

Does Perceived Social Mobility Shape Attitudes Toward Government and Family Educational Investment?

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Abstract

Education is considered a key driver of intergenerational social mobility in the United States. However, the past several decades have witnessed a dramatic increase in the costs of college attendance, which puts political pressure on what the roles of government and families in education financing ought to be. In this study, we examine how individuals' perception of society's intergenerational mobility affects their willingness to financially support children in college, as well as their opinion on whether the government should take a smaller or bigger role. Perceptions of mobility matter because they reflect individuals' estimated opportunity structure and thereby an important component of returns to education. Using data from a nationally representative online survey and a novel design to measure perceived mobility, we show that (1) individuals who believe to live in a more mobile society exhibit more aversion toward government spending and a preference for students relying on family support; (2) these associations are stronger among higher-SES groups; and (3) information treatments randomly assigning objective social mobility facts make individuals who overestimate the level of social mobility even more eager to contribute to tuition costs. These findings suggest that learning about factual levels of mobility reinforces existing beliefs and possibly their consequences for educational investment.

Keywords: Educational Investment, Intergenerational Mobility, Perception of Social Mobility, Survey Experiment

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1 Introduction

Education is considered the most powerful vehicle for intergenerational social mobility in the United States. Aside from its key role as a supplier of human capital, sociologists often emphasize the extent to which college degrees reduce the association between individuals' family socioeconomic origin and offspring's occupational destination ([Hout, 1984, 1988](#); [Torche, 2011](#)). This supports the idea that students who obtain a college degree against the odds are significantly better equipped to escape from their otherwise bleak career trajectories: the equalizing function of bachelor's degrees. As higher education expanded throughout the second half of the 20th century, many college attendees from lower- and middle-class backgrounds indeed enjoyed a pathway of upward intergenerational social mobility ([Breen, 2010](#); [Pfeffer and Hertel, 2015](#)). Mirroring this stream of scientific evidence for the equalizing function, popular belief also holds that higher education enables its attendees to make intergenerational jumps ahead on the socioeconomic ladder ([McCall and Kenworthy, 2009](#)).

The extent to which college functions as a meritocratic equalizer is however not undisputed ([Witteveen and Attewell, 2020](#)). A recent study by [Zhou \(2019\)](#) revealed that the origin-destination relationship is surprisingly similar for college graduates and non-college graduates after adjusting for selection into higher education attendance. To be sure, there is still considerable intergenerational mobility among both educational groups, meaning that the mobility returns are not completely endogenous with respect to social background; parents can also perceive a high return to college education even when the reality suggests the opposite. Therefore, the current study, which concentrates on attitudes toward family financing of higher education and the extent to which these are susceptible to information treatments, remains highly relevant for actual socioeconomic inequalities in college returns.

The United States' colleges and universities have relied on a substantive family contribution to the costs of attendance for several decades ([Carnegie Commission on Higher Education, 1973](#)). Both private and public colleges and universities charge a considerable amount in tuition and fees. Aside from state funding of public higher education institutions through tax revenues, government spending includes a means-tested financial aid system based on an expected family contribution. However, costs of college attendance have skyrocketed since 2000, placing an ever larger financial burden on families ([Bozick, 2007](#); [Goldrick-Rab, 2016](#)). As of 2015, the share of tertiary education expenditures covered by US households, net of public financial aid, is about 45%. This is among the highest in the OECD, along with Japan, Australia, and the United Kingdom. In comparison, households' tertiary education expenditure share is about 25% in Italy, Ireland, and Portugal, and negligible (<5%) in Denmark, Sweden, and Austria ([OECD, 2021](#)). At the same time, Americans are generally supportive of public spending on education, in particular because it is the pinnacle of equality of opportunity ([McCall and Kenworthy, 2009](#)).

This study is about the role of perceived level of society's social mobility in shaping individuals' attitudes toward family contribution and government spending on education. We argue that perceptions of social fluidity are an important component of the expected returns to educational investment. For instance, believing that society is highly mobile – containing a high degree of equality of opportunity – might be an encouraging incentive for contributing to children's education costs, net of other factors. Conversely, believing that movements on the socioeconomic ladder are limited anyway might lead to the opposite and be a discouraging factor for educational investment. Regarding opinions on the role of the government in financing education, overestimation of society's current level of social fluidity might lead to lower support for (more) government spending.

One novelty of this study is the use of a survey-embedded experimental design. This allows us to improve on both measurement and conceptualization of beliefs about the ex-

pected returns to college – in particular in terms of mobility – for the next generation. We make use of a measurement strategy for mobility beliefs that is reliable, as well as predictive of attitudes toward education spending and investment. In other words, it empirically connects two critical components necessary to understand the social stratification process and intergenerational mobility. Moreover, upon creating reliable parameters of beliefs about educational attainment and the opportunity structure, we introduce a technique to measure whether an information treatment can change attitudes. This question is important for social policy that aims to reduce educational inequalities with information provision.

Our methodology also allows us to incorporate several different theories regarding educational investment. Specifically, we distinguish between attitudes toward government spending and family contribution, while performing empirical tests for both sources of investments simultaneously. We draw on a status maintenance framework to hypothesize that individuals who believe that they are living in a more mobile society exhibit (1) a higher incentive to financially support their children's college education and (2) less enthusiasm for government spending on education. Importantly, these relationships are studied while accounting for various individual-level factors, such as one's financial capacity and key sociodemographics. The analysis concentrates on the association between perceived social mobility and attitudes toward educational investment responsibility. Our assessment also includes the heterogeneous effects along socioeconomic (SES) lines, whereby relative risk aversion theory predicts higher socioeconomic groups to be more responsive to perceived social mobility. In addition, we ask whether individuals' attitudes toward government and family spending on education can be altered when confronted with their misperception of social mobility. We consider this misperception as being directional – as an overestimation or an underestimation of social mobility. Some mobility researchers refer to these as mobility "optimism" or "pessimism."

The next section lays out the theoretical foundation and recent empirical work that informed our hypotheses regarding the main effect and the SES-heterogeneity. We then introduce a new nationally representative sample and a unique data collection procedure that allows us to conduct an information treatment experiment. Our findings reveal that attitudes toward government spending and family responsibility are indeed associated with perceived social mobility, but contain class heterogeneity reflective of inequality mechanisms. We also demonstrate that in so far information treatments can alter individuals' attitudes, they do so in a polarizing fashion. Implications for current scholarship and policy are discussed.

2 Literature

2.1 Perceptions of Social Mobility

How far will families go in taking responsibility for the costs of offspring's education? While the answer to this question undoubtedly depends on financial capacity, individuals' incentives must contain some kind of realization of the opportunity structure. Theorists have asserted that parents serve their own best interest by contributing to children's education costs as long as the expected returns outweigh the investments ([Becker, 2009](#); [Becker and Tomes, 1979](#)). However, the extent to which educational investments indeed yield higher payoffs is a function of whether higher-level credentials allow individuals to move up the socioeconomic ladder, relative to their parents, or possibly down in case of lower achievement. In other words, societies with higher levels of social fluidity should contain more movements up and down the socioeconomic order that result from individuals' merits (education level) rather than their family background ([Erikson and Goldthorpe, 1992](#)). This would imply that for the working- and middle classes – who have most to gain from a meritocracy – investments in education seem more "secure" if society has a flexible socioeconomic hierarchy. We deduce that individuals implicitly consider the social mobility

level of society in their calculations of educational investment.

While *factual* social mobility has been investigated extensively in sociology (e.g., [Breen, 2010](#); [Breen and Müller, 2020](#); [Corak, 2004](#); [Kerckhoff et al., 1985](#); [Lipset and Bendix, 1991](#); [Pfeffer and Hertel, 2015](#)), the study of social mobility perception lacks behind or has remained ambiguous. It is however evident that individuals' social mobility perceptions often deviate from the reality and that such misperceptions depend on what kind of social fluidity is referred to. If intergenerational social mobility is defined as one's ability to move from the bottom to the top of the socioeconomic ladder (bottom-to-top mobility), studies reveal both overestimations and underestimations, depending on sample features and survey design ([Alesina et al., 2018](#); [Chambers et al., 2015](#); [Davidai and Gilovich, 2015](#); [Kraus and Tan, 2015](#); [Swan et al., 2017](#); [Wen, 2021](#)). If social mobility is referred to as relative mobility – i.e. the chance of taking a different socioeconomic position than one's parents – studies found that Americans are quite pessimistic ([Cheng and Wen, 2019](#); [Wen, 2021](#)). Moreover, as shown by [Brooks and Manza \(2013\)](#), Americans have remained highly optimistic about living in a meritocratic society despite overwhelming evidence for steeply increasing levels of inequalities ([Kenworthy and McCall, 2008](#); [McCall and Perchowski, 2010](#)).

Researchers have only recently begun to study *why* perceptions of social mobility and inequality of opportunity deviate from reality. Explanations have thus far been sought in disturbances or delays in the recognition of social structure. Reviewing the literature, [Mijs \(2019\)](#) found two explanations for the paradoxical correlation between societies' high levels of inequality and absence of popular concern. One possibility is that people in unequal societies are structurally being misinformed (e.g., [Cruces et al., 2013](#); [McCall, 2013](#); [Gimpelson and Treisman, 2018](#)). Other researchers have argued that unequal societies causally affect tolerance of inequality because people get used to it (e.g., [Bénabou and Tirole, 2006](#); [Jost et al., 2004](#)). Contradicting both streams of research, [Mijs's \(2019\)](#) own

empirical analyses suggested that people accept highly unequal outcomes as long as they perceive these to be a product of a fair and meritocratic process. Yet information stimuli (still) explain variation of perception within unequal societies. Based on experiments, [Wen \(2021\)](#) discovered that Americans exhibit more optimism about social mobility in the US, when asked to compare it to Europe, after learning about historical institutional differences (i.e. the European nobility system). Conversely, respondents show more pessimism about US social mobility if they are presented with information about the contemporary redistributive regime differences between countries.

The current study seeks to expand knowledge of perceptions of mobility in a direction that has remained largely unexplored: its direct link to attitudes and opinions on the responsibility of government and families for educational investment. Although primarily concerned with exploring variation and heterogeneity within these attitudes, we expect to find high "baseline" levels of willingness to personally invest in children's education because belief in meritocracy can coexist with profound levels of inequality (such as in the United States). We concentrate perceptions on both forms of social mobility: bottom-to-top and relative.

2.2 Costs of College Attendance and Family Support

Higher education attendance is notoriously expensive in the United States. Despite substantive public financing streams, the US tertiary system has always been predicated on the assumption that families contribute to their children's tuition costs ([Carnegie Commission on Higher Education, 1973](#)). As state appropriations for public higher education dropped by more than 40% between 1980 and 2010 ([Goldrick-Rab, 2016](#)), a growing share of college costs was being passed on to families and students ([Archibald and Feldman, 2011](#); [Baum and Ma, 2014](#)). This resulted in two-thirds of all college costs being carried by families or students and a majority of college attendees utilizing federal or non-federal

student loans to finance their studies, some of which include parent loans ([Cha et al., 2005](#); [Sallie Mae, 2019](#)).

Despite the consistently high and ever rising costs of attending higher education, a vast majority of American parents have remained surprisingly confident in the economic returns from the investments they make in the future of their children. For 12 consecutive years, [Sallie Mae \(2019\)](#) reported that over 90% of families with a student enrolled in college agree "college is an investment in the student's future." Some 40 percent state that they are "paying the right price," while another 31 percent feel they are "getting a good value." At the same time, researchers have noted that US families do not always act as perfectly rational and calculative actors with regard to higher education investment. For example, [Grodsky and Jones \(2007\)](#) found that many parents are also reluctant to estimate college costs, are often poorly informed about tuition levels, and appear to not have saved enough for children's college expenses.

Explanations for why families are (or remain) motivated to invest in offspring's education at all times can be found in varieties of human capital theory. This theoretical stream stresses the existence of parent altruism, whereby parents' utility is to a large degree dependent on the utility of children. The concept of "utility" should be understood as general well-being or consumption satisfaction, consisting of lifetime income with regard to offspring's utility from the viewpoint of parents. It implies that families are willing to use monetary and non-monetary resources on their offspring's skills, health, and indeed "schooling," as long as these investments continue to yield marginal returns in future socioeconomic standing of their children ([Becker, 2009](#); [Becker and Tomes, 1979](#)). In other words, willingness to invest in offspring's college education does not have to be affected by rising costs if the payoffs from college still exceed investments.

However, intergenerational investment considerations of families also contain an inherently social component, which varies along rungs of the socioeconomic status (SES)

ladder. Sociologists of the Wisconsin School have expanded on human capital theory by emphasizing the relevance of social-psychological and cultural factors for educational investments behaviors. They argued that inequalities in family investments into offspring's education are rooted in occupational aspirations for the next generation and are inevitable consequences of "status socialization." Because lower- and higher-SES parents have vastly different levels of occupational aspirations for their children, as a function of their own educational experience and socioeconomic position, class gradients in both offspring's own academic goals and family's educational attainment investments appear automatically (Blau and Duncan, 1967; Sewell et al., 1970; Sewell and Hauser, 1975). Moreover, researchers found that such class gradients persist even if the educational system expands and becomes more accessible to low-SES students (Lucas, 2001; Raftery and Hout, 1993).

