Penn

Center *for* Social Norms & Behavioral Dynamics

Exploring Poverty's Roots within US Communities

Quantitative Diagnosis Report

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Table of Contents

Summary

The Roots of Poverty Project

Despite being the wealthiest country on earth, the United States is home to increasingly broad swaths of poverty, with much of it concentrated in urban centers. According to real-time estimates, the COVID-19 pandemic seems to have worsened this trend: in the last six months of 2020, there was a 2-percentage point increase in poverty as defined by the US Census Bureau (from 9.4 to 11.4 percent). The effect is pronounced, especially among African-Americans, children, and people with high school education or less (Han et al., 2021). Data also show increases in the households that struggle to put enough food on the table because they cannot afford it: around 9 percent of all US adults (and 16 percent among African-Americans and Latinos) report that their household sometimes or often did not have enough to eat in the last seven days (Center on Budget and Policy Priorities, 2021).

Poverty is typically defined in terms of a deficit of material resources that is linked to an inability to meet basic needs (as in the poverty thresholds defined by the US Census Bureau). Poverty, however, has many more dimensions beyond material deprivation. Social exclusion, lack of education, unemployment, and low income – all work together to reduce opportunities, limit choices, mine hope and, as a result, threaten self-efficacy and lower expectations for taking effective collective action. The absence of financial resources is closely linked with deficits in other types of capital, including human and social capital. Building these other forms of capital, which encompass factors such as education, skills, networks, relationships, and well-being, is essential for individuals to be able to permanently escape poverty (Daminger et al., 2015, p. 10).

Most research on poverty and on the barriers to social mobility has focused on institutional and structural aspects such as macro-level labor market and demographic conditions (Brady, 2009). In contrast, we focus on the social and behavioral dimensions associated with poverty. In particular, we collect a nationally representative measurement of beliefs, social expectations, local norms, preferences, and trust levels among rural and urban poor populations across different areas of the US. This report presents early results from this effort related to diagnosing social norms in poor populations, especially in relation to education, welfare assistance and violence, as well as the relationship between social norms and trust. We also briefly include results of further related research about and perceptions of intergenerational economic mobility and subjective income expectations. We summarize these findings below.

The Role of Social Norms

To understand how norms shape behavior, we must adopt concepts that are both precise and measurable. In our approach, we focus specifically on beliefs and preferences, which lend themselves to reliable measurement and prediction of behavior. Social norms, as defined by Bicchieri (2006, 2016), are behavioral rules that apply to specific contexts or situations. For a social norm to exist, four main conditions must be met:

1. **Knowledge of the Rule**: People are aware that the rule applies in particular conditions.
2. **Empirical Expectations**: Individuals expect that most people within their reference network also follow the rule, anticipating general adherence to it.
3. **Normative Expectations**: Individuals expect that most people in their reference network believe one should follow the rule and would disapprove of anyone who does not. This reinforces the social pressure to comply.
4. **Conditional Preferences**: Individuals prefer to follow the rule when they hold both empirical and normative expectations, meaning their preference to comply is conditional on these expectations.

Unlike descriptive norms, which are based simply on observed behaviors (such as conventions), social norms involve preferences that are conditioned by both empirical and normative expectations, creating a deeper commitment to following the rule in relevant contexts.

Diagnosing norms is a valuable approach for designing interventions aimed at behavioral change. Such interventions have proven effective in altering collective behaviors across various domains (Bicchieri, 2016). Through survey experiments, we examine four behaviors that are relevant to anti-poverty policies. We consider two education related behaviors: the decision to attend high school (as opposed to dropping out) and the decision to pursue higher education. We also examine the decision to apply for welfare assistance. Finally, we study the use of violence in response to instances of disrespect. We show how such different behaviors are influenced by shared norms, and we study the nature of such norms.

Turning first to high school attendance, the results of our study suggest that the decision to drop out of high school is affected by social norms. Those who report that dropping out of school is common and approved of in their reference network are more likely to drop out. In fact, our measures show that the decision to drop out is conditional on others' behavior and approval. Likewise, the decision to pursue higher education is also influenced by social norms.

Returns to education are high in the United States. In 2016, full-time year round workers who completed high school earned $6,400 more per year ($31,800) than those who did not ($25,400). Compared to completing high school, those with associate's degrees earned $6,200 more per year ($38,000) and those who finished a bachelor’s degree earned $23,000 more per year ($54,800) (National Center for Education Statistics, 2019). Yet there is great heterogeneity in educational achievement. While dropout rates have fallen considerably in the United States, this masks districts, high schools, and peer groups that have fallen behind (Social Explorer, 2024). In these settings, our results suggest it may be useful to employ interventions aimed at changing social expectations in order to influence high school attendance. These include interventions that correct misperceptions about dropout rates as well as changing people’s reference groups, and even identifying potential trendsetters who can influence school attendance.

We also study whether the decision to apply for welfare assistance is conditional on social expectations. Our analysis suggests conditionality of preference for this behavior, which

provides suggestive evidence that social norms govern the use of welfare assistance. Notably, others' approval tends to matter more than behavioral prevalence here, which may be related to stigma surrounding the use of welfare assistance. To further study the role of stigma, we also measure how embarrassment about the use of welfare assistance responds to approval and behavioral prevalence. We find that the likelihood of embarrassment is a function of these factors, and again that approval tends to play a stronger role, mirroring the previous result.

While much is made in American political discourse of the potential for dependence on welfare assistance, the established norms against welfare use and the stigma associated with this behavior could lead to reduced use of programs that people qualify for. Indeed, the use of welfare assistance often falls short of the pool estimated to qualify for these programs (Shrivastrava, 2021; Cunnyngham, 2023). Our findings align with studies in the United States that highlight the stigma associated with the use of social programs (Moffitt, 1983; Celhay et al., 2022). This stigma can discourage individuals from seeking assistance, despite their eligibility, due to social norms that attach negative perceptions to welfare use. These norms can lead individuals to avoid welfare programs to preserve social status or self-image, reinforcing cycles of poverty. Understanding these underlying social expectations is essential for developing interventions that can reduce stigma and improve access to necessary resources.

Finally, we study behavior related to honor norms. In particular, we study violence in response to disrespect. Our analysis suggests conditionality of preference with respect to social expectations, which indicates that this behavior is influenced by social norms.

How Norms Influence Trust

Social norms also shape social trust, which in turn influences economic behaviors such as spending, saving, and investing (Fromell et al. 2021; Lindbeck 1997). Together, these factors significantly impact long-term financial stability and the likelihood of remaining in or escaping poverty. Our research examines the relationship between poverty, social norms, and trust using a novel survey dataset. We argue that trust is behavioral: it manifests in concrete actions and relies on expectations about specific behaviors in particular situations. People form *empirical expectations* (beliefs about what others typically do) and *normative expectations* (beliefs about what others think is acceptable) based on their social environment, which is governed by norms (Bicchieri 2006, 2016).

Our survey experiment finds strong evidence that people's levels of trust are particularly sensitive to the degree of social disorder and violence they experience, and that the sensitivity of social trust to the social environment survives across poor and more advantaged communities. We show that for all types of trusting behaviors we study, mean levels of trust fall progressively and significantly as we move from an environment governed by positive norms to an extremely negative social environment. The consistent decline in trust from positive to negative environments indicates that as individuals expect more members of their community to engage in and approve of antisocial behaviors, their trust in their community declines. Our findings indicate that trust plays a critical role in upward economic mobility. While it is

well-established that trust in federal institutions influences perceptions of mobility, our research underscores the equally significant impact of interpersonal trust. High levels of interpersonal trust foster more robust and extensive networks, which are crucial for economic advancement. Such networks not only broaden access to economic opportunities, such as finding better jobs, but also enable individuals to depend on trusted contacts. This support allows them to dedicate more time to productive activities, thus enhancing their economic prospects.

Outline of the Quantitative Diagnosis Report

We begin by providing an overview of the survey data collected for our study, detailing the sampling approach and key demographics. Following this, we outline the specific methods applied to each component of our research. Next, we present findings on social norms and trust, highlighting the main results in each area. We conclude with a discussion of the policy implications derived from our findings, emphasizing strategies that could enhance economic mobility and social trust.

Survey Data

To examine the social dimensions of poverty across communities in the United States, we collect data from a nationally representative survey of 6118 respondents across the US collected by NORC at the University of Chicago. We used insights from focus group data to construct the survey. Prior to designing our survey, we conducted six focus groups among various communities (i.e., African-American, Latino, and White) in Pennsylvania and Kentucky. These focus groups aimed to capture the experiences of participants in low income and marginalized communities in their own words. The focus group data give important insights about local norms, the relationship between poverty and trust, network characteristics, and the difficulties in accessing welfare services. Based on these data, we built our questionnaire.

Survey Sampling

Our survey instrument was fielded between January 4, 2024 to January 31, 2024. We oversample those below 200% of the 2023 Federal Poverty Level (i.e. $14,580 individual annual income[1]). Of the 6118 total respondents, 4089 (66.8%) are below 200% of the FPL, and 2029 (33.2%) are above 200% of the FPL. This threshold is important in its relation to our definition of poverty, which is average household incomes below 150% of the FPL. We wanted our low-income oversample to extend to households above the chosen poverty line to capture those who are near poverty. We choose these thresholds for several reasons. First, poverty is a fluid notion. As Desmond notes, "there is plenty of poverty above the poverty line as a lived experience" (2023: 36). Relative measures of poverty (i.e., those defining poverty as relative economic deprivation) have placed poverty near to 150% of the FPL (Iceland, 2013). Second, thresholds for social welfare programs tend to reflect per capita household income above the official poverty line, between 100% and 200% of the FPL. For example, income eligibility thresholds for nutrition assistance programs (commonly called "food stamps") are capped at values between 100 and 200% of the FPL: Eligibility for the Supplemental Nutrition Assistance Program (SNAP) is capped at 130% of the FPL while eligibility for Women, Infants, and Children (WIC) extends to 185% of the poverty line. Finally, poverty is a dynamic process. Some of those who are not poor, according to their yearly income, make less than the poverty line some months in a year (Morduch and Schneider, 2017).

Our data comes from a multi-stage probability sample. We sample 26,983 units from the Amerispeak panel. Panelists, in turn, are drawn with known probability from a frame of fixed addresses covering 97% of addresses in the United States. Therefore, we use sample weights to achieve representative estimates of population and subgroup-level. These weights account for the probability of selection and non-response at each stage of the sampling process, including our study-specific oversample. The final weights include a raking adjustment to align

[1] See details of FPL in US Census https://www.census.gov/data/tables/time-series/demo/income-poverty/historical-poverty-thresholds.html

the survey sample to specific population benchmarks and trimming to reduce the influence of extreme weights on survey estimates. The design effect is 3.94.

The median duration of the overall survey was 32 minutes. The vast majority of respondents (5927) completed the survey online, although a small number (191) completed it by phone. We offered compensation of $10 for completion of the survey, with $15 for those who completed the survey by phone. Of 6408 completed surveys, 290 (4.5%) of these were removed for one or more of these issues: speeding, high refusal rate, and/or straight-lining in question grids.

Table 1: Sample Demographics

Sample Demographics

N=6118

Sample Demographics	N	Percentage
Poverty Status (150% FPL): n (%).		
<=150% FPL	2986	48.80%
>150% FPL	3132	51.20%
Urbanicity: n (%).		
Rural	2343	38.30%
Suburban	2666	43.60%
Urban	1109	18.10%
Race/Ethnicity: n (%).		
White, non-Hispanic	3689	60.30%
Black, non-Hispanic	936	15.30%
Other, non-Hispanic	81	1.30%
Hispanic	1017	16.60%
2+, non-Hispanic	188	3.10%
Asian-Pacific Islander	207	3.40%
Gender: n (%).		
Male	3666	59.90%
Female	2452	40.10%
Age (4 Bins): n (%).		
18-29	979	16.00%
30-44	2038	33.30%
45-59	1219	19.90%
60+	1882	30.80%

Demographic Breakdown

We present the sample demographics in Table 1. Our oversample of those under 200% of the poverty line results in a relatively large proportion of poor respondents (we define poverty

as under 150% of the FPL). Our sample skews male. The sample also tends to have more African American and Hispanic respondents as a result of the oversample. In order to produce population relevant estimates we use weights accounting both for our sample design and various aspects of non-response.

Questionnaire

The questionnaire featured 11 modules and 129 questions, focused on different dimensions of people's lives. We detail each of these modules below, including a short description of the topics covered within:

1. *Family Structure and Background*: family structure, expectations about marriage and childbearing, household decision-making, expectations around safe sex, and frequency of intimate partner conflict and violence.
2. *Expenses, Assets, and Debts*: household finance including assets, expenses, access to financial services, credit usage, and debt stress.
3. *Work and Employment*: employment and labor force status, work hours, entrepreneurship/self-employment, workplace relationships, job autonomy, and employment precarity.
4. *Education*: educational achievement, mother's and father's educational achievement, expectations around education, perceived self-efficacy in educational settings, expectations around dropping out, expectations around pursuit of higher education, social support and/or backlash around education.
5. *Economic Mobility*: subjective income expectations, intergenerational mobility, perceptions of economic mobility, and neighborhood mobility.
6. *Welfare Assistance*: usage[2] and expectations around welfare usage, embarrassment about welfare usage, economic security, deservingness, perceived discrimination and disrespect, perceptions of universal basic income.
7. *Networks*: size and composition of close personal networks by race/ethnicity and relative income; mobilization of assistance through networks.
8. *Trust*: levels of institutional and non-institutional trust, behavioral trust.
9. *Neighborhood Characteristics*: general environmental conditions, neighborhood characteristics, and perceived violence
10. *Preferences, Behavior, and Scarcity*: domain-specific risk taking, risk preferences, time preferences, stress levels, self-efficacy, autonomy measures.
11. *Other issues*: Civic and political engagement: participation in presidential elections, union membership, time and effort volunteering, attendance of public meetings.

Additionally, we have information already collected by NORC, including age, race/ethnicity, education level, marital status, employment status, income, state, metro area, internet access, home type, telephone service, household size and age composition, occupation, and industry.

[2] Medicaid; Affordable Care Act ("Obamacare"); Children's Health Insurance Program (CHIP); Child Care and Development Fund (CCDF); Women, Infants, and Children (WIC); Social Security; Supplemental Nutrition Assistance Program (SNAP), Temporary Assistance for Needy Families (TANF)

Use of Vignettes

In our survey, we ask specific questions about actual behavior in a variety of domains (education, welfare, etc.) and the social expectations participants report about those behaviors. Even if there are strong correlations between expectations and behavior, we cannot draw conclusions about the direction of causation. Do social expectations influence behavior? Or, is it the way one behaves that influences one's expectations? To address these questions—specifically, to determine if social expectations influence behavior and to assess which expectations are more influential in different contexts—we incorporate vignettes into our survey. A vignette typically describes an hypothetical character similar to the subject in age, gender, race and income who has to make a decision in a specific social environment. We use hypothetical characters because (a) people have difficulty imagining themselves in counterfactual situations, and (b) using a hypothetical individual avoids social desirability bias in responses.

Each vignette is a 2x2 matrix where we vary the empirical and normative expectations of the fictitious character. Look at the example below of a vignette related to dropping out of high school. Each subject is presented with only one cell in the table, and has to predict the likelihood (on a Likert scale) of the hypothetical character performing the behavior described in the vignette.

Figure 1: 2x2 Vignette Overview

<table>
<tr><td colspan="3">"Imagine a person who is similar to you in age, income, gender, and race. This person just moved into a new community and learns that…"</td></tr>
<tr><td></td><td>Low Normative</td><td>High Normative</td></tr>
<tr><td>Low Empirical</td><td>"few people drop out of high school and few people approve of dropping out of high school."</td><td>"few people drop out of high school and many people approve of dropping out of high school."</td></tr>
<tr><td>High Empirical</td><td>"many people drop out of high school and few people approve of dropping out of high school."</td><td>"many people drop out of high school and many people approve of dropping out of high school."</td></tr>
<tr><td colspan="3">"How likely is it that this person will drop out of high school?"
- Extremely Likely
- Likely
- Unlikely
- Extremely Unlikely</td></tr>
</table>

Source: Bicchieri et al. (2014)

We use vignettes to examine whether respondents' answers about the likelihood of the behavior are *conditional* on the social expectations provided. The results can be extended to identify the causal relation between the actual social expectations of the individual who answers the vignette question and his or her effective behavior.

We apply the vignette method to the decision to pursue education or to drop out of school; to the decision to use welfare services; and to understand the possible emotional responses to needing welfare services. Finally, we explore the use of violence in response to disrespect.

Social Trust Vignettes

The vignettes we just discussed let us diagnose the presence or absence of social norms regulating the above mentioned behaviors. We also use vignettes to determine whether interpersonal trust is influenced by social norms.

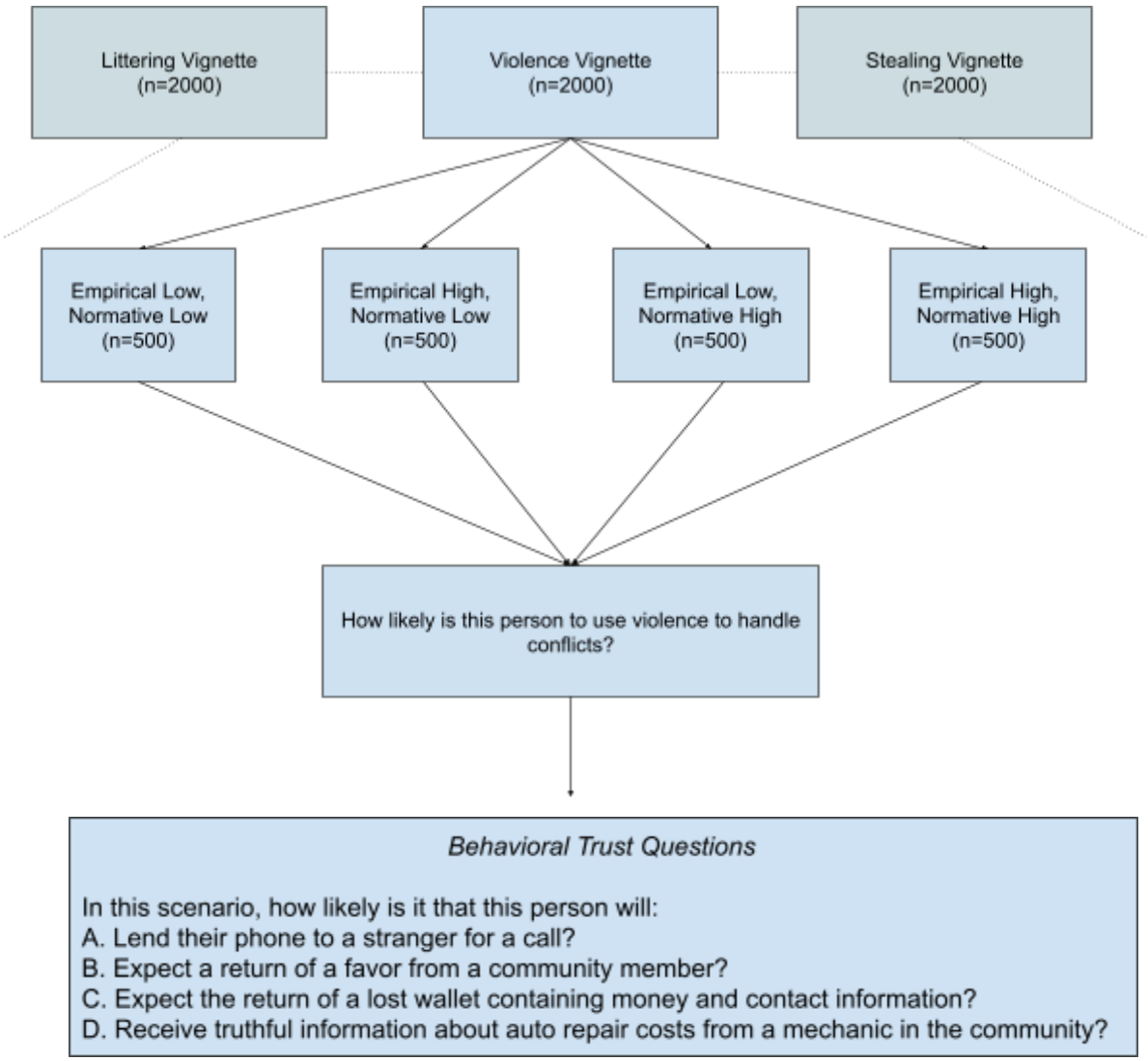
Trust can be understood as either a non-cognitive disposition, such as generalized trust, or as grounded in a level of knowledge or belief regarding the trustee's reliability. In the latter case, trust is cognitive, relying on the belief that the trusted party has a reason or motive to be trustworthy. The notion of trust as a three-part relation ("i trusts j to do x") suggests that trust can be specific to particular actions. However, this concept evolves into a four-part relation when we consider the context ("i trusts j to do x in situation S"), underscoring that trust is conditional upon specific circumstances. This understanding of trust highlights its relational and situational nature, recognizing that trust is not simply given but is built upon a complex interplay of knowledge, context, and specific actions.

A cognitive view of trust assumes that the trustor possesses sufficient information about the trustee's intentions and abilities, which is often not the case in real-world interactions. In this case, we rely on widely shared social norms that create a framework for what is generally expected of people in those situations, helping to reduce uncertainty. When we understand what is typically done in a given context, we can make more informed assumptions about how others are likely to behave. Specifying the context of an interaction serves as a "proxy" for the detailed information we may lack regarding a person's intentions or capabilities. In essence, social norms and contextual cues aid us in navigating interactions and predicting behavior, thereby fostering trust even without specific knowledge of individuals.

The environment of individuals who live in a condition of scarcity is often negative—littering, stealing and the use of violence are often more prevalent in poor communities. If trust is behavioral, as we just described, the situation within which behavior occurs will play a major role in deciding whether the people we interact with are trustworthy and in which respect.

We build 2x2 vignettes where we present a hypothetical character that is similar to the respondent in age, gender, race and income, who may live in one of three environmental conditions (see Figure 2 below). As in the norm vignettes, we ask the respondent to predict how likely (on a Likert scale) the hypothetical individual is to perform an action compatible with the environment. For example, one may receive social information that the community where the hypothetical individual lives is one in which many people throw trash on the ground, and few think it is okay to throw trash on the ground. We then ask how likely it is that the hypothetical individual will throw trash on the ground. For each environmental condition (the use of violence, littering and stealing), each respondent is randomly assigned one cell of only one 2x2 vignette (or environmental condition), each cell representing variations in empirical and normative expectations about the collective behavior. After answering the behavioral likelihood question, each respondent is asked four questions about behavioral trust in that specific situation: how likely is the hypothetical individual to lend their phone to a stranger for a call, expect the return of a favor from a community member, expect the return of a lost wallet containing money and contact information, and to receive truthful information about auto repair costs from a mechanic in the community. These data allow us (a) to assess whether the presence of social expectations influences the prediction of behavior (i.e. there is a causal link between social expectations and behavior), and (b) to determine if behavioral trust is conditional upon the presence or absence of specific social norms (about littering, violence and stealing).

Figure 2: Vignette Assignments and Flow



In sum, when asking whether the social environment influences interpersonal trust, we want first to assess whether the social expectations about the state of the environment (positive or negative) influence the likelihood of performing negative behaviors (littering, stealing, engaging in violence). Second, we ask specific questions about behavioral trust, taking into account the environment and the presence or absence of positive norms in that environment. With littering and violence, we can say that there is conditionality of predicted behavior on both empirical and normative expectations. With stealing, instead, though there is still conditionality on social expectations, the expectations that matter are 'normative' ones (i.e. when stealing is approved of, the likelihood of stealing significantly increases). In all three environments, we find that predicted behavior is conditional on social expectations,and we can therefore proceed to determine whether the presence or absence of positive norms impacts behavioral trust.

Methods

Norms Diagnosis

Social Norms Theory

In this project, we use Social Norms Theory (SNT) to understand if collective behaviors are poverty-alleviating or poverty-supporting, depending on the different types of social expectations related to these behaviors (Bicchieri, 2006, 2016). In SNT, the main discriminant is the dependence of behavior on the behaviors and normative beliefs of one's reference network. As shown in Figure 3 below, we are interested in interdependent rather than independent behaviors since in such behaviors, social expectations play a causal role.

Figure 3: Types of Behavior

	Independent Behavior (Unconditional Preferences)	**Interdependent Behavior (Conditional Preferences)**
Descriptive	*Custom* You **prefer** to do X because **you believe X meets your needs.** Your choice does <u>not</u> depend on others doing X or thinking that you should do X.	*Descriptive Norm* You prefer to do X because **you expect others to do X** (empirical expectations)**.** Your choice depends on your empirical expectations of others' behavior.
Injunctive	*Moral Rule* You **prefer** to do X because **you believe X is the right thing to do.** Your choice does <u>not</u> depend on others doing X (empirical expectations) or others thinking that you should do X (normative expectations).	*Social Norm* You **prefer** to do X because **you expect others to do X** (empirical expectations) **<u>and</u> you believe that others think that you should do X** (normative expectations)**.** Your choice depends on both empirical <u>and</u> normative expectations.

Source: Bicchieri (2012).

The two types of interdependent behaviors we are interested in are (a) descriptive norms: practices that people conform to because they believe other people follow the practice, and (b) social norms: rules of behavior that depend both on beliefs about what other people do, but also on beliefs about what other people approve of.

Understanding the type of behavior in a specific context is critical for the development of appropriate programs for behavioral change. If the practice is a collective custom, one might try to target individual-level motivations. If the targeted behavior is a descriptive norm, programs could be designed to better align empirical expectations with reality or to create new empirical expectations. If the behavior is a social norm, programs need to make sure they affect the accuracy and influence of normative expectations (the latter may be achieved with sanctions). Thus, different types of collective behavior require radically different program interventions to ensure behavioral change (Bicchieri 2021).

Overview of Social Norms Diagnosis

The behaviors we analyze in the light of the presence or absence of social norms are education-related, welfare-related, and violence-related behaviors. In these three cases, we first measure actual behaviors, and then combine a *direct* assessment of the subject's empirical and normative expectations about such behaviors in their community with their responses to the presented vignettes. First, we estimate the regression model relating the behavioral interest to the self-reported empirical and normative expectations about it, and conduct the following test:

- **Test 1:** Are empirical expectations statistically significantly and positively associated with measured behavior?
- **Test 2:** Are normative expectations statistically significantly and positively associated with measured behavior?

These two tests can suggest that expectations may be related to the behavior in the population of interest, but do not directly provide causal evidence as they can be subject to selection bias. Therefore, they are necessary but insufficient to diagnose the presence of a descriptive or social norm.

Second, we analyze vignettes designed to measure expectations' causal effect on behavior. The specific vignettes we used are reproduced below, and each asks a respondent about what an hypothetical person of similar background, gender, race would do if they moved to a new community with a specific set of expectations around a behavior. Specifically, would the hypothetical character participate in that behavior? We randomly assign one cell of the 2x2 vignette to each participant (Figure 4).

Figure 4: 2x2 Vignette Overview

"Imagine a person who is similar to you in age, income, gender, and race. This person just moved into a new community and learns that…"		
	Low Normative	**High Normative**
Low Empirical	"**few** people drop out of high school and **few** people approve of dropping out of high school."	"**few** people drop out of high school and **many** people approve of dropping out of high school."
High Empirical	"**many** people drop out of high school and **few** people approve of dropping out of high school."	"**many** people drop out of high school and **many** people approve of dropping out of high school."
"How likely is it that this person will drop out of high school?" - Extremely Likely - Likely - Unlikely - Extremely Unlikely *Note:* Differences in vignettes are highlighted in bold.		

Using the vignette data, we estimate the aggregate differences in predicted behavioral outcomes between social expectation conditions.

- **Test 3.0:** Is the difference in predicted behavioral outcomes between high empirical, high normative, and low empirical, low normative conditions positive and significant? If so:
    - **Test 3.1:** Is the predicted behavioral difference between high empirical, low normative, and low empirical, low normative conditions positive and significant? Thus, holding normative expectations constant, is there positive conditionality of behavioral outcomes on empirical expectations? This conditionality is equivalently calculated by considering the predicted behavioral difference between high empirical, high normative, and low empirical, high normative.
    - **Test 3.2:** Is the predicted behavioral difference between low empirical, high normative, and low empirical, low normative conditions positive and significant? Thus, holding empirical expectations constant, is there a positive and significant conditionality of behavioral outcomes on normative expectations? This conditionality may be equivalently calculated by considering the predicted behavioral difference between high normative, low empirical and high normative, high empirical.

If test 3.0 is positive, there is conditionality of preference, which is to say, the behavior is interdependent and we may face either a descriptive or a social norm, since, in this case, we cannot evaluate the weight of empirical versus normative expectations. If test 3.0 is negative, we can conclude that no norm exists. If test 3.1 is positive but test 3.2 is not, the behavior is diagnosed as a descriptive norm – an interdependent behavior impacted only by expectations of

others' behavior. If both 3.1 and 3.2 are positive, the behavior is diagnosed as a social norm, impacted by both expectations of others' behavior and approval.

Behavior and Self-Reported Expectations

In our case, as we have binary response variables for our behavioral outcomes, *B*, we will use logistic regression. We specify the logit

$$\Pr(B_i) = \Lambda(\alpha + \beta_1 EE_i + \beta_2 NE_i)$$

where EE and NE are the *actual* empirical and normative expectations of respondents and $\Lambda(x) = 1/(1 - e^{-x})$ is the logit link function. In our questionnaire, we elicit these expectations as quantitative variables ("how many people out of ten do B?", "how many out of ten approve of B?"). Because our data on actual social expectations reflect the subjective experience and environment of our subjects, the data are likely correlated with the behaviors in question. Additionally, since we have a non-linear model, we use weighted logistic regressions estimated using maximum likelihood. For robustness, we also control for baseline covariates in additional specifications.

Using these results we can test whether EE and NE are significantly associated with the behavior in question. First, we test the association of EE with the behavior using the significance test of β_1 in our logistic regression (**test 1**). Then, we repeat the process with β_2, testing if there is a significant association of NE with the behavior (**test 2**). As previously discussed, observing a correlation between behavior and social expectations does not, on its own, establish a causal relationship. To rigorously assess causality, we turn to vignette analysis. This approach enables us to identify whether changes in social expectations directly influence behavior, moving beyond correlation to establish a more robust understanding of causation.

Vignette Analysis

Let p_i be the reported probability of the vignette character participating in the behavior B according to respondent i. We allow this probability to be conditional on empirical expectations (EE) and normative expectations (NE):

$$p_i(EE_i, NE_i) = \Pr(B_i \mid EE_i, NE_i)$$

We can thus write the probability that the fictitious character performs the behavior with high empirical and high normative expectations as,

$$p_i(EE_{H,i}, NE_{H,i}) = \Pr(B_i \mid EE_i = High, NE_i = High).$$

This definition yields a helpful shorthand for our tests. For example, we can write the *average* probability of performing the behavior according to respondents faced with high empirical and high normative expectations as $\bar{p}(EE_H, NE_H)$. Then, test 3.0 can be written as the a statistical test with null hypothesis: $H_0 : \bar{p}(EE_H, NE_H) - \bar{p}(EE_L, NE_L) \leq 0$. Similarly, test 3.1 can be written as a statistical test with null hypothesis $H_0 : \bar{p}(EE_H, NE_L) - \bar{p}(EE_L, NE_L) \leq 0$ and test 3.2 can be written as a statistical test with null hypothesis $H_0 : \bar{p}(EE_L, NE_H) - \bar{p}(EE_L, NE_L) \leq 0$.

In our vignettes, we elicit the likelihood of the character in the vignette participating in the behavior using a four-point Likert scale (Extremely Likely, Likely, Unlikely, or Extremely Unlikely), meaning that we cannot directly estimate the differences between conditions without making more assumptions about the scale, namely mapping the values of the scale to probabilities. A more defensible approach is to treat it as an ordinal variable with four categories. In this case, we use the Kruskal-Wallis H test.[3]

We can then conduct a post hoc Dunn test to see *where* the differences between expectations lie. Using these tests, if we reject the null hypothesis $H_0 : \bar{p}(EE_H, NE_H) - \bar{p}(EE_L, NE_L) \leq 0$ for test 3.0, this is evidence of conditionality of preference. If we reject the null hypothesis $H_0 : \bar{p}(EE_H, NE_L) - \bar{p}(EE_L, NE_L) \leq 0$ for test 3.1 but do not reject the null hypothesis $H_0 : \bar{p}(EE_L, NE_H) - \bar{p}(EE_L, NE_L) \leq 0$ for test 3.2, this is evidence of conditionality of preference but only with respect to empirical expectations. We diagnose this behavior as a descriptive norm. However, if we additionally reject both null hypothesis for test 3.1 and test 3.2, this is evidence of the conditionality of preference with respect to both empirical and normative expectations. Under the Bicchieri SNT framework, we conclude that a social norm drives the behavior.

Empirically Led vs. Normatively Led Behaviors

Social norms are, as we described above, a combination of empirical and normative expectations. An interesting question to ask is whether empirical or normative expectations have a stronger impact on behavior in a specific social norm. In a descriptive norm, normative expectations do not matter to behavior. In a social norm, they always matter but their importance may vary. It is thus important to measure the relative strength of empirical versus normative expectations, especially when designing interventions.

We may think of behaviors where the high empirical, low normative condition is significantly greater than low empirical, high normative as “empirically led.” In contrast, if the

[3] In case we had a cardinal measure of the probability of participating in the behavior we would use a one-way ANOVA. However, this is inappropriate to use with an ordinal outcome variable.

opposite is true, we would think of this behavior as “normatively led.” If the two are similar, we think of the behavior as balanced between the two.

Formally, we can think of the difference $\bar{p}(EE_H, NE_L) - \bar{p}(EE_L, NE_L)$ as the treatment effect of high empirical expectations on behavior, conditional on low normative expectations. Similarly $\bar{p}(EE_L, NE_H) - \bar{p}(EE_L, NE_L)$ is the treatment effect of high normative expectations on behavior (conditional on low empirical expectations). Comparing these treatment effects, however, reduces to a similar comparison:

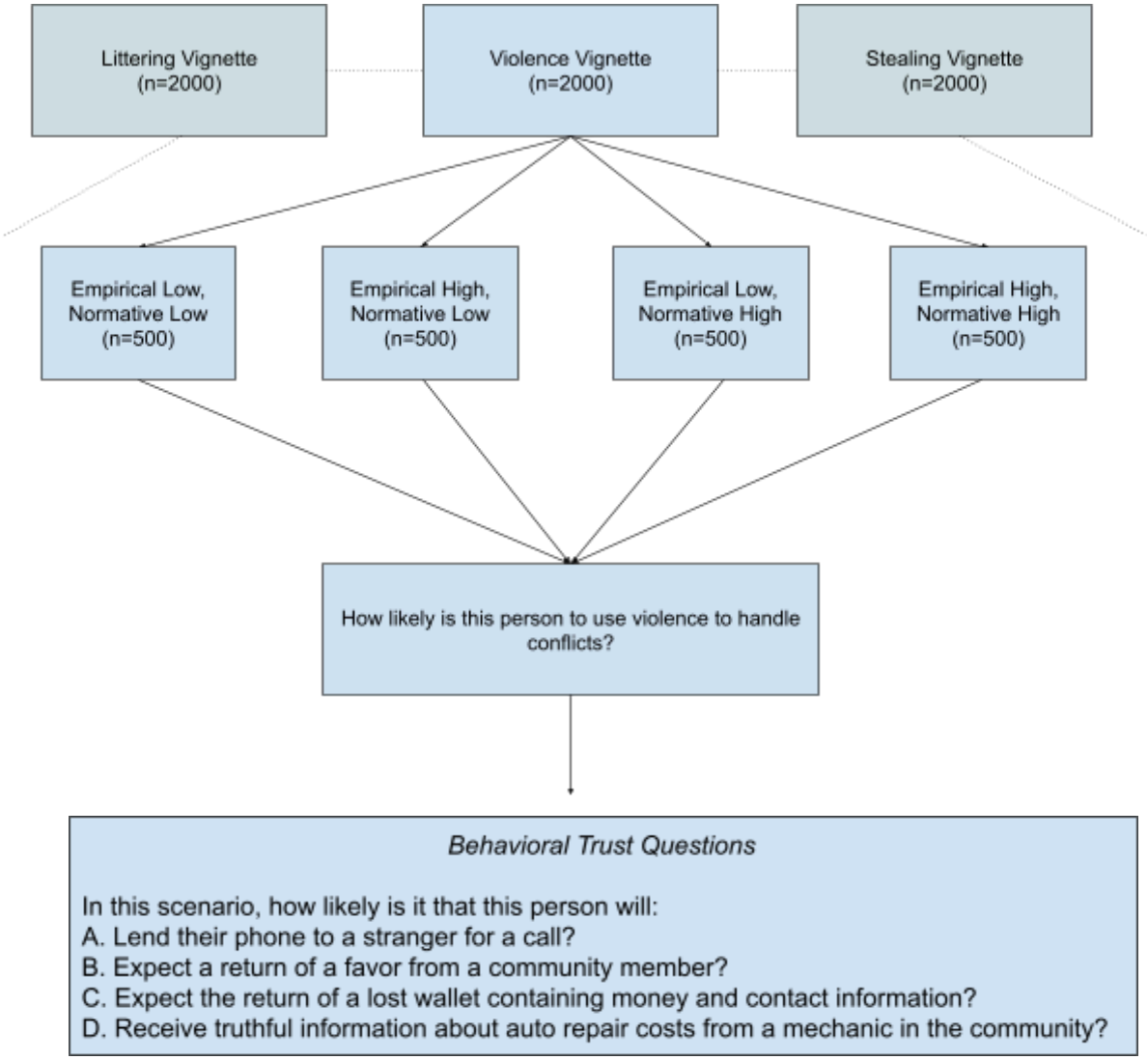
$$[\bar{p}(EE_H, NE_L) - \bar{p}(EE_L, NE_L)] - [\bar{p}(EE_L, NE_H) - \bar{p}(EE_L, NE_L)] = \bar{p}(EE_H, NE_L) - \bar{p}(EE_L, NE_H)$$

Therefore,we test the null hypothesis that $H_0 : \bar{p}(EE_H, NE_L) - \bar{p}(EE_L, NE_H) = 0$. If we fail to reject, we think of the behavior as “balanced” between the empirical and normative expectations. If we reject the null, and $\bar{p}(EE_H, NE_L) - \bar{p}(EE_L, NE_H) > 0$, we call the social norm “empirically led.” In contrast if we reject the null, and $\bar{p}(EE_H, NE_L) - \bar{p}(EE_L, NE_H)$, we call the social norm “normatively led.” This characterization follows from the Dunn-Bonferroni test of difference in the HL vs. LH conditions.

Social Trust and Social Norms

As previously discussed, we developed a two-part vignette measurement strategy to test our hypotheses that behavioral trust is conditional on the social environment.

Figure 5: Vignette Assignments and Flow



We randomly assigned each respondent to just one of the three possible social "environmental" conditions (littering, violence, stealing). The respondent was then randomly assigned one of the four social expectations conditions in the vignette. . Respondents were then asked how likely the fictitious individual would perform the given behavior on a four-point Likert scale. Then, each respondent, with respect to their assigned vignette and the specific social expectation condition, was asked to respond to four behavioral trust questions. See Figure 5 above.

Given the ordinal nature of our outcome measure, we used the Kruskal-Wallis Hypothesis test to address our hypothesis that predicted behavioral outcomes would significantly differ between environmental conditions. The Kruskal-Wallis H test is a nonparametric alternative to the Analysis of Variance procedure and is recommended for ordinal data (MacFarland & Yates, 2016). We employed Dunn-Bonferroni post-hoc tests to estimate

significant differences between different pairs of vignette responses. We used Benjamini-Hochberg p-value adjustments to control Type I error given multiple comparisons.

As noted, we hypothesize that behavioral trust would vary by social expectation conditions for each social environment, operationalized as behavioral prevalence and collective approval for a behavior. We also expected that this relationship would vary by poverty status, race/ethnicity, and gender.

We denote the probability that the trust relation holds as follows:

$$\tau_{i,j,Y}\left(EE_i(B), NE_i(B)\right) \;=\; \Pr(i\ trusts\ j\ to\ do\ x \mid EE_i(B),\ NE_i(B)))$$

That is, behavioral trust is a function of empirical expectations (EE) and normative expectations (NE) for a behavior B. We write the expression

$$\bar{\tau}_{j,Y}(EE\ (B), NE\ (B))$$

to denote the *mean* level of trust as conditional on the empirical and normative expectations around a given behavior. This is the *average* probability of the character in the vignette trusting j to do Y according to the specific empirical and normative expectations presented to respondents.

As we have two levels (high and low) of two types of social expectations (empirical and normative), we are left with four conditions per vignette, denoted as $\bar{\tau}_{j,Y}(EE_L(B), NE_L(B))$, $\bar{\tau}_{j,Y}(EE_L(B), NE_H(B))$, $\bar{\tau}_{j,Y}(EE_H(B), NE_L(B))$, and $\bar{\tau}_{j,Y}(EE_H(B), NE_H(B))$, where EE_L indicates few people engaging in the target behavior, EE_H indicates many people engaging in the behavior, NE_L indicates few people approving of the behavior, and NE_H indicates many people approving of the behavior. We hypothesized that the the mean trust levels across conditions would be significantly different from one another:

$$\bar{\tau}_{j,Y}(EE_L(B), NE_L(B)) \neq \bar{\tau}_{j,Y}(EE_L(B), NE_H(B)) \neq \bar{\tau}_{j,Y}(EE_H(B), NE_L(B)) \neq \bar{\tau}_{j,Y}(EE_H(B), NE_H(B)).$$

We also hypothesized that mean interpersonal trust will be higher when empirical and normative expectations for the antisocial behavior are lower, compared to when they are higher:

$$\bar{\tau}_{j,Y}(EE_L(B), NE_L(B) > \bar{\tau}_{j,Y}(EE_H(B), NE_H(B))$$

Additionally, we hypothesized that, holding normative expectations constant, higher empirical expectations of antisocial behaviors will result in lower mean interpersonal trust when compared with lower empirical expectations of antisocial behaviors:

$$\bar{\tau}_{j,Y}(EE_L(B), NE_L(B)) > \bar{\tau}_{j,Y}(EE_H(B), NE_L(B)).$$

Further, we sought to determine whether empirical or normative expectations exert a greater influence on interpersonal trust with the following rule:

If $\bar{\tau}_{j,Y}(EE_H(B), NE_L(B)) - \bar{\tau}_{j,Y}(EE_L(B), NE_H(B)) > 0$, then empirical expectations have a higher treatment effect on trust evaluations than normative expectations. Conversely, if $\bar{\tau}_{j,Y}(EE_H(B), NE_L(B)) - \bar{\tau}_{j,Y}(EE_L(B), NE_H(B)) < 0$, then normative expectations have a higher treatment effect on trust evaluations than empirical expectations.

Norms Results

Social Norms Diagnosis: Pursuing Higher Education

The result of our survey experiment is that pursuing higher education is influenced by a social norm. The first part of our diagnosis is a question about the *actual* empirical and normative expectations of the respondents. In particular we ask:

> Q1. *Out of 10 people that are important to you now, how many attend or have attended a four-year college, community college, or vocational/technical school? Enter a number between 0 and 10.*
>
> Q2. *Out of 10 people that are important to you now, how many approve of attending a four-year college, community college, or vocational/technical school? Enter a number between 0 and 10.*

We then correlate respondents' actual expectations and educational outcomes. Specifically, we use the respondents' reported educational attainment, and whether they had attended some college (or more). Table 2 presents the association between empirical and normative expectations, and college completion. We find a positive and significant association between pursuing higher education, and higher education being common in one's reference group. This result for **test 1** is statistically significant at conventional levels ($p < 0.001$). Hence, we can reject the null hypothesis for **test 1**. That is to say, an additional person out of ten in the respondent's reference group who pursues higher education is associated with a 21 percent increase in the odds that the respondent has participated in some form of higher education. Using average marginal effects (AME), this increase translates to a 2.6 percentage point increase in the probability of the respondent attending higher education for each additional person out of ten. When everyone in the reference group pursues higher education compared to none pursuing higher education, there is a 26 percentage point increase in the probability of the respondent pursuing higher education.

Table 2: College Logistic Regression Coefficients

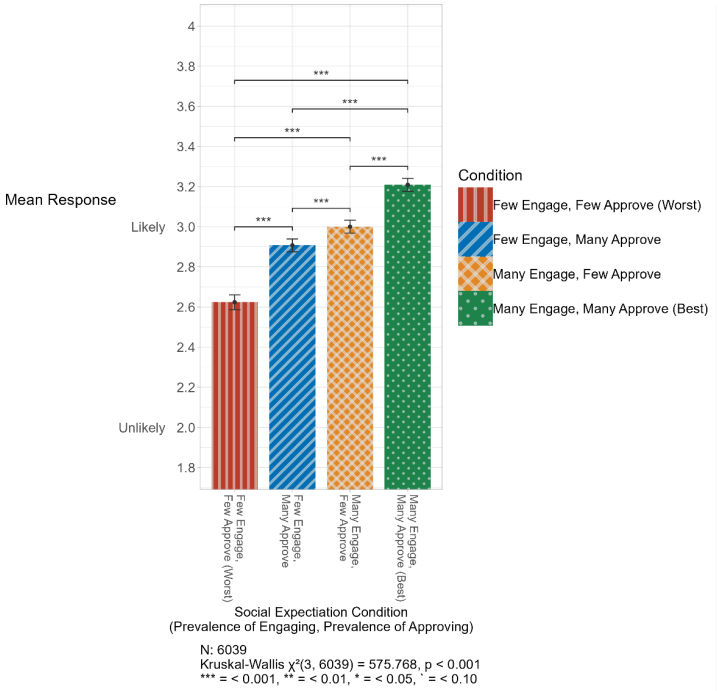
	Full Sample		<=150% FPL		>150% FPL	
	Excl. Controls	Incl. Controls	Excl. Controls	Incl. Controls	Excl. Controls	Incl. Controls
Characteristic[1]	OR[2,3]	OR[2,3]	OR[2,3]	OR[2,3]	OR[2,3]	OR[2,3]
College Common	1.21***	1.21***	1.15***	1.17***	1.20***	1.22***
College Approval	1.14***	1.13***	1.11***	1.12***	1.13***	1.13***
No. Obs.	5,876	5,615	2,835	2,679	3,041	2,936

[1]Weighted [2]*p<0.05; **p<0.01; ***p<0.001, [3]OR = Odds Ratio.
Controls include poverty status, urbanicity, race/ethnicity, gender, and age group

Similarly, we find a positive association between approval of pursuing higher education in one's reference group and the likelihood of attending a higher education institution. The result for **test 2** is statistically significant at conventional levels. That is to say, an additional person out of ten in the respondent's reference group who approves of higher education is associated with a 14 *percent* increase in the probability of the respondent participating in higher education. This translates to a 3.7 *percentage point* increase in the probability of the respondent attending higher education for every additional individual in the reference group approving of pursuing higher education. Moving from none to all in the reference group approving of pursuing higher education, we see a 37 percentage point increase in the probability of the respondent pursuing higher education. These tests suggest that pursuing higher education is an interdependent behavior. The direction of causality is, however, unclear. It may be the case that expectations depend on the respondent already pursuing higher education. We use the vignette method to assess the direction of causality.

Turning to the analysis of the higher education vignette, we move on to **test 3.0** assessing whether there is conditionality of preference with respect to social expectations. We again reject the null hypothesis, ($p < 0.001$), and so continue to **tests 3.1** and **3.2**. We find conditionality of preference with respect to both empirical expectations (**test 3.1**, $p < 0.001$) and normative expectations (**test 3.2**, $p < 0.001$). Therefore, using SNT, we diagnose pursuing higher education as influenced by a social norm.

Figure 6: Mean Response by Higher Education Vignette Social Expectation Condition



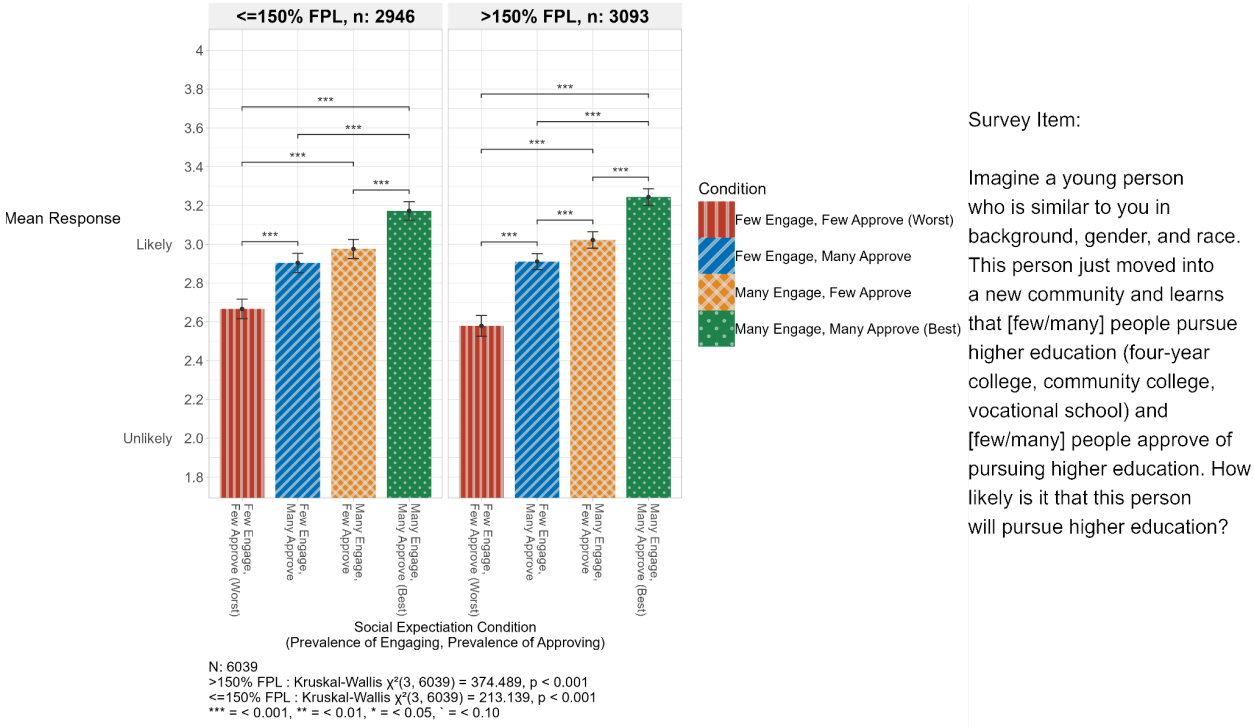
Survey Item:

Imagine a young person who is similar to you in background, gender, and race. This person just moved into a new community and learns that [few/many] people pursue higher education (four-year college, community college, vocational school) and [few/many] people approve of pursuing higher education. How likely is it that this person will pursue higher education?

Do norms around higher education differ by poverty status? In both poor and non-poor subsamples, we find positive and significant relationships between respondents' expectations and their educational attainment. For poor respondents, an additional person in their reference group pursuing higher education is associated with an increase of 15% in their probability of pursuing higher education (**test 1,** $p < 0.001$), and an additional person in their reference approving of higher education is associated with an 11% increase in their probability of pursuing it (**test 2,** $p < 0.001$). For non-poor respondents, an additional person in their reference group pursuing higher education is associated with a 20% increase in their probability of pursuing it (**test 1,** $p < 0.001$). An additional person in their reference group approving of attending higher education is associated with a 13% increase in their probability of pursuing higher education (**test 2,** $p < 0.001$).

With respect to differences by poverty status, we use **test 3.0** to find that in both subsamples there is some conditionality of preference (both $p < 0.001$). For the poor, we find that there is both conditionality of preference with respect to empirical expectations (**test 3.1**, $p < 0.001$) and normative expectations (**test 3.2**, $p < 0.001$), suggesting that the pursuit of higher education is influenced by social norms in this population. The results are very similar for the non-poor. Specifically, we find conditionality of preference with respect to both empirical (**test 3.1**, $p < 0.001$) and normative expectations (**test 3.2**, $p < 0.001$). Therefore we conclude that a similar social norm governs pursuit of education among the poor and the non-poor.

Figure 7: Mean Response by Higher Education Vignette Social Expectation Condition and Poverty Status



See Appendix for additional results exploring heterogeneity by Race/Ethnicity, Geography, Gender, and Age.

Social Norm Diagnosis: High School Attendance

Our analysis shows that the behavior of dropping out of high school is influenced by a social norm. We start by measuring respondent's actual expectations within their reference group and their school outcomes. Table 3 presents the association between actual empirical and normative expectations and high school dropout rates. We find a significant positive association between the prevalence of dropping out within one's reference group, and the respondent's completion of high school. The statistically significant result suggests that we can reject the null hypothesis for **test 1**. More specifically, for every additional person out of ten who drops out, there is a 15% increase in the respondent's likelihood of not having finished high school ($p < 0.001$). When examined through average marginal effects (AME), this relationship translates to a 0.6%increase in the likelihood of high school incompletion per additional individual out of ten in the reference group dropping out ($p < 0.01$). When all in the reference group dropped out of high school, the likelihood that the respondent will drop out increases by 6 percentage points, compared to when all in the reference group did not drop out.

Table 3: Drop Out Logistic Regression Coefficients

	Full Sample		<=150% FPL		>150% FPL	
	Excl. Controls	**Incl. Controls**	**Excl. Controls**	**Incl. Controls**	**Excl. Controls**	**Incl. Controls**
Characteristic[1]	**OR**[2,3]	**OR**[2,3]	**OR**[2,3]	**OR**[2,3]	**OR**[2,3]	**OR**[2,3]
Drop Out Common	1.15***	1.15***	1.24***	1.24***	1.06	1.09*
Drop Out Approval	1.07**	1.06*	0.95	0.95	1.12**	1.15***
No. Obs.	5,916	5,653	2,870	2,712	3,046	2,941

[1]Weighted [2]*p<0.05; **p<0.01; ***p<0.001, [3]OR = Odds Ratio

Controls include poverty status, urbanicity, race/ethnicity, gender, and age group

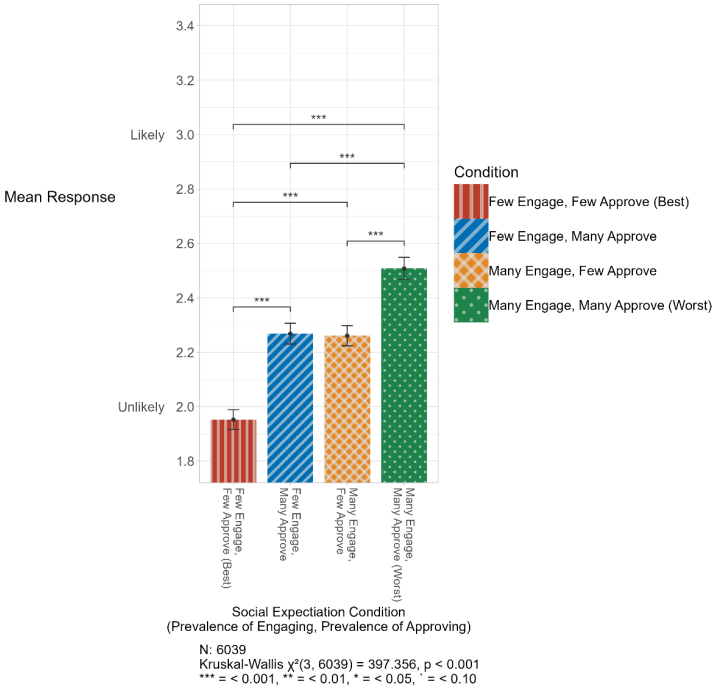
Similarly, the results of the logistic regression analysis demonstrate that there is a strong positive association between the approval of dropping out of high school and the likelihood of the respondent dropping out, meaning we reject the null hypothesis for **test 2**. Each additional person out of ten in the respondent's reference group who approves of not finishing high school is associated with a 7% increase in the respondent's likelihood of dropping out ($p < 0.01$). This association translates to a 1.2 percentage point increase in the AME likelihood of dropping out of highschool for every additional individual in the reference group, or a 12 percentage point increase when moving from no approval to full approval within the reference group ($p < 0.001$).

These tests suggest that dropping out of high school is an interdependent behavior. However, the direction of causality remains unspecified. This is the reason why we use a vignette to assess whether social expectations play a causal role in influencing the decision to drop out of high school.

Our vignette analysis suggests that social norms influence the decision to remain in high school or to drop out. Figure 10 plots the differences in the average response on a Likert scale. Formally, we reject the null hypothesis for the Kruskal-Wallis test of the pooled sample, which suggests that there are differences between the experimental conditions. Exploring further, we find a significant difference in the likelihood of dropping out between **[Few Engage, Few Approve]** and **[Many Engage, Many Approve]** (**test 3.0,** Dunn-Bonferroni, $p<0.001$). This suggests that there is conditionality of preference (or that behavior is interdependent). Next, we test for differences in the likelihood of dropping out by empirical and normative expectations. We have significant evidence to support the hypotheses in **tests 3.1** ($p < 0.001$) and **3.2** ($p < 0.001$).

This suggests that there is conditionality of preference with respect to both empirical and normative expectations.

Figure 8: Mean Response by Drop Out Vignette Social Expectation Conditions



Survey Item:

Imagine a young person who is similar to you in background, gender, and race. This person just moved into a new community and learns that [few/many] people drop out of high school This person just moved into a new community and [few/many] people approve of dropping out of high school. How likely is it that this person will drop out of high school?

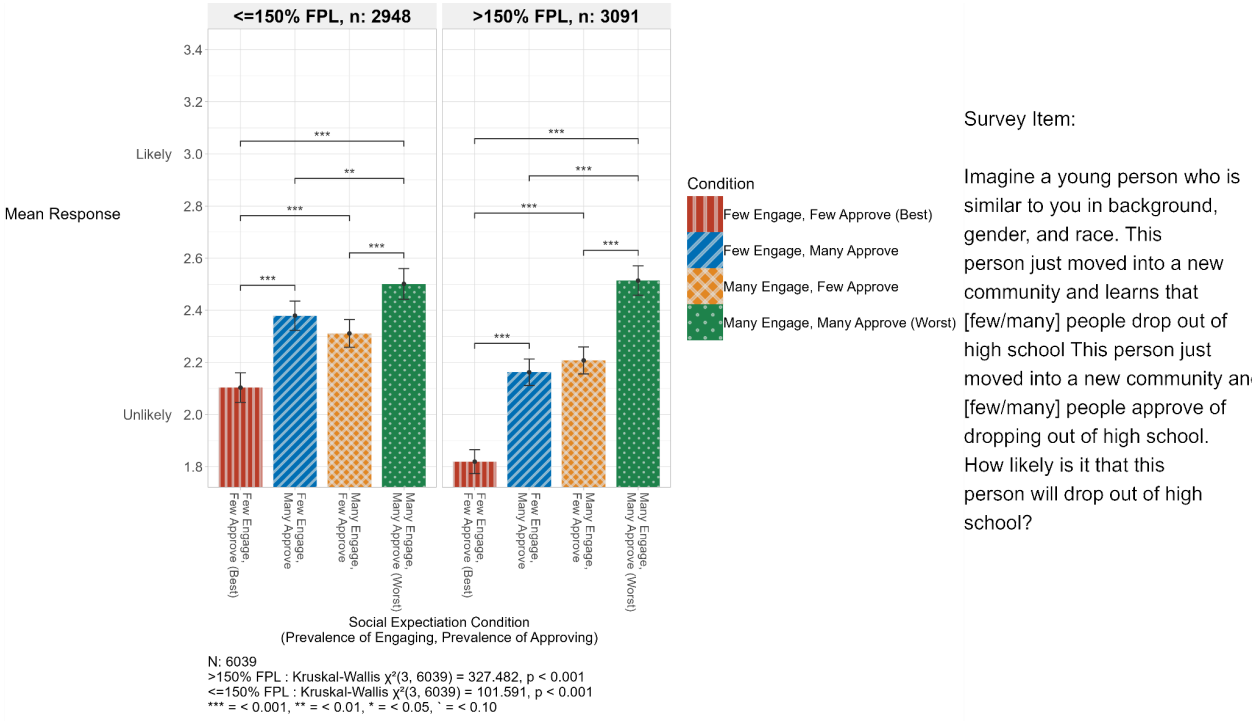
We find positive results for **tests 1, 2, 3.0,** and, in turn**, tests 3.1 and 3.2**, under the Bicchieri SNT framework. We conclude that dropping out of high school is a social norm.

Our analysis shows that results do not differ across poor (<= 150% FPL) and non-poor (>150% FPL) samples, suggesting that similar norms govern dropping out of high school for poor and non-poor communities. For testing actual expectations (**test 1** and **test 2)** we can reject the null hypothesis for both groups. We conclude that among poor and non-poor communities, there is a positive and significant association between dropping out being both common and approved of within their reference group, and the respondent actually dropping out of high school (both $p < 0.001$).

Moving on to the following vignette analysis, we find evidence for conditionality of preferences by both empirical and normative expectations for both poor and non-poor respondents. That is, in both samples we reject the null hypothesis for **test 3.0** (poor: $p < 0.001$ non-poor: $p < 0.001$), **test 3.1** (both $p < 0.001$), and **test 3.2** (both $p < 0.001$).[4]

[4] While the norms are similar, this does not mean behavior is entirely the same across the two subsamples. For example, one difference between the two groups is that for the >=150% FPL group, the probability of dropping out in the control world is substantially less than for the <150% FPL group.

Figure 9: Mean Response by Drop Out Vignette Social Expectation Conditions and Poverty Status



See Appendix for additional results exploring heterogeneity by Race/Ethnicity, Geography, Gender, and Age.

Social Norm Diagnosis: Use of Welfare Assistance

Our analyses support the hypothesis that the use of welfare assistance is influenced by social norms.

We start by asking questions about the actual empirical and normative expectations of respondents. We ask,

Q1: *Out of 10 people in your community, how many people receive welfare services? Enter a number between 0 and 10.*

Q2: *Out of 10 people in your community, how many people approve of receiving welfare services? Enter a number between 0 and 10.*

To measure application to welfare services, we use a respondent's self reports that they have never applied for welfare services.

We measure the association between actual applications for welfare assistance, and actual empirical and normative expectations about it. We show there is a positive and significant association between empirical expectations about applying for and using welfare, normative expectations (approval), and actual applying for and using welfare assistance. The statistically significant results from the logistic regression analysis suggest that we can reject the null hypothesis for **test 1** – that is, empirical expectations are positively and significantly associated with applying for welfare assistance. For every additional person out of ten who applies for welfare, there is a 23% increase in the respondent's likelihood of applying ($p < 0.001$). Similarly, we show a marginal but significant positive association between the expected approval of applying for welfare (normative expectations) and the likelihood of the respondent applying for it. For every additional person out of ten who approves of applying for welfare, there is a 3% increase in the respondent's likelihood of applying ($p < 0.05$). Thus, we reject the null hypothesis for **test 2**. Actual empirical and normative expectations are positively and significantly associated with the likelihood of the respondent applying for welfare. Since our sample includes individuals above 150% of the federal poverty level – respondents who are unlikely to qualify and thus to have applied for welfare – we expect that our results underestimate the effect of actual empirical and normative expectations on respondent's likelihood of having applied for welfare.

Table 4: Welfare Application Logistic Regression Coefficients

Characteristic[1]	Pooled			
	(Excl. Controls) OR[2,3]	(Excl. Controls) SE[3]	(Incl. Controls) OR[2,3]	(Incl. Controls) SE[3]
Welfare Common	1.31***	0.016	1.23***	0.017
Welfare Approval	1.02	0.010	1.03*	0.011
Income4				
<$30k			—	—
$30k - under $60k			0.48***	0.048
$60k - under $100k			0.37***	0.036
$100k+			0.20***	0.020

[1]Weighted 2*p<0.05; **p<0.01; ***p<0.001, [3]OR = Odds Ratio, SE = Standard Error

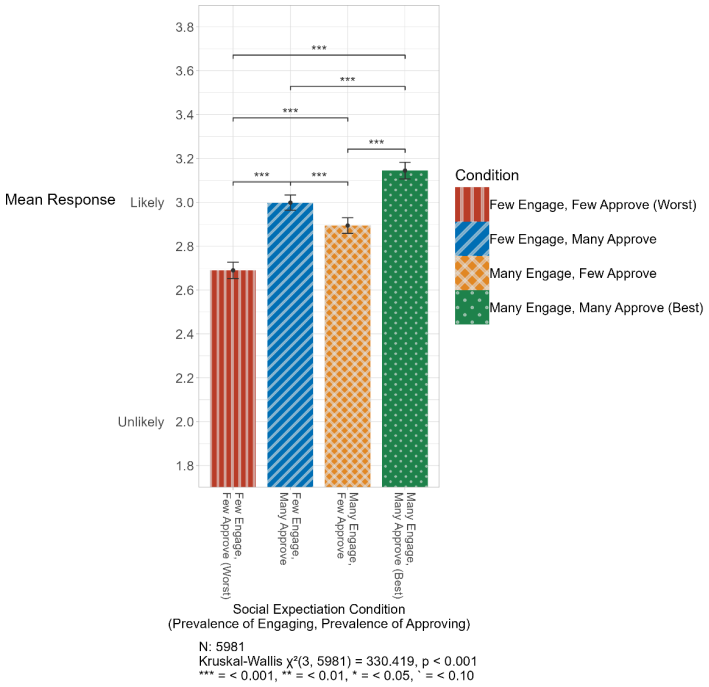
Controls include poverty status, urbanicity, race/ethnicity, gender, and age group

Our vignette analysis allows us to determine the causal relationship between social expectations and applying for welfare services. We reject the null hypothesis that there are no differences across conditions (Kruskal-Wallis test, $p < 0.001$). Therefore, we test for differences in the likelihood of applying to welfare services between the high empirical and high normative expectations, and low empirical and low normative expectations conditions (**test 3.0**). We find a significant difference in the predicted likelihood of the hypothetical character applying for social assistance (Dunn-Bonferroni test, $p < 0.001$). We can thus say that there is conditionality of preference about applying for welfare assistance. We further conduct the Dunn-Bonferroni tests to assess the relative strength of empirical expectations (**test 3.1**) versus normative expectations (**test 3.2**). We find conditionality of preference with respect to both empirical expectations ($p<0.001$) and normative expectations ($p<0.001$). Given that **tests 3.0**, **3.1**, and **3.2**

have positive results, we find evidence that supports that applying for welfare is influenced by a social norm.

Beyond asking respondents about the likelihood that the hypothetical character would apply for welfare services, we are interested in understanding the reasons why someone would not apply despite being eligible. We add a second vignette in which we ask whether, given specific social expectations, the hypothetical character would feel embarrassed by receiving said services. This allows us to understand whether social expectations, in this case, elicit an emotional response in order to tie our results to the stigma that has often been reported around welfare services.[5]

Figure 10: Mean Response by Welfare Vignette Social Environment Conditions (Apply)

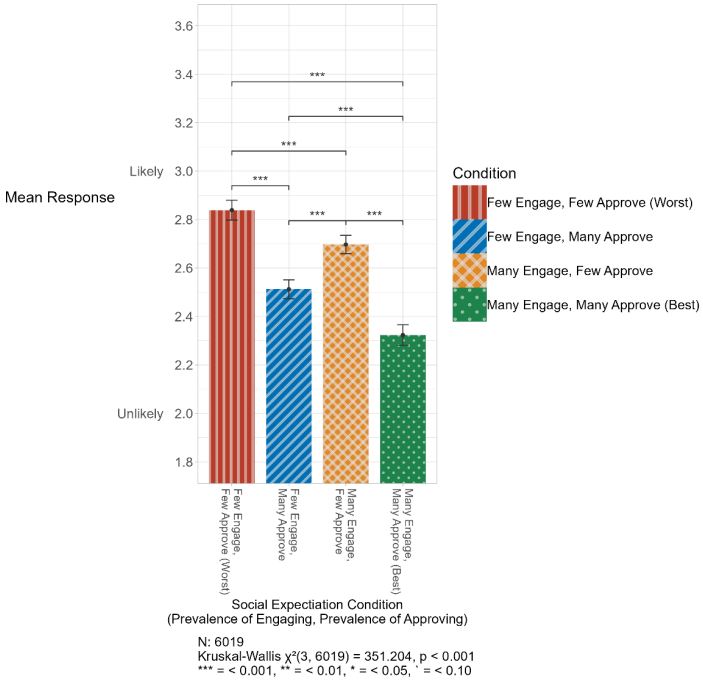


Survey Item:

Imagine a person who is similar to you in age, gender, and race. This person just moved to a new community and is eligible for welfare services. This person learns that [few/many] people in that community receive welfare services and [few/many] people in that community approve of those who receive welfare services. How likely is it that the person will apply for welfare services?

[5] See for example Celhay et al. (2023).

Figure 11: Mean Response by Welfare Vignette Social Environment Conditions (Embarrassed)



Survey Item:

Imagine a person who is similar to you in age, gender, and race. This person moves to a new community and needs welfare services. [Few/many] people in the community receive welfare services. [Few/many] approve of people receiving welfare services. How likely is it that the person will be embarrassed about receiving welfare services?

Responses about the link between embarrassment and social expectations show an interesting pattern that mirrors the results of the first vignette. Specifically, at high levels of empirical and normative expectations about applying to welfare and approving of it, respondents expect a decrease in embarrassment. To investigate this pattern, we perform tests that are analogous to **3.0**, **3.1**, and **3.2**. Specifically, we test the following null hypotheses:

- $H_0 : Embarrassed^{EE_{H'}, NE_H} - Embarrassed^{EE_{L'}, NE_L} \geq 0$ **(test 3.0)**,
- $H_0 : Embarrassed^{EE_{H'}, NE_L} - Embarrassed^{EE_{L'}, NE_L} \geq 0$ **(test 3.1)**
- $H_0 : Embarrassed^{EE_{L'}, NE_H} - Embarrassed^{EE_{L'}, NE_L} \geq 0$ **(test 3.2)**.

We reject the null hypothesis for test 3.0, finding that a person with high social expectations feels less embarrassed than one facing lower social expectations ($p<0.001$). Likewise, we reject the null hypothesis when conducting test 3.1 ($p< 0.001$) and test 3.2 ($p<0.001$). In both cases, the approval or the prevalence of social welfare recipients in the reference group is associated with less embarrassment on the part of the hypothetical character. As these results are similar to those of the welfare assistance vignette, they suggest that embarrassment is a mechanism by which social expectations around welfare assistance impact its usage.

Interestingly, the approval of social welfare assistance has a stronger influence on both the likelihood assigned to the hypothetical character of applying for welfare and of their feeling embarrassed, compared to the mere prevalence of social assistance (Dunn-Bonferroni test,

both p < 0.001). Therefore we think of the use of social assistance as an interdependent behavior whose conditionality is strongly tied to its social approval.

We now turn to heterogeneity by poverty status. We find social norms in both poor and non-poor subsamples. The pattern of overall conditional preferences reflected in test 3.0 holds true for both the >150% FPL and <150% FPL groups in the welfare vignette (p < 0.001). In tests 3.1 and 3.2, we similarly reject the null hypothesis for both poor and non-poor respondents (both p < 0.001). These results confirm that both empirical and normative expectations shape perceptions of social welfare across income groups. In both poor and non-poor samples, we find welfare assistance is also normatively-led. These results are reflected in responses to the embarrassment vignette for both poor and non-poor respondents. Though people who are above 150% of the federal poverty level do not qualify for welfare benefits, these results are interesting because they suggest potential widespread social disapproval and thus social stigma for those who are recipients of welfare.

Figure 12: Mean Response by Welfare Vignette Social Environment Conditions and Poverty Status

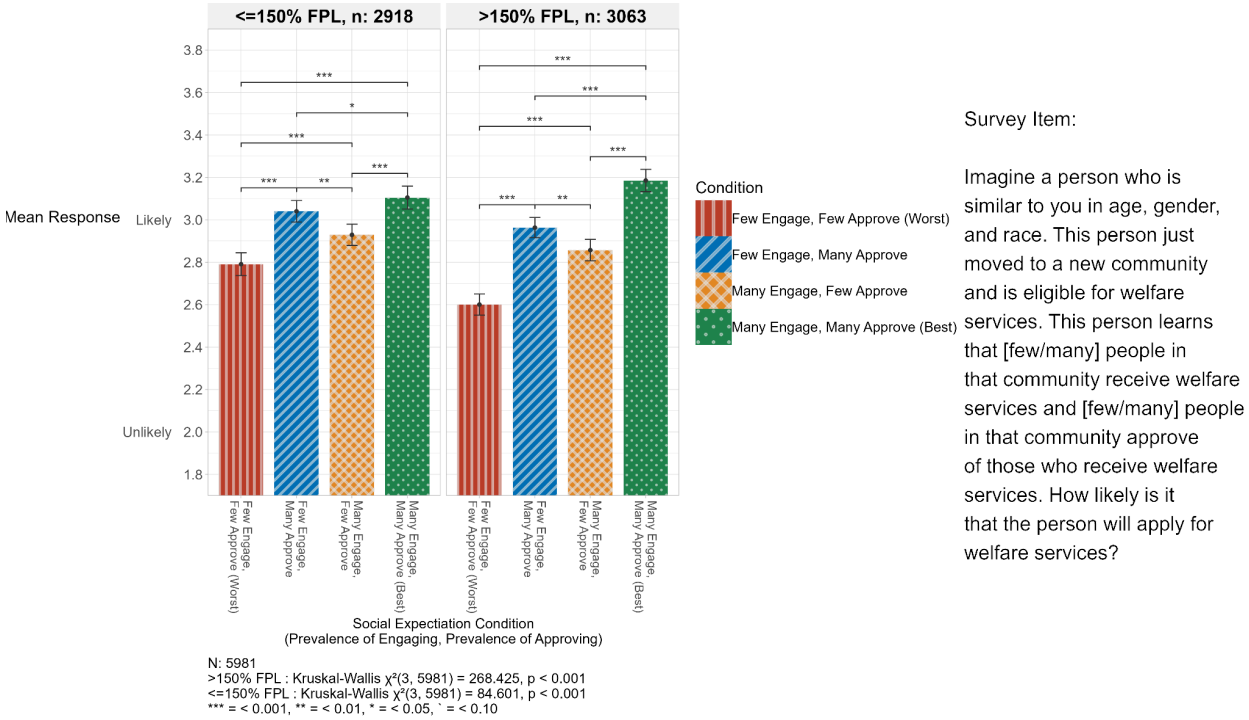
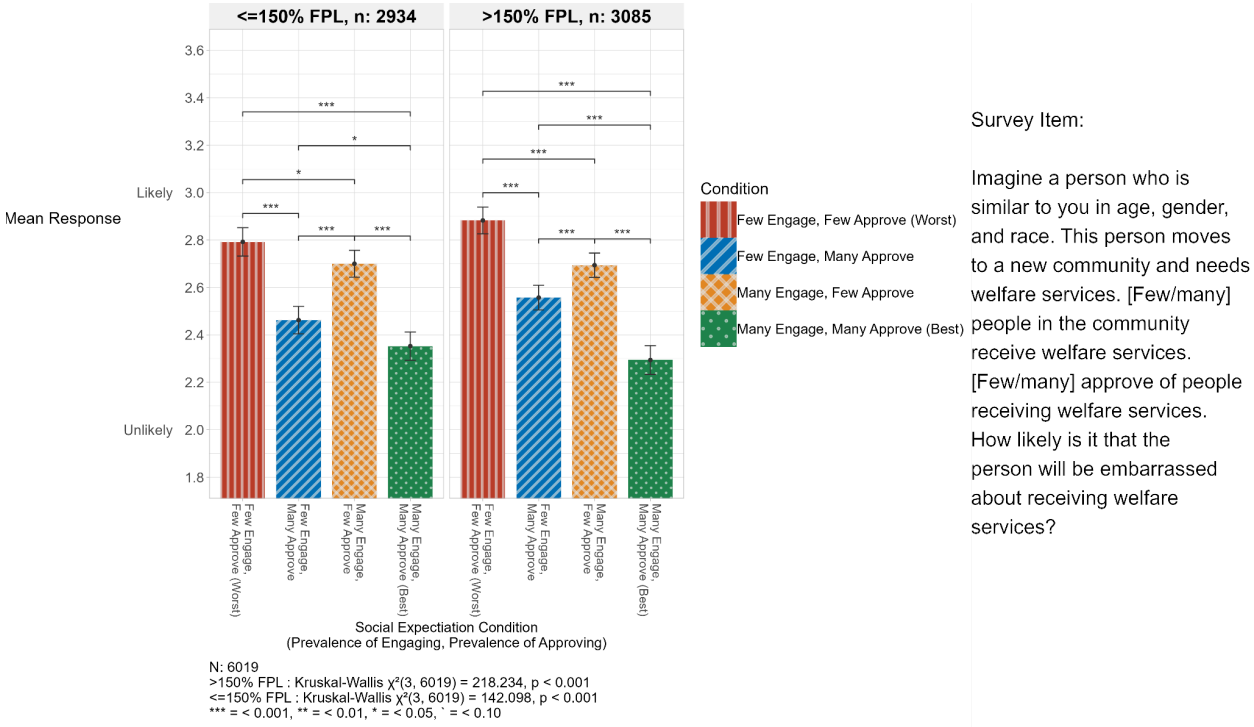


Figure 13: Mean Response by Welfare Vignette Social Environment Conditions (Embarrassed) and Poverty Status



Social Norms Diagnosis: Violence in Response to Disrespect

The use of violence in response to disrespect is influenced by a social norm.

Actual empirical and normative expectations around the use of violence in response to disrespect are positively and significantly correlated with respondents' likelihood of having experienced a physical conflict.[6] Our logistic regression analysis shows that we can reject the null hypothesis for **test** 1 – that is, actual empirical expectations are positively and significantly associated with engagement in violence. For every additional person out of ten using violence in response to disrespect, there is a 7% increase in the respondent's likelihood of engaging in violence ($p < 0.001$). We show a larger positive and significant association between expected approval of using violence (normative expectations) and the likelihood of the respondent engaging in it. For every additional person out of ten who approves of using violence in response to disrespect, there is a 21% increase in the respondent's likelihood of using violence ($p < 0.001$). Thus, we reject the null hypothesis for **test 2**. Actual empirical and normative

[6] Explicitly asking respondents whether they have responded to disrespect using violence results in concerns of confidentiality and social desirability bias. Thus, we use a proxy to measure engagement in violent behavior: "How often do you experience physical conflicts (for example, hitting, shoving, slapping)?"

expectations are positively and significantly associated with the likelihood of the respondent using violence in response to disrespect. See Table 5 below for further logistic regression results.

Table 5: Violence to Disrespect Logistic Regression Coefficients

	Full Sample		*<=150% FPL*		*>150% FPL*	
	Excl. Controls	***Incl. Controls***	***Excl. Controls***	***Incl. Controls***	***Excl. Controls***	***Incl. Controls***
Characteristic[1]	***OR***[2,3]	***OR***[2,3]	***OR***[2,3]	***OR***[2,3]	***OR***[2,3]	***OR***[2,3]
Hitting Common	*1.07****	*1.06*	*1.07**	*1.06*	*1.06***	*1.05*
Hitting Approval	*1.21****	*1.17*	*1.19****	*1.14*	*1.19****	*1.18*
No. Obs.	*5,869*	*5,688*	*1,098*	*1,039*	*4,772*	*4,649*

[1] Weighted 2*p<0.05; **p<0.01; ***p<0.001, [3] OR = Odds Ratio, SE = Standard Error

Controls include poverty status, urbanicity, race/ethnicity, gender, and age group

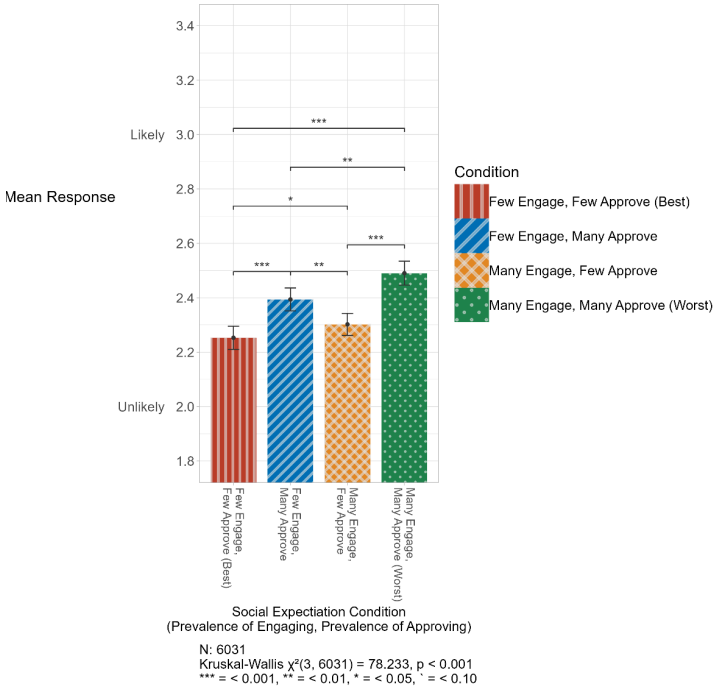
Vignette analysis allows us to causally evaluate the relationship between empirical and normative expectations and the use of violence in response to disrespect. We find that social expectations play a causal role. In the vignette analysis, we see that the hypothetical individual faced with high normative and high empirical expectations is predicted to have a greater likelihood of resorting to violence relative to low normative and low empirical expectations ($p < 0.001$). We further analyze the conditionality of preference with respect to the relative weight of empirical and normative expectations. For test 3.1 we reject the null hypothesis, i.e., we find conditionality of preference with respect to empirical expectations ($p < 0.05$). Similarly, we reject the null for test 3.2 ($p < 0.001$), suggesting that there is conditionality of preference with respect to both empirical and normative expectations. Within SNT, this implies that responding with violence to disrespect is a social norm. Interestingly, we also see that normative expectations have a greater weight than empirical ones ($p < 0.01$).

We now turn to heterogeneity by poverty status. There is heterogeneity in the norms governing why people resort to violence. We find that in the non-poor subsample conditionality of behavior is stronger than in the poor subsample.[7] For both subsamples we find overall conditionality of preference (test 3.0, both $p < 0.001$). Looking at the non-poor subsample, we

[7] In Appendix, we show data about the conditionality experienced by different racial and ethnic groups. The group of White people is the one most influenced by social expectations.

reject the null hypothesis for both test 3.1 ($p < 0.01$) and 3.2 ($p < 0.001$), suggesting conditionality of preference with respect to both empirical and normative expectations. This implies that in the non-poor subsample, the use of violence in response to disrespect is influenced by a social norm. However, in the poor subsample we reject the null hypothesis for test 3.1 and 3.2 ($p > 0.05$). In fact, in this subsample we only document an effect when both high empirical and normative expectations are activated together.

Figure 14: Mean Response by Hitting Social Environment Conditions

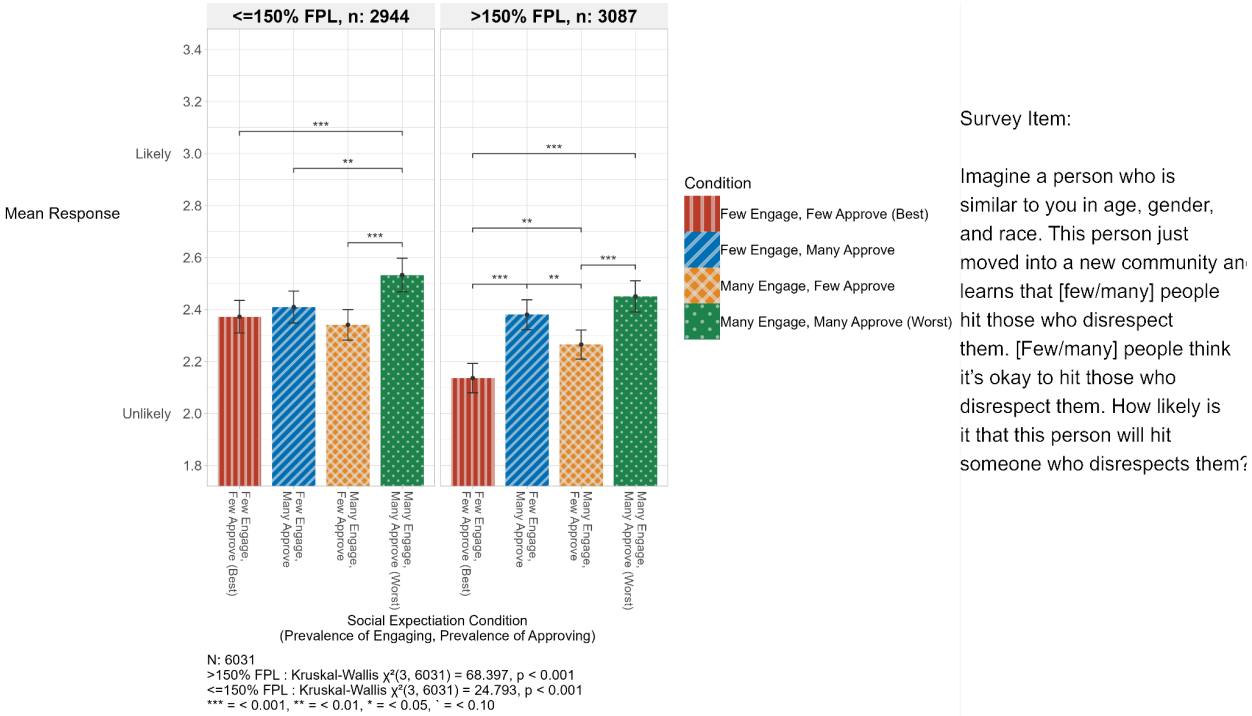


Survey Item:

Imagine a person who is similar to you in age, gender, and race. This person just moved into a new community and learns that [few/many] people hit those who disrespect them. [Few/many] people think it's okay to hit those who disrespect them. How likely is it that this person will hit someone who disrespects them?

See Appendix for additional results exploring heterogeneity by Race/Ethnicity, Geography, Gender, and Age.

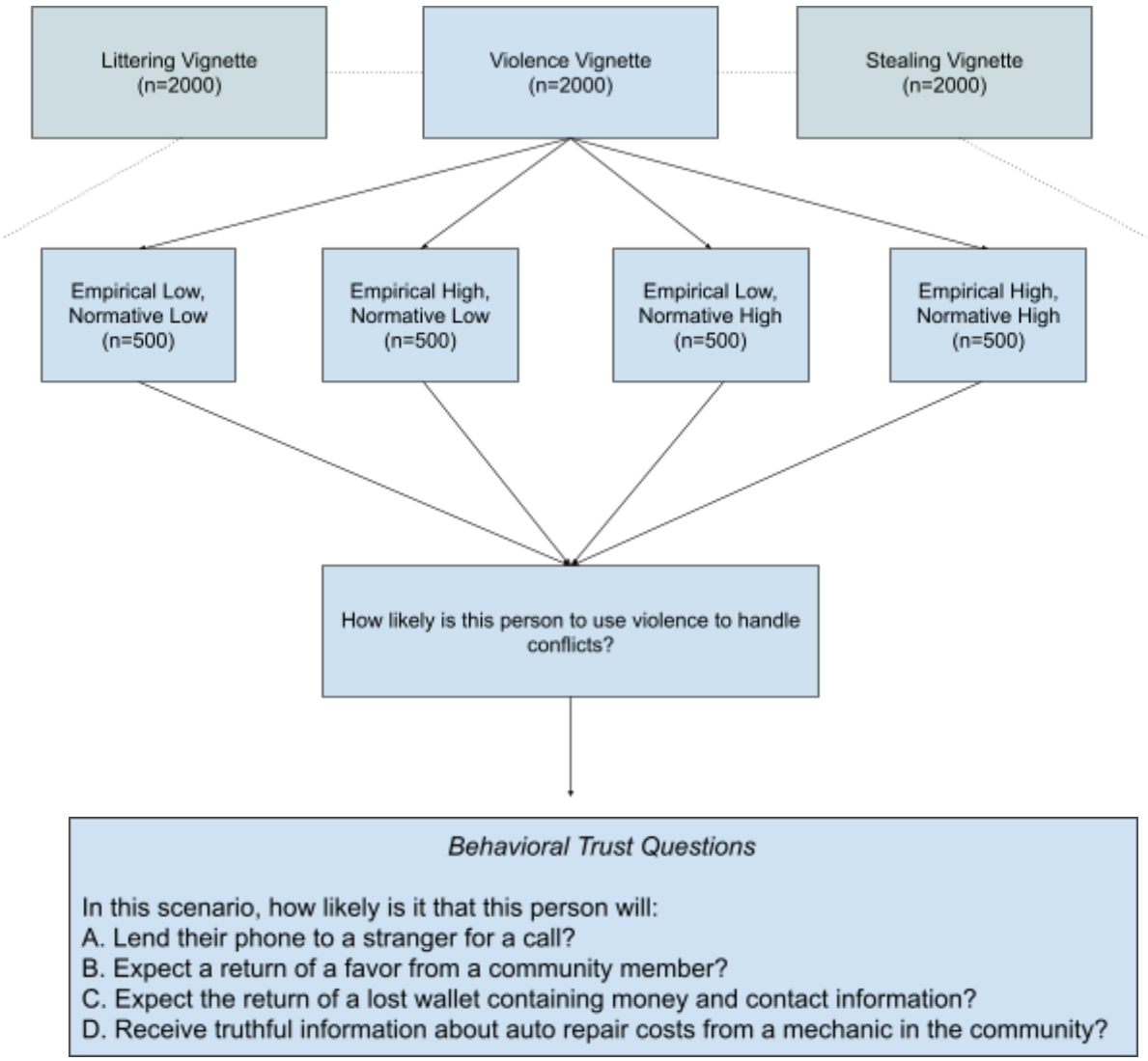
Figure 15: Mean Response by Hitting Social Environment Conditions and Poverty Status



Trust and Social Norms Results

Recall that we use a two-part vignette measurement strategy, first asking respondents to imagine a fictitious character moving to a community where there is a specific behavioral prevalence and collective approval of one of three negative behaviors (littering, stealing, and using violence.See the figure below). Each respondent is assigned to one of the three behaviors (social environments), and a particular combination of social expectations. We first assess the conditionality of predicted behavior on the specific social expectations, and then ask questions about engaging in four trusting behaviors in that specific condition (i.e. given specific social expectations).

Figure 16: Vignette Assignments and Flow



Each respondent is assigned to one vignette (either littering, stealing or using violence) and only one combination of social expectations (high/low empirical expectations, and high/low normative expectations). The behavioral trust questions asked are the same for every participant. For our full sample, and across all vignette behaviors (stealing, littering and the use of violence) and all trust behaviors (lending a phone, expecting a favor returned, expecting a wallet returned, and trusting a mechanic), mean levels of trust fall progressively and significantly as we move from a good world (few engage and few approve) to the ultimate bad world in which many engage and many approve. The consistent and progressive decline in trust through different 'world' conditions indicates that as anti-social behaviors are perceived as common and approved, trust in community members declines.

Social Norms Diagnosis (Full Sample)

For each behavior (stealing, using violence, and littering), we analyze the vignette data to test for evidence of social norms. The Kruskal-Wallis and Dunn-Bonferroni tests indicate that the likelihood of the hypothetical character engaging in the vignette behavior significantly differs between the low empirical and low normative, and high empirical and high normative conditions at the 1% level (see Figure 18 below). This suggests that the decision to engage in these negative behaviors is conditional on empirical and normative expectations.

When looking at littering and using violence, there is not much difference between low empirical and high normative, and high empirical and low normative conditions, suggesting that neither empirical nor normative expectations dominate. In the stealing vignette, on the contrary, the normative expectations seem to play a major role in predicting the likelihood that the hypothetical character would steal (low empirical and high normative is significantly stronger than high empirical and low normative in predicting the behavior).

Trust Behaviors by Vignette Condition (Full Sample)

Using Kruskal-Wallis tests, we find for the full sample that, across all vignettes behaviors and all trust behaviors there is significant difference between mean levels of trust by social expectation conditions. The results of Dunn-Bonferroni comparisons indicate that mean trust levels in the low empirical and low normative condition (the ‘good’ world) are significantly greater than mean trust levels in the high empirical and high normative condition (the ‘bad’ world) across all vignettes and trust behaviors ($p < 0.001$). Mean trust levels consistently decrease between the ‘good’ world where few engage and few approve, passing through intermediate conditions where few engage and many approve, or many engage and few approve, and the ‘bad’ world where many engage and many approve ($p < 0.01$). The consistent decline in trust from the low empirical and low normative conditions to all other conditions across vignettes and trust behaviors indicates that, as participants expect their community to engage in and approve of anti-social behaviors like littering, stealing, or using violence, their trust in community members declines.

Figure 17: Trust Behavior Outcomes by 'Using Violence' Vignette Social Expectation Condition (Full Sample)

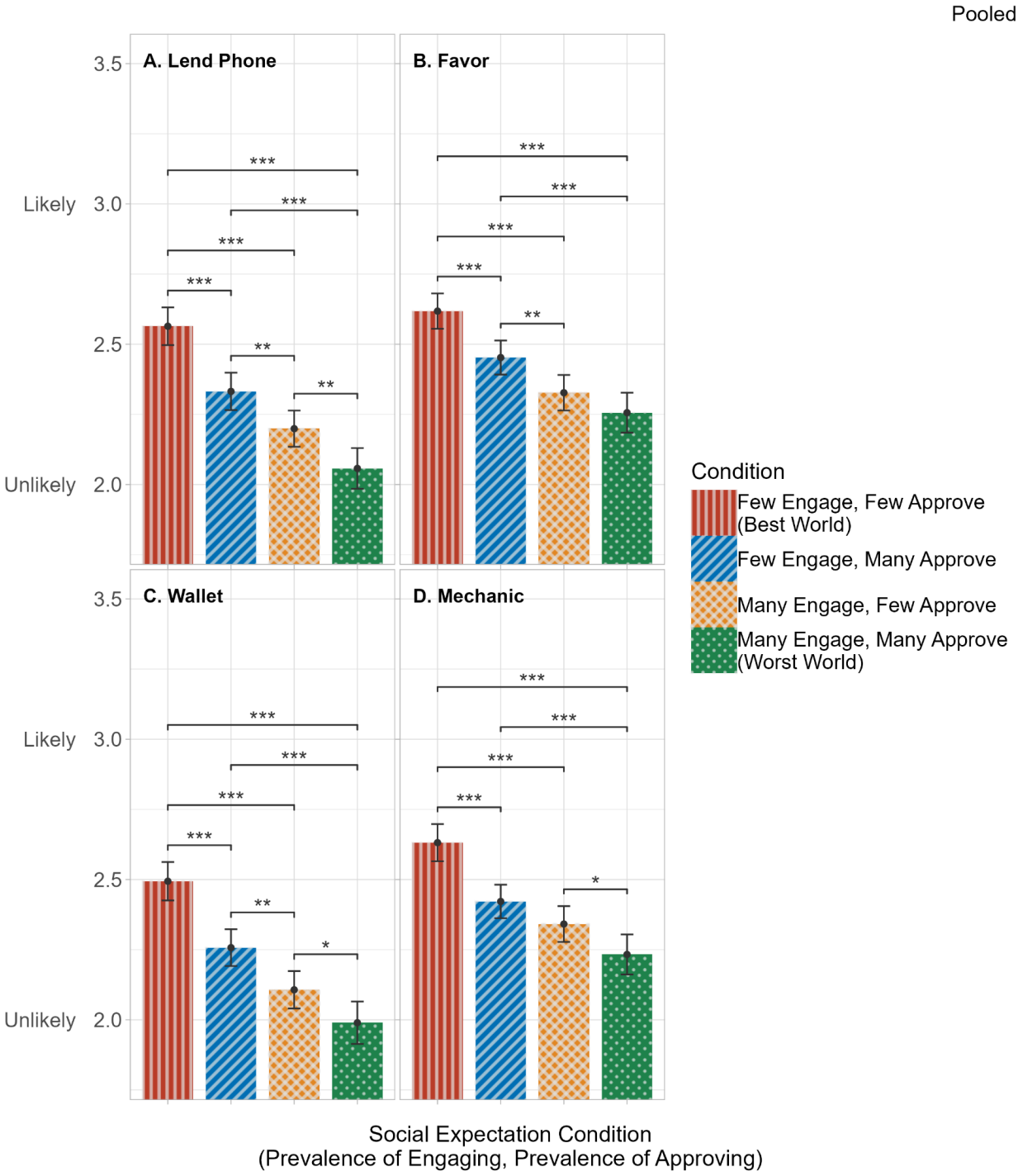
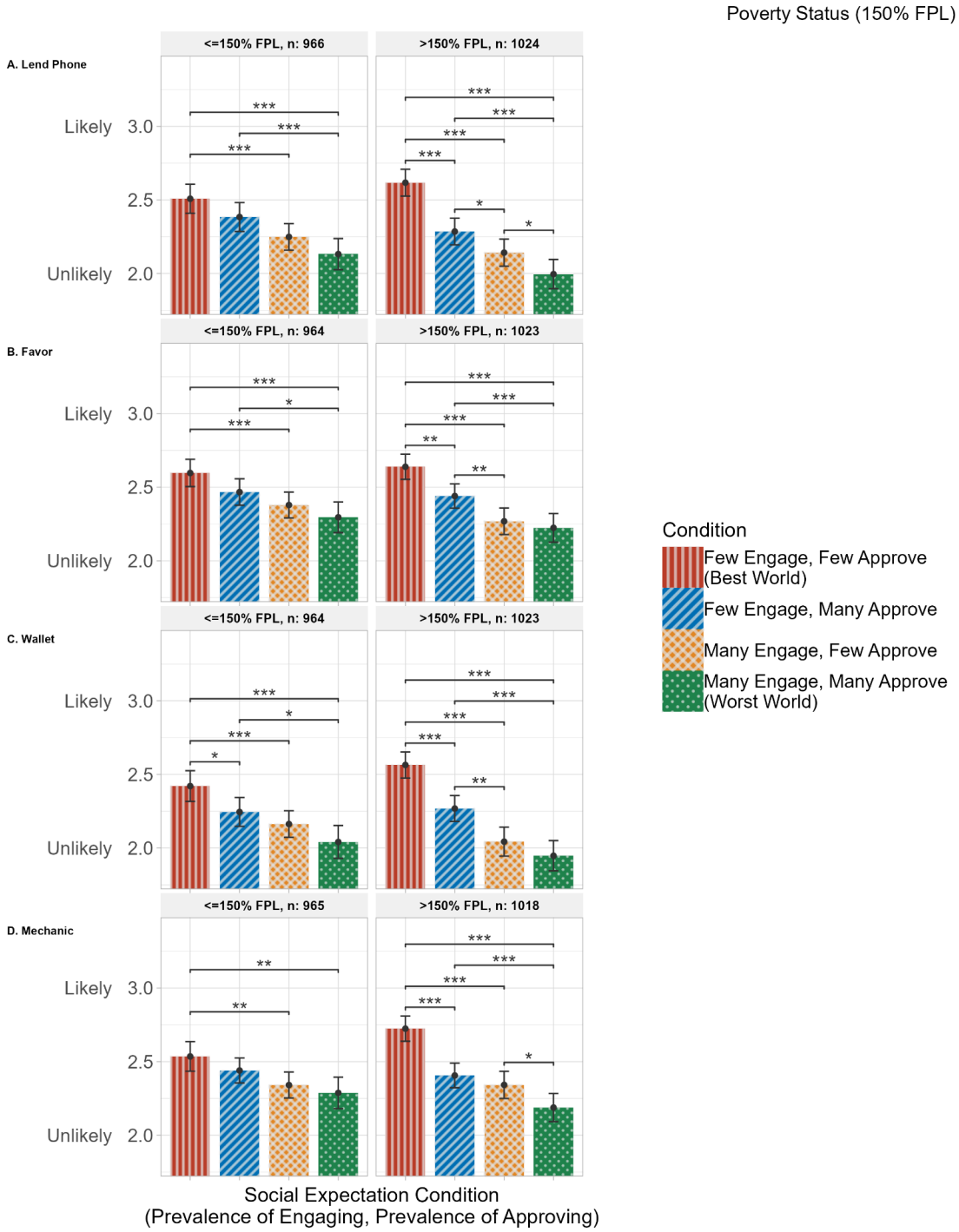


Figure 18: Dunn-Bonferroni Comparisons of Trust Outcomes by 'Using Violence' Vignette Social Expectation Condition & Poverty Status (150% FPL)



Stratified by Income

Using Violence

Table 6 below summarizes the relationship between trusting behaviors and social expectation conditions in the violence vignette, stratified by income. Significant results in **test 3.0** indicate the conditionality of trusting behaviors on social environmental conditions. Significant results in **test 3.1** and **3.2** imply that empirical and normative conditions are respectively significant in predicting trusting behaviors. Finally, the table indicates whether trusting behaviors are empirically or normatively led.

In the violence vignette, we reject the null hypothesis for **test 3.0** for both poor and non-poor individuals, i.e. all trusting behaviors are dependent on social expectations. For non-poor respondents, all trusting behaviors are influenced by social norms. Rejecting the null hypotheses for **test 3.1** and **test 3.2**, both empirical and normative expectations determine the likelihood of trusting behaviors. In all cases, however, trusting behaviors are mainly empirically led. For those experiencing poverty, most trusting behaviors are influenced by empirical rather than normative expectations (we fail to reject **test 3.2).** For specific Dunn-Bonferroni coefficient details, see Table A10 in the appendix.

Table 6: Trusting Behaviors under Using Violence Vignette by Poverty Status

Vignette: Using Violence					
Trust Behavior	***Poverty Status***	***High Empirical, High Normative - Low Empirical, Low Normative (Test 3.0)***	***High Empirical, Low Normative - Low Empirical, Low Normative (Test 3.1)***	***Low Empirical, High Normative - Low Empirical, Low Normative (Test 3.2)***	***Empirical v. Normative Relative Predominance***
Lend Phone	< 150% FPL	✓	✓	✗	Descriptive Norm (Empirical Only)
	> 150% FPL	✓	✓	✓	Social Norm (Empirical > Normative)
Return Favor	< 150% FPL	✓	✓	✗	Descriptive Norm (Empirical Only)
	> 150% FPL	✓	✓	✓	Social Norm (Empirical > Normative)
Return Wallet	< 150% FPL	✓	✓	✓	Social Norm (Balanced)
	> 150% FPL	✓	✓	✓	Social Norm (Empirical > Normative)
Truthful Mechanic	< 150% FPL	✓	✓	✗	Descriptive Norm (Empirical Only)
	> 150% FPL	✓	✓	✓	Social Norm (Empirical > Normative)

Stealing

In the stealing vignette, all trusting behaviors are influenced by social norms. Mean trust levels increase progressively and significantly between high empirical and high normative expectations, and low empirical and low normative expectations. We reject the null hypothesis for **test 3.0** for both poor and non-poor individuals, i.e. all trusting behaviors are interdependent behaviors. We additionally reject **tests 3.1** and **3.2**, finding that both empirical and normative expectations are significantly associated with the hypothetical character's likelihood of engaging in any trusting behavior. Among poor respondents, such behaviors are balanced. Among non-poor respondents, such behaviors are all empirically led. These findings are summarized in Table 7 below. For specific Dunn-Bonferroni coefficients, see Table A11 in the appendix.

Table 7: Trust Behaviors under Stealing Vignette by Poverty Status

Vignette: Stealing					
Trust Behavior	***Poverty Status***	***High Empirical, High Normative - Low Empirical, Low Normative (Test 3.0)***	***High Empirical, Low Normative - Low Empirical, Low Normative (Test 3.1)***	***Low Empirical, High Normative - Low Empirical, Low Normative (Test 3.2)***	***Empirical v. Normative Relative Predominance***
Lend Phone	< 150% FPL	✓	✓	✓	Social Norm (Balanced)
	> 150% FPL	✓	✓	✓	Social Norm (Empirical > Normative)
Return Favor	< 150% FPL	✓	✓	✓	Social Norm (Balanced)
	> 150% FPL	✓	✓	✓	Social Norm (Empirical > Normative)
Return Wallet	< 150% FPL	✓	✓	✓	Social Norm (Balanced)
	> 150% FPL	✓	✓	✓	Social Norm (Empirical > Normative)
Truthful Mechanic	< 150% FPL	✓	✓	✓	Social Norm (Balanced)
	> 150% FPL	✓	✓	✓	Social Norm (Empirical > Normative)

Littering

Across the stealing and using violence vignettes, trusting behaviors are influenced by largely normatively led expectations, with a few exceptions among poor individuals. Table 8 below summarizes our findings in the littering vignette. In this vignette, we see more heterogeneity in the effects of social expectations on trusting behaviors by poverty status. Among non-poor individuals, we reject the null hypothesis for **test 3.0** in all cases, i.e. all trusting behaviors are interdependent. We further reject the null hypothesis for **test 3.1** and **3.2** in all but one case, finding that both empirical and normative expectations influence the likelihood of the hypothetical character engaging in trusting behaviors. Norms around trusting are balanced or empirically led.

In contrast, among poor respondents, we do not reject the null hypothesis for **test 3.0** in two trusting behaviors - lending a phone and believing a favor would be returned. These two behaviors are not dependent on either empirical or normative expectations. We hypothesize that such behaviors are not conditional on social expectations because poor individuals are more likely to live in neighborhoods where littering is prevalent. Despite experiencing greater exposure to littering, individuals in poorer neighborhoods may develop and maintain strong interpersonal trust within their communities, and therefore believe that the hypothetical character would not be more distrustful due to negative social expectations around littering. Another possible explanation is that resource scarcity may lead poor individuals to prioritize trusting behaviors that provide community members with resource support – lending a phone or returning a favor – regardless of the prevalence and approval of littering.

Among poor respondents, we reject the null hypothesis for **test 3.0** for trusting that a wallet would be returned and that a mechanic would provide truthful cost estimates. These trusting behaviors depend upon empirical and normative expectations. However, in both cases, we do not reject the null hypothesis for **test 3.1** and **test 3.2** - that is, neither empirical or normative expectations independently and significantly influence the likelihood of the hypothetical character's trusting behavior. For specific Dunn-Bonferroni coefficients, see Table A12 in the appendix.

Table 8: Trust Behaviors under Littering Vignette by Poverty Status

Vignette: Littering					
Trust Behavior	***Poverty Status***	***High Empirical, High Normative - Low Empirical, Low Normative (Test 3.0)***	***High Empirical, Low Normative - Low Empirical, Low Normative (Test 3.1)***	***Low Empirical, High Normative - Low Empirical, Low Normative (Test 3.2)***	***Empirical v. Normative Relative Predominance***
Lend Phone	< 150% FPL	✗	✗	✗	No Norm (Independent Behavior)
	> 150% FPL	✓	✓	✓	Social Norm (Balanced)
Return Favor	< 150% FPL	✗	✗	✗	No Norm (Independent Behavior)
	> 150% FPL	✓	✓	✗	Descriptive Norm (Empirical Only)
Return Wallet	< 150% FPL	✓	✗	✗	Conditionality of Preference Only
	> 150% FPL	✓	✓	✓	Social Norm (Empirical > Normative)
Truthful Mechanic	< 150% FPL	✓	✗	✗	Conditionality of Preference Only
	> 150% FPL	✓	✓	✓	Social Norm (Balanced)

Stratified by Racial/Ethnic Identity

Using Violence

In the violence vignette, we observe heterogeneity by race and ethnicity in the conditionality of trusting behaviors on social expectations.These results are summarized in Table 9 below, and visualized graphically in Figure 21. For White respondents, we reject the null hypothesis for **test 3.0 -** since trust levels fall significantly between the low empirical and low normative, and high empirical and high normative expectation conditions. All trusting behaviors are influenced by social expectations. For all trusting behaviors, we additionally reject the null hypotheses for **tests 3.1** and **3.2,** i.e. both empirical and normative expectations are significantly associated with the hypothetical character's likelihood of engaging in the behavior. Thus, among White respondents, trust is influenced by social norms, and such norms are empirically led or balanced.

In contrast, social expectations do not influence trust among Black respondents. For all trusting behaviors, we reject the null hypothesis for **test 3.0,** as we find no significant difference

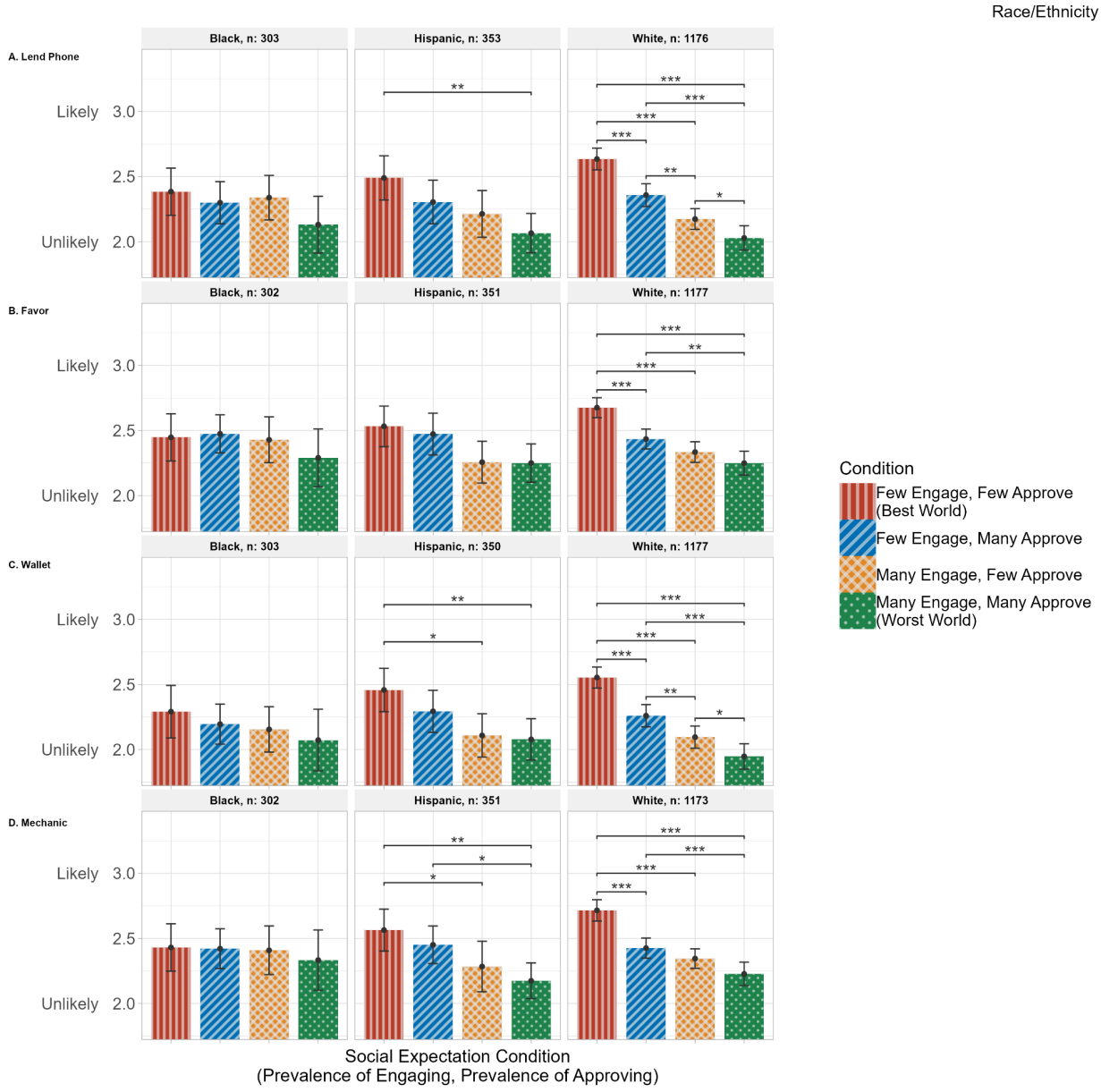
between low empirical and low normative, and high empirical and high normative conditions. These behaviors are not interdependent.

Among Hispanic respondents, the conditionality of trusting behaviors on social expectations varies by the specific behavior in question. Though we reject the null hypothesis for **test 3.0**, we cannot reject the null hypotheses for **tests 3.1** and **3.2.** For example, though lending a phone to a stranger is an interdependent behavior, neither empirical or normative expectations are independently and significantly associated with changes in the likelihood of such behavior. In contrast, as we see among Black respondents, expecting the return of a favor is not conditional on social expectations, i.e., we fail to reject the null hypothesis for **test 3.0**. Among Hispanic respondents, the return of a lost wallet and truthful cost estimates from a mechanic are influenced by descriptive norms. In these cases, we reject the null hypothesis for **test 3.0,** finding significant differences between the likelihood of behaviors between high empirical and high normative, and low empirical and low normative expectations. The behaviors are interdependent. We further reject the null hypothesis for **test 3.1** and find significant conditionality of behaviors on empirical expectations. However, we cannot reject the null hypothesis for **test 3.2 -** changes in normative expectations do not result in significant changes in the likelihood of behaviors. Thus, we diagnose trust in a wallet being returned and trust in a mechanic for honest estimate as influenced by descriptive norms. Further presentation of results in terms of coefficients is available in Table A13 in the appendix.

Table 9: Trust Behaviors under Violence Vignette by Race and Ethnicity

Vignette: Using Violence					
Trust Behavior	***Race/Ethnicity***	***High Empirical, High Normative - Low Empirical, Low Normative (Test 3.0)***	***High Empirical, Low Normative - Low Empirical, Low Normative (Test 3.1)***	***Low Empirical, High Normative - Low Empirical, Low Normative (Test 3.2)***	***Empirical v. Normative Relative Predominance***
Lend Phone	White	✓	✓	✓	Social Norm (Empirical > Normative)
	Black	✗	✗	✗	No Norm (Independent Behavior)
	Hispanic	✓	✗	✗	Conditionality of Preference Only
Return Favor	White	✓	✓	✓	Social Norm (Balanced)
	Black	✗	✗	✗	No Norm (Independent Behavior)
	Hispanic	✗	✗	✗	No Norm (Independent Behavior)
Return Wallet	White	✓	✓	✓	Social Norm (Empirical > Normative)
	Black	✗	✗	✗	No Norm (Independent Behavior)
	Hispanic	✓	✓	✗	Descriptive Norm (Empirical Only)
Truthful Mechanic	White	✓	✓	✓	Social Norm (Balanced)
	Black	✗	✗	✗	No Norm (Independent Behavior)
	Hispanic	✓	✓	✗	Descriptive Norm (Empirical Only)

Figure 19: Dunn-Bonferroni Comparisons of Trust Outcomes by 'Using Violence' Vignette Social Expectation Condition & Racial/Ethnic Identity



Stealing

As in the case of the violence vignette, we see heterogeneity by race and ethnicity in the conditionality of trusting behaviors on social expectations in the stealing vignette. As previously, among White respondents, all trusting behaviors are influenced by social norms. We universally reject the null hypothesis for **test 3.0**, finding significant declines in trust between conditions of low empirical and low normative conditions, and high empirical and high normative conditions. Thus, the trusting behaviors are interdependent. We further reject the null hypotheses for **tests 3.1** and **3.2 -** that is, both empirical and normative expectations are significantly associated with the hypothetical character's likelihood of engaging in trusting behaviors. Thus, these behaviors are influenced by social norms, and these norms are either balanced or empirically led.

In the stealing vignette, we find that among Black respondents all trusting behaviors are independent of social expectations. We are unable to reject the null hypothesis for **test 3.0**; there is no significant difference between the likelihood of trust behaviors under low empirical and low normative, and high empirical and high normative expectations. There is no norm regulating trust in the studied conditions.

Among Hispanic respondents, our norm diagnosis varies by the specific trusting behavior in question. The likelihood of lending a phone, expecting the return of a favor, and expecting truthful cost estimates from a mechanic are independent behaviors, i.e., - we cannot reject the null hypothesis for **test 3.0** as we do not observe a significant difference in the likelihood of trusting between low empirical and low normative, and high empirical and high normative expectations. Expecting the return of a lost wallet, however, is influenced by a descriptive norm. We reject the null hypothesis for **test 3.0**, finding that trusting in this case depends on social expectations. We further reject the null hypothesis for **test 3.1** but not for **test 3.2.** Thus, only empirical and not normative expectations significantly affect the likelihood of the specific trusting behavior.

Table 10: Trust Behaviors under Stealing Vignette by Race and Ethnicity

Vignette: Stealing					
Trust Behavior	***Race/Ethnicity***	***High Empirical, High Normative - Low Empirical, Low Normative (Test 3.0)***	***High Empirical, Low Normative - Low Empirical, Low Normative (Test 3.1)***	***Low Empirical, High Normative - Low Empirical, Low Normative (Test 3.2)***	***Empirical v. Normative Relative Predominance***
Lend Phone	White	✓	✓	✓	Social Norm (Empirical > Normative)
	Black	✗	✗	✗	No Norm (Independent Behavior)
	Hispanic	✗	✗	✗	No Norm (Independent Behavior)
Return Favor	White	✓	✓	✓	Social Norm (Balanced)
	Black	✗	✗	✗	No Norm (Independent Behavior)
	Hispanic	✗	✗	✗	No Norm (Independent Behavior)
Return Wallet	White	✓	✓	✓	Social Norm (Empirical > Normative)
	Black	✗	✗	✗	No Norm (Independent Behavior)
	Hispanic	✓	✓	✗	Descriptive Norm (Empirical Only)
Truthful Mechanic	White	✓	✓	✓	Social Norm (Balanced)
	Black	✗	✗	✗	No Norm (Independent Behavior)
	Hispanic	✗	✓	✗	No Norm (Independent Behavior)

Littering

As in the other trust vignettes, we note heterogeneity by race when diagnosing trusting behaviors as conditional or unconditional on social expectations around littering. Among White respondents, we reject the null hypothesis for **test 3.0**, finding significant differences in the likelihood of engaging in trusting behaviors between low empirical and low normative, and high empirical and high normative expectations conditions. All trusting behaviors are interdependent. All behaviors - with the exception of expecting the return of a favor - are influenced by social norms. For expecting the return of a favor, we reject the null hypothesis for **test 3.1** but not for **test 3.2**. This indicates that while the likelihood of trusting behavior is conditional on empirical expectations, it is not conditional on normative expectations. Thus, expecting the return of a favor is influenced by a descriptive norm.

Among Black respondents, none of the trusting behaviors are conditional on social expectations. We fail to reject the null hypothesis for **test 3.0** and do not find significant differences in the likelihood of trusting behaviors between low empirical and low normative, and high empirical and high normative expectations. The unconditionality of trusting behaviors on social expectations is replicated among Hispanic individuals.

Table 11: Trust Behaviors under Littering Vignette by Race and Ethnicity

Vignette: Littering					
Trust Behavior	***Race/Ethnicity***	***High Empirical, High Normative - Low Empirical, Low Normative (Test 3.0)***	***High Empirical, Low Normative - Low Empirical, Low Normative (Test 3.1)***	***Low Empirical, High Normative - Low Empirical, Low Normative (Test 3.2)***	***Empirical v. Normative Relative Predominance***
Lend Phone	White	✓	✓	✓	Social Norm (Balanced)
	Black	✗	✗	✗	No Norm (Independent Behavior)
	Hispanic	✗	✗	✗	No Norm (Independent Behavior)
Return Favor	White	✓	✓	✗	Descriptive Norm (Empirical Only)
	Black	✗	✗	✗	No Norm (Independent Behavior)
	Hispanic	✗	✗	✗	No Norm (Independent Behavior)
Return Wallet	White	✓	✓	✓	Social Norm (Balanced)
	Black	✗	✗	✗	No Norm (Independent Behavior)
	Hispanic	✗	✗	✗	No Norm (Independent Behavior)
Truthful Mechanic	White	✓	✓	✓	Social Norm (Balanced)
	Black	✗	✗	✗	No Norm (Independent Behavior)
	Hispanic	✗	✗	✗	No Norm (Independent Behavior)

To summarize: we find heterogeneity by race across all the vignettes. Trusting behaviors among White respondents are influenced by empirically led social expectations. Trusting behaviors among Black respondents instead are not conditional on social expectations. We see mixed results among Hispanic respondents, but largely find limited conditionality of trusting behaviors on social expectations. When we do see conditionality among Hispanic respondents, empirical expectations play a major role in driving the likelihood of trusting behaviors.

We present two hypotheses aimed at explaining racial differences in trust conditionality within adverse environments. The first hypothesis posits that individuals' direct exposure to negative social conditions—like violence, theft, and littering—may influence how social expectations shape trust. Specifically, people accustomed to such environments might develop strong interpersonal trust within their communities, leading them to believe that external factors like negative social expectations won't inherently undermine trust. If poor Black and Hispanic participants experience these adverse environments more frequently, then, according to our hypothesis, their trusting behaviors would be less affected by generalized social expectations.

The second hypothesis suggests that heterogeneity in trust responses may stem from how respondents imagine the demographic composition of new communities that a hypothetical character might move to, as well as the demographics of individuals within these communities whom they are asked to trust. Racial biases and prejudices might therefore influence trust, as individuals project certain assumptions onto unfamiliar social contexts. We are currently examining respondents' actual neighborhood demographics and the composition of their social networks—focusing on the presence of weak ties across racial and socioeconomic lines—to gain further insight into these hypotheses.

Policy Implications

Showing an association between social expectations and individual behaviors provides a foundation for designing policy interventions that can sustainably change negative collective behaviors by changing existing social expectations or creating new ones. Interventions will differ by depending on which expectations matter. We briefly look at possible interventions in the context of each of the behaviors examined: high school attendance, pursuit of higher education, use of welfare services, and violence in response to disrespect.

High School Attendance

High school attendance and dropout behavior have been widely studied in the United States and abroad, mainly due to the large economic returns to finishing high school (or earning equivalent degrees). In 2016, full-time year round workers who completed high school earned $6,400 more per year ($31,800) than those who did not ($25,400) (National Center for Education Statistics, 2019). Nationally, drop out rates were 7.0% in 2012, falling to 5.3% in 2022 (National Center for Education Statistics, 2024). However, these aggregate statistics mask heterogeneity by district, school, and even peer groups. While some districts have quite low dropout rates, others are much higher. For example, in Pequea Valley School District (in rural eastern Pennsylvania) around 48% of 16-19 year olds have neither graduated nor are enrolled in high school. In the neighboring Coatesville area school district, the number is 1.6%. While many things differ between these districts, they highlight the often vast differences in high school dropout between districts (Social Explorer, 2024).

In many studies, traditional policy interventions have been widely tested. These include legal (e.g., truancy laws), information (e.g., information about returns to education), and financial (e.g., paying students to attend class) interventions. Each of these interventions has potential pitfalls. For example, laws fail to change behavior when they are perceived as illegitimate, arbitrary, or distant from shared norms. Likewise, information interventions face issues of statistical literacy and emotional salience, not to mention the credibility of the sources. Financial approaches may be useful in the short term, but may provide mixed messages. They may crowd out intrinsic motivation, and small incentives may suggest that behavior change is not that important. Moreover, financial incentives may temporarily change behavior, only as long as the incentive lasts. Since peer effects have been widely documented in high school education (Sacerdote, 2011), it is advisable to extend policy interventions to identify and change widespread social expectations.

When we design interventions focusing on weakening existing norms or even creating new ones, it is important to be clear on the type of norm we are diagnosing. If we identify a behavior as following a descriptive norm, only empirical expectations matter, and correcting expectations of peer attendance may be an effective way to boost attendance when it lags behind. In contrast, if we find that the decision to drop out of school is supported by a social

norm, we have to pay attention to both empirical and normative expectations. In this case, several policy interventions may be appropriate.

1. *Correcting expectations*: Gathering information about prevalence of high school completion and approval of it, we can assess whether these expectations align with reality. A common finding is *pluralistic ignorance*, where individual expectations significantly differ from what is the believed prevalence or acceptance of a specific behavior. In this case, interventions correcting misperceptions may turn out to be successful.
2. *Changing the reference group*: Another potential intervention consists of changing or expanding students' social networks in order to modify the reference group. For example, the "Big Brothers, Big Sisters" program falls into this type of intervention. The older mentor is typically close enough in age to be part of their mentee's reference group and to change the group's social expectations. This is one of many examples of how to provide relatable and realistic models that can deeply influence students' perceptions and expectations. In every community, there exist individuals who are usually trusted by the community and want to see a change in certain specific practices. These are what we call trendsetters (Bicchieri 2016). Identifying and empowering them can be a very effective policy intervention.
3. *Creating new expectations:* Changing students' social expectations is important, but it is also important to work on parents. Parents' expectations are equally important in influencing students' performance. Our data support interventions aimed at involving and training parents from students' early school years. We see that there is a strong correlation between students being encouraged by parents to complete high school and individuals' decision to complete high school.

Pursuit of Higher Education

Returns to education do not end at high school completion. In 2016, full-time workers with an associate degree earned $38000 per year and those with a bachelor degree earned $54,800. As we did with high school attendance, we have examined expectations about higher education–which we define broadly, including bachelor, associate or technical and vocational school degrees. We again found that pursuing education is influenced by social expectations, both across poor and non-poor subsamples of the population. Similar to the strategy that should be employed to eliminate high school dropping out, correcting expectations, changing reference groups and identifying trendsetters are potentially successful interventions.[8] Our survey results show that beyond financial constraints, lack of interest and lack of perceived utility of a four-year college degree are key drivers in individuals choosing not to pursue higher education. Of those who do not believe they would obtain a four-year degree, approximately 49.3% do not have the interest or motivation to complete a program. Around 29.5% do not believe it would be useful to obtain a degree. Given the large percentage of individuals who either (a) lack motivