods reveals treatment heterogeneity, I first examine treatment effects of the no-choice condition on the frequency of political engagement in the experiment. Figure 6 shows the relative importance of each variable to explain variation in treatment effects. Political motivation variables are among the variables with most explanatory power, a finding that replicates on other outcome variables.

607 Figure 6. Relative variable importance for treatment heterogeneity

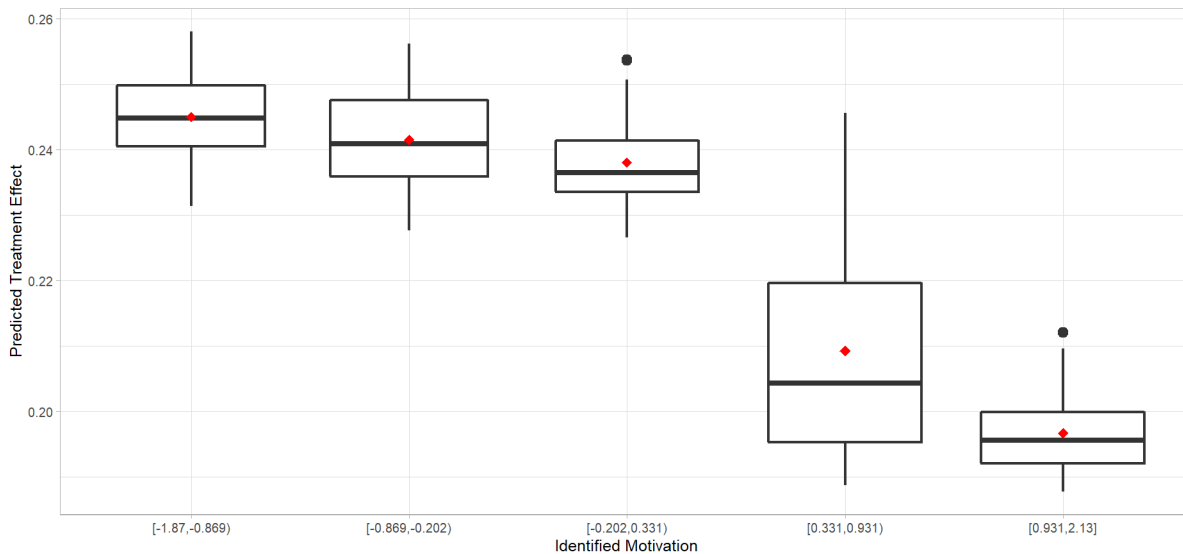


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610 However, Figure 6 does not inform about the magnitude of treatment heterogeneity, and it is thus
611 unclear whether the heterogeneity is substantively meaningful. When conducting an omnibus test
612 on the presence of treatment heterogeneity, an omnibus test fails to reject the null hypothesis of no
613 treatment heterogeneity ($p=.80$). The lack of significant heterogeneity becomes also apparent in

Figure 6 which displays the substantive magnitude of subgroup differences.² For the strongest predictor of treatment heterogeneity, Figure 6 shows how predicted treatment effects differ at selected values of identified political motivation, indicating no substantial heterogeneity. Meaningful heterogeneity cannot be detected for other outcome variables either (see Supplement 8).³ Altogether, therefore, even an exploratory method to recover any potential treatment heterogeneity that makes efficient use of the available data reveals no evidence of meaningful treatment effects that were hidden in the data. Therefore, treatment heterogeneity seems not to have overshadowed true effects, strengthening the confidence that the experiment simply did not elicit theory-consistent effects.

Figure 7. Heterogeneous treatment effects by identified political motivation



Note: Predicted treatment effects for five equally sized subgroups by pre-treatment levels of identified political motivation, using grf package for R

² The omnibus test also fails to reject the null hypothesis of no treatment heterogeneity when only motivational variables are included as model features which has more power to detect potential heterogeneity on these variables.

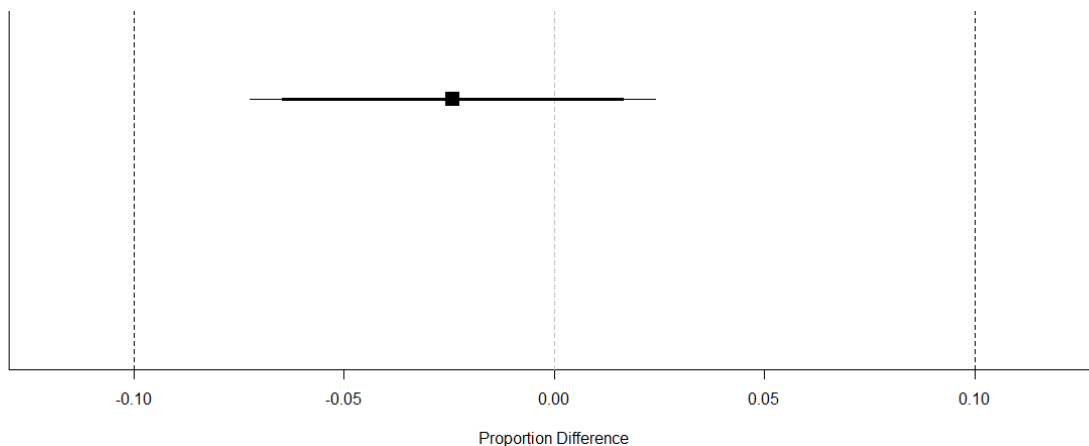
³ Causal forests were run only on the competence manipulation for which heterogeneous effects were most likely because neither autonomy-related treatment led succeeded in the subsequent manipulation checks.

629 A final test is conducted to assess whether the reported null results warrants to refute the formulated
630 hypothesis or whether an alternative theory-consistent explanation could account for the null effects.
631 In particular, the previous analyses have established that the null hypothesis of no effect cannot be
632 rejected, yet the possibility remains that the expected effects did occur but were too small to detect
633 statistically. By calculating whether an estimate achieves a practically meaningful effect size, equivalence
634 tests allow distinguishing whether a null effect is either inconclusive or too small to make a
635 substantial difference (Lakens et al., 2018). Even though it is impossible to prove the absence of an
636 effect, we can establish whether an effect is practically absent and thus statistically equivalent with
637 zero.

638 Determining whether a null effect is either inconclusive or practically insignificant requires
639 specifying the smallest effect size of interest for a given test. Consider the effect on the behavioral
640 measure of intrinsic motivation, that is whether respondents chose to watch yet another political
641 video after the survey questionnaire is completed. We might categorize treatment effects as negligible
642 when the shares of respondents choosing to watch another political video do not differ by 10 percentage
643 points or more between experimental conditions. Figure 7 shows the results of an equivalence
644 test of the need for competence manipulation on the behavioral measure of intrinsic motivation, using
645 the 10-percentage point threshold. The graph shows that the reported estimate is consistent with
646 a true population estimate that is 0 or around 0 and we can be confident to rule out that the effect is
647 large enough to consider it substantively meaningful. Put differently, the effect is statistically equivalent
648 to zero. As documented in Supplement 9, we reach the same conclusion of statistical equivalence
649 for all conducted tests using reasonable thresholds. Therefore, even though some theory-consistent
650 effects might have occurred we can thus confidently reject that the need-related treatment elicited
651 practically meaningful effects on the relevant outcome measures.

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Figure 8. Testing the equivalence of intrinsic motivation (behavioral measure) in both treatment groups, SESOI=10%p.



Note: Note: Equivalence bonds -0.1 and 0.1. Estimated proportion difference = -0.024 [-0.072; 0.024 95% CI] using TOSTER package for R

What does the absence of meaningful theory-consistent effects imply for the proposed need-based model of political motivation? The informational value of the presented findings for judging the tested theory depends on the experiment's internal and external validity. In this study, each experimental condition was intended to induce a certain psychological state among respondents which then was expected to elicit motivational downstream effects in line with the theory. Internal validity is thus impaired when the stimuli failed to elicit the intended psychological state. In the following, I therefore test for each experimental condition whether these requirements for an informative hypothesis test were met.

The autonomy-supportive condition was intended to remind respondents of good reasons to engage with politics and thus more closely align political engagement with the respondents' sense of selves so that a decision for political engagement seems concordant with the respondents' need for autonomy (similar: Kadous and Zhou, 2019). However, the manipulation check indicates that the experimental manipulation did not succeed in making respondents more aware of reasons for

political engagement.⁴ Respondents in the autonomy-supportive condition did not report at higher rates that they could name many reasons for why politics is enjoyable compared to the control group ($t(1443) = 0.74, p = .46$). The failed manipulation check thus casts doubt that the autonomy-supportive manipulation worked as intended.⁵ Importantly, if the priming paradigm was ineffective in stimulating autonomous reasons for political engagement, then the insignificant test result cannot be considered informative tests on the hypotheses under investigation because one would not have expected the hypotheses to hold if respondents do not differ by treatment conditions in how autonomous they experience their own behavior.

The autonomy-thwarting manipulation was intended to make respondents feel that political engagement is not a matter of choice but required even against their will so that the enforced political engagement is experienced as undermining respondents' need for autonomy. However, the evidence suggests that this manipulation did not have the intended effect either. First, even though respondents in the autonomy-thwarting conditions were 2.3 times more likely to choose a political video than other respondents, 29.7 percent of respondents still resisted the instructions and chose a nonpolitical video. Apparently, a substantial segment of the respondents did not consider the survey instructions binding. Second, respondents in the autonomy-thwarting conditions did not report more often that they felt under pressure to watch the video compared to the control condition ($t(1441) = -0.09, p = .93$). To conclude, the experimental manipulation apparently failed to elicit the perception of autonomy-undermining pressure.

⁴ Note that this survey item contained a wording mistake which impaired the item's intelligibility and may thus have introduced unintended measurement error.

⁵ The implemented priming manipulation was selected due to its demonstrated efficacy in previous motivation studies (Kadous and Zhou, 2019). However, recent meta-scientific research shows that many priming studies exhibit low replicability rates (e.g., Cesario, 2014), suggesting that the effectiveness of such manipulations is more precarious and context-dependent than suggested in previous literature.

693 Considering that both autonomy-related conditions failed to facilitate or undermine need sat-
694 isfaction, it is thus little wonder that no downstream effect on political engagement occurred. With
695 the available data, we cannot know whether an effect would be have observed if the treatment suc-
696 ceeded in manipulating situational need satisfaction. Hence, whether satisfaction of the need for au-
697 tonomy affects politics motivations remains unanswered and the autonomy-related experiments thus
698 do not qualify as informative tests of the hypotheses under observation.

699 Things stand differently for the competence manipulation. As intended, the difficulty of the
700 knowledge quiz varied between treatment conditions. Respondents in the need-for-competence sup-
701 portive conditions accurately responded more frequently to questions in the easier knowledge quiz
702 than respondents in the need-thwarting condition with more difficult questions ($t(1626) = 9.84, p <$
703 $.00001$). More importantly—after having received the manipulated quiz feedback—respondents in the
704 need-supportive condition reported higher levels of internal political efficacy ($t(1558) = 3.03, p =$
705 $.0025$). So, respondents were successfully induced to feel more or less competent with regard to the
706 political domain and thus the experiment succeeded in manipulating the theorized need-based pre-
707 cursor to political engagement. On average, respondents in both need-for-competence conditions
708 thus solely differ in whether they recently experienced the political domain as either satisfying or
709 undermining their need for competence so that the expected downstream effects on political engage-
710 ment should have occurred. Hence, the experiment's competence-related manipulation meets the con-
711 dition of an informational theory test as the experimentally induced differences between respondents
712 in need satisfaction have not led to the motivational and behavioral outcomes that were predicted by
713 the need-based model of political motivation.

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Discussion

To understand why some people experience political engagement as inherently satisfying while others find it boring or burdensome, this study has laid out a theoretical framework for understanding the motivational processes that underlie political engagement as its own reward. This synthesis of existing motivation theories enhances the conceptual political science toolkit, sheds new light on previous findings and contributes novel ideas for the explanation of a poorly understood political phenomenon, based on insights that have proven useful in other domains of life. Starting from the pleasure principle's notion that individuals will re-engage with activities they have previously experienced as positive and rewarding, the proposed theory builds on the concept of basic psychological needs to predict which situational features people find satisfying. The need-based theory of political motivation thus posits that citizens will be intrinsically motivated to engage with politics when they previously experienced political activities as satisfying basic psychological needs. Whether and how citizens engage with the political domain is thus argued to reflect desires and experiences that are deeply ingrained in the human psyche.

The theory's prediction was put to an empirical test in a preregistered, high-powered survey-experiment with two experimental arms that were intended to manipulate the satisfaction of a relevant basic need. Yet, the autonomy-related conditions apparently failed to induce need-thwarting or need-satisfying experiences. Therefore, the requirements for an informational hypothesis test are not met in this experimental arm and it remains unclear whether previous autonomy-related experiences with politics affect subsequent political behavior. However, considering that the experimental design was carefully crafted and built on previous literature with similar manipulations, the failed induction attempts still teach about the difficulty to deliberately induce need-related psychological states. As argued in the manuscript, the effect of an objectively given situation on a person's need satisfaction

depends on the perception and experience of the respective situation. Hence, if need satisfaction is difficult to manipulate systematically even in a controlled survey-experimental environment, then need satisfaction may be considered even less predictable in the real world, suggesting that need-based theories and applications of it may be more precarious and context-dependent than previous literature suggests.

Nonetheless, the need-for-competence manipulation does represent an informative test of the theory, casting further doubt on the usefulness of basic needs to explain political motivation. In five out of six analytical tests, the need manipulation did not bring about the expected motivational or behavioral outcomes. Notably, the negative findings hold across different measurement strategies and after conducting extensive exploratory analysis to minimize the likelihood of false-negative conclusions. While it remains possible that treatment-induced attrition may have hidden small treatment effects, overall the exploratory analyses suggest that treatment heterogeneity, measurement reliability and statistical power are not likely to have caused type II errors, thus strengthening the confidence that the expected effects of the need-related manipulation simply did not reliably materialize. Altogether, the available data thus suggests refuting the hypotheses that need-for-competence supportive experiences will lead to higher levels of intrinsic motivation, which, in turn, will stimulate political engagement among respondents. Similarly, there is only limited and less than expected evidence that need-related experiences have ramifications for the quality by which political behavior is conducted.

What does the fact that most hypotheses were refuted when put to an empirical test empirically imply for the credibility of the need-based theory of political motivation? Naturally, a single experiment can neither confirm nor refute a theory (Oreskes, 2019), but it may signal the need to abandon or revise elements of it. Most clearly, the evidence indicates that the proposed theory does not yield accurate prediction when applied to the need for competence which is particularly

surprising when considering the previous literature on political efficacy (e.g., Bandura, 2010; Preece, 2016; Prior, 2019; Schwarz and Schuman, 1997), which rendered need for competence a likely candidate for theory-consistent effects on the political domain. Nonetheless, it remains possible that the theory finds empirical support when adequately tested with other need candidates such as autonomy or relatedness. However, another strategy for revision could entail to maintain the basic tenets of the pleasure principle but to abandon need-based concepts and, instead, build on other concepts such as core motives (Fiske, 2014) or insights from Gestalt psychology (Kruglanski et al., 2018) to explain the conditions under which people perceive politics as pleasurable. Altogether, the demonstrated results undermine confidence in the proposed need-based theory of political motivation, at least suggesting a narrower scope than originally assumed.

One final aspect worth mentioning concerns the experiment's external validity. Survey- and laboratory experiments often face the criticism that the psychological processes elicited in an artificial environment might not resemble those in the real world, suggesting that effects might occur outside but not within the lab. As a case in point, the failed autonomy manipulation indicates that many respondents perceived the video and the following instructions as yet another survey task, suggesting that respondents might not have perceived the situation as resembling real-world scenarios. Still, only survey- and laboratory experiments allow the manipulation of distinct psychological states in a controlled environment, rendering the inquiry and manipulating of such psychological processes in the field even more difficult. Altogether, these difficulties shows why the study of political engagement as an end in itself has still received relatively scant attention compared to the relevance of intrinsic motivation for an active citizenry. In this vein, the theoretical discussions presented in this study and the presented study design may help stimulate future research by demonstrating dead ends and fruitful avenues for further research. Specifically, having shown what works and what does not work may

785 help in revising thinking about intrinsic political motivation and thus in the accumulation of
786 knowledge about. political engagement for its own reward.

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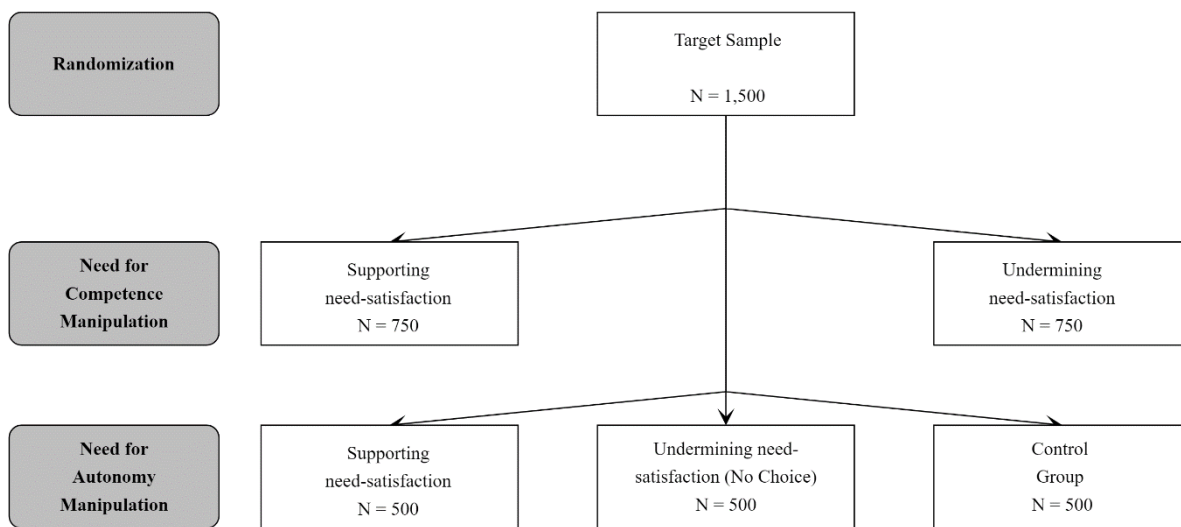
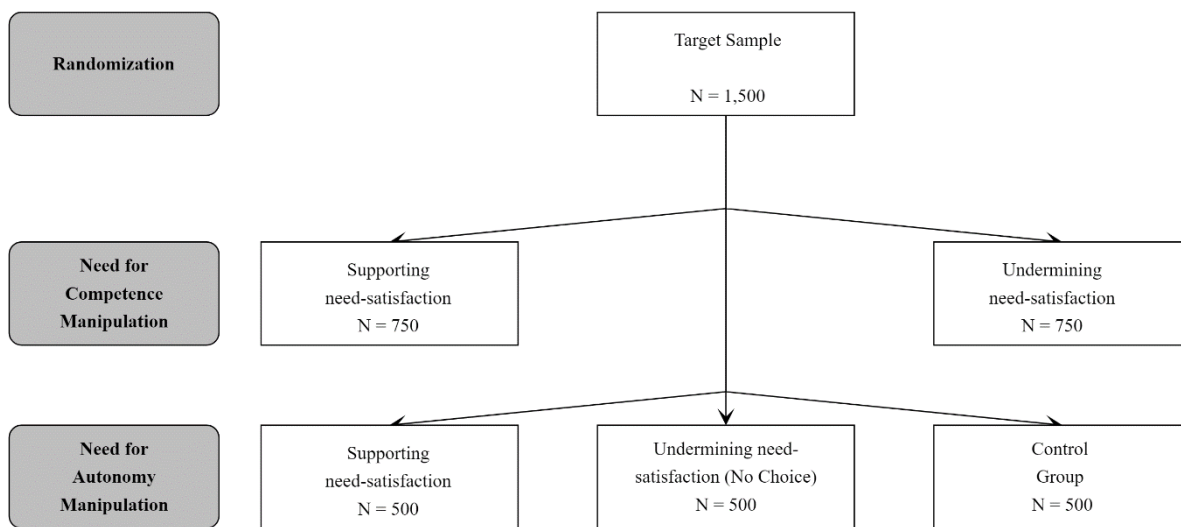
936 **SI: Consort Diagram**

Figure 1 shows the experimental design. Moreover, it shows the targeted samples sizes in each experimental arm and in each experimental group. For more information about sample size calculation, see *S4: Power analysis*.

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94| Figure S1-I Consort diagram showing the distribution of respondents across experimental groups

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S2: Questionnaires

This supplement contains questionnaire. See Supplementary Material for further material, including an Unipark project file that allows to re-run the survey using the Questback Survey Software.

German Questionnaire

Themenk: Willkommen und Datenschutz	Intro
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Vermutete Dauer:	20 Sekunden [Konservativ, da es meist überlesen wird]
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Fragestext:

Wissenschaftliche Studie

Die folgende Befragung ist Teil einer **wissenschaftlichen Studie** der **Universität Mannheim** zu Medien und politischem Verhalten in modernen Demokratien. **Ihre Antworten sind Grundlage für unsere Forschung.** Je sorgfältiger und aufmerksamer Sie teilnehmen, desto zuverlässiger werden die gewonnenen Forschungsergebnisse sein.

Ton einschalten

Im Zuge der Befragung haben Sie die Gelegenheit, ein **Video** zu sehen. Bitte sehen Sie es sich aufmerksam an. Schalten Sie daher jetzt bereits den **Ton Ihres Computers** an. **Es ist wichtig, dass Sie das Video sehen und hören können.**

Datenschutz

Im Zuge der technischen Abwicklung der Befragung (z.B. während des Beantwortens der Umfrage) aus technischen Gründen auch personenbezogene Daten (z.B. IP-Adresse) erhoben werden. Zudem wird im Zuge dieser Befragung ein YouTube Video eingeblendet. Sollten Sie dieses Video abspielen und den entsprechenden Datenschutzbestimmungen zustimmen, können auch hier personenbezogene Daten technischer Art (z.B. IP-Adresse) gespeichert werden. Die wissenschaftliche Auswertung Ihrer Antworten in dieser Befragung erfolgt ausschließlich **anonym**.

Weitere Informationen zum Studienzweck erhalten Sie nach Beendigung des Fragebogens.

Themenk: Soziodemographie	Item: Geschlecht
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Vermutete Dauer:	10
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Filter:

Varnames:

Sex

Darstellung:

must answer; Einfachauswahl untereinander; Plausitext, wenn keine Angabe: Bitte beachten Sie, dass eine Antwort für die Fortsetzung der Umfrage notwendig ist. Sollten Sie ihren Schulabschluss im Ausland erworben haben, geben Sie bitte einen entsprechenden deutschen Abschluss an.

Ursprung:

GLES

Textintro:

Geben Sie bitte Ihr Geschlecht an.

- männlich

- weiblich

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Themenk: Soziodemographie	Item: Alter
Vermutete Dauer:	10
Filter:	
Varnames:	
Age	
Darstellung:	
must answer;	Einfachauswahl untereinander; Plausitext, wenn keine Angabe: Bitte beachten Sie, dass eine Antwort für die Fortsetzung der Umfrage notwendig ist. Sollten Sie ihren Schulabschluss im Ausland erworben haben, geben Sie bitte einen entsprechenden deutschen Abschluss an.
Ursprung:	
GLES	
Textintro:	
Bitte geben Sie Ihr Alter in Jahren an.	
- 18-29	
- 30-39	
- 40-49	
- 50-59	
- 60 und älter	
Themenk: Soziodemographie	Item: Schulabschluss
Filter:	
Darstellung:	
must answer;	Einfachauswahl untereinander; Plausitext, wenn keine Angabe: Bitte beachten Sie, dass eine Antwort für die Fortsetzung der Umfrage notwendig ist. Sollten Sie ihren Schulabschluss im Ausland erworben haben, geben Sie bitte einen entsprechenden deutschen Abschluss an.
Ursprung:	
GLES	
Varnames:	
edu	
Fragetext:	
Welchen höchsten allgemeinbildenden Schulabschluss haben Sie?	
- Schule beendet ohne Abschluss	
- Hauptschulabschluss, Volksschulabschluss, Abschluss der polytechnischen Oberschule 8. oder 9. Klasse	
- Realschulabschluss, Mittlere Reife, Fachschulreife oder Abschluss der polytechnischen Oberschule 10. Klasse	
- Fachhochschulreife (Abschluss einer Fachoberschule etc.)	
- Abitur bzw. erweiterte Oberschule mit Abschluss 12. Klasse (Hochschulreife)	
- bin noch Schüler	
Codierung:	
(1) Schule beendet ohne Abschluss	
(2) Hauptschulabschluss	
(3) Realschulabschluss	
(4) Fachhochschulreife	
(5) Abitur	
(9) bin noch Schüler	

→ Check for Quota and Filtering

Themenk: Erklärende Variable

Item: Politische Motivation I

Vermutete Dauer: 30 Sekunden

Filter:

Varnames:

pre_mot_*

Darstellung:

Standard-Matrix

Textintro:

Menschen können sich auf unterschiedliche Weise politisch beteiligen oder sich mit Politik auseinandersetzen. Sie können zum Beispiel über Politik diskutieren, in einer Bürgerinitiative mitarbeiten, politische Nachrichten hören, sehen oder lesen, an Demonstrationen teilnehmen.

Bitte geben Sie an, inwieweit die folgenden Aussagen auf Sie persönlich zutreffen oder nicht zutreffen.

Fragetext:

Wenn ich mich politisch beteilige oder mit Politik auseinandersetze, tue ich das, weil...

- ich es interessant finde zu verfolgen, was in der Politik passiert
[intrinsisch, pre_mot_intrinsic1]
- ich mir selbst Druck mache, politisch auf dem Laufenden zu sein.
[introjeziert, pre_mot_introjected1]
- andere Menschen mir sagen, dass ich es tun sollte.
[external, pre_mot_external1]
- ich mich selbst als politischen Menschen begreife.
[identifiziert, pre_mot_identified1]
- ich stolz bin, wenn ich etwas über Politik verstehe.
[introjeziert, pre_mot_introjected2]
- Politik für mich ein Herzensanliegen ist
[identifiziert, pre_mot_identified2]
- Um sicherzugehen, dass diese Befragung von einem Menschen ausgefüllt wird, klicken Sie hier bitte auf 'teils/teils'.
[attentioncheck]

Codierung:

- (1) trifft überhaupt nicht auf mich zu
- (2) trifft eher nicht auf mich zu
- (3) teils/teils
- (4) trifft eher auf mich zu
- (5) trifft voll und ganz auf mich zu

→ Screenout if attention check was failed

Themenk: Einstellungen zu Politik allgemein	Item: Politisches Interesse, allgemein
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Ursprung:

GLES

Darstellung:

Einfachauswahl untereinander

Varnames:

polint

Fragetext:

Wie stark interessieren Sie sich im Allgemeinen für Politik?

- sehr stark
- stark
- mittelmäßig
- weniger stark
- überhaupt nicht

Codierung:

- (1) sehr stark
- (2) stark
- (3) mittelmäßig
- (4) weniger stark
- (5) überhaupt nicht

Themenk: Erklärende Variable	Item: Politische Motivation 2
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Vermutete Dauer: 30 Sekunden**Filter:****Varnames:**

pre_mot_intrinsic

Darstellung:

Standard-Matrix

Textintro:

Hier sehen sie noch einmal einige Gründe deretwegen sich Menschen politisch beteiligen oder mit Politik auseinandersetzen.

Bitte geben Sie an, inwieweit die folgenden Aussagen auf Sie persönlich zutreffen oder nicht zutreffen.

Fragetext:

Wenn ich mich politisch beteilige oder mit Politik auseinandersetze, tue ich das, weil...

- es meinen Prinzipien entspricht, mich mit Politik auseinanderzusetzen.
[identifiziert, pre_mot_identified3]
- Menschen respektiert werden, wenn sie viel über Politik wissen.
[external, pre_mot_external2]
- ich Politik spannend finde.
[intrinsisch, pre_mot_intrinsic2]
- ich so Kritik von Freunden und Verwandten vermeiden kann.
[external, pre_mot_external3]

- man Politik verfolgen sollte, selbst wenn man gerade keine Lust darauf hat.
[introjeziert, pre_mot_introjected3]
- es mir Freude bereitet, mich mit Politik auseinanderzusetzen.
[intrinsisch, pre_mot_intrinsic3]

Codierung:

- (1) trifft überhaupt nicht auf mich zu
- (2) trifft eher nicht auf mich zu
- (3) teils/teils
- (4) trifft eher auf mich zu
- (5) trifft voll und ganz auf mich zu

Themenk: Einstellungen zu Politik allgemein	Item: Bürgerschaftsnormen
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Ursprung: ISSP 2016

Darstellung:

Einfachauswahl untereinander

Fragetext:

Es gibt verschiedene Ansichten darüber, was einen guten Bürger ausmacht. Was meinen Sie: Inwieweit sind folgende Dinge wichtig, um ein guter Bürger zu sein?
Dass jemand...

- immer wählen geht.
- niemals versucht, Steuern zu hinterziehen.
- Gesetze und Bestimmungen immer befolgt.
- sehr aufmerksam verfolgt, was die Regierung macht.
- in sozialen oder politischen Vereinigungen aktiv ist.
- versucht, den Standpunkt Andersdenkender zu verstehen.
- sich aus politischen, ethischen oder Umweltgründen für Produkte entscheidet, selbst wenn sie etwas mehr kosten.

Skala

1 Überhaupt nicht wichtig

2

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7 Sehr wichtig

Themenk: Erklärende Variable	Item: Politische Motivation 3
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Vermutete Dauer: 30 Sekunden

Filter:**Varnames:**

pre_mot_intrinsic

Darstellung:

Standard-Matrix

Textintro:

Ein letztes Mal sehen sie hier Gründe deretwegen sich Menschen politisch beteiligen oder mit Politik auseinandersetzen.

Bitte geben Sie an, inwieweit die folgenden Aussagen auf Sie persönlich zutreffen oder nicht zutreffen.

Frage**text:**

Wenn ich mich politisch beteilige oder mit Politik auseinandersetze, tue ich das, weil...

- ich Politik oft aufregend finde.
[intrinsisch, pre_mot_intrinsic4]
- ich mich schämen würde, wenn ich über Politik nicht informiert bin.
[introjeziert, pre_mot_introjected4]
- Politik zu meiner Persönlichkeit gehört.
[identifiziert, pre_mot_identified4]
- Andere sonst auf mich herabblicken würden.
[external, pre_mot_external4]
- ich mir selbst beweisen will, dass ich mich auch mit Dingen wie Politik auseinandersetze.
[introjeziert, pre_mot_introjected5]
- mir Politik einfach wichtig ist.
[identifiziert, pre_mot_identified5]
- ich den Eindruck habe, dass es von mir erwartet wird.
[external, pre_mot_external5]

Codierung:

- (1) trifft überhaupt nicht auf mich zu
- (2) trifft eher nicht auf mich zu
- (3) teils/teils
- (4) trifft eher auf mich zu
- (5) trifft voll und ganz auf mich zu

Themenk: Experiment	Item: Political knowledge quiz I [need-supportive, Comp+]
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Vermutete Dauer:	30 Sekunden
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Filter:

Respondents need-for-competence-supportive condition

Varnames:

comp_sup_quiz_politician

Darstellung:**Textintro:****Frage****text:**

Wir möchten gerne wissen, ob Sie mehr oder weniger als andere Menschen über Politik wissen. Ein kurzes Quiz.
Bitte markieren Sie alle Politikerinnen und Politiker, die Mitglied der SPD sind.

Bilder in need-for-competence-supportive condition:

[Bekannte PolitikerInnen der SPD]

Themenk: Experiment	Item: Political knowledge quiz I [need-supportive, Comp-]
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Vermutete Dauer:	30 Sekunden
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Filter:

Respondents need-for-competence-thwarting condition

Varnames:

comp_thwart_quiz_politician

Darstellung:**Textintro:****Fragetext:**

Wir möchten gerne wissen, ob Sie mehr oder weniger als andere Menschen über Politik wissen. Ein kurzes Quiz.
Bitte markieren Sie alle Politikerinnen und Politiker, die Mitglied der SPD sind.

Bilder in need-for-competence-thwarting condition:

[Weniger bekannte PolitikerInnen der SPD]

Themenk: Experiment	Item: Political knowledge quiz 2 [need-supportive, Comp+]
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Vermutete Dauer: 10 Sekunden**Filter:**

Respondents need-for-competence-supportive condition

Varnames:

comp_sup_quiz_estimate

Darstellung:

Schieberegler

Textintro:**Ursprung:**

GLES

Ausfüllhinweis:

Wenn Sie es nicht wissen, geben Sie Ihre beste Schätzung ab.

Fragetext:

Bei Wahlen zum Deutschen Bundestag gilt eine Prozenzhürde, die Parteien überschreiten müssen um im Bundestag vertreten zu sein.
Ab wie viel Prozent der Zweitstimmen kann eine Partei auf jeden Fall Abgeordnete in den Bundestag entsenden?

Themenk: Experiment	Item: Political knowledge quiz 2 [need-thwarting, Comp-]
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Vermutete Dauer: 10 Sekunden**Filter:**

Respondents need-for-competence-thwarting condition

Varnames:

comp_thwart_quiz_estimate

Darstellung:

Schieberegler

0 bis 1000

Textintro:**Ausfüllhinweis:**

Beziehen Sie sich auf die Anzahl der Mitglieder im gegenwärtigen 19. Deutschen Bundestag.

Fragetext:

Der Deutsche Bundestag ist ein wichtiges gesetzgebendes Gremium.

Wie viele Abgeordnete entscheiden im gegenwärtigen Bundestag über unsere Gesetze? Wenn Sie die Anzahl der Bundestagsmitglieder nicht kennen, geben Sie Ihre beste Schätzung ab.

Themenk: Experiment	Item: Feedback Stimuli + Efficacy [need-supportive, Comp+]
---------------------	--

Vermutete Dauer: 20 Sekunden

Filter:

Respondents need-for-competence-supportive condition

Varnames:

comp_sup_quiz_efficacy

Ursprung:

GLÉS / Gesis-Kurzskalen / Eigen

Darstellung:

Matrix

Textintro:

Fragetext:

Ihr persönliches Quizresultat: Überdurchschnittliches Wissen über Politik.

Unser Algorithmus hat Ihre Antworten mit den bisherigen Antworten anderer Teilnehmer verglichen. *Herzlichen Glückwunsch!* Offenbar kennen Sie sich mit Politik besser aus als andere Befragte. Toll.

In den bisher gesammelten Wissensquiz-Daten schneiden Sie besser ab als 72% der bisherigen Befragten. Politik gehört offenbar zu Ihren Stärken.

Soweit die Daten. Wir wollen aber wissen, was Sie selbst über sich denken!

Bitte geben Sie an, inwieweit folgende Aussagen auf Sie zutreffen.

- Wichtige politische Fragen kann ich gut verstehen und einschätzen.

[reverse, comp_sup_quiz_efficacy1]

- Über politische Angelegenheiten bin ich in der Regel umfassend informiert.

[comp_sup_quiz_efficacy2]

Codierung:

(1) trifft überhaupt nicht auf mich zu

(2) trifft eher nicht auf mich zu

(3) teils/teils

(4) trifft eher auf mich zu

(5) trifft voll und ganz auf mich zu

Themenk: Experiment	Item: Feedback Stimuli + Efficacy [need-thwarting, Comp-]
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Vermutete Dauer: 20 Sekunden

Varnames:

comp_thwart_quiz_efficacy

Filter:

Respondents need-for-competence-thwarting condition

Darstellung:

Matrix

Textintro:

Ursprung:

GLÉS / Gesis-Kurzskalen / Eigen

Frage**text:**

Ihr persönliches Quizresultat: Unterdurchschnittliches Wissen über Politik.

Unser Algorithmus hat ihre Antworten mit den bisherigen Antworten anderer Teilnehmer verglichen. Leider hat sich dabei ergeben, dass Sie deutlich weniger über Politik wissen als andere Befragungsteilnehmer.

Mit Blick auf die bisher gesammelten Daten schneiden Sie im politischen Wissensquiz schlechter ab als 72% der bisherigen Befragten. Politik gehört offenbar nicht zu Ihren Stärken.

Soweit die Daten. Wir wollen aber wissen, was Sie selbst über sich denken!

Bitte geben Sie an, inwieweit folgende Aussagen auf Sie zutreffen.

- Wichtige politische Fragen kann ich gut verstehen und einschätzen.

[comp_thwart_quiz_efficacy1]

- Über politische Angelegenheiten bin ich in der Regel umfassend informiert .

[comp_thwart_quiz_efficacy2]

Codierung:

(1) trifft überhaupt nicht auf mich zu

(2) trifft eher nicht auf mich zu

(3) teils/teils

(4) trifft eher auf mich zu

(5) trifft voll und ganz auf mich zu

Themenk: Experiment	Item: IntrMot Stimulus [need-supportive, Aut+]
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Vermutete Dauer: 30 Sekunden

Filter:

Varnames:

Darstellung:

Multiple Choice

Textintro:

Viele Menschen berichten, dass die Auseinandersetzung mit Politik mitunter Freude und Befriedigung bereitet. Hier sehen Sie einige Gründe, aus denen Menschen sich gerne mit Politik befassen.

Bitte überlegen Sie, ob auch Sie schon einmal Spaß oder Interesse an der Auseinandersetzung mit Politik hatten.

Markieren Sie alle Aussagen, denen Sie zustimmen können.

- Es bereitet Freude, über Politik zu lernen und zu verstehen, wie die Dinge zusammenhängen.

[aut_sup_agree1]

- Das Spektakel in der Politik zu verfolgen ist oft unterhaltsam, denn letztlich ist Politik wie ein großer Zirkus.

[aut_sup_agree2]

- Politik ist interessant, weil von politischen Entscheidungen so viel abhängt.

[aut_sup_agree3]

Themenk: Experiment	Item: Stimulus + DV: Neigung zu politischem Medienkonsum
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Vermutete Dauer: 20 Sekunden

Filter:

Varnames:

exp_aut_cont_sup_choice_video, exp_aut_thwart_choice_video

Darstellung:

Einfachauswahl untereinander

Textintro:

Frage-Text:

Zufallsauswahl eines Frames: [Kontrollgruppe / Treatmentgruppe 1 / Treatmentgruppe 2 / Treatmentgruppe 3]

Antwortoptionen:

- (A) YouTube-Video: Lustiger alter Mann
- (B) WDR-Mitschnitt: Populäre Abendsendung
- (C) Politisches Video: Sozialgesetzgebung
- (D) Politisches Video: Appell für mehr Gerechtigkeit

Kontrollgruppe +
Need-supportive: Wir möchten verstehen, wie Menschen im Internet Videos konsumieren. Daher werden wir Ihnen auf der nächsten Fragebogenseite ein Video zeigen. Es ist wichtig, dass Sie dafür bitte **jetzt** den Ton ihres Computers anschalten.

Wir haben mehrere Videos vorbereitet, aus denen die Teilnehmer dieser Befragung auswählen können. **Entscheiden Sie sich, welchen Film Sie sehen möchten.** Dieses Video wird dann auf der nächsten Seite des Fragebogens abgespielt.

Need-thwarting: **No Choice**

Wir möchten verstehen, wie Menschen im Internet Videos konsumieren. Daher werden wir Ihnen auf der nächsten Fragebogenseite ein Video zeigen. Es ist wichtig, dass Sie dafür bitte *jetzt den Ton ihres Computers anschalten*.

Für diese Studie haben wir vier Videos vorbereitet, aus denen Studienteilnehmer auswählen dürfen. Einige Teilnehmern dürfen aus allen Videos wählen, andere Teilnehmer müssen eines der politischen Videos sehen.

Ein Zufallsgenerator hat bestimmt, dass Sie zur Gruppe gehören, die ein politisches Video wählen muss. Auch wenn alle Auswahloptionen eingeblendet sind, müssen sie aus Studienzwecken ein "Politisches Video" auswählen und ansehen. Unsere Software erfasst, ob Sie einen Film aus der Gruppe „Politische Videos“ wählen.

Entscheiden Sie sich, welches Video sie sehen möchten. Dieses Video wird dann auf der nächsten Seite des Fragebogens abgespielt.

Topic: meta data, dependent variable **Item:** Experimental stimulus

Vermutete Dauer: 60 Sekunden

Filter:

Darstellung:

Einfachauswahl untereinander

Textintro:**Frage-Text:**

Bitte schalten Sie den Ton an. Starten Sie dann das Video und schauen Sie es, so lange Sie wollen.

Einbetten: <https://www.youtube.com/watch?v=mQHHb0II05Y>

Zu speichernde Variable: Dauer des Verbleibs auf dieser Seite

Topic: meta data, dependent variable, behavioral measure **Item:** intrinsic motivation, free choice activity

Vermutete Dauer: 10 Sekunden

Filter:

Varnames:

exp_intr_behavioral

Comment:

Presentation: Radio-Button

Frage**text:**

Haben Sie Lust, am Ende dieser Befragung noch ein weiteres Video dieser Art zu sehen, oder wollen Sie lieber die Befragung schnell beenden? Sie erhalten keine zusätzlichen Vergütung, können aber ein weiteres Video dieser Art anschauen, falls Sie Lust dazu haben.

- Ja, ich möchte später freiwillig noch ein ähnliches Video sehen.
- Nein, ich möchte kein solches Video mehr sehen.

Topic: cognitive processing, dependent variable	Item: Depth of processing
--	----------------------------------

Vermutete Dauer: 60 Sekunden

Varnames:

exp_quality_obj_pos, exp_quality_obj_con

Kommentar:

Darstellung: three small text boxes

Frage**text:**

Wir möchten erfahren, wie Sie die Ausführungen des Herrn im Video zu Lohnnebenkosten einschätzen.
Erklären Sie kurz in einem oder in wenigen Stichworten.

- Laut Video, wie wirkt eine Senkung der Lohnnebenkosten aus Sicht des Arbeitnehmers?
[exp_quality_obj1]
- Laut Video, was sind Lohnnebenkosten aus Sicht des Arbeitgebers?
[exp_quality_obj2]
- Laut Video, wer muss die Deckungslücke in den Sozialausgaben nach einer Lohnnebenkostensenkung bezahlen?
[exp_quality_obj3]

Topic: dependent variable, self-report	Item: task-related intrinsic motivation & manipul. check (perception of choice)
---	--

Vermutete Dauer: 60 Sekunden

Filter:

Varnames:

Comment: adopted from ([Deci et al., 1994](#))

Presentation: Matrix

Frage**text:**

Wir haben noch einige Frage zu dem Video, das sie gesehen haben. Bitte geben Sie an, inwieweit folgende Aussagen auf Sie zutreffen.

- (A) Ich hatte wirklich Lust, das Video anzusehen.
[Intrinsic Motivation; exp_intr_subj1]
- (B) Ich habe das Video aufmerksam angeschaut.
[DV: Quality of Engagement exp_qual_subj1]
- (C) Mir fallen viele gute Gründe ein, warum man sich mit Politik Freude interessant kann. [sic]
[Manipulation Check: autonomy-supportive group; exp_aut_manip_autsup]
- (D) Ich würde das Video als sehr interessant beschreiben.
[Intrinsic Motivation; exp_intr_subj1]
- (E) Ich habe mich unter Druck gesetzt gefühlt, das Video anzuschauen.
[Manipulation Check: no choice group; exp_aut_manip_nochoice]
- (F) Ich war froh, als das Video zu Ende war.
- (G) Durch das Video konnte ich etwas Interessantes lernen.
[Reverse Coded, Intrinsic Motivation; exp_intr_subj3]

[Intrinsic Motivation; exp_intr_subj4]
 (H) Den Inhalt des Videos habe ich nur oberflächlich wahrgenommen.

[Reverse Coded, DV: Quality of Engagement; exp_qual_subj2]

Coding:

- (1) trifft überhaupt nicht auf mich zu
- (2) trifft eher nicht auf mich zu
- (3) teils/teils
- (4) trifft eher auf mich zu
- (5) trifft voll und ganz auf mich zu

Topic: Debriefing	Item:
Vermutete Dauer:	30 Sekunden
Filter:	
Kommentar:	
Darstellung:	Text
Fragetext:	

Wichtige Information: Aufklärung über Experiment in der Befragung

Danke für Ihre Teilnahme! Sie haben soeben an einer sozialwissenschaftlichen Befragung teilgenommen. Teil dieser Befragung waren zwei Experimente:

Erstens wurde zufällig ausgelost, welche Begleitinformationen Sie zum Video angezeigt bekamen, das Sie während der Befragung gesehen haben. Mit diesem Experiment möchten wir untersuchen, wie diese situativen Unterschiede die Neigung beeinflussen, sich mit Politik auseinanderzusetzen.

Zweitens wurden der Inhalt des Wissensquiz und das folgende Feedback zufällig gestaltet **Das Feedback zum Quiz war unabhängig von Ihren tatsächlichen Antworten und reflektiert nicht zwangsläufig das tatsächliche Niveau Ihres Wissens über Politik!** Mit diesem Experiment möchten wir untersuchen, wie persönliche Selbstwahrnehmung politisches Verhalten beeinflusst.

Bitte haben Sie Verständnis, dass wir aus praktischen Gründen unabhängig von Ihren Angaben kein zweites Video zeigen können. Diese Frage diente lediglich zur Messung ihrer Bereitschaft, ähnliche Medieninhalte zu konsumieren.

Bei Fragen können Sie sich gerne an den Studienverantwortlichen wenden: alexander.wuttke@uni-mannheim.de

English Questionnaire (Translation)

Themenk: welcome and data privacy **Intro**

Duration: 20 seconds[conservative, because mostly skipped]

Scientific Study

The following survey is part of a **scientific study** at the **University of Mannheim** on media and political behavior in modern democracies. **Your answers are the basis for our research.** The more careful and attentive you participate, the more reliable will the won research results be.

Unmute

In the course of the survey, you will have the opportunity, to watch a video. Please watch it carefully. Therefore, turn on the **volume of your computer** now. **It is important that you are able to watch and listen to the video.**

Protection of Data Privacy

In the course of technical processing of the survey (e.g. while answering the survey) on technical reasons also personal data (e.g. IP-address) will be compiled. In the course of this survey, additionally a YouTube video will be showed. When you play the video and agree with the corresponding data privacy terms, also personal data of technical character (e.g. IP-address) could be saved. The scientific evaluation of your answers on this survey will be carried out exclusively **anonymous**.

You will receive more information on the study at the end of the questionnaire.

Themenk: Sozio-demographics

Item: Sex

Duration: 10 seconds

Filter:

Varnames:

Sex

Presentation:

Source:

GLES

Text introduction:

Please specify your sex.

- male

-female

Themenk: Sozio-demographics

Item: Age

Duration: 10 seconds

Filter:

Varnames:

Age

Presentation:

must answer; single response list (vertical); plausibility check: Please note that an answer to this question is mandatory for continuing the survey. If you have acquired your school leaving certificate outside of Germany, please state the respective German certificate.

source:

GLES

Text introduction:

Please indicate your age.

- 18-29
- 30-39
- 40-49
- 50-59
- 60 and older

Themenk: Sozio-demographics	Item: Graduation
-----------------------------	------------------

Filter:**Presentation**

must answer; single response list (vertical); plausibility check: Please note that an answer to this question is mandatory for continuing the survey. If you have acquired your school leaving certificate outside of Germany, please state the respective German certificate.

Source:

GLES

Varnames:

edu

Question text:

What's your highest level of general education?

- Finished school without school leaving certificate
- Lowest formal qualification of Germany's tripartite secondary school system, after 8 or 9 years of schooling ("Hauptschulabschluss, Volksschulabschluss")
- Intermediary secondary qualification, after 10 years of schooling ("Mittlere Reife, Realschulabschluss, or Polytechnische Oberschule mit Abschluss 10. Klasse")
- Certificate fulfilling entrance requirements to study at a polytechnical college ("Fachhochschulreife (Abschluss einer Fachoberschule etc.)")
- Higher qualification, entitling holders to study at a university ("Abitur or Erweiterte Oberschule mit Abschluss 12. Klasse (Hochschulreife)")
- still at school

Code:

- (1) Finished school without school leaving certificate
- (2) Lowest formal qualification of Germany's tripartite secondary school system, after 8 or 9 years of schooling ("Hauptschulabschluss, Volksschulabschluss")
- (3) Intermediary secondary qualification, after 10 years of schooling ("Mittlere Reife, Realschulabschluss or Polytechnische Oberschule mit Abschluss 10. Klasse")
- (4) Certificate fulfilling entrance requirements to study at a polytechnical college/university of applied sciences ("Fachhochschulreife (Abschluss einer Fachoberschule etc.)")
- (5) Higher qualification, entitling holders to study at a university ("Abitur or Erweiterte Oberschule mit Abschluss 12. Klasse (Hochschulreife)")
- (9) Still at school

➔ **Check for Quota and Filtering**

Themenk: explaining variable	Item: political motivation I
Duration: 30 seconds	
Filter:	
Varnames: pre_mot_*	
Presentation: Standard-Matrix	
Text introduction: People could participate differently politically or deal with politics. They could for example argue about politics, work in a citizens' initiative, listen to, watch or read political news, or participate in a demonstration.	
Please report in how far following statements apply, or not apply to you personally.	
When I engage in politics, I do that, because...	
- I find it interesting to follow what happens in the politics [intrinsisch, pre_mot_intrinsicI]	
- I put myself under pressure to be politically up to date [introjeziert, pre_mot_introjectedI]	
- other people tell me to do that [external, pre_mot_externalI]	
- I identify myself as a political person [identifiziert, pre_mot_identifiedI]	
- I am proud, when I understand something in politics [introjeziert, pre_mot_introjected2]	
- Politics is a for me [identifiziert, pre_mot_identified2]	
- To make sure, this survey is filled out by a human, please click here on 'neither apply nor does not apply' [attentioncheck]	

Code:

- (1) does not apply at all to me
 (2) does not apply to me
 (3) neither applies nor does not apply
 (4) applies to me
 (5) strongly applies to me

→ **Screenout if attention check was failed**

Themenk: attitudes towards democracy in general	Item: political interest in general
Source: GLES	
Presentation: Radio box	
Varnames: polint	

Question text:

How strongly are you interested in politics in general?

- Very strongly
- Strongly
- Moderately
- Less strongly
- Not at all

Code:

- (1) very strongly
- (2) strongly
- (3) moderately
- (4) less strongly
- (5) not at all

Themenk: explaining variable	Item: political motivation 2
Duration: 30 seconds	
Filter:	
Varnames: pre_mot_intrinsic	
Presentation: Standard-Matrix	
Text introduction: Here you again see various reasons people engage in politics.	
Please report in how far following statements apply, or not apply to you personally.	
Question text: When I engage in politics, I do that, because...	
<ul style="list-style-type: none"> - it fits my principals, to engage in politics. [identifiziert, pre_mot_identified3] - people get respect, when they know lots about politics. [external, pre_mot_external2] - I find politics interesting. [intrinsisch, pre_mot_intrinsic2] - I can avoid critic by friends and family this way. [external, pre_mot_external3] - One should stay informed about politics, even if one is not interested in it at the moment. [introjeziert, pre_mot_introjected3] - I feel joy, engaging in politics. [intrinsisch, pre_mot_intrinsic3] 	
Code:	
(1) does not apply at all to me	
(2) does not apply to me	
(3) neither applies nor does not apply	
(4) applies to me	
(5) strongly applies to me	

Varnames:

pre_mot_intrinsic

Presentation:

Standard-Matrix

Text introduction:

Here you again see various reasons people engage in politics.

Please report in how far following statements apply, or not apply to you personally.

Question text:

When I engage in politics, I do that, because...

- it fits my principals, to engage in politics.
[identifiziert, pre_mot_identified3]
- people get respect, when they know lots about politics.
[external, pre_mot_external2]
- I find politics interesting.
[intrinsisch, pre_mot_intrinsic2]
- I can avoid critic by friends and family this way.
[external, pre_mot_external3]
- One should stay informed about politics, even if one is not interested in it at the moment.
[introjeziert, pre_mot_introjected3]
- I feel joy, engaging in politics.
[intrinsisch, pre_mot_intrinsic3]

Code:

- (1) does not apply at all to me
- (2) does not apply to me
- (3) neither applies nor does not apply
- (4) applies to me
- (5) strongly applies to me

Themenk: attitudes towards democracy in general	Item: Norms of citizenship
--	-----------------------------------

Source: ISSP 2016

Presentation:

Radio box

Question text:

There are different views on what makes a good citizen. What do you think: In how far are the following things important to be a good citizen?

That someone...

- always votes.
- never tries, to make fiscal fraud.
- Always obeys laws and regulations.
- Pays attention on what the government does.
- Participates actively n social or political associations.
- Tries to understand the opinion of people with different opinions.
- Decides for products because of political, ethical or environmental reasons, even if they are a bit more expensive.

Skale

1 not important at all

2

3

4

5

6

7 very important

Themenk: explaining variable	Item: political motivation 3
-------------------------------------	-------------------------------------

Duration: 30 seconds

Filter:

Varnames:

pre_mot_intrinsic

Presentation:

Standard-Matrix

Text introduction:

For a last time, you see here reasons why people engage in politics.

Please report in how far following statements apply, or not apply to you personally.

Question text:

When I engage politically, I do it because....

- I find politics thrilling.
[intrinsisch, pre_mot_intrinsic4]
- I would be ashamed, if I was not informed about politics.
[introjeziert, pre_mot_introjected4]
- Politics belongs to my personality.
[identifiziert, pre_mot_identified4]
- Otherwise other people would look down on me.
[external, pre_mot_external4]

- I want to prove to myself, that I engage also in things like politics.
[introjeziert, pre_mot_introjected5]
- Politics is simply important to me.
[identifiziert, pre_mot_identified5]
- I got the impression, that people expect that from me.
[external, pre_mot_external5]

Code:

- (1) does not apply at all to me
- (2) does not apply to me
- (3) neither applies nor does not apply
- (4) applies to me
- (5) strongly applies to me

Themenk: experiment	Item: Political knowledge quiz I [need-supportive, Comp+]
---------------------	---

Duration: 30 seconds

Filter:

Respondents need-for-competence-supportive condition

Varnames:

comp_sup_quiz_politician

Presentation:**Text introduction:****Question text:**

We would like to know whether you know more or less about politics than other people. A short quiz. Please mark all politicians who are member of the SPD.

Pictures in need-for-competence-supportive condition:

[famous SPD politicians]

Themenk: experiment	Item: Political knowledge quiz I [need-supportive, Comp-]
---------------------	---

Duration: 30 seconds

Filter:

Respondents need-for-competence-thwarting condition

Varnames:

comp_thwart_quiz_politician

Presentation:**Text introduction:****Question text:**

We would like to know whether you know more or less about politics than other people. A short quiz. Please mark all politicians that are member of the SPD.

Pictures in need-for-competence-thwarting condition:

[not very famous SPD politicians]

Themenk: experiment	Item: Political knowledge quiz 2 [need-supportive, Comp+]
---------------------	---

Duration: 10 seconds**Filter:**

Respondents need-for-competence-supportive condition

Varnames:

comp_sup_quiz_estimate

Presentation:

Slider

Text introduction:**Source:**

GLES

Hint:

If you do not know, please give your best estimate.

Question text:

In elections for the Bundestag there is a threshold parties have to pass in order to enter the Bundestag. Do you know what percentage of the second votes a party needs to get in order to enter the Bundestag?

Themenk: experiment	Item: Political knowledge quiz 2 [need-thwarting, Comp-]
---------------------	--

Duration: 10 seconds**Filter:**

Respondents need-for-competence-thwarting condition

Varnames:

comp_thwart_quiz_estimate

Presentation:

Slider

0 through 1000

Text introduction:**Hint:**Refer to the number of members in the current 19th German Bundestag.**Question text:**

The Bundestag is an important legislative committee.

How many deputies in the current Bundestag make laws? If you don't know, please give your best estimate.

Themenk: experiment	Item: Feedback Stimuli + Efficacy [need-supportive, Comp+]
---------------------	--

Duration: 20 seconds**Filter:**

Respondents need-for-competence-supportive condition

Varnames:

comp_sup_quiz_efficacy

Source:

GLES / Gesis-Kurzskalen / Eigen

Presentation:

Matrix

Text introduction:

Question text:

Your personal quiz result: knowledge about politics above average.

Our algorithm has compared your responses to the responses of other participants.

Congratulations! Apparently, you know more about politics than other respondents. Great.

Considering all data we have collected so far, you fare better on the political knowledge quiz than 72% of participants.

Obviously, politics is one of your strengths.

But this is only what our data says. We want to know what you think about yourself!

In your own perception, how well do the following statements apply to you?

- I can understand and evaluate political issues easily.
[reverse, comp_sup_quiz_efficacy1]

- I am usually well informed about political affairs.
[comp_sup_quiz_efficacy2]

Scale:

(1) does not apply at all to me

(2) does not apply to me

(3) neither applies nor does not apply

(4) applies to me

(5) strongly applies to me

Themenk: experiment

Item: Feedback Stimuli + Efficacy [need-thwarting, Comp-]

Duration: 20 seconds

Varnames:

comp_thwart_quiz_efficacy

Filter:

Respondents need-for-competence-thwarting condition

Presentation:

Matrix

Text introduction:

Source:

GLS / Gesis-Short scales

Question text:

Your personal quiz result: knowledge about politics below average.

Our algorithm has compared your responses to the responses of other participants.

Unfortunately, it shows that you know *far less about politics than other respondents.*

Considering all data we have collected so far, you fare worse on the political knowledge quiz than 72% of participants.

Obviously, politics is not one of your strengths.

Yet, this is only what our data says. We want to know what you think about yourself!

In your own perception, how well do the following statements apply to you?

- I can understand and evaluate political issues easily.
[reverse, comp_sup_quiz_efficacy1]

- I am usually well informed about political affairs.
[comp_sup_quiz_efficacy2]

Scale:

- (1) does not apply at all to me
 (2) does not apply to me
 (3) neither applies nor does not apply
 (4) applies to me
 (5) strongly applies to me

Themenk: experiment	Item: IntrMot Stimulus [need-supportive, Aut+]
----------------------------	---

Duration: 30 seconds

Filter:

Varnames:

Presentation:

Multiple Choice

Text introduction:

Many people report that engagement with politics can provide joy and satisfaction. Here you see various reasons why some people like engaging with politics.

Please consider whether you have also found joy in political engagement before. Tick all statements that apply to you.

- It provides pleasure to learn about politics and to understand how the things go together. [aut_sup_agree1]
- Following the spectacle in politics is often entertaining because, in the end, politics is like a grand circus. [aut_sup_agree2]
- Being informed about politics is satisfying because so much depends on political decisions. [aut_sup_agree3]

Themenk: experiment	Item: Stimulus + DV: Neigung zu politischem Medienkonsum
----------------------------	---

Duration 20 seconds

Filter:

Varnames:

exp_aut_cont_sup_choice_video, exp_aut_thwart_choice_video

Presentation:

Radio box

Text introduction:

Question text:

Random selection of a frame: [control group / treatment group 1 / treatment group 2 / treatment group 3]

Question choices:

- (A) YouTube-video: funny old man
- (B) WDR-recording: popular evening show
- (C) Political video: social legislation
- (D) Political video: call for more social justice

Control group +

Need-supportive:

We would like to understand how people consume video content on the internet. Accordingly, we will present you a video on the next page of this questionnaire. Therefore, it is important that you **now** turn on your volume of your computer.

We have prepared multiple videos from which participants of this survey can choose. **Please decide, which movie you would like to watch.** This video will then be presented on the next page of the questionnaire.

Need-thwarting:

No Choice

We would like to understand how people consume video content on the internet. Accordingly, we will present you a video on the next page of this questionnaire. Therefore, it is important that *you now turn on the volume of your computer.*

We have prepared four videos from which participants of this survey can choose. Some participants can freely choose, other participants have to watch one of the political videos.

A random generator has determined that you are part of the group of respondents that has to choose a political video.

For research purposes you have to select a movie with political content and watch it even though there are other options. Our software records, whether you select a movie from the group "political videos".

Please decide, which video you want to watch. This video will then be presented to you on the next page of this questionnaire.

Topic: meta data, dependent variable	Item: Experimental stimulus
---	------------------------------------

Duration: 60 seconds

Filter:

Presentation:

Radio box

Text introduction:

Question text:

Please turn on the volume and watch this video as long as you want.

Embedding: https://www.youtube.com/watch?v=mQHHb0II05Y

Variable to save: time on this site

Topic: meta data, dependent variable, behavioral measure	Item: intrinsic motivation, free choice activity
---	---

Duration: 10 seconds

Filter:

Varnames:

exp_intr_behavioral

Comment:

Presentation: Radio-Button

Question text:

Would you like to watch another video of this kind at the end of this survey or would you prefer to quickly finish this survey? You will not be granted any extra compensation but you can watch another video of this kind if you want to.

- | |
|--|
| <ul style="list-style-type: none"> - Yes, voluntarily I would like to watch another video of this kind later. - No, I do not want to watch more videos of this kind. |
|--|

Topic: cognitive processing, dependent variable	Item: Depth of processing
--	----------------------------------

Duration: 60 seconds

Varnames:

exp_quality_obj_pos, exp_quality_obj_con
--

Comment:

Presentation: three small text boxes

Question text:

We would like to know, how you evaluate the remarks of the man in the video on incidental wage costs.
Explain shortly in one or a few bullet points.

- Concerning to the video, how seems a reduction of the incidental wage costs for employees?
[exp_quality_obj1]
- Concerning to the video, what are incidental wage costs in the view of the employer?
[exp_quality_obj2]
- Concerning to the video, who has to pay for the funding gap in the social spending after a reduction in incidental wage costs?
[exp_quality_obj3]

Topic: dependent variable, self-report	Item: task-related intrinsic motivation & manipul. check (perception of choice)
---	--

Duration: 60 Sekunden

Filter:

Varnames:

Comment: adopted from ([Deci et al., 1994](#))

Presentation: Matrix

Question text:

We have some questions on the video you have watched. Please state how well the following statements apply to you.

- (A) I really wanted to watch this video.
[Intrinsic Motivation; exp_intr_subj1]
- (B) I watched the video attentively.
[DV: Quality of Engagement exp_qual_subj1]
- (C) I can think of many good reasons why one should engage in politics.
[Manipulation Check: autonomy-supportive group; exp_aut_manip_autsup]
- (D) I would describe the video as very interesting
[Intrinsic Motivation; exp_intr_subj1]
- (E) I felt under pressure to watch the video.
[Manipulation Check: no choice group; exp_aut_manip_nochoice]
- (F) I was glad when the video was over.
[Reverse Coded, Intrinsic Motivation; exp_intr_subj3]
- (G) The video helped me to learn interesting things.
[Intrinsic Motivation; exp_intr_subj4]
- (H) I only processed the content of the video superficially.

[Reverse Coded, DV: Quality of Engagement; exp_qual_subj2]

Scale:

- (1) does not apply at all to me
- (2) does not apply to me
- (3) neither applies nor does not apply
- (4) applies to me
- (5) strongly applies to me

Topic: Debriefing	Item:
--------------------------	--------------

Duration: 30 Sekunden

Filter:

Comment:

Presentation: Text

Question text:

Important Information: Declaration about Experiment in Survey

Thank you for your participation. You have participated in a social-scientific survey. Two experiments were part of this survey:

First, it was randomly allocated who received which accompanying information on the video that you have watched during the survey. With this experiment we want to investigate how situational differences influence the proclivity to engage with politics.

Second, the content and the feedback to the political knowledge quiz was randomly generated. **The feedback to the quiz was independent of your actual responses and does not necessarily reflect your actual level of knowledge about politics.** With this experiment we investigate how self-image affects political behavior.

Please have understanding that, independently of your specifications, we cannot show you a second video due to practical reasons. This question was merely employed to measure your willingness of consuming similar media content.

If you have any question, please feel free to contact the principal investigator: alexander.wuttke@uni-mannheim.de

S3: Coding Instructions

The objective measure of behavioral quality relies on open-ended question gauging whether respondents can accurately respond to the question about the video content. Manual coding was employed to code whether a response was accurate or not. Because the survey responses are German the coding instructions below which were given to the coder are also in German.

Codierungsanweisung: Offene Frage zu Lohnnebenkosten

Originalvideo

<https://www.youtube.com/watch?v=mQHHb0II05Y>

Frage 1: Laut Video, wie wirkt eine Lohnnebenkostensenkung aus Sicht des Arbeitnehmers?

„Eine Senkung der Lohnnebenkosten ist eine Lohnsenkung. Sonst gar nichts. [...] Freuen Sie sich nie wieder über eine Senkung der Lohnnebenkosten. Es ist eine Lohnsenkung. Sie zahlen hinterher drauf.“ (sek 52)

Auch zulässige Antworten

kostenerhöhend, nicht sehr positiv, nicht optimal, Höhere Ausgaben, weniger Gehalt, Unfair, Blöd, Schlecht, er muss mehr bezahlen, hat weniger Geld

Nicht zulässig

gut für den Arbeitgeber, Kostensenkend für AG, Minderung der Lohnkosten, Teil des Lohns, Lohn

Frage 2: Laut Video, was sind Lohnnebenkosten aus Sicht des Arbeitgebers?

„Für einen Arbeitgeber sind Lohnnebenkosten einfach ein Teil des Lohns. Welcher Teil des Lohns gesenkt wird ist dem Arbeitgeber ziemlich egal. Hauptsache ist, der muss weniger Geld bezahlen, damit Sie für ihn arbeiten.“ (sek 12)

Auch zulässige Antworten

Eine Zahlung die weh tut, Betriebskosten, Kosten, Kosten für Sozialversicherungsbeiträge, nervig,

Nicht zulässig

Steuern

Frage 3: Laut Video, wer muss die Deckungslücke in den Sozialausgaben nach einer Lohnnebenkostensenkung bezahlen?

Jetzt raten Sie mal wer das ist [der die Lücke bezahlt]. Kleiner Tipp: Es ist nicht Ihr Arbeitgeber. [...] Sie zahlen hinterher drauf (sek 52).

Auch zulässige Antworten

Ich, nicht der Arbeitgeber, Steuerzahler

Nicht zulässig

der Staat

Notiz

Bis zu Nr. „I703“ (Ifdn I3) gab es einen Codierungsfehler in Frage I. Statt , Laut Video, wie wirkt eine Lohnnebenkostensenkung aus Sicht des Arbeitnehmers?‘ hieß es , Laut Video, wie wirkt eine Lohnnebenkostensenkung aus Sicht des Arbeitnehmers?‘. Alle diese I3 ersten Personen auf dieser Frage I mit Missing Value (.) versehen.

Missing Values

-66 wird als Missing Value (.) codiert.

-99 wird als 0 kodiert (keine richtige Angabe).

S4: Power analysis

This supplement entails multiple steps to describes the strategy for determining the adequate sample size of the proposed study. In the first step, a review of existing studies provides information on the sizes of experimental effects as reported in previous studies whose treatments share certain features with the treatments of the proposed study. In a second step, sample size calculations are conducted at different levels of detectable effect sizes at a pre-specified level of statistical power. The sample size estimates that were derived from the power analysis are then compared with the estimates collected in the review of existing studies to ensure that the intended sample size enables the detection of treatment effects equal to or smaller than the effect sizes reported in previous studies.

When basing sample size calculations on effect sizes in published literature, one needs to take systematic publication biases in the body of scholarly literature into account.(Camerer et al., 2018) In particular, meta-scientific research shows that effect sizes reported in original social science studies are usually larger than effect sizes obtained in subsequent replication attempts.(Camerer et al., 2018) Moreover, reported effect sizes in published studies are usually lower when the analytical strategy was pre-registered compared to studies without pre-registered analysis protocol.(Allen and Mehler, 2018) Hence, meta-scientific research suggests that effect sizes are even more likely to be inflated in non-pre-registered studies, which is the case for all the studies reviewed below. Considering these uncertainties in extrapolating future effect sizes from previously reported effect sizes, in a third step this Supplement documents power calculations which report the likelihood that the proposed study can detect effect sizes that are considerably lower than those reported in the existing literature. Hence, these calculation help to assess the probability of detecting effect sizes that are small but substantially meaningful, irrespective of previously reported effect sizes.

The following sample size calculations employ a conservative approach. For one, the strategy behind the conducted power analysis targets at detecting effect sizes that are smaller than those in the published literature the power analysis. Moreover, the design can also be considered as conservative due to the statistical techniques that are employed. The statistical tests underlying the power analysis are simple tests of means and proportions (e.g. t-test) which yield unbiased estimates but do not make efficient use of the data. In contrast, in line with the pre-registered analysis pipeline the analyses conducted in the proposed study will include pre-treatment covariates in the model according to the Lin method which also yields unbiased but more precise estimates.(Lin, 2013) Hence, the power in the proposed study will be even higher than suggested in the following power analysis.

Overview of effect sizes in previously published studies

Hypothesis 1: Need-supportive situational contexts increase intrinsic political motivation.

Study by Bowed et al. (need for competence manipulation)

The experimental manipulation of the perceived situational satisfaction of the need for competence that is employed in the proposed study is inspired by a study by Bowed et al. who manipulated rankings in the leaderboard of an online game to induce varying levels of perceived competence and perceived enjoyment.Bowey et al. Specifically, players engaged in various rounds of an online game. After each of these rounds, the players were shown their relative success on a visual leaderboard. The participant's position on the leaderboard was randomly assigned, indicating either relative success or failure in the game. The study reports an effect size of $\eta^2=.15$ ($F_{1,135}=23.8$, $p<.001$) on perceived competence, which translates into **Cohen's d = 0.84**. The authors report an effect size of $\eta^2=.09$ ($F_{1,135}=11.9$, $p=.001$) on enjoyment (an indicator of intrinsic motivation) which translates into **Cohen's d = 0.63**. Hence, for the domain of computer games, the study by Bowed et al. provides effect estimates

on two variables: perceived competence and intrinsic motivation. Both of these variables are also measured in the proposed study. In the proposed study, perceived efficacy functions as a manipulation check of the need for competence manipulation. Intrinsic motivation functions as the dependent variable.

It remains uncertain whether the effect sizes will be larger or smaller as a result of the proposed study's different context. On the one hand, one might expect smaller sizes relative to the study by Bowed et al. as the participants in their study might have undergone a more immersive experience (playing several rounds of an online game) compared to the short knowledge quiz conducted in the proposed study. On the other hand, one might expect larger effect sizes than in the Bowed et al. study as the competence-related feedback regarding political knowledge might elicit stronger psychological responses than competence-related feedback on a generic computer game for two reasons. First, knowledge of political matters is widely regarded as socially desirable, therefore potentially triggering a sense of pride or shame. Second, assessing low levels of knowledge on political issues has greater environmental relevance compared to low skills on a generic computer game, thereby potentially having greater implications for the self-image of participants. Altogether, the study by Bowed et al. is one indicator of the effect sizes to expect regarding the need for competence manipulation. Nonetheless, it remains somewhat uncertain how the different study context may affect the effect sizes.

Need for competence and political interest

In the proposed study, the need for competence manipulation consists of two elements: both the difficulty of political knowledge questions and the feedback to political knowledge questions is manipulated. Prior research has established that each of these manipulations is capable of

influencing a person's perceived competence and interest in politics. However, prior research has not employed both elements in combination. We may expect that combining both elements yields additive and potentially multiplicative effects on intrinsic motivation.

Bishop 1987(Bishop, 1987) reports three studies, in which participants receive easy or hard political knowledge questions before responding to a political interest question. Bishop reports statistically significant differences in each of the studies at an effect size of **cohen's d = 0.39**, **cohen's d = 0.14** and **cohen's d = 0.22** respectively. Similarly, Lasorsa has shown in two studies(Lasorsa, 2003, 2009) that reported levels of political interest are markedly higher when preceded by fairly difficult political knowledge questions compared to no preceding political knowledge questions. In the first study,(Lasorsa, 2003) 206 out of 295 respondents (**70%**) reported high levels of political interest in the control condition whereas only 136 of 272 respondents (**50%**) reported high levels of political interest when the interest question was proceeded by fairly difficult political knowledge questions. In a second study, "**86.1%** of those who did not first encounter the political knowledge questions (n=353) reported high political interest, whereas only **74.1%** of those who encountered the knowledge questions (n=320) reported high interest ($X^2 = 18.96$, $df = 1$, Fisher's Exact Test, $p < .001$)".(Lasorsa, 2009) Altogether, these studies suggest sizable effects on reported levels of political interest when the interest item was preceded by political knowledge questions that many respondents may have experienced as undermining their perceived levels of political competence. Note, however, that the stimuli in the reviewed studies were arguably weaker than the one intended in the proposed study. The Bishop et al. study only employs one of the experimental stimuli (varying difficulty of knowledge questions) intended to use in the proposed study. (The Bishop et al. study did not provide manipulated competence feedback). What is more, the studies by Larosorsa did not manipulate competence feedback and only compared an experimental group who either received knowledge questions with a control group

who did not receive knowledge question. In contrast, the proposed study will administer hard vs. easy knowledge questions to both experimental groups, thereby amplifying differences between the experimental groups.

A study by Preece(Preece, 2016) provided manipulated competence feedback without manipulating item difficulty. Because the study does not report standard deviations of the experimental groups, it is not possible to estimate standardized effect sizes. However, it is apparent that the effect of manipulated competence feedback ('Great job! You did very well on this difficult quiz. Very few people do well on it.' vs no feedback) on political interest is sizeable. On a 5-point scale, the level of political interest increases from **1.92 to 2.31** (two-side p-value = 0.022). Note that, again, the experimental stimulus in the study by Preece is arguably weaker than in the proposed study. First, in the study by Preece the praise-receiving group is compared to a control group who received no feedback whereas in the proposed study the second experimental group receives negative feedback, potentially undermining perceived competence. Second, the study by Preece only manipulated competence feedback but did not vary item difficulty in the knowledge quiz. With these caveats in minds, altogether the studies by Preece and Bishop show that the manipulation of what I interpret as one's situational satisfaction of need for competence has sizeable effects on a person's self-reported level of political interest.

Study by Grant/Berry (Need-for-autonomy manipulation, Aut-)

The no-choice condition intended to manipulate situational satisfaction of the need for autonomy is inspired by a study by Grant/Berry (Study 3) who offered participants to choose from two tasks.(Grant and Berry, 2011) Whereas participants in both conditions of that study, in fact, solved the identical task, participants in the no-choice condition were told that the chosen task was not available anymore and that they would

have to solve the less appealing task. Compared to participants who seemingly solved the task of their choice (mirroring the control group in the proposed study), participants in the no-choice condition reported lower levels of intrinsic motivation after they concluded the task. The estimated effect size of the autonomy-thwarting manipulation on intrinsic motivation was **cohen's d=0.56**.

Study by Gillet et al. (Need-for-autonomy manipulation, Aut+)

The autonomy-supportive condition is modeled after examples in previous research which reported detectable effects of rehearsing intrinsic reasons for engagement on various outcomes such as well-being (Amabile; Burton et al., 2006; Gillet et al., 2013). Most closely related to the outcome variable of the proposed study is a study by Gillet et al. who examined the effects of rehearsing intrinsic reasons for solving an anagram task on the levels of intrinsic motivation reported by the participants after engaging in that task (Gillet et al., 2013). Mean levels of autonomous motivation increased from $M=3.38$ in the control condition to $M=4.07$ among respondents who experienced the autonomy-supportive manipulation, corresponding to an effect size of **Cohen's d=0.50**.

Meta-analysis on choice and intrinsic motivation (Need-for-autonomy manipulation, Aut-)

Meta-analyzing 41 studies on the role of choice in stimulating intrinsic motivation, Patall et al. (Patall et al., 2008) found an average effect size of **cohen's d=0.36**. Using trim-and-fill analyses to account for publication bias, the meta-analysis suggests an overall effect size of **cohen's d=0.24**. However, whereas various of the studies included in the meta-analysis compare conditions in which choices or no choices were present, the proposed study emphasizes controlling situational constraints by explicitly pointing participants in the no-choice conditions to the absence of choice, thereby potentially increasing the external locus of control and further increasing differences in need satisfaction between participants

in the autonomy-undermining condition compared to the autonomy-supporting condition. Hence, while the meta-analysis provides an indication of the relationship between choice and intrinsic motivation there is reason to expect that, mediated by need satisfaction, the provision of choice vs the absence of choice may exert stronger effects on intrinsic motivation in the proposed study compared to the meta-analysis.

H2: Need-supportive environment and frequency of political behavior

Various studies compare the proclivity to engage with a specific behavior in need-supportive vs. need-thwarting environments. A meta-analysis by Patall (Patall et al., 2008) on the relationship between autonomy-supportive contexts and the participants' willingness to continue an activity even when it is not required by the experimenter any more exhibits an effect size of **Cohen's $d=0.29$** .

H3/H4 Need-supportive context and quality of behavior

The tenet that need-supportive contexts facilitate behavioral performance is well established in the psychological literature albeit not yet applied to the political domain. A recent meta-analysis finds medium-sized effects of autonomy- and competence-supportive experimental manipulations on behavioral performance: “perceived autonomy emerged as a moderate predictor of performance ($k = 46$, $N = 11,937$, $q = .28$), and the absence of zero in the 95 % confidence interval indicates the population relationship between the two is positive (95 % CI = .23–.33). [...] Perceived competence emerged as the strongest need satisfaction predictor of performance ($k = 70$, $N = 20,924$, $q = .37$), and the absence of overlapping confidence intervals with both autonomy and relatedness needs indicates the effect is significantly larger than both (95 % CI = .34–.40).” (Cerasoli et al., 2016) In the following, we review those studies that resemble the experimental design of the proposed study most closely.

Autonomy-supportive condition and its influence on the quality of behavior (Aut+, H3b)

The autonomy-supportive condition is modeled after examples in previous research which showed detectable effects of rehearsing intrinsic reasons for engagement on various outcomes such as well-being (Amabile; Burton et al., 2006; Gillet et al., 2013). Most closely related to the outcome variable of the proposed study is a study by Kadous/Zhou (Kadous and Zhou, 2019) who prompted participants to rehearse reasons for auditing before the participants conducted said behavior. Kadous/Zhou show that participants engage in deeper information processing when conducting an audit task in the autonomy-supportive condition at effect sizes of **Cohen's d = 0.61** (DV: deep issues) and **Cohen's d = 0.55** (DV: total valid issues). Whereas the experimental stimulus of the proposed study and the study by Kadous/Zhou is similar, it should be noted that differences exist with regards to outcome variable and with regards to the experimental context. However, it is not self-evident whether these differences will impede or reinforce experimental effects.

Meta-analysis on choice and effort (Need-for-autonomy manipulation, Aut-)

Meta-analyzing twelve effect sizes on the role of choice in stimulating effort, Patall et al. (Patall et al., 2008) found an average effect size of **Cohen's d = 0.22**. However, whereas various of the studies included in the meta-analysis compare condition in which the participants were given choices vs. were not given choices the proposed study emphasizes the controlling constraints of the situation more strongly by explicitly pointing participants in the no-choice conditions to the absence of choice, thereby potentially increasing the external locus of control and further increasing differences in need satisfaction between participants in the autonomy-undermining condition compared to the autonomy-supporting condition. Hence, there is reason to expect that, mediated by need satisfaction, the provision of choice vs the absence of choice may exert stronger effects on effort in the proposed study compared to the meta-analysis.

Study by Grant/Berry (Need-for-autonomy manipulation, Aut-)

The study by Grant/Berry(Grant and Berry, 2011) (Study 3) on creativity yielded an average effect size of autonomy-thwarting contexts (withdrawn vs. granted choice) of **Cohen's d = 0.41** on the quality of the behavioral task where quality (creativity) was as measured as the novelty and usefulness of business idea, rated by independent coders .

Overview of effect sizes

Table S4-1 provides an overview of the reported effect sizes in studies with experimental conditions that share certain features with the experimental stimuli administered in the proposed study. With the exception of the study by Bishop which reported small-sized effects, most of the studies report medium-sized effects. Note that several of the reported effect sizes relate to experimental treatments that are arguably weaker compared to the stimuli in the proposed study because, e.g., these studies only administered one element of the experimental stimuli to the participant whereas the proposed study combines multiple elements to enhance the experimental effects.

S4- 1. Overview of Effect Sizes in Existing Literature

Similar to hy-pothe-sis...	Similar to test...	Experi-mental Ma-nipulation	DV	Study	Effect size (Cohen's d)	Effect size (other met-ric)	Note
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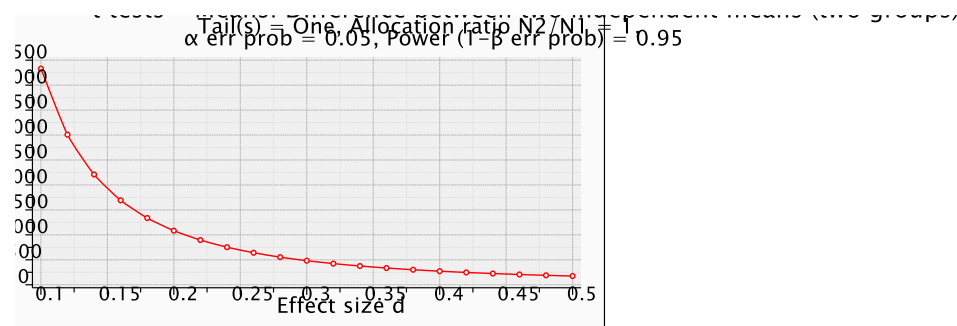
H1	2	Need for Competence	Intrinsic Motivation	Bishop	.39/ .14/ .22		Weaker stimulus
H1	2	Need for Competence	Intrinsic Motivation	Lasorsa		70% vs 50% of exp. group report interest in politics	Weaker stimulus
H1	2	Need for Competence	Intrinsic Motivation	Lasorsa		86% vs 74% of exp. group report interest in politics	Weaker stimulus
H1	2	Need for Competence	Intrinsic Motivation	Preece		1.92 vs 2.31 (p= 0.021) on a 5-point scale	Weaker stimulus
H1	4	Need for Competence	Intrinsic Motivation	Gillet et al.	.50		
H1	4	Need for Autonomy (No Choice)	Intrinsic Motivation	Grant/Berry	.56		
H1	4	Need for Autonomy	Intrinsic Motivation	Patall	.24		Weaker stimulus
H2	6	Need for Autonomy	Frequency of Behavior	Patall	.29		

H3a	7 / 8	Need for Autonomy	Quality of behavior	Cerasoli		k = 70, N = 20,924, q = .37	Meta-analysis
H3b	9 / 10	Need for Competence	Quality of behavior	Cerasoli		k = 46, N = 11,937, q = .28	Meta-analysis
H3b	9	Need for Autonomy (Aut-supportive)	Quality of Behavior	Kadous/ Zhou	.61/ .55		
H4	13	Need for Autonomy (No Choice)	Quality of behavior	Patall	.22		DV: effort
H4	13	Need for Autonomy (No Choice)	Quality of behavior	Grant/Berry	.41		

Sample size estimation

Figure S4-1 shows the results of a power analysis conducted with G* Power 3.1. Figure 1 reports for various effect sizes the required sample sizes to detect an effect with a power of .95. Many of the effect sizes reported in previous studies are around or larger than Cohen's $d=0.4$ which would correspond to a required $N=136$ per experimental condition (total $N=272$ with two experimental arms).

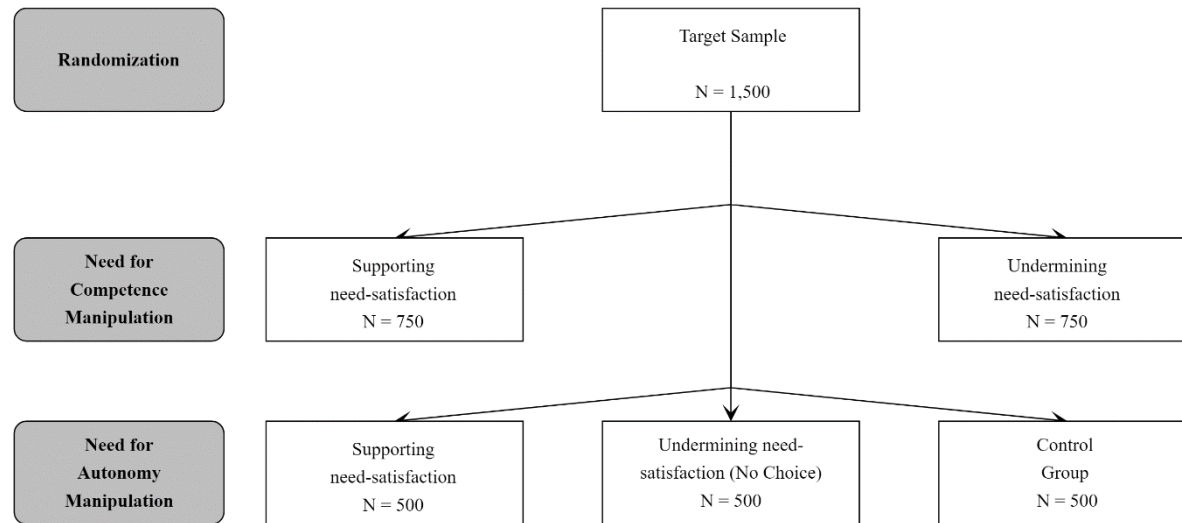
Figure S4-I Detectable effect sizes at different sample sizes



However, because meta-scientific evidence suggests that the effect sizes reported in published studies are usually inflated compared to the true population parameter there is reason to plan with sample sizes that enable to detect effect sizes smaller than those reported in the existing literature. Considering financial and practical constraints, we are able to run the size a sample size of up to 1,500 participants. The following analyses will examine the lowest detectable effect sizes with a sample size of 1,500 participants at power=.95.

In these analyses, we need to consider that the experimental design of the proposed study consists of a three-arm design in the manipulation of need for autonomy and of a two-arm design in the manipulation of need for competence (see consort diagram in Figure 2).

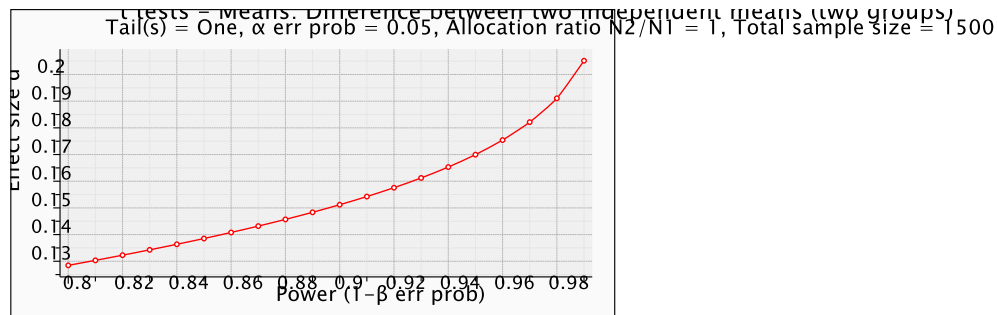
Figure S4-2 Consort diagram showing distribution of respondents across experimental groups



Because the need for autonomy manipulation consists of three experimental conditions, a total sample size of 1,5000 corresponds to a size of $N=500$ of each experimental group in that experimental stage. Because the need for competence manipulation consists of two experimental conditions, a total sample size of 1,5000 corresponds to a size of $N=750$ of each experimental group in that experimental stage. The fact that the experimental groups in the need for autonomy manipulation and in the need for competence manipulation have different sample sizes implies that the power to detect experimental effects differs between the need for competence manipulation and the need for autonomy manipulation.

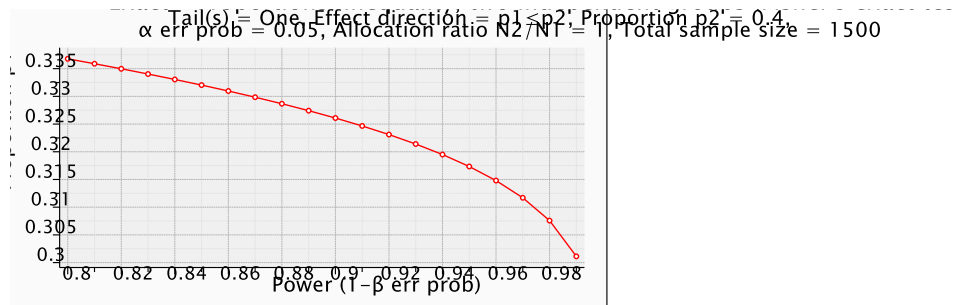
Figures 3 and 4 depict power analyses for the need for competence manipulation. Specifically, Figure S4-3 and 4 show which effect sizes will be detectable with 750 respondents in each experimental group. Note that one-tailed tests are employed because the proposed study pre-specifies the direction of the expected experimental effects. The power analysis Figure 3 shows that an effect size as large as **Cohen's $d=0.17$** will be detectable at a power of .95. Hence, with great likelihood, the proposed study will be able to detect experimental effects that are much lower than the effect sizes reported in previously published literature. In the same vein, if the effect sizes will be larger, then the experimental power to detect these effects will be above the .95. For instance, effect sizes as large as **Cohen's $d=0.19$** will be detectable at a power of .98.

Figure S4-3 Power to detect a significant difference in means for need-for competence manipulation with 750 respondents in each experimental group



Various tests in the proposed study are conducted on binary dependent variables (see *S5: Overview of statistical tests*). Therefore, power analyses are required that take the dichotomous scale of the dependent variable into account. For instance, tests 5 and 6 assess whether individuals choose to watch political media vs. ostensibly non-political media content, captured in a binary variable. Hence, Figure C-4 depicts a power analysis to detect differences in proportions. Assuming that a proportion of 40% in one experimental group, the analysis will be able to detect differences between the groups at a power of .95 when the proportion in the other treatment group is at 31.7% or lower. Unfortunately, there is no prior literature available with a sufficiently similar research design that could inform about likely effect sizes. However, the power analysis shows that the analysis will be able to detect differences in proportions between experimental groups that are substantially meaningful and reasonably close.

Figure S4-4 Power to detect a significant difference in proportions for need-for competence manipulation with 750 respondents in each experimental group



Figures S4-5 and S4-6 show power analysis for the need for autonomy manipulation in which each experimental group consists of 500 participants. Hence, the detectable effect sizes at a power of .95 slightly larger compared to the need for competence manipulation. For instance, at a power of .95 the analysis will be able to detect mean differences that correspond to effect sizes as large Cohen's $d = .208$. Hence, the detectable effect sizes in the need for autonomy manipulation are still smaller than the effect sizes reported in previous literature, particularly when taking into account that previous studies often administered arguably weaker experimental stimuli. Figure 6 shows that the analysis will be able to detect differences in proportion when the proportion in one experimental group is at 40%, and the proportion in the other experimental group is at 29.9% or smaller.

Figure S4-5 Power to detect a significant difference in means for need for autonomy manipulation with 500 respondents in each experimental group

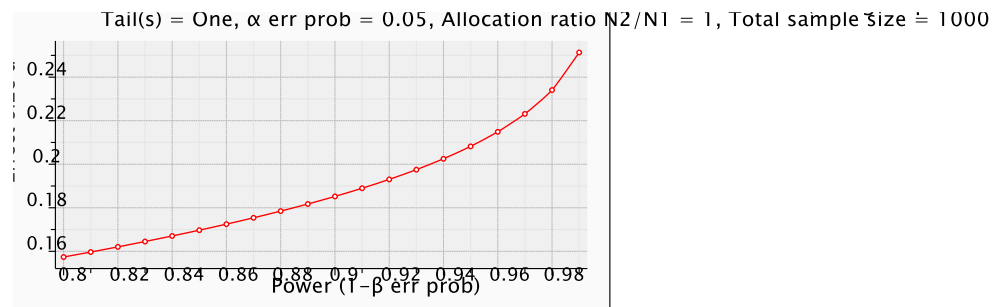
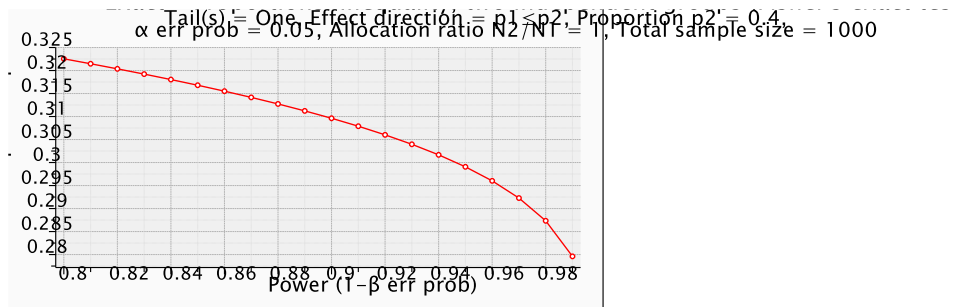


Figure S4-6 Power to detect a significant difference in proportions for need for autonomy manipulation with 500 respondents in each experimental group



S5: Overview of statistical tests

Because multiple measurement instruments will be employed to assess the concepts of interest and because multiple hypotheses will be tested, in total 13 statistical tests will be conducted. Table D-1 lists all statistical tests that will be conducted. Table D-1 is used a reference in the pre-registered analysis pipeline (Stata syntax).

Table S5-I Power to detect a significant difference in proportions for need for autonomy manipulation with 500 respondents in each experimental group

Test Name	Test #	Hyp	DV	Compared Groups
Int-Mot-Behav-Comp	1	H1: Need-supportive situational contexts increase intrinsic political motivation.	Intrinsic Motivation: Behavioral Indicator	Comp+ vs Comp-
Int-Mot-SelfRep-Comp	2	H1: Need-supportive situational contexts increase intrinsic political motivation.	Intrinsic Motivation: Self-reported	Comp+ vs Comp-
Int-Mot-Behav-Aut	3	H1: Need-supportive situational contexts increase intrinsic political motivation.	Intrinsic Motivation: Behavioral Indicator	Aut+ vs. Aut-
Int-Mot-SelfRep-Comp	4	H1: Need-supportive situational contexts increase intrinsic political motivation.	Intrinsic Motivation: Self-reported	Aut+ vs. Aut-
Quant-Comp	5	H2a: Individuals who previously experienced the political domain as satisfying their need for competence, want to engage with politics more	Quantity of Engagement: Choice of Political Media Content (yes/no)	Comp+ vs Comp-

Quant-Aut	6	<p>frequently than individuals with need-thwarting domain-related experiences.</p> <p>H2b: Individuals in an autonomy-supportive context want to engage with politics more frequently than individuals in neutral situational contexts.</p> <p>H3a: Individuals who previously experienced the political domain as satisfying their need for competence, are more inclined to invest cognitive efforts in processing the political information conveyed in the video than individuals with need-thwarting domain-related experiences.</p>	Quantity of Engagement: Choice of Political Media Content (yes/no)	Aut+ vs. Control
Qual-Subj-Comp	7	<p>H3a: Individuals who previously experienced the political domain as satisfying their need for competence, are more inclined to invest cognitive efforts in processing the political information conveyed in the video than individuals with need-thwarting domain-related experiences.</p> <p>H3a: Individuals who previously experienced the political domain as satisfying their need for competence, are more inclined to invest cognitive efforts in processing the political information conveyed in the video than individuals with need-thwarting domain-related experiences.</p>	Quality of Engagement: Subj. Measure of Effort	Comp+ vs Comp-
Qual-Obj-Comp	8	<p>H3a: Individuals who previously experienced the political domain as satisfying their need for competence, are more inclined to invest cognitive efforts in processing the political information conveyed in the video than individuals with need-thwarting domain-related experiences.</p> <p>H3a: Individuals who previously experienced the political domain as satisfying their need for competence, are more inclined to invest cognitive efforts in processing the political information conveyed in the video than individuals with need-thwarting domain-related experiences.</p>	Quality of Engagement: Objective Measure of Effort	Comp+ vs Comp-
Qual-Obj-Comp	9	<p>H3b: Individuals in autonomy-supportive contexts are more inclined to invest cognitive efforts in processing the political information conveyed in the video than individuals with need-thwarting domain-related experiences.</p> <p>H3b: Individuals in autonomy-supportive contexts are more inclined to invest cognitive efforts in processing the political information conveyed in the video than individuals with need-thwarting domain-related experiences.</p>	Quality of Engagement: Behavioral Measure of Effort	Comp+ vs Comp-
Qual-Subj-Aut	10	<p>H3b: Individuals in autonomy-supportive contexts are more inclined to invest cognitive efforts in processing the political information conveyed in the video than individuals in neutral situational contexts.</p>	Quality of Engagement: Behavioral Measure of Effort	Aut+ vs. Control
Qual-Subj-Aut	11	<p>H3b: Individuals in autonomy-supportive contexts are more inclined to invest cognitive efforts in</p>	Quality of Engagement: Subj. Measure of Effort	Aut+ vs. Control

Qual-Obj-Aut	12	<p>processing the political information conveyed in the video than individuals in neutral situational contexts.</p> <p>H3b: Individuals in autonomy-supportive contexts are more inclined to invest cognitive efforts in processing the political information conveyed in the video than individuals in neutral situational contexts.</p>	Quality of Engagement: Objective Measure of Effort	Aut+ vs. Control
Quant-No-Choice	13	<p>H4: Forcing individuals into political engagement will increase the frequency of political engagement but will decrease the level of cognitive involvement.</p>	Quantity of Engagement: Coice of Political Media Content (yes/no)	Aut- vs. Control
Qual-No-Choice	14	<p>H4: Forcing individuals into political engagement will increase the frequency of political engagement but will decrease the level of cognitive involvement.</p>	Quality of Engagement: Subj. Measure of Effort	Aut- vs. Control
Qual-No-Choice	15	<p>H4: Forcing individuals into political engagement will increase the frequency of political engagement but will decrease the level of cognitive involvement.</p>	Quality of Engagement: Objective Measure of Effort	Aut- vs. Control
Qual-No-Choice	16	<p>H4: Forcing individuals into political engagement will increase the frequency of political engagement but will decrease the level of cognitive involvement.</p>	Quality of Engagement: Behav Measure of Effort	Aut- vs. Control

Notes: Abbreviations for experimental conditions: Aut+ = autonomy-supportive condition; Aut- = No Choice Condition; Control = Control Group (Autonomy Condition); Comp+ = need-for-competence-supportive condition; Comp - = need-for-competence-thwarting condition

S6: Transparency Report

To improve and document the transparency of research reports in social and behavioral research, various authors (Aczel et al.) have developed a consensus-based transparency check list. The responses below document the study's degree of transparency according to v1 of the transparency check list.

PREREGISTRATION SECTION

- (1) Prior to analyzing the complete data set, a time-stamped preregistration was posted in an independent, third-party registry for the data analysis plan. **Yes**
- (2) The manuscript includes a URL to all preregistrations that concern the present study. **Yes**
- (3) The study was preregistered... **before any data were collected**

The preregistration fully describes...

- (4) all inclusion and exclusion criteria for participation (e.g., English speakers who achieved a certain cutoff score in a language test). **Yes**
- (5) all procedures for assigning participants to conditions. **Yes**
- (6) all procedures for randomizing stimulus materials. **Yes**
- (7) any procedures for ensuring that participants, experimenters, and data-analysts were kept naive (blinded) to potentially biasing information. **Yes**
- (8) a rationale for the sample size used (e.g., an a priori power analysis). **Yes**
- (9) the measures of interest (e.g., friendliness). **Yes**
- (10) all operationalizations for the measures of interest (e.g., a questionnaire measuring friendliness). **Yes**
- (11) the data preprocessing plans (e.g., transformed, cleaned, normalized, smoothed). **Yes**
- (12) how missing data (e.g., dropouts) were planned to be handled. **Yes**
- (13) the intended statistical analysis for each research question (this may require, for example, information about the sidedness of the tests, inference criteria, corrections for multiple testing, model selection criteria, prior distributions etc.). **Yes**

METHODS SECTION

The manuscript fully describes...

- (14) the rationale for the sample size used (e.g., an a priori power analysis). **Yes**
- (15) how participants were recruited. **Yes**

- (16) how participants were selected (e.g., eligibility criteria). **Yes**
- (17) what compensation was offered for participation. **No**
- (18) how participant dropout was handled (e.g., replaced, omitted, etc). **Yes**
- (19) how participants were assigned to conditions. **Yes**
- (20) how stimulus materials were randomized. **Yes**
- (21) whether (and, if so, how) participants, experimenters, and data-analysts were kept naive to potentially biasing information. **Yes**
- (22) the study design, procedures, and materials to allow independent replication. **Yes**
- (23) the measures of interest (e.g., friendliness). **Yes**
- (24) all operationalizations for the measures of interest (e.g., a questionnaire measuring friendliness). **Yes**
- (25) any changes to the preregistration (such as changes in eligibility criteria, group membership cutoffs, or experimental procedures)? **Yes**

RESULTS AND DISCUSSION SECTION

The manuscript...

- (26) distinguishes explicitly between “confirmatory” (i.e., prespecified) and “exploratory” (i.e., not prespecified) analyses. **Yes**
- (27) describes how violations of statistical assumptions were handled. **No**
- (28) justifies all statistical choices (e.g., including or excluding covariates; applying or not applying transformations; use of multi-level models vs. ANOVA). **Yes**
- (29) reports the sample size for each cell of the design. **Yes**
- (30) reports how incomplete or missing data were handled. **No**
- (31) presents protocols for data preprocessing (e.g., cleaning, discarding of cases and items, normalizing, smoothing, artifact correction). **Yes**

DATA, CODE, AND MATERIALS AVAILABILITY SECTION

The following have been made publicly available...

- (32) the (processed) data, on which the analyses of the manuscript were based. **Yes**
- (33) all code and software (that is not copyright protected). **Yes**
- (34) all instructions, stimuli, and test materials (that are not copyright protected). **Yes**
- (35) Are the data properly archived (i.e., would a graduate student with relevant background knowledge be able to identify each variable and reproduce the analysis)? **Yes**

(36) The manuscript includes a statement concerning the availability and location of all research items, including data, materials, and code relevant to the study. **Yes**

S7: Supplement Treatment-induced attrition and imputation

The main text reported evidence which suggested that the competence manipulation might have affected the probability to affect the survey. As a result, missing values on the outcome variables might be affected by treatment status which may induce bias in the estimation of the experimental treatment effects. The main text reports analyses that shows what happens when we impute missing values. In all analyses, values for imputed for as many respondents necessary so that in both treatment conditions there would be an equal share of respondents with non-missing values. Respondents for imputation were drawn randomly from all respondents in the need-thwarting group with missing value on the respective outcome variable. Table 1 shows, for each outcome variables, details of the imputation process and the estimated effect size of the need for competence manipulation on the imputed outcome variable.

S7- I Imputation of Outcome Variables and Experimental Tests

Outcome	Number of Respondents with Imputations	Imputed Value	p-value of effect on imputed outcome	p-value of effect on imputed outcome	Cohen's d
Quality (Behavioral)	37	30 (seconds)	.83	.88	-
Quality (Subjective)	59	1 (Lowest possible value)	.00001	.17	0.24
Intrinsic Motivation (Self-reported)	59	1 (Lowest possible value)	.002	.73	0.15

S8: Heterogeneous treatment effects using random forests

To detect treatment heterogeneity, I conducted causal forest analyses using grf package version 0.10.4. The number of trees to be calculated was set to 4,000, using automated tune-parameter and leaving the remaining model options on default values. Because the manipulation checks for the autonomy-related conditions failed, analyses of treatment heterogeneity were only conducted for the competence manipulation. Table S8-1 shows the p-value of an omnibus test of whether the null hypothesis of no treatment heterogeneity can be rejected, suggested no evidence for treatment heterogeneity in any of the tests.

S8-1 Imputation of Outcome Variables and Experimental Tests

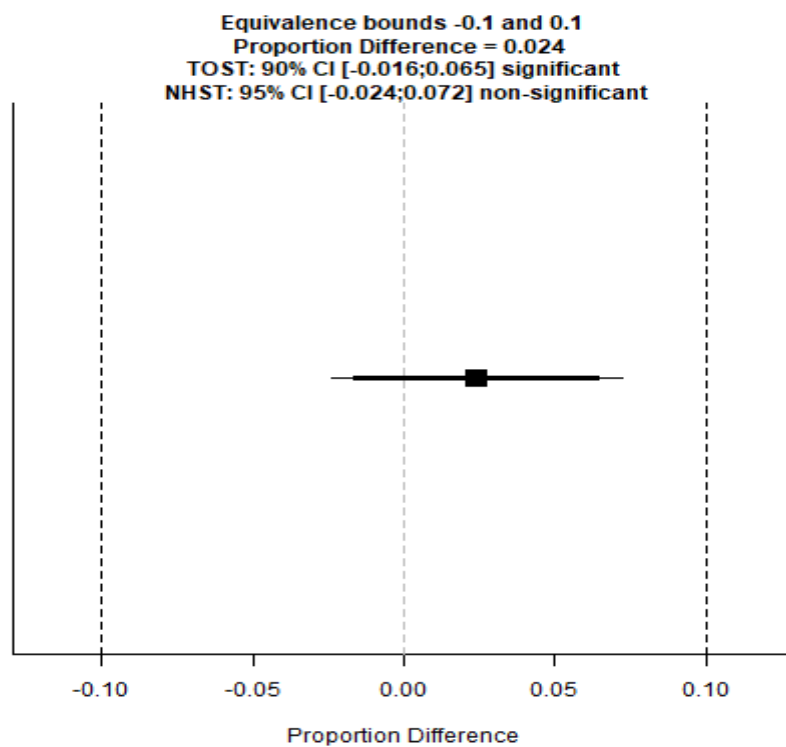
Outcome	p-value
Frequency	0.86
Intrinsic Motivation (Behavioral)	1.00
Intrinsic Motivation (Subjective)	0.64
Quality (Objective)	0.99
Quality (Subjective)	0.98

S9: Equivalence tests

To conduct equivalence tests, it is necessary to specify the 'smallest effect size of interest' (SESOI) that needs to be reasoned for each test of interest. The following plots show the results of equivalence for each test with the respective SESOI. Because the manipulation checks for the autonomy-related conditions failed, equivalence tests were only conducted for the competence manipulation

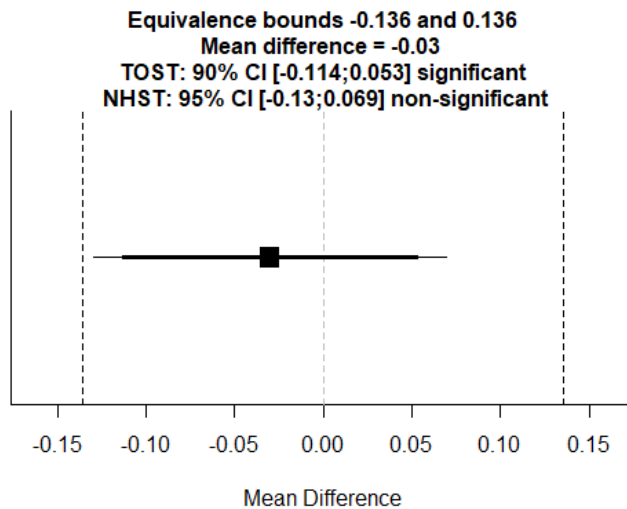
Test	I
DV	Intrinsic Motivation: Behavioral Indicator
SESOI	10%
Justification	Even lower than suggested in previous experiment
Result	Statistical equivalence

S9-I Equivalence test



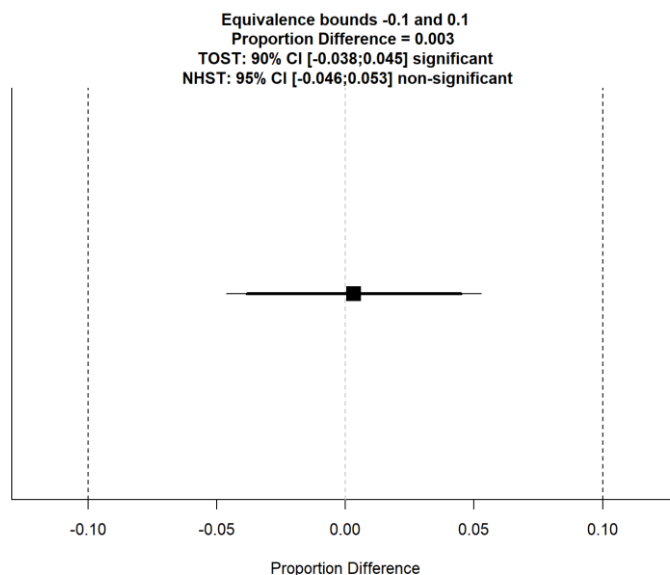
Test	2
DV	Intrinsic Motivation: Self-reported
SESOI	0.14
Justification	Lowest effect estimate retrieved in previous studies
Result	Statistical equivalence

S9-2 Equivalence test



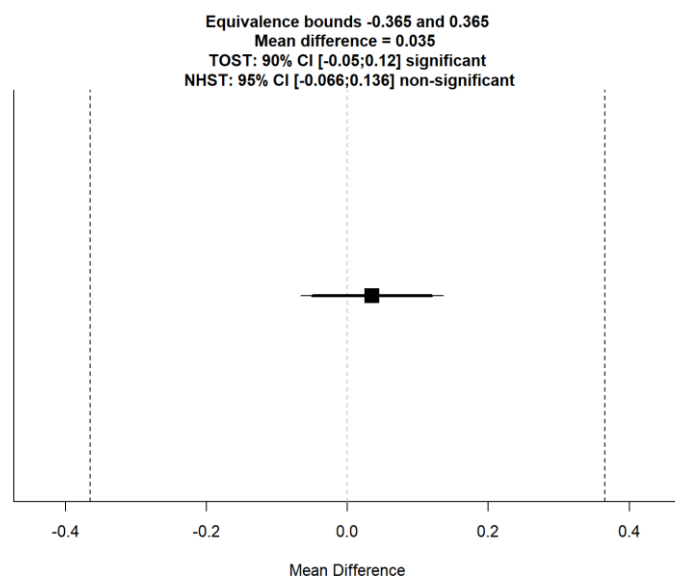
Test	5
DV	Quantity of Engagement
SESOI	10%
Result	Statistical equivalence

S9-3 Equivalence test



Test	7
DV	Quality of Engagement: Subj. Measure of Effort
SESOI	half a scale point
Result	Statistical equivalence

S9-4 Equivalence test



Test	8
DV	Quality of Engagement: Objective Measure of Effort
SESOI	difference of 0.5 more /fewer correct responses
Result	Statistical equivalence

S9-4 Equivalence test