Expanding the socialization model, Breen and Goldthorpe (1997) demonstrated that class gradients in educational attainment are rooted in forward-looking decision-making. They state that families are *equally motivated* to invest in their children's education because parents and children seek to avoid a downward socioeconomic step in the next generation: attaining a lower level of education than the parents. This is called identical "relative risk aversion" (RRA). What varies between social classes are the reference points of what it means to be downwardly mobile. Compared to students from working-class origins, high SES-students will typically require lengthier educational careers in order to match their parents' education level, such as graduating from college or obtaining an advanced degree. Class gradients in educational attainment thus result from the intergenerational goals being the same across social classes in relative terms, yet markedly different in absolute terms. Empirical research found strong evidence for RRA – i.e. class background-specific perceptions – affecting educational decisions over and above current socioeconomic standing (see Holm and Jaeger, 2008; Morgan, 2005).

Subsequent empirical research has focused on various forms of parental involvement

in education between kindergarten and high school and their SES-rooted variation. Despite some controversies, studies have documented social stratification patterns that are much in line with socialization theory. All throughout primary and secondary education, affluent parents are better able to influence their children's academic achievement. Much of this transmission is rather unconscious, as it goes hand in hand with parenting routines or other forms of environmental socialization. However, class gaps also appear as plain resource and power inequalities because middle-class and upper-class families are better positioned to make investments in their children's educational outcomes (Lareau, 2011; Cheadle, 2008; Potter and Roksa, 2013).

Parental involvement continues into children's twenties, and more so than for previous generations (e.g., Johnson, 2013). This includes both monetary and non-monetary forms of investment. With regard to the former, young adults from high-SES backgrounds receive about three times more financial support in young adulthood as compared to the bottom quartile (Hamilton, 2013; Schoeni and Ross, 2005). Furthermore, the psychological well-being of high-SES college students is more often monitored by their parents: "helicopter parenting" (Schiffrin et al., 2014; Settersten and Ray, 2010). In a series of qualitative studies on intergenerational mechanisms in college, Hamilton and colleagues identified combinations of social, economic, and cultural resource- and investment-inequalities along social class lines (Armstrong and Hamilton, 2013; Hamilton, 2016; Hamilton et al., 2018).

In this study, we estimate individuals' attitudes toward families' responsibility for financing children's college education. We argue that perceptions of social mobility matter for individuals' willingness to contribute to children's tuition costs, net of other factors. Following human capital theory, we believe that part of the expected marginal return to educational investment to a large degree depends on how much social mobility exists in society. In absence of accurate information of the opportunity structure, we assume that

individuals' *perception* of social mobility may become an important proximate driver of investment incentives: greater belief in social mobility should mean higher and more secure payoffs of education, and therefore higher investment willingness. We expect to find this dynamic across US society. As individuals with children are more likely to be involved with actual educational investments, it is plausible that the positive relationship between social mobility belief and preference for family contributions is somewhat stronger among parents; but we do not have a strong hypothesis here.

Furthermore, all theoretical frameworks of educational investment point toward a higher educational investment willingness if society is believed to be (more) socially mobile. This positive relationship should exist across all socioeconomic layers. However, we expect to find social class heterogeneity in the mobility-investment relationship whereby social mobility perception affects educational investment willingness more strongly among the upper-income and higher-educated groups. This is because high-SES individuals have a greater necessity to achieve their (higher) educational reference points (i.e. socialization and status maintenance theory) *and* have more household resources at their disposal to spend on college costs. Thus, all else equal, it could mean that the positive effect of perceived social mobility on investments is primarily driven by the most socioeconomically advantaged groups.

2.3 Government Spending on Education

Political scientists have extensively studied citizens' preferences for all kinds of public spending. However, research findings have been somewhat inconsistent regarding attitudes toward spending on education, and in particular in cross-sectional data. Individuals' opinions on the government's role in *higher* education financing is most understudied. Studies take into account the class or income variation in measurements of public spending attitudes, but do so primarily to analyze whose preferences matter most for eventual

implementation of programs (i.e. power) (Wlezien, 2004).

There are two main reasons for why the interrelationships between class position, mobility perspectives, and attitudes toward government spending on (higher) education have received little attention. First, value differences between lower-educated and higher-educated groups regarding the governments' roles are believed to be distorted because low-SES individuals display less interest in political decision-making in general (Jacoby, 2006). Therefore, most studies about attitudes do not test for social class differences because they often reflect information gaps. Second, observational studies seem to suffer from citizens not always being able to link income or mobility differences with governmental programs (Bartels, 2018; Hayes, 2014). The current study seeks to overcome this problem by using an experimental research design that includes information treatments.

Studies find considerable evidence for great support of Americans for egalitarian policies and in particular systems that foster equality of opportunities. Education appears as the most important of these institutions in cross-sectional survey data. Research on attitudes toward government spending has shown a striking popularity of public education, even when contrasted with public spending on other government domains. For instance, using data from the 1994 Multi-Investigator Study, Jacoby (2006) found that Americans are most supportive of governmental spending on crime, the environment, and public education as compared to, for instance, social services. Studies by Doyle (2007) and McCall and Kenworthy (2009) also indicate that Americans share widespread support for institutions and policies that are supposed to stimulate equality of opportunity.

At the same time, sociologists have been surprised by the absence of *increasing* levels of demand for redistributive policies – among which public education – given the stagnating incomes for the majority of American households and the growing level of inequality. Analyzing support for public spending in cross-sectional data of the General Social Surveys between 1987 and 2000, McCall and Kenworthy (2009) could not find a consistent upward

or downward trend over time. Nor were they able to find a robust relationship between individuals' tolerance of inequality and support for increasing public spending on education. However, [Manza and Brooks \(2020\)](#) point to beliefs about the prospect of upward mobility as shaping the individuals' preferences for redistributive policy, rather than social inequality. They find that greater optimism about social mobility is associated with lower support for taxes and higher acceptance of inequality. These results corroborate the idea that beliefs in procedural justice – meritocracy – are associated with acceptance of income differences, as found across high-income societies ([Larsen, 2016](#)).

Similar to families' willingness to pay of tuition costs, there are reasons to expect SES-based heterogeneous effects in the relationship between believed social mobility and the role of government. Social scientists have been greatly concerned with preference variation for education spending in context of the Meltzer-Richard thesis ([1981](#)). While this theoretical work comprises of general dynamics between income distribution and taxation/redistribution, it also includes an explicit social class dynamic: the further one is above society's median income, the less likely one is to favor government redistribution ([Ansell, 2010](#)). Assuming public spending on education is a form of redistributive policy, it should be less popular among the most affluent members of society. However, since high-SES individuals are more likely to attain college, increasing public spending on higher education could conversely be more popular among the most advantaged groups ([Busemeyer, 2012](#); [Fernandez and Rogerson, 1995](#)). In line with the latter argument, [Horn \(2012\)](#) found that government spending on education deviates from the Meltzer-Richard theory across OECD countries; while a socioeconomic position is positively associated with preference for less governmental spending in all other areas, higher-educated individuals were shown to be *most* likely to favor government spending on education.

Following empirical studies on public opinion and attitudes, and in particular [Manza and Brooks' \(2020\)](#) recent findings, we believe that perceived social mobility is reflective

of holding the belief that US society is already sufficiently "fluid" and does therefore not require any further governmental financial investment in education. Thus, perceived social mobility is expected to be negatively associated with support for (more) governmental investment in education. In addition, our empirical assessments of class heterogeneity should indicate to what degree Horn's (2012) finding can be replicated in US data. If so, advantaged individuals indeed express the greatest support for government spending on education, net of other factors. Conversely, results would be affirmative of the Meltzer-Richard thesis if higher-class individuals would be least supportive of such investments. This dynamic could imply that the relationship between perceived social mobility and preference for less government investment in education would be strongest for high-SES individuals.

3 Research Design

We first ask three interrelated questions about individuals' attitude toward financial responsibility for education costs: (1) Is perception of social mobility predictive of believing that government spending on education is too much, about right, or too little? (2) Is perception of social mobility predictive of believing that parents should be responsible for (a) *college* education costs and (b) how much of these costs in percentages? (3) Is there heterogeneity along class position (income and education) in the relationship between perceived social mobility and attitudes toward family contributions and public education investment? And if so, in which direction? We then turn to our experiment with regard to the independent variable: Can information treatments – providing information about mobility reality – alter individuals' attitudes toward government spending on education and family responsibility for college costs? If so, in which direction?

3.1 Measuring Perceived Social Mobility

There are different ways to measure perception of social mobility. One strand of research relies on measures of perceived transition probabilities for specific subgroups, such as the likelihood to move from the bottom (in terms of parental status) to the top (offspring status), and vice versa (Alesina et al., 2018; Kraus and Tan, 2015). One drawback of this type of measure is that it requires respondents to make some kind of calculation of a probability on the spot, which involves a relatively large cognitive burden for the respondent (Swan et al., 2017; Eriksson and Simpson, 2012; Kahneman and Tversky, 1972). In addition, it can only measure social mobility among certain groups (e.g., bottom-to-top).

Another approach to measuring perceived social mobility makes use of a rank-rank-based survey instrument, such as developed by Cheng and Wen (2019). Researchers first draw from respondents their perceived relationship between parents' income rank and children's income rank across society, which is then compared to the country's actual rank-rank relationship. This yields the country's aggregate-level of mobility perception (or misperception). One major advantage of this technique is that it allows measurement of relative mobility perception across the entire parent income distribution.

Since the focus of the current study is the extent to which Americans' perceived social mobility shapes their attitudes, we intend to capture between-person variation in relative rather than absolute terms. More specifically, our key explanandum is respondents' degree of overestimation of social mobility *in general* rather than for themselves. We therefore adopt and modify a technique previously used in psychology studies (e.g., Davidai and Gilovich, 2018), which measures respondents' perception based on their ranking of societal-level social mobility as contrasted with other countries.

In our case, we asked respondents to rank the levels of social mobility in the United States relative to four European countries — United Kingdom, France, Italy, and Sweden.¹

¹The four European countries were chosen because of availability of reliable objective mobility statistics

We do not require respondents to have specific knowledge about any of the European countries. Instead, what we really care about is how they compare the US with Europe as a whole. Involving only five countries for such a comparison entails a relatively light cognitive burden. The gap between the perceived rank and the actual rank for the US generates a misperception measure for each respondent. We find that respondents tend to overestimate social mobility if it is defined as bottom-to-top mobility and they tend to underestimate if mobility is referred to as relative mobility. These trends are consistent with recent studies that use other techniques (e.g., [Cheng and Wen, 2019](#); [Davidai and Gilovich, 2015](#); [Kraus and Tan, 2015](#)).

3.2 Conducting a Nationally Representative Online Survey

In order to answer these questions, a two-wave nationally representative online survey was conducted. Prior to data collection, multiple pilots were ran on the Amazon Mechanical Turks (MTurks) to test the reliability of the instruments. The survey was fielded in the AmeriSpeak® panel between May and June, 2019. Funded and operated by the National Opinion Research Center (NORC) at the University of Chicago, AmeriSpeak® is a probability-based panel designed to represent the United States household population. Households were randomly selected using area probability and address-based sampling. Participants in both waves were English speaking self-administered web users, providing sample coverage of approximately 82% of the American household population. In total, NORC collected 1,213 interviews for the first wave, of which 1,021 respondents were resurveyed one week after the initial contact (retention rate of 84%).² The survey experimental design allows examination of treatment effects on attitudes toward education financing responsibilities, whereby some randomly selected respondents were treated with provision

and usage in prior empirical work on perceived social mobility ([Alesina et al., 2018](#)).

²The number of sampled respondents was based on a power analysis and the available budget. As shown in appendix Figure A, the sample size is sufficient to detect an effect size that is commonly found in pilots studies ([Cohen, 2013](#)).

of factual information about social mobility in the United States. AmeriSpeak® provided sampling weights for both waves of the survey, ensuring that the attributes of the respondents are reflective of averages reported in census statistics.

The dataset contains several features that make it suitable for hypothesis testing with external validity. First, the address-based probability survey ensures that our sample is representative of the US population that is active online. Second, as treatments were randomly assigned, we can test whether information interventions regarding objective social mobility are causally related to possible changes in individuals' attitudes. Finally, the two-wave design, whereby respondents are interviewed again one week after the initial contact, enables us to test the duration (i.e. robustness) of these treatment effects.

3.3 Experimental Procedure

The online survey consists of three components – (1) measurement of perceived social mobility, (2) randomly providing factual information about social mobility in the United States, and (3) measuring attitudes toward educational investment.³

(1) All respondents were randomly assigned into one of the two social mobility wording groups (N=600 for each). In the first wording group, respondents' perception of intergenerational mobility is measured by bottom-to-top upward mobility. In the second wording group, it is measured by relative mobility.

Please answer the following questions based on your perceptions.

Rank the following countries based on the chance for children who come from the poorest families to move up to the richest income group once they grow up. (Rank 1 - Rank 5: from the lowest chance to the highest chance) **Or**

Rank the following countries based on how much of children's economic success is dependent on their parents' economic success. (Rank 1 - Rank 5: from the most dependent to the

³The appendix section "Survey Instruments" provides further details.

least dependent)

Please drag the country names up or down to represent the order in your mind.⁴

United States

United Kingdom

France

Italy

Sweden

All respondents in each wording group, regardless of being selected for the information treatment, first ranked the level of intergenerational mobility in the United States relative to four European countries. Respondents ranking the United States higher (lower) than its actual standing are considered overestimating (underestimating) intergenerational social mobility in the United States.

(2) Subsequently, respondents in each wording group were randomly assigned into a treatment group (N=300) and a control group (N=300). Respondents in the control group were immediately directed to the next section, while respondents selected for the treatment group were first provided with factual information about the intergenerational social mobility in the United States relative to the selected European countries.

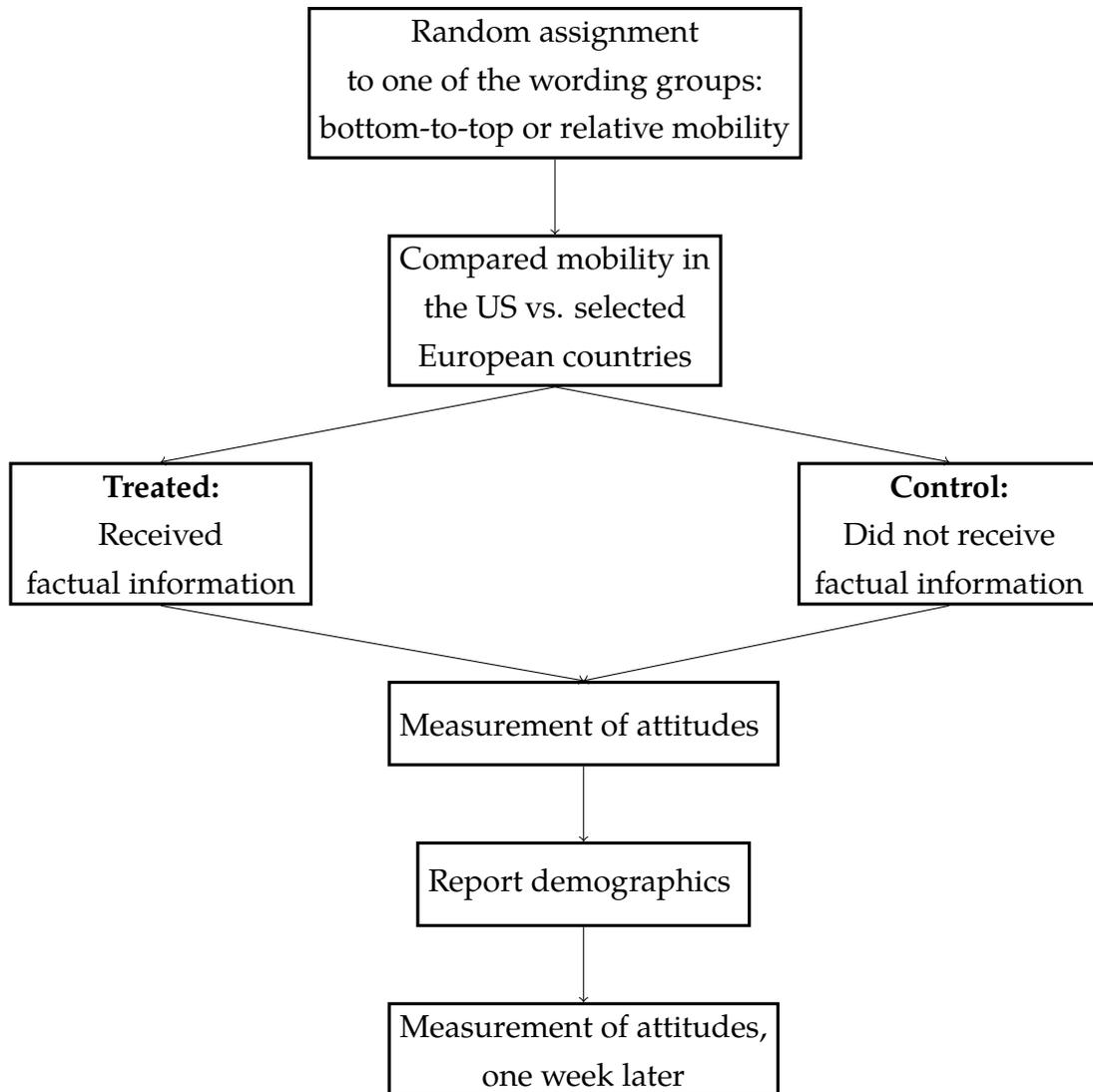
(3) All respondents, regardless of treatment status, answered several questions about attitudes toward educational investment – one about government spending and two about family support.

3.4 Variables

3.4.1 *Dependent Variables*

Three dependent variables are examined in this study. First, respondents were asked whether they think "the government is spending too much money, about the right amount,

⁴The country names appear in a random order on the screen.



or too little money on education." This is the same question as asked in the American General Social Survey (GSS). The variable is coded on a 3-point scale (1 = too much; 2 = about right; 3 = too little).⁵ Second, respondents also reported "whether or not they agree that parents should pay for their children's college tuition" and "the extent to which they are willing to contribute."⁶ The former is coded on a 7-point scale (from "strongly disagree" to "strongly agree"), and the latter ranges from 0% to 100%.

⁵Please be aware that the first dependent variable measures attitude toward government spending on education in general, while the second and third dependent variables specify higher education.

⁶Respondents with no children were asked to answer this question under a hypothetical scenario in which they do.

3.4.2 Key Independent Variables

Perceived social mobility is calculated by deducing the actual US rank from the perceived US rank: a net misperception measure. As respondents were asked to rank countries from the least mobile to the most mobile (effectively a 5-point scale), a positive value of misperceived rank indicates a relative overestimation of social mobility in the United States, while a negative value represents a relative underestimation. For instance, if a respondent ranks the US as the second most mobile country out of the five (perceived rank = 4), while the actual rank for the United States is 3 (actual rank = 3), her misperceived rank equals 1 (perceived rank – actual rank = 1). This respondent is slightly overestimating the United States' level of social mobility.⁷ The US ranks as 1 in the set of five countries in terms of bottom-to-top upward mobility (i.e. *least* mobile) (Alesina et al., 2018). The US' actual relative mobility rank is 3, which is the effective median among the five countries included (Corak, 2013).

The second key independent variable is the treatment status and is coded in a straightforward binary fashion. For treated respondents, who read factual information about social mobility in the United States relative to the four European countries, have treatment status "1," while untreated respondents keep "0."

3.4.3 Control Variables

The presented predication models include a comprehensive set of socioeconomic and demographic variables to account for differences in observed characteristics. Specifically, we control for gender, age, race and ethnicity, education level, marital status, parental status, employment status, income level, political ideology, and geographic region. Descriptive characteristics of the control variables are presented in Table A of the appendix.

⁷We draw factual information for each measure of social mobility from the most recent – reliable – publication on this topic. "Survey Instruments" in the appendix details how factual information was provided to the treatment group

3.5 Estimation Strategies

We first examine the association between perceived social mobility and attitudes toward three forms of financial responsibility for education costs, net of sociodemographics. An Ordinary Least Squares (OLS) model is specified as follows:

$$\mathbf{Attitude}_{ijlw} = \alpha + \beta \mathbf{Overest}_{ij} + \lambda \mathbf{X}_i + \epsilon_i \quad (1)$$

where the dependent variable, **Attitude**, represents the attitude l (government spending⁸ / family support) for the respondent i in wave w (1/2) when social mobility is measured as j (bottom-to-top upward mobility / relative mobility). **Overest** denotes the initial level of mobility overestimation, measured as j , for the respondent i . A more positive value for **Overest** means more overestimation and a more negative value means more underestimation. **X** includes control variables listed in the "Variables" section. ϵ is the individual idiosyncratic error term. Sampling weights are applied.

Since our dependent variable "percent children's college tuition willing to contribute" is seemingly bimodal (see Figure 1), OLS regressions that are suitable for mean estimation could possibly be misleading. We therefore also conduct a series of quantile regressions⁹ to examine effects of perceived mobility at different percentiles of this outcome distribution.

In order to measure the heterogeneous effects of perceived mobility by socioeconomic status, we examine the interaction between **Overest** and respondents' SES.

$$\mathbf{Attitude}_{ijlw} = \alpha' + \beta'_1 \mathbf{Overest}_{ij} + \beta'_2 \mathbf{SES} + \beta'_3 \mathbf{Overest}_{ij} \times \mathbf{SES} + \lambda' \mathbf{X}_i + \omega_i \quad (2)$$

where **SES** is measured by either income decile or education level dummies.

⁸Theoretical and simulation studies (Freedman, 2008; Gomila, 2020) have shown that when using experiments to examine the causal effect of treatments, linear regressions are preferred even when the outcome is categorical. In order to be consistent, we employ OLS regressions for all models. Our results remain similar when ordered logistic regressions are applied for the first dependent variable (see appendix Table D).

⁹While OLS regression estimates the conditional mean of the response variable across values of the predictor variables, quantile regression estimates the conditional quantile of interest of the response variable.

The second part of the analysis examines whether individuals' attitude toward government spending on education and opinion on the responsibility of parents to contribute to college costs can be altered when confronted with their misperception of social mobility.

$$\mathbf{Attitude}_{ijlw} = \mu + \gamma_1 \mathbf{Overest}_{ij} + \gamma_2 \mathbf{Treat}_{ij} + \gamma_3 \mathbf{Overest}_{ij} \times \mathbf{Treat}_{ij} + \zeta \mathbf{X}_i + \delta_i \quad (3)$$

By interacting **Overest** with **Treat**, a dummy variable indicating whether or not the respondent i has received factual information about social mobility, we can assess (1) whether social mobility overestimation increases aversion to government spending on education / willingness to provide family support of education costs in the control group (γ_1), (2) whether the treatment has any effect among respondents who underestimate the most (γ_2), and (3) whether the treatment effect varies across level of overestimation (γ_3). Once again, for the dependent variable "percent children's college tuition willing to contribute," we perform quantile regressions in addition to OLS regressions to estimate the effects (γ_1 , γ_2 , and γ_3) at other locations of the outcome distribution.

4 Results

4.1 Descriptive Statistics

The analytical sample consists of 1,165 respondents: 589 observations and 576 observations in the "bottom-to-top mobility" and the "relative mobility" wording groups, respectively. This study sample excludes cases with missing values on either the key independent variable or all the three dependent variables (5%).¹⁰ The sample sizes of estimation models vary slightly as a result of some respondents having answered only one or two of the dependent variable questions. We recorded no missing values in control variables.

Figure 1 plots the distributions of the dependent variables among untreated respon-

¹⁰Results remain similar when using multiple imputations and regressions based on the entire original sample.

dents. The first graph shows individuals' opinion on whether the government spends too much (11%), about the right amount (25%), or too little (64%). On average, a majority of Americans believe that the government should spend more on education. This distribution is in line with the popularity of the educational system as found in comparable survey data (McCall and Kenworthy, 2009). Regarding attitudes toward parents' role in paying for children's college tuition, we observe an evident normal distribution (second graph). This means that very few people are of the opinion that parents should not have to contribute, while a more or less equally small share states that parents should definitely take responsibility for children's college tuition. However, the more precise question — "What percent of the total tuition costs would you be willing to pay?" — leads to a markedly different distribution. As shown in the bottom panel, opinions are concentrated on the 50% mark (25% of respondents) and, to a slightly lesser extent, on the 100% mark (16% of respondents). Aside from these two peaks, the other 59% of individuals ticked percentages throughout the distribution.

[Figure 1 about here]

Figure 2 plots the two measures of perceived social mobility in adjacent graphs. When social mobility refers to the possibility of jumping from the bottom quintile (origin) to the top quintile (destination), a majority of respondents rank the United States as either most mobile (34%) or most immobile (33%). In other words, when presented a definition of mobility that is closest to the American Dream — allowing bottom-to-top mobility — Americans are likely to show polarization in regard to their perception of the true opportunity structure. The dashed line indicates the true rank of the United States, which is the lowest probability of bottom-to-top mobility among the countries listed (Alesina et al., 2018).

The right-hand side graph of Figure 2 presents the distribution of respondents' per-

ception of relative mobility — the extent to which one is able to move both up and down the socioeconomic ladder independent of family background. In reality the United States is at the median (dashed line) in terms of social fluidity among the selection of five high-income countries (Corak, 2013). However, a majority of respondents (64%) place the US' relative mobility level at the very bottom of this list. In other words, respondents frequently underestimate the true level of relative mobility. These findings highlight the importance of distinguishing different dimensions of social mobility when studying individuals' mobility perceptions.

[Figure 2 about here]

We present the mean, standard deviation, and range of all variables in Table A of the appendix, split by measures of perceived social mobility in two separate sets of columns. The descriptive statistics also show that the treatment and control groups have similar mean differences in terms of model covariates (see appendix Table B). Furthermore, the covariates in our analytical sample display patterns comparable to those in the General Social Survey 2018 (see appendix Table C), confirming it being representative of the US (online) population.

4.2 Attitudes about Government Spending and Family Support

Table 1 presents our main findings regarding the associations between misperceived social mobility rank and attitudes toward government spending (top panel), family support for college (middle panel), and amount of family support for college (bottom panel). For overestimation of bottom-to-top mobility, we display the point estimates of individuals' degree of misperception – overestimation – in two nested models: a baseline model with no control (model 1), followed by a model with full controls (model 2). Model 3 presents the misperception estimate for a subsample of respondents who have children.¹¹ Models

¹¹From descriptive statistics, we do not find parents and non-parents hold different attitudes toward educational investment. In Figure B of the appendix, we present the third plot of Figure 1 by parental status

4 through 6 repeat this order for overestimation of relative mobility.

In the top panel, we observe a statistically significant negative relationship between overestimation of the social mobility rank (both bottom-to-top and relative) and support for more government spending on education. This means that the more individuals overestimate the US' level of social mobility, the less likely they are to agree that the government currently spends too little on education — the third and highest category of the outcome variable. For the full sample estimates, we find that the associations are not (model 2) or only slightly (model 5) attenuated when controlling for a wide range of controls, including measures of financial capacity. Specifically, net of gender, age, race/ethnicity, education, marital status, parental status, employment status, income level, political ideology, and geographic region, we find that overestimation by one rank in bottom-to-top mobility (relative mobility) is significantly associated with favoring less government spending on education by 0.05 (0.11) on a scale from 1 to 3. This effect corresponds to a decrease in the dependent variable by 7.1% (15.1%) of a standard deviation. The association is noticeably weaker among respondents who are parents (models 3 and 6), whereby the estimate for misperceived relative mobility ceases to be statistically significant.

The middle panel displays the associations between overestimation of both social mobility definitions and the extent to which respondents believe that parents should be responsible for paying college tuition. Most of the point estimates are positive, which is suggestive of both bottom-to-top mobility and relative mobility overestimation being positively predictive of agreeing to family support in terms of college costs. It should be noted, however, that the association is only statistically significant in the baseline model 4 when using a 95% confidence level. We consider the full model estimations in models 2 and 5 to be meaningful given the moderate sample size and the elaborate set of control variables and report similar patterns in both groups. Therefore, we do not have a strong hypothesis about if the effect of perceived mobility should be stronger or weaker among parents than in the full sample.

ables. The non-significant effects in the parent subsamples may be attributable to the much smaller number of observations in the "parents only" subsample.

The bottom panel presents the results for *how much* one would be willing to contribute to children's college education. We find that overestimation of bottom-to-top mobility is positively associated with the share of college tuition that one is willing to cover (0% - 100%). This relationship is however not statistically significant with a the 95% confidence level in the nested models 1 and 2. The effect is both significant and noticeably stronger among respondents with children, as shown in model 3 of Table 1. Specifically, as parents overestimate bottom-to-top mobility in the US by one rank, they are willing to contribute to children's college tuition by 2.7 percentage points more. We find a smaller association between relative mobility (social fluidity) overestimation and educational investment willingness, which is only significant in the baseline model 4.

[Table 1 about here]

In addition, for both bottom-to-top and relative mobility measures in the full sample, quantile regressions (see Figure C of the appendix) estimating the effects of perceived mobility on percent children's college tuition that respondents are willing to pay yield positive point estimates throughout the outcome distributions. This is in line with the mean effect associations as reported in Table 1. We further find that the association between bottom-to-top mobility overestimation and educational investment willingness is statistically significant among many of the lower percentiles, where the point estimates are also higher. In other words, our key independent variable – being relatively optimistic about bottom-to-top social mobility in the United States – is likely to change the outcome (intended tuition contribution), and this association seems more evident among individuals who show a low baseline investment willingness.

4.3 Social Class Heterogeneity in Attitudes

We next present the results of social class heterogeneity in attitudes toward education financing responsibilities. We use both income level and education level as proxies for respondents' socioeconomic status (SES) in separate models. The graphs on the left-hand side of Figure 3 plot the interactions between class position and (bottom-to-top) mobility overestimation, while the graphs on the right-hand side refer to relative mobility. We concentrate on the results for attitude toward government spending on education only. The social class interactions for family responsibility were also statistically significant, yet less robust (see appendix Figure D).

The interactions reveal that virtually no class heterogeneity exists in the extent to which bottom-to-top mobility overestimation is associated with the role of the government in education financing (being too little, enough, or too much). However, when asked about relative mobility, we find compelling evidence for respondents' misperception (i.e. overestimation) being differently associated with one's attitude toward government responsibility according to class position. As shown in the top-right graph, the steep downward red slope indicates that high-income individuals' social mobility overestimation is strongly associated with a preference for less government support. More specifically, while the main effects indicates that overestimation of bottom-to-top mobility is positively associated with believing that the government spends enough or too much, the interaction suggests that this association is much stronger among high earners.

The bottom-right graph of Figure 3 present visual evidence for the same heterogeneous dynamic. The steep red line refers to the highest-educated respondents – advanced degree holders. Mirroring the income group interaction, we deduce from this model that the association between social mobility overestimation and stating that the government spends too much rather than too little on education is strongest among the most advantaged SES

group. Specifically, the significant interaction between overestimation of relative mobility rank and education level is driven by those who hold a master's degree or more. The significant class position interactions are in line with the Meltzer-Richard hypothesis, which implies that higher class (income) individuals are indeed less supportive of redistributive and overall government spending.

[Figure 3 about here]

4.4 Can People Change Their Attitudes Toward Educational Investment?

We next present the results of the information treatment that about half of the respondents underwent. To summarize, we find little evidence to support the idea that learning about society's social mobility reality can change Americans' attitudes toward government spending on education and whether parents should pay for children's college education. When including all control variables in the models, none of the treatment estimates are statistically significant at the 5% level (see appendix Table E). However, the information treatments do alter attitude toward *how much* respondents are willing to contribute to their children's college tuition (in percentages). Such difference implies while the factual information cannot change people's general attitudes toward government and family responsibilities, it can shift the degree of support they are willing to provide to the next generation.

Specifically, Table 2 shows the results of OLS and quantile regressions. We compare the coefficients at the 10th, 25th, 50th (median), 75th, 90th percentile, and the mean (OLS) of the outcome distribution. We find that, for bottom-to-top mobility overestimation, treatment effects are not statistically significant at median and mean (models 3 and 4). However, the information treatment seems to increase the share of tuition that respondents are willing to cover at the lower-end of the outcome distribution. We do not observe any treatment heterogeneity across the level of overestimation of bottom-to-top mobility.

Regarding relative mobility overestimation, displayed in the bottom panel of Table 2,

we find significant main effects of the information treatment, as well as its interactions with misperceiving society's relative social mobility rank (i.e. overestimation) at the mean, the lower-end, and the upper-end of the outcome distribution.¹² We visualize these findings in Figure 4.

[Table 2 about here]

To aid conceptual interpretation, Figure 4 graphically shows that factual information about social mobility significantly increases investment willingness among respondents who are overestimating social fluidity in the United States at the mean, the 10th, and the 25th percentile of the outcome distribution. It also significantly decreases investment willingness among the most underestimating respondents at the 90th percentile. Compared to the mean, the magnitudes of the treatment effects are larger at *both* ends of the outcome distribution. Echoing results from bottom-to-top mobility, we also notice that knowledge of relative mobility reality generally increases the share of college tuition parents want to contribute among those who show low educational investment willingness (e.g., P10 and P25). The effect size – the change in amount of the contribution – is much larger among those who are overestimating social mobility in the United States to a larger degree (4.3 to 6.2 percentage points additional increase by one more rank of overestimation). In contrast, the information treatment decreases the intended level of financial support to college-attending children among respondents who exhibit high educational investment willingness (e.g., P90). Such decrease seems to be driven by individuals who underestimate relative mobility. Graphs in Figure 4 clearly demonstrate that the polarizing effect of the information treatment is most obvious among respondents who show very low or very high educational investment willingness.

[Figure 4 about here]

¹²We report qualitatively similar but less robust results in wave 2 (see appendix Table F).

5 Conclusions and Discussion

In this study, we investigate how perceptions of social mobility affect attitudes toward responsibility of educational investment in the context of rising college costs in the United States. Using data from a nationally representative online survey and a novel study design to measure perceived mobility, we reveal that (1) net of a range of individual-level factors, overestimating the intergenerational mobility in the United States is associated with a lower demand for government spending on education and overall more willingness to provide financial support for children's college tuition; (2) these associations turn out to be stronger among higher socioeconomic status groups, which is consistent with both status maintenance theory and the Meltzer-Richard hypothesis; (3) when confronted with factual information, individuals who overestimate relative mobility in the United States intend to contribute an even larger amount, and vice versa. This suggests that information treatments about social mobility do not necessarily narrow existing gaps in educational investment willingness between families; in fact, they might exacerbate such gaps.

It is particularly noteworthy that SES heterogeneity in the relationship between perceived social mobility and attitude toward government educational investment operates via overestimation of relative mobility rather than bottom-to-top mobility. In other words, individuals with higher incomes and educational credentials are more inclined to believe the government spends too much on education if they overestimate relative social mobility. This finding is best understood in context of relative risk aversion theory. [Breen and Goldthorpe \(1997\)](#) argued that while individuals may be equally motivated to invest in offspring's education, the reference point is dependent on the class position of the family. The higher the current class position, the more ambitious educational attainment goals will have to be in order to avoid a relative step down on the socioeconomic ladder in the next generation. This means that individuals who are *already* in middle- and upper-class

positions are much more concerned with society's level of relative mobility rather than being able to move from the bottom to the top.

One caveat to the current study is that our measures of attitudes toward government spending and family responsibility are not exact contrasts. The General Social Survey-based question regarding government spending refers to the educational system in general, while our supplementary survey questions concerned with family responsibility of education costs specify college tuition. We believe this leads to an underestimation of the baseline support for government spending because the reason of US citizens' support for education is primarily rooted in the popularity of institutions that promote equality of opportunity. This quality is often uniquely assigned to higher education. The GSS could consider a question that addresses government spending on higher education to better reflect concerns in today's societal debates.

The results of our study have a few broader implications that require some elaboration. Through exploration of the impact of perceived social mobility – a subjective view on the opportunity structure – on attitudes, we make the case for inclusion of this measure in rational action theory (RAT)-based research concerned with educational outcomes. RAT research is typically focused on observed behavior, such as educational attainment and monetary investments (and actual earnings), as well as individuals' expectations regarding future educational attainment and corresponding monetary rewards. We argue that in absence of knowledge about the true opportunity structure, educational decisions and opinions are partially shaped by *perceptions* of social mobility. Our study demonstrates that perceptions of social mobility – in particular overestimation – shape attitudes toward who and to what extent the government and families are responsible for the costs of higher education. Future research may therefore incorporate measures of perceived social mobility in a comprehensive model of observed behaviors, such as college attendance and the level of tuition paid.

Furthermore, the study is conducted in a context of historically high college tuition and a student loan crisis. National political discussions about education have been concerned with plans for tuition free public college and student loan forgiveness. Leaving aside the latest political polls on these issues, our results suggest that although Americans are greatly supportive of government spending on education, there is also substantial division depending on one's perceived mobility level and social class. Based on our results, we predict that most push-back against free public college and loan forgiveness comes from people who overestimate social mobility and, among these, the most affluent in terms of education and earnings. While such a dynamic regarding social mobility perception is novel, the Meltzer-Richard hypothesis has long implied class heterogeneity in support for government redistribution.

Finally, to the extent that our treatment study is relevant for educational policy, we argue that providing more mobility information tends to yield polarization in attitudes regarding the role of families in contributing to education costs. This conclusion is in agreement with studies that have shown how exposure to opposing facts or views could lead to even greater attitude polarization rather than convergence (e.g., [Bail et al., 2018](#)). One possible explanation for polarization is that individuals often only trust information that corresponds to their prior belief. Opposing information reinforces individuals' prior beliefs, if they change at all. This may be bad news in some cases because a strong underestimation of the opportunity structure could lead to some groups being unnecessarily discouraged to attend college, to pay the tuition, or take out a loan. Future research should examine whether some social mobility beliefs indeed lead to missed educational opportunities (in behavior), as well as the class heterogeneity therein.

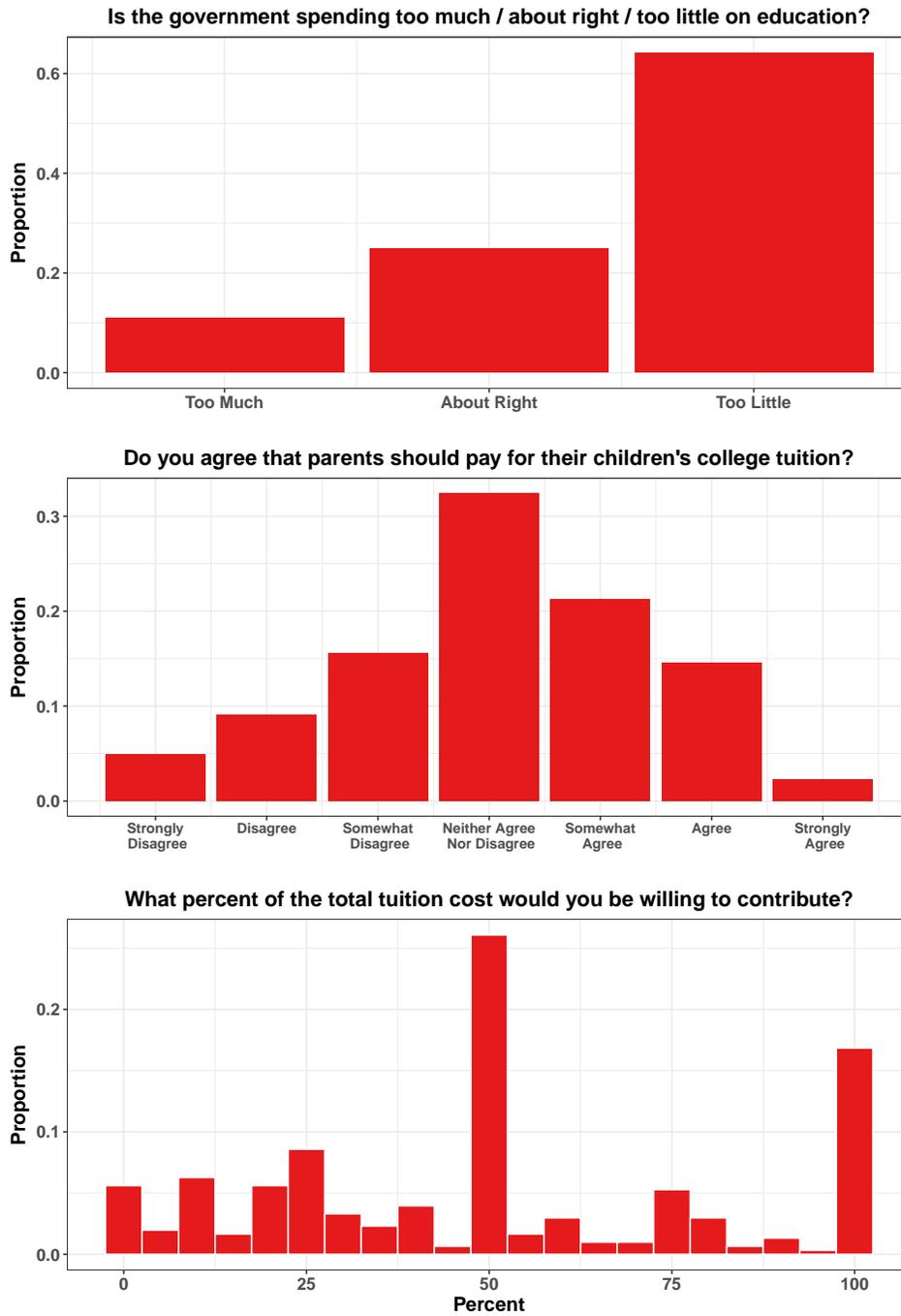


Figure 1. The Distribution of Respondents' Attitudes Toward Educational Investment (Government Spending and Family Support)
Note: Plots are based on statistics in the control group.

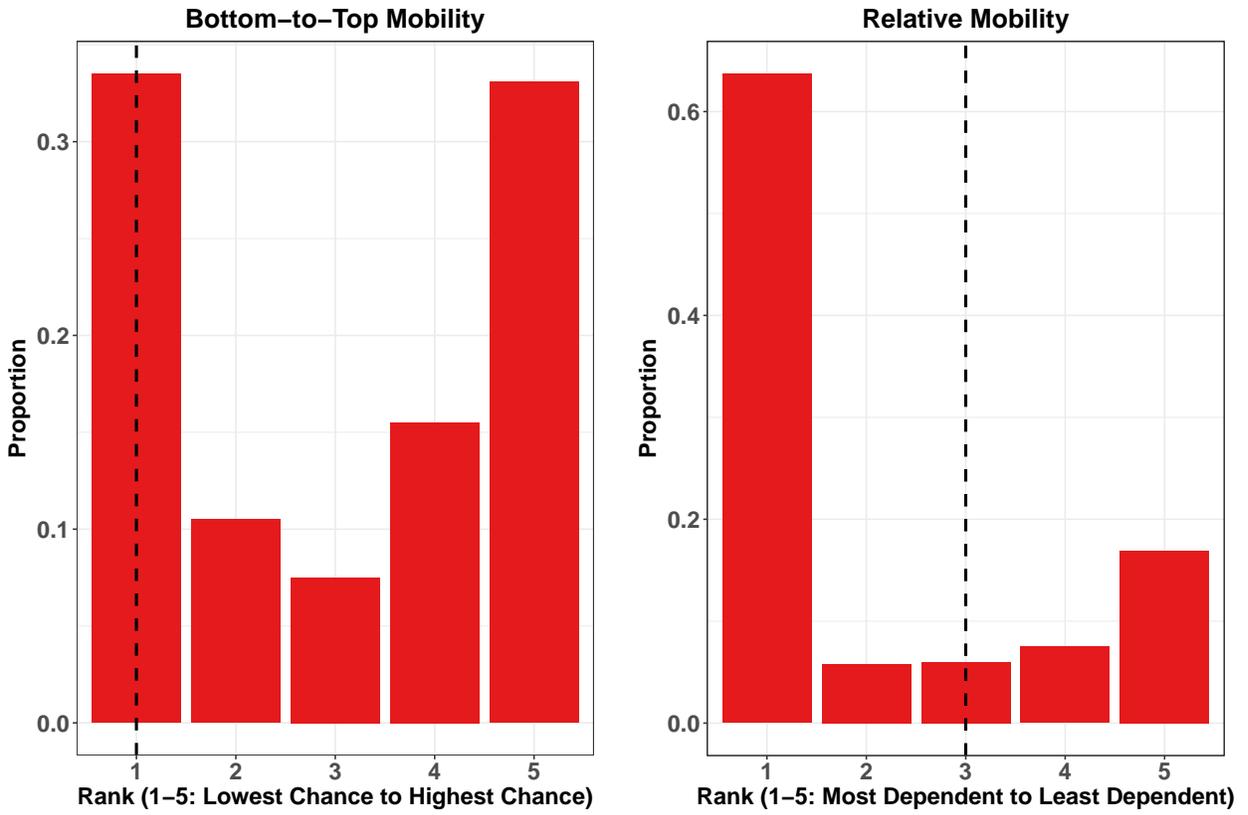


Figure 2. The Distribution of Respondents' Ranking for the US Relative to Selected European Countries by Social Mobility Measure
Note: The dashed lines represent the true ranks of the US.

Table 1. The Associations Between Perceived Social Mobility and Attitudes Toward Educational Investment (Government Spending and Family Support)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
<i>Key Independent Variable</i>	Full Sample	Full Sample	Parents Only	Full Sample	Full Sample	Parents Only
<i>Dependent Variable: Government Spending</i> (1 = Too Much; 2 = About Right; 3 = Too Little)						
Overestimation (Bottom-to-Top Mobility)	-0.049** (0.017)	-0.049** (0.017)	-0.037 (0.024)			
Overestimation (Relative Mobility)				-0.141*** (0.017)	-0.106*** (0.017)	-0.079*** (0.023)
Controls	No	Yes	Yes	No	Yes	Yes
N	584	584	328	573	573	345
<i>Dependent Variable: Parents Should Pay</i> (1 – 7: Strongly Disagree – Strongly Agree)						
Overestimation (Bottom-to-Top Mobility)	0.064 (0.035)	0.041 (0.036)	0.094 (0.049)			
Overestimation (Relative Mobility)				0.108** (0.038)	0.035 (0.040)	-0.069 (0.052)
Controls	No	Yes	Yes	No	Yes	Yes
N	588	588	330	576	576	347
<i>Dependent Variable:</i> Percent Tuition Willing to Contribute (0 – 100)						
Overestimation (Bottom-to-Top Mobility)	1.236 (0.785)	1.298 (0.780)	2.694** (0.971)			
Overestimation (Relative Mobility)				1.796* (0.740)	0.915 (0.789)	0.846 (1.054)
Controls	No	Yes	Yes	No	Yes	Yes
N	574	574	325	549	549	328

Notes: *** p<0.001, ** p<0.01, * p<0.05;

Overestimation = perceived rank – actual rank for the US, higher value = more overestimation;

"Parents only" = a subsample of respondents who actually have children;

Control variables include treatment status, gender, age, race and ethnicity, education level, marital status, parental status, employment status, income level, political ideology, and region;

Sample sizes differ in the three panels only due to missing values in the dependent variables;

Sampling weights in wave 1 are applied.

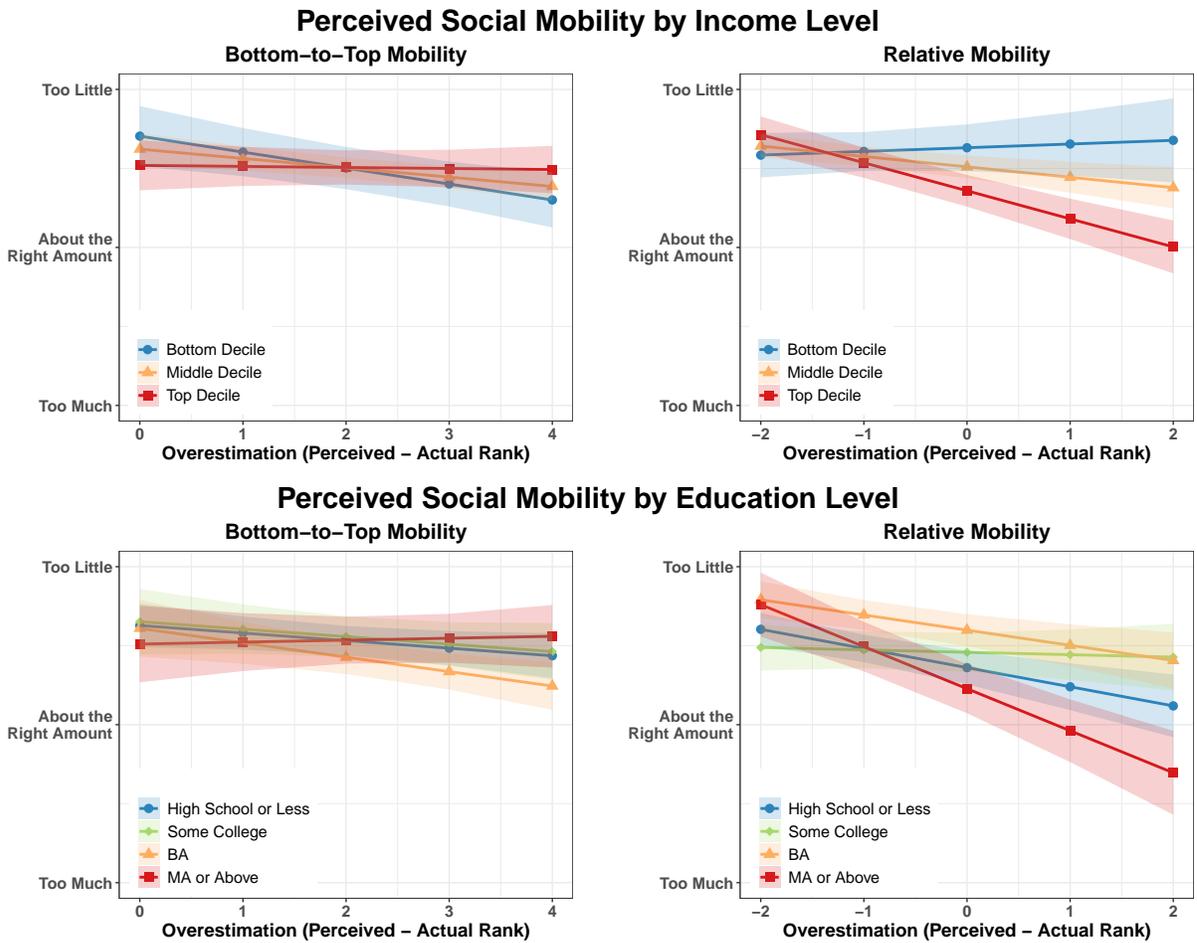


Figure 3. Predicted Attitude Toward Government Educational Investment by Perceived Social Mobility and SES (Income & Education)

Notes: Samples and control variables are the same as those in Model (2) and Model (5) in Table 1;

Shaded areas represent 95% confidence intervals.

Table 2. Information Treatment Interactions in the Association Between Perceived Social Mobility and Percent Children’s Tuition Willing to Contribute

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
<i>Key Independent Variables</i>	P10	P25	Median	Mean	P75	P90
<i>Dependent Variable: Percent Tuition Willing to Contribute (0 - 100)</i>						
Overestimation (Bottom-to-Top Mobility)	2.935** (0.917)	3.300* (1.569)	0.882 (1.948)	1.159 (1.080)	0.362 (1.869)	0.616 (1.840)
Treatment	5.361 (3.237)	11.690* (5.278)	-3.136 (7.053)	-0.974 (3.968)	-12.470 (7.540)	-8.122 (7.654)
Overestimation × Treatment (Bottom-to-Top Mobility)	0.100 (1.078)	-2.864 (2.321)	0.315 (2.396)	0.271 (1.450)	2.744 (2.442)	0.557 (3.191)
N	574					
<i>Dependent Variable: Percent Tuition Willing to Contribute (0 - 100)</i>						
Overestimation (Relative Mobility)	0.180 (1.650)	-2.325* (1.128)	-0.119 (1.392)	-0.762 (1.067)	-1.213 (1.955)	-0.995 (1.162)
Treatment	5.709 (3.932)	10.058*** (2.689)	0.741 (3.464)	2.266 (2.652)	-5.225 (4.699)	-8.688** (2.987)
Overestimation × Treatment (Relative Mobility)	4.343* (2.038)	6.192*** (1.612)	0.308 (1.844)	3.403* (1.465)	2.184 (2.383)	4.188* (1.700)
N	549					

Notes: *** p<0.001, ** p<0.01, * p<0.05;

Overestimation = perceived rank – actual rank for the US, higher value = more overestimation;

Model 1, 2, 3, 5, and 6 are estimated by quantile regressions, while model 4 is estimated by OLS regression;

All models include control variables, including gender, age, race and ethnicity, education level, marital status, parental status, employment status, income level, political ideology, and region;

Sampling weights in wave 1 are applied.

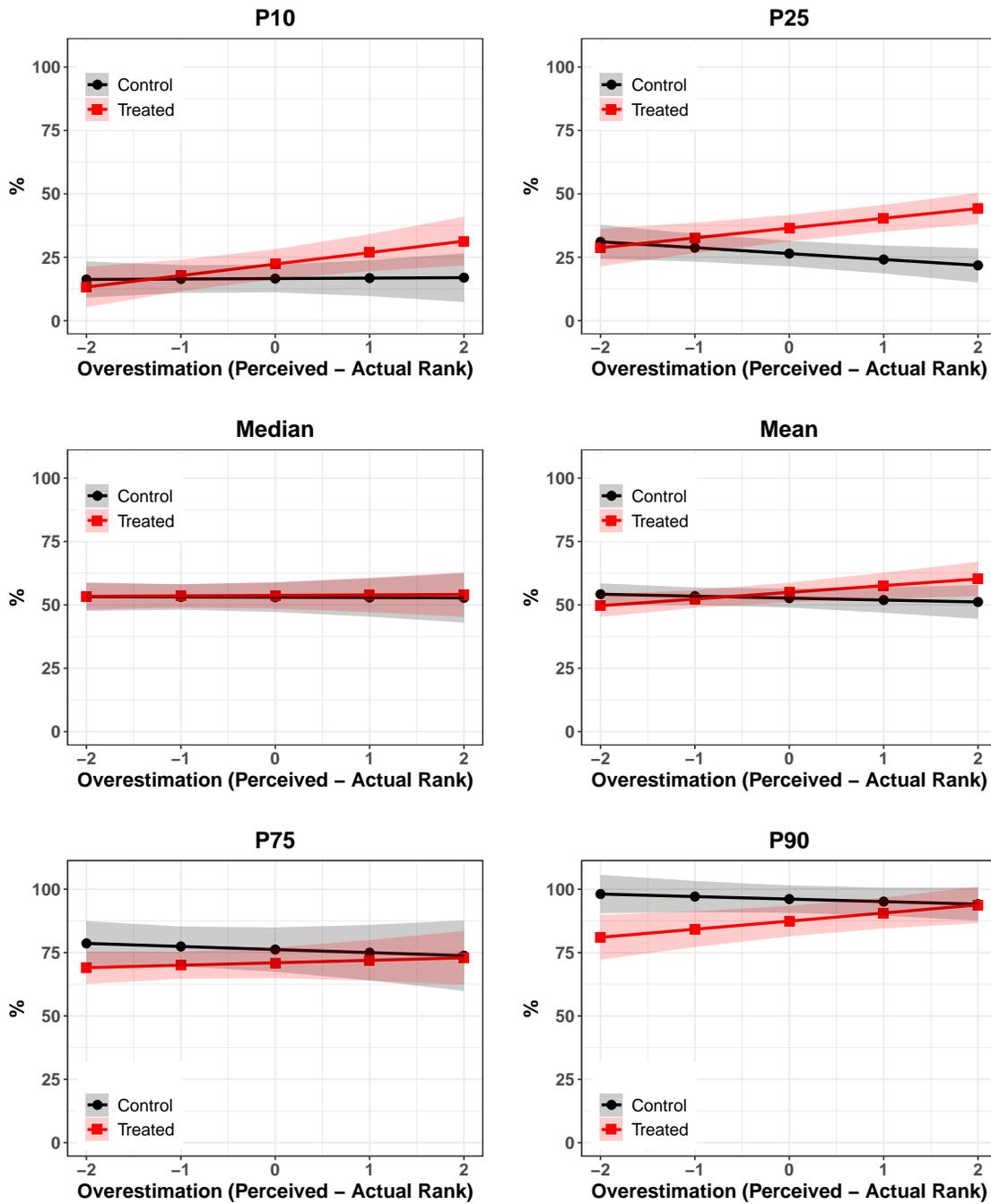


Figure 4. Predicted Attitude Toward Percent Children’s Tuition Parents Willing to Contribute by Perceived Social Mobility and Treatment Status
Notes: Social mobility is measured as relative mobility;
 Predictions are based on coefficients in the bottom panel of Table 2;
 Shaded areas represent 95% confidence intervals.

Appendix

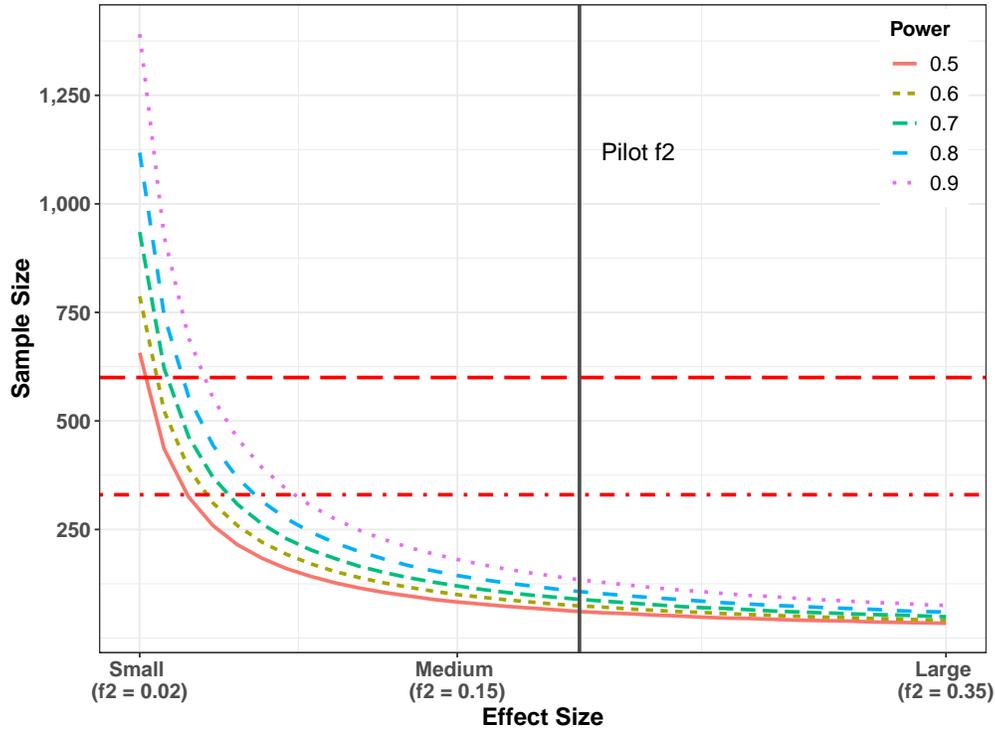


Figure A. Sample Size Estimation for Linear Models

Notes: Significance level = 0.05 (two-tailed);

The red long dashed horizontal line represents the sample size ($N \approx 580$) in one of the two wording groups;

The red dash-dotted horizontal line represents the sample size ($N \approx 330$) for parents only in one of the two wording groups;

$f^2 = \frac{R^2_{AB} - R^2_A}{1 - R^2_{AB}}$, where R^2_A = variance accounted for in the population by variable set A (predictors of interest); R^2_{AB} = variance accounted for in the population by variable set A and B (covariates) together; Cohen (2013) suggests f^2 values of 0.02, 0.15, and 0.35 represent small, medium, and large effect sizes;

According to pilot studies on MTurks, most our f^2 values are around 0.2. In other words, our current sample sizes should be sufficient to detect any significant effects around this range. However, if the effect size turns out to be smaller than in pilot studies, we might not have enough power to detect it, especially in the "parents only" subsample;

We conducted the power analysis based on a model with full controls.

Table A. Descriptive Statistics

	Bottom-to-Top Mobility				Relative Mobility			
	Mean	SD	Min	Max	Mean	SD	Min	Max
<i>Dependent Variables</i>								
Government Spending	2.49	0.69	1	3	2.54	0.70	1	3
Government Spending (Wave 2)	2.46	0.68	1	3	2.62	0.63	1	3
Parents Should Pay	4.14	1.47	1	7	4.04	1.47	1	7
Parents Should Pay (Wave 2)	4.09	1.49	1	7	4.11	1.43	1	7
Percent Contribute	48.86	31.89	0	100	52.84	27.92	0	100
Percent Contribute (Wave 2)	51.55	31.17	0	100	54.13	30.39	0	100
<i>Key Independent Variables</i>								
Overestimation (Perceived - Actual Rank)	2.10	1.72	0	4	-0.82	1.61	-2	2
Treatment (Receive Factual Information)	0.52	0.50	0	1	0.49	0.50	0	1
<i>Control Variables</i>								
Female	0.52	0.50	0	1	0.51	0.50	0	1
Age	46.94	17.19	19	88	47.25	17.10	18	88
Race and Ethnicity								
– Asian	0.04	0.20	0	1	0.04	0.19	0	1
– Black	0.14	0.35	0	1	0.09	0.28	0	1
– Hispanic	0.13	0.34	0	1	0.20	0.40	0	1
– White	0.64	0.48	0	1	0.64	0.48	0	1
– Other	0.05	0.21	0	1	0.04	0.19	0	1
Education Level								
– High School or Less	0.40	0.49	0	1	0.36	0.48	0	1
– Some College	0.18	0.38	0	1	0.19	0.40	0	1
– BA or Equivalent	0.27	0.44	0	1	0.31	0.46	0	1
– MA or Above	0.16	0.36	0	1	0.13	0.34	0	1
Currently Married	0.55	0.50	0	1	0.50	0.50	0	1
Having Kids	0.55	0.50	0	1	0.61	0.49	0	1
Currently Employed	0.62	0.49	0	1	0.62	0.48	0	1
Income Level								
– Less than \$30,000	0.25	0.43	0	1	0.18	0.39	0	1
– \$30,000 to \$74,999	0.38	0.48	0	1	0.39	0.49	0	1
– \$75,000 to \$124,999	0.23	0.42	0	1	0.28	0.45	0	1
– \$125,000 or More	0.15	0.36	0	1	0.15	0.35	0	1
Political Ideology								
– Democrat	0.19	0.39	0	1	0.26	0.44	0	1
– Independent	0.52	0.50	0	1	0.48	0.50	0	1
– Republican	0.29	0.46	0	1	0.26	0.44	0	1
Region								
– Northeast	0.19	0.39	0	1	0.17	0.37	0	1
– Midwest	0.19	0.39	0	1	0.23	0.42	0	1
– South	0.40	0.49	0	1	0.36	0.48	0	1
– West	0.22	0.42	0	1	0.25	0.43	0	1
N				589				576

Notes: Overestimation = perceived rank – actual rank for the US, higher value = more overestimation; Sampling weights in wave 1 and wave 2 are applied, respectively.

Table B. Differences Between Treatment Group and Control Group in Terms of Control Variables

	Bottom-to-Top Mobility						Relative Mobility					
	Treatment Group		Control Group		Difference	SE	Treatment Group		Control Group		Difference	SE
	Mean	SD	Mean	SD			Mean	SD	Mean	SD		
Female	0.48	0.50	0.55	0.50	-0.07	0.04	0.48	0.50	0.54	0.50	-0.06	0.04
Age	47.07	17.66	46.79	16.66	0.28	1.42	48.45	16.35	46.09	17.71	2.36	1.42
Race and Ethnicity												
– Asian	0.05	0.22	0.03	0.17	0.02	0.02	0.03	0.18	0.05	0.21	-0.01	0.02
– Black	0.13	0.33	0.15	0.36	-0.03	0.03	0.10	0.30	0.08	0.26	0.02	0.02
– Hispanic	0.12	0.32	0.15	0.36	-0.03	0.03	0.21	0.41	0.19	0.39	0.02	0.03
– White	0.67	0.47	0.60	0.49	0.07	0.04	0.62	0.48	0.65	0.48	-0.03	0.04
– Other	0.03	0.18	0.07	0.25	-0.03	0.02	0.04	0.19	0.04	0.19	0.00	0.02
Education Level												
– High School or Less	0.42	0.49	0.38	0.49	0.04	0.04	0.38	0.49	0.35	0.48	0.03	0.04
– Some College	0.17	0.38	0.18	0.38	-0.01	0.03	0.19	0.39	0.20	0.40	0.00	0.03
– BA or Equivalent	0.25	0.43	0.28	0.45	-0.03	0.04	0.30	0.46	0.32	0.47	-0.02	0.04
– MA or Above	0.15	0.36	0.16	0.37	-0.01	0.03	0.13	0.33	0.14	0.34	-0.01	0.03
Currently Married	0.55	0.50	0.56	0.50	-0.01	0.04	0.48	0.50	0.53	0.50	-0.05	0.04
Having Kids	0.57	0.49	0.52	0.50	0.05	0.04	0.63	0.48	0.58	0.49	0.05	0.04
Currently Employed	0.57	0.49	0.66	0.47	-0.09	0.04*	0.64	0.48	0.61	0.49	0.03	0.04
Income Level												
– Less than \$30,000	0.24	0.43	0.25	0.44	-0.01	0.04	0.17	0.37	0.20	0.40	-0.03	0.03
– \$30,000 to \$74,999	0.38	0.49	0.37	0.48	0.01	0.04	0.38	0.49	0.39	0.49	-0.01	0.04
– \$75,000 to \$124,999	0.23	0.42	0.22	0.42	0.00	0.03	0.31	0.46	0.26	0.44	0.04	0.04
– \$125,000 or More	0.15	0.36	0.15	0.36	0.00	0.03	0.14	0.35	0.15	0.36	-0.01	0.03
Political Ideology												
– Democrat	0.20	0.40	0.17	0.37	0.04	0.03	0.27	0.45	0.25	0.44	0.02	0.04
– Independent	0.50	0.50	0.54	0.50	-0.03	0.04	0.45	0.50	0.50	0.50	-0.05	0.04
– Republican	0.29	0.45	0.30	0.46	0.00	0.04	0.27	0.45	0.24	0.43	0.03	0.04
Region												
– Northeast	0.19	0.40	0.19	0.39	0.00	0.03	0.16	0.36	0.18	0.38	-0.02	0.03
– Midwest	0.17	0.37	0.20	0.40	-0.04	0.03	0.23	0.42	0.23	0.42	0.00	0.03
– South	0.45	0.50	0.35	0.48	0.10	0.04*	0.35	0.48	0.36	0.48	0.00	0.04
– West	0.19	0.39	0.26	0.44	-0.07	0.03	0.26	0.44	0.24	0.43	0.02	0.04
N	292		297				285		291			

Notes: *** p<0.001, ** p<0.01, * p<0.05;

Two-tailed t tests compare differences between treatment group and control group;

The significant mean differences by treatment status for "currently employed" and the south region dummy in the "bottom-to-top" wording group are likely due to randomness introduced by a relatively small sample size.

Table C. Control Variable Characteristics in the Analytical Sample and GSS 2018

	Analytical Sample				GSS 2018			
	Mean	SD	Min	Max	Mean	SD	Min	Max
Female	0.51	0.50	0	1	0.54	0.50	0	1
Age	47.09	17.14	18	88	46.67	17.37	18	89
Race and Ethnicity								
– Asian ⁽¹⁾	0.04	0.20	0	1	NA	NA	NA	NA
– Black	0.11	0.32	0	1	0.14	0.35	0	1
– Hispanic	0.16	0.37	0	1	0.16	0.37	0	1
– White	0.64	0.48	0	1	0.65	0.48	0	1
– Other	0.04	0.20	0	1	0.04	0.20	0	1
Education Level								
– High School or Less	0.38	0.49	0	1	0.39	0.49	0	1
– Some College	0.18	0.39	0	1	0.21	0.41	0	1
– BA or Equivalent	0.29	0.45	0	1	0.25	0.43	0	1
– MA or Above	0.14	0.35	0	1	0.15	0.35	0	1
Currently Married	0.53	0.50	0	1	0.50	0.50	0	1
Having Kids ⁽²⁾	0.57	0.49	0	1	0.72	0.45	0	1
Currently Employed ⁽³⁾	0.62	0.49	0	1	0.73	0.45	0	1
Income Level								
– Less than \$30,000	0.22	0.41	0	1	0.33	0.47	0	1
– \$30,000 to \$74,999	0.38	0.49	0	1	0.41	0.49	0	1
– \$75,000 to \$124,999	0.25	0.43	0	1	0.16	0.36	0	1
– \$125,000 or More	0.15	0.36	0	1	0.10	0.30	0	1
Political Ideology ⁽⁴⁾								
– Liberal	0.22	0.42	0	1	0.44	0.50	0	1
– Independent	0.50	0.50	0	1	0.20	0.40	0	1
– Conservative	0.28	0.45	0	1	0.36	0.48	0	1
Region								
– Northeast	0.18	0.39	0	1	0.14	0.35	0	1
– Midwest	0.21	0.40	0	1	0.22	0.41	0	1
– South	0.38	0.48	0	1	0.40	0.49	0	1
– West	0.24	0.42	0	1	0.24	0.43	0	1
N		1,165				2,113		

Notes: Control variables in the analytical sample show similar patterns as those in GSS 2018, and the four major disparities marked in the table are largely due to the different measurements in the two data sources;

(1) GSS 2018 does not single out Asians in its race and ethnicity measures;

(2) In terms of parental status, the analytical sample uses the question "Do you have any biological or adopted children that you make financial decision for", while in GSS 2018, it uses "How many children have you ever had? (including all that were born alive and any from a previous marriage);"

(3) As for employment status, the analytical sample uses "Are you working as a paid employee or self-employed?", while in GSS 2018, it uses "Did you work either full-time or part-time last year?"

(4) GSS 2018 does not have a direct measure of political ideology, so we recoded the GSS variable "party identification" ("democrat" as "liberal", "republican" as "conservative", etc.) to make a crude comparison.

Sampling weights are applied.

What percent of the total tuition cost would you be willing to contribute?

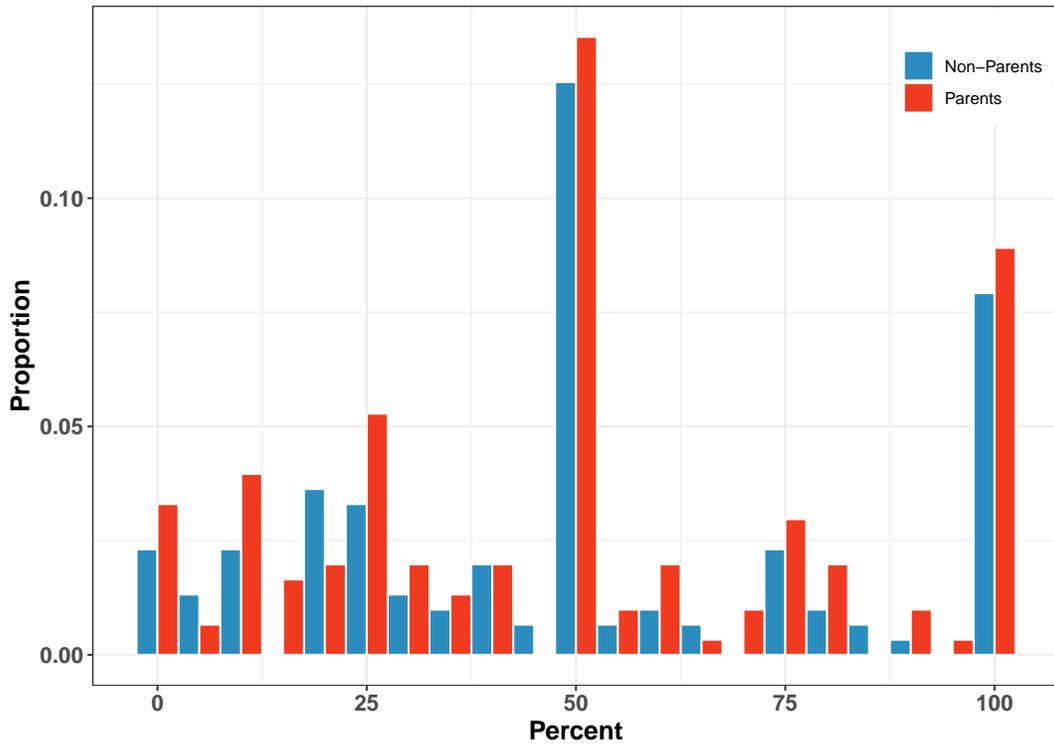


Figure B. The Distribution of Respondents' Attitude Toward Educational Investment (Percent Tuition Willing to Contribute), by Parental Status
Note: The Plot is based on statistics in the control group.

Table D. The Associations Between Perceived Social Mobility and Attitudes Toward Government Spending on Education (OLS vs. Ordered Logit)

	<i>Dependent Variable: Government Spending</i> (1 = Too Much; 2 = About Right; 3 = Too Little)					
	Full Sample		Full Sample		Parent Only	
	OLS	Ologit	OLS	Ologit	OLS	Ologit
Overestimation (Bottom-to-Top Mobility)	-0.049** (0.017)	-0.137** (0.049)	-0.049** (0.017)	-0.190*** (0.057)	-0.037 (0.024)	-0.129 (0.077)
Control Variables	No	No	Yes	Yes	Yes	Yes
N	584		584		328	
Overestimation (Relative Mobility)	-0.141*** (0.017)	-0.412*** (0.056)	-0.106*** (0.017)	-0.369*** (0.065)	-0.079*** (0.023)	-0.256** (0.087)
Control Variables	No	No	Yes	Yes	Yes	Yes
N	573		573		345	

Notes: *** p<0.001, ** p<0.01, * p<0.05;

Overestimation = perceived rank – actual rank for the US, higher value = more overestimation;

"Parent only" = a subsample of respondents who actually have children;

Brant test statistics, p values always much larger than 0.05, suggest that we cannot reject the null hypothesis that the parallel regression assumption holds, so ordered logistic regressions are used;

Control variables include treatment status, gender, age, race and ethnicity, education level, marital status, parental status, employment status, income level, political ideology, and region;

Sampling weights in wave 1 are applied.

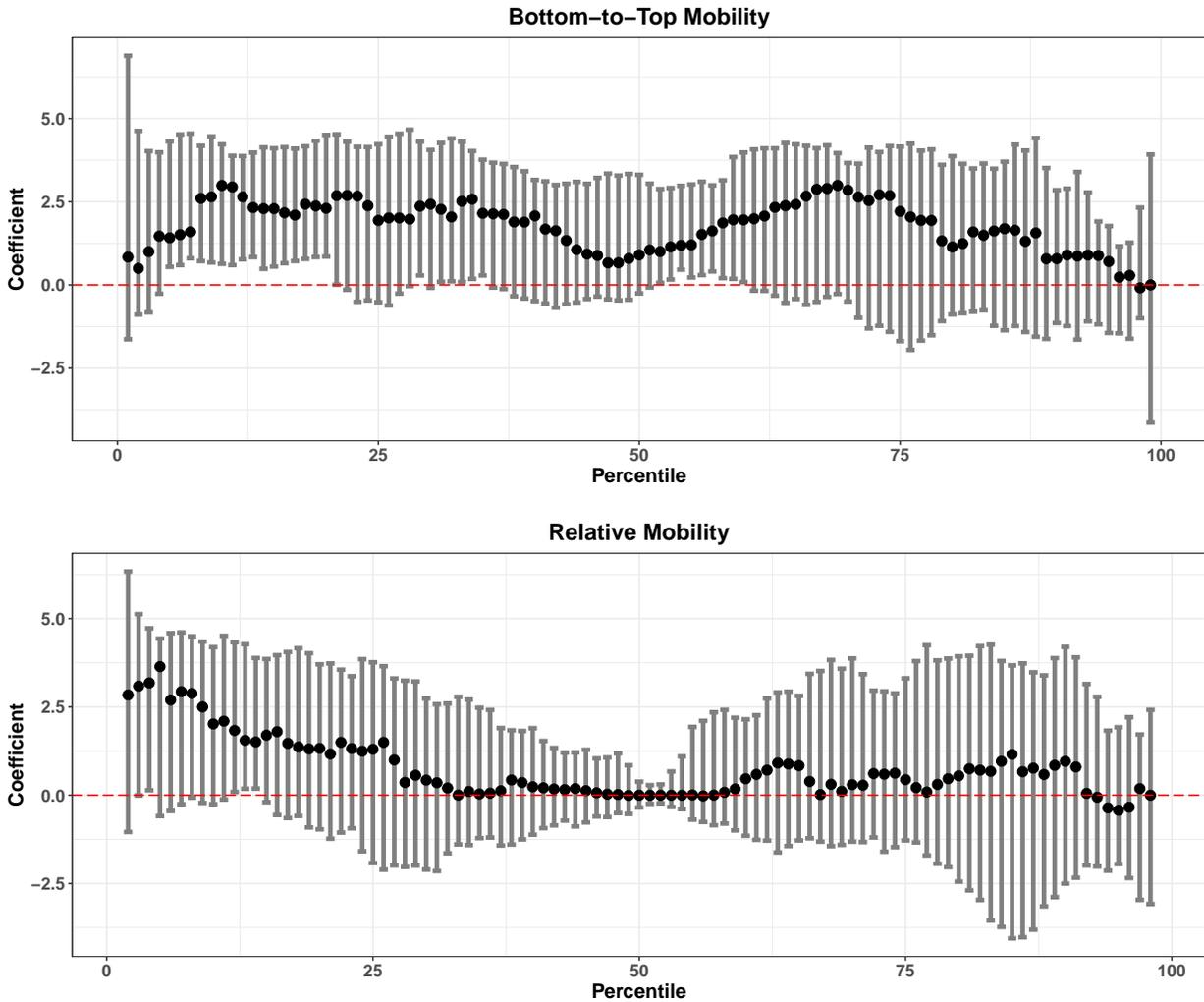


Figure C. Coefficients Obtained by Quantile Regressions, by Percentile and Social Mobility Measure

Notes: Samples and control variables are the same as those in Model (2) and Model (5) in Table 1;

Error bars represent 95% confidence intervals.

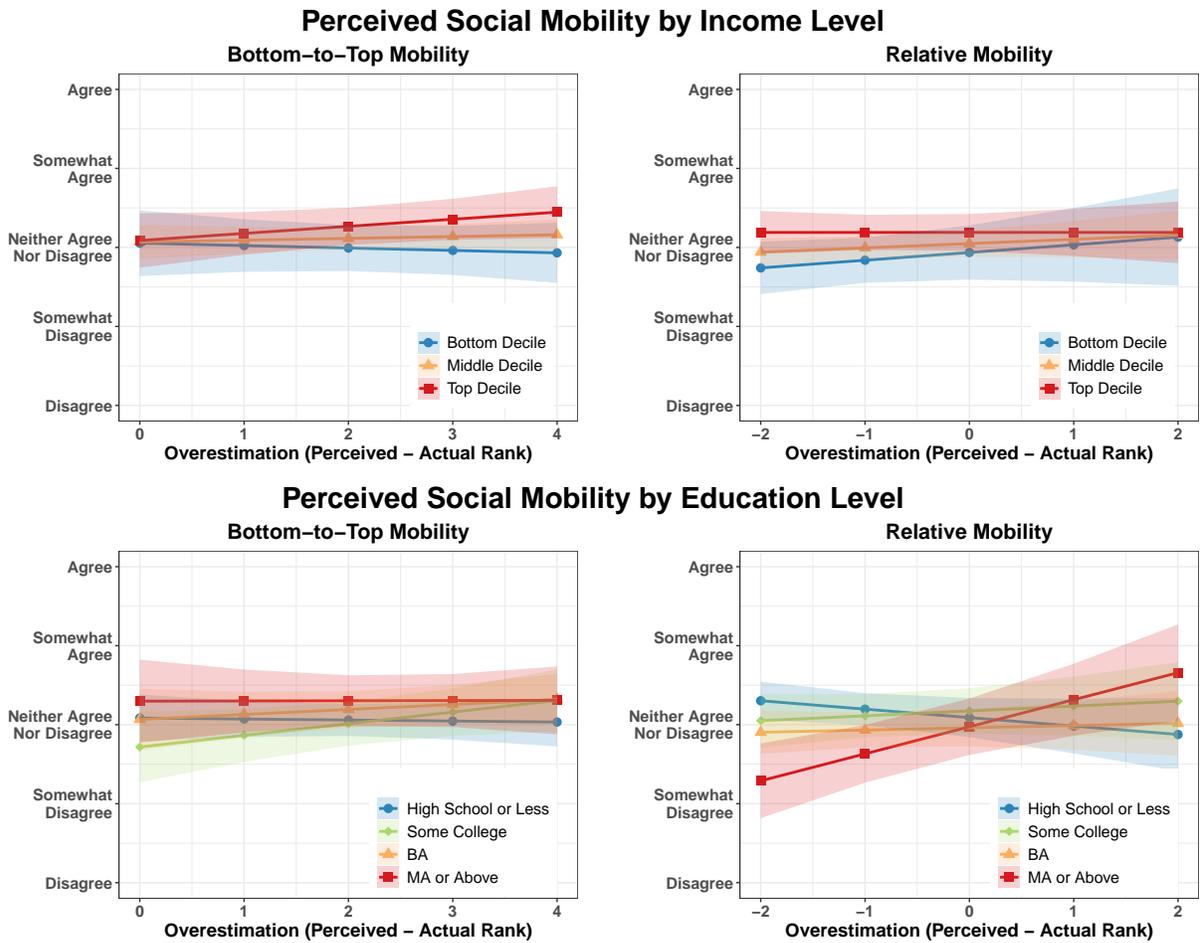


Figure D. Predicted Attitude Toward Family Educational Investment by Perceived Social Mobility and SES (Income & Education)

Notes: Samples and control variables are the same as those in Model (2) and Model (5) in Table 1;

Shaded areas represent 95% confidence intervals.

Table E. The Interactions Between Treatment and Perceived Social Mobility on Attitudes Toward Educational Investment (Government Spending and Family Support)

<i>Key Independent Variable</i>	Model 1	Model 2	Model 3	Model 4
	Wave 1	Wave 2	Wave 1	Wave 2
<i>Dependent Variable: Government Spending</i> (1 = Too Much; 2 = About Right; 3 = Too Little)				
Overestimation (Bottom-to-Top Mobility)	-0.054* (0.024)	-0.017 (0.025)		
Overestimation (Relative Mobility)			-0.092*** (0.024)	-0.099*** (0.024)
Treatment	0.074 (0.086)	0.168 (0.091)	0.054 (0.058)	-0.009 (0.061)
Overestimation × Treatment (Bottom-to-Top Mobility)	0.010 (0.031)	-0.024 (0.033)		
Overestimation × Treatment (Relative Mobility)			-0.027 (0.032)	0.018 (0.034)
N	584	502	573	470
<i>Dependent Variable: Parents Should Pay</i> (1 – 7: Strongly Disagree – Strongly Agree)				
Overestimation (Bottom-to-Top Mobility)	0.070 (0.051)	0.064 (0.055)		
Overestimation (Relative Mobility)			0.017 (0.054)	-0.006 (0.059)
Treatment	-0.181 (0.185)	-0.115 (0.198)	-0.156 (0.135)	0.004 (0.149)
Overestimation × Treatment (Bottom-to-Top Mobility)	-0.056 (0.068)	-0.007 (0.073)		
Overestimation × Treatment (Relative Mobility)			0.037 (0.075)	0.024 (0.083)
N	588	503	576	472

Notes: *** p<0.001, ** p<0.01, * p<0.05;

Overestimation = perceived rank – actual rank for the US, higher value = more overestimation;
All models include control variables, including gender, age, race and ethnicity, education level,
marital status, parental status, employment status, income level, political ideology, and region;
Sampling weights in wave 1 and wave 2 are applied, respectively.

Table F. Information Treatment Interactions in the Association Between Perceived Social Mobility and Percent Children’s Tuition Willing to Contribute One Week Later

	Model 1 P10	Model 2 P25	Model 3 Median	Model 4 Mean	Model 5 P75	Model 6 P90
Key Independent Variable Measure 1: Bottom-to-Top Mobility						
Overestimation	1.796* (0.784)	3.704** (1.188)	-0.560 (1.736)	0.573 (1.152)	0.112 (1.986)	0.828 (1.886)
Treatment	-2.045 (2.727)	2.713 (5.021)	-6.253 (7.062)	-1.066 (4.197)	-4.796 (6.475)	-5.749 (8.113)
Overestimation × Treatment	0.378 (1.102)	0.234 (2.011)	4.274 (2.241)	2.341 (1.538)	4.946 (2.812)	2.030 (3.142)
N	495					
Key Independent Variable Measure 2: Relative Mobility						
Overestimation	0.476 (1.549)	-0.377 (1.646)	-1.255 (1.601)	-0.176 (1.292)	-1.379 (1.616)	-0.618 (1.682)
Treatment	5.026 (4.167)	0.222 (4.628)	3.730 (3.819)	0.120 (3.247)	1.247 (3.374)	-5.179 (5.201)
Overestimation × Treatment	3.570 (2.159)	3.756 (2.547)	4.282 (2.194)	2.544 (1.794)	4.193* (1.837)	2.881 (2.821)
N	455					

Notes: *** p<0.001, ** p<0.01, * p<0.05;

Overestimation = perceived rank – actual rank for the US, higher value = more overestimation;
 Model 1, 2, 3, 5, and 6 are estimated by quantile regressions, while model 4 is estimated by OLS regression;
 All models include control variables, including gender, age, race and ethnicity, education level, marital status, parental status, employment status, income level, political ideology, and region;
 Sampling weights in wave 2 are applied.

Survey Instruments¹³

A. Perception of Intergenerational Mobility in the United States Relative to Selected European Countries

(1) **Wording 1:** Intergenerational mobility measured as bottom-to-top upward mobility

Please answer the following questions based on your perceptions.

Rank the following countries based on the chance for children who come from the poorest families to move up to the richest income group once they grow up. (Rank 1 - Rank 5: from the lowest chance to the highest chance)

Please drag the country names up or down to represent the order in your mind. [Note: The country names appear in a random order on the screen.]

United States

United Kingdom

France

Italy

Sweden

(2) **Wording 2:** Intergenerational mobility measured as relative mobility

Please answer the following questions based on your perceptions.

Rank the following countries based on how much of children's economic success is dependent on their parents' economic success. (Rank 1 - Rank 5: from the most dependent to the least dependent)

¹³This study belongs to a larger project on "Perceptions of Social Mobility and Support for Redistribution." For other information of the larger project, please visit Fangqi Wen's personal website.

Please drag the country names up or down to represent the order in your mind. [Note: The country names appear in a random order on the screen.]

United States

United Kingdom

France

Italy

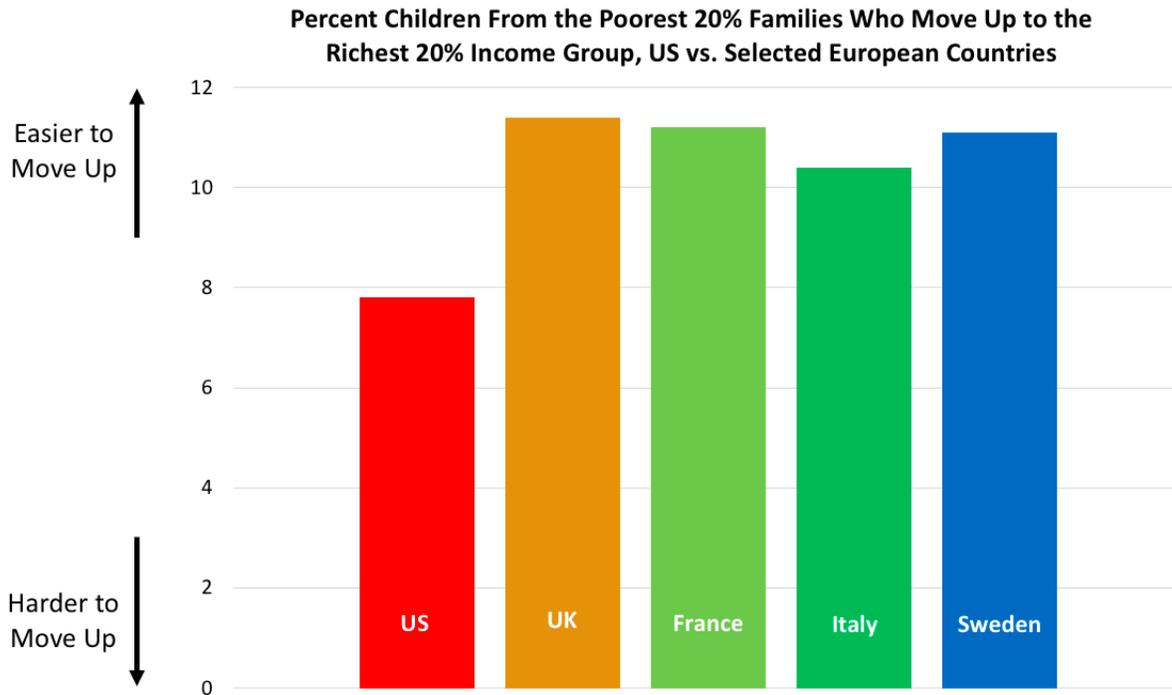
Sweden

B. Factual Information about Intergenerational Mobility in the United States Relative to Selected European Countries

While different data and methods could generate inconsistent "facts" about social mobility in one particular country, an effective survey experiment requires a simple and straightforward design. Therefore, the factual information for each measure of social mobility only comes from one specific publication. To avoid additional cognitive burdens, the uncertainties of mobility patterns are not presented. After reading the treatment message, respondents were asked to evaluate if they had misperceived mobility chances in the United States and the extent to which they trusted the factual information provided.

(1) **Wording 1:** Intergenerational mobility measured as bottom-to-top upward mobility

In reality, the ranks of the chance for children who come from the poorest families to move up to the richest income group are as follows.



The chance is UK > France > Sweden > Italy > US.

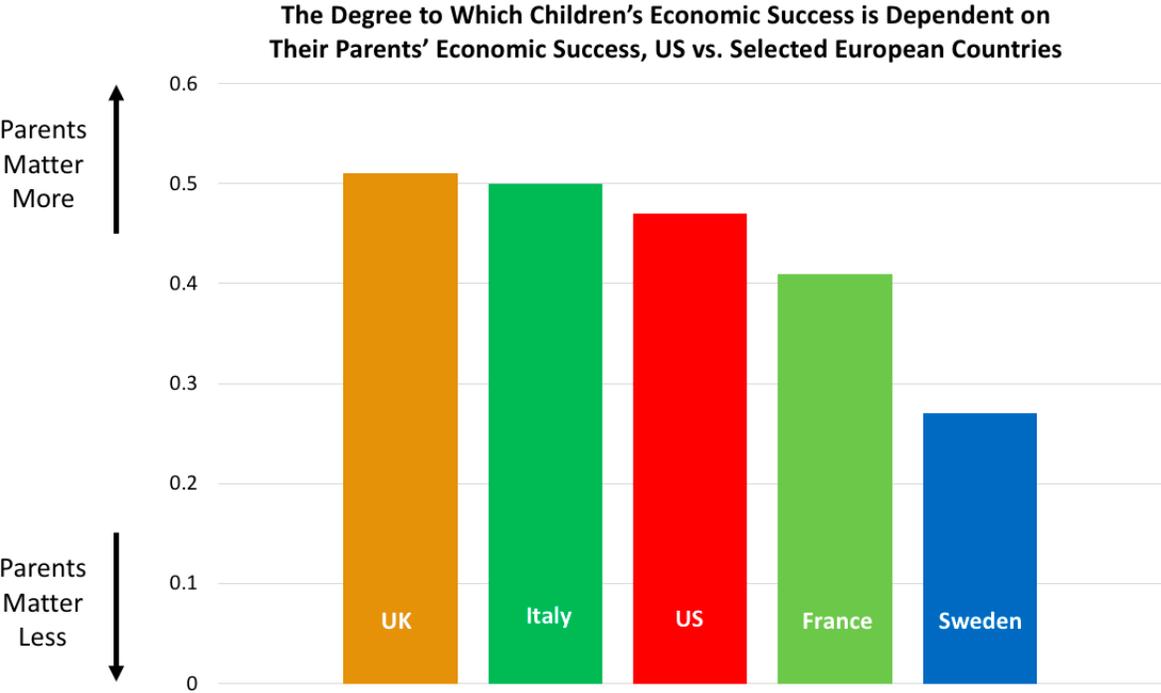
In other words, compared to in UK, France, Italy and Sweden, poor children in the United States have a lower chance to move up to the richest income group once they grow up. [Source: [Alesina et al. 2018](#)]

After reading the information provided above, you think your previous estimation about the chance for poor American children to move up in the income distribution is [too optimistic / just alright / too pessimistic].

How much do you trust the information just provided — compared to in some European countries, poor children in the United States have a lower chance to move up to the richest income group once they grow up [on a 11-point scale from "not at all trust" to "trust very much"]?

(2) **Wording 2:** Intergenerational mobility measured as relative mobility

In reality, the ranks of the dependence of children’s economic success on parents’ economic success are as follows.



The dependence level is UK > Italy > US > France > Sweden.¹⁴

In other words, British children’s economic success is the most dependent on their parents’ economic success, while Swedish children’s economic success is the least dependent on their parents’ economic success. The situation for American children is in between. [Source: [Corak 2013](#)]

After reading the information provided above, you think your previous estimation about the dependence of children’s economic success on parents’ economic success in the United States is [too optimistic / just alright / too pessimistic].

¹⁴The ranks are based on the intergenerational income elasticity.

How much do you trust the information just provided — compared to some European countries, the dependence of children’s economic success on parents’ economic success in the United States ranks somewhere in the middle [on a 11-point scale from "not at all trust" to "trust very much"]?

C. Attitudes Toward Educational Investment (Government vs. Family Support)

We are faced with many problems in the United States, none of which can be solved easily or inexpensively. Is the government spending too much money, too little money, or about the right amount on education [too much / about the right amount / too little]?

Do you agree or disagree that parents should pay for their children’s college tuition [on a 7-point scale from "strongly disagree" to "strongly agree"]?

If your children need help for their college tuition, what percent of the total cost would you be willing to contribute? (If you do not have children, please answer this question under a hypothetical scenario in which you do.) [Respondents were asked to move a slider ranging from 0 to 100.]

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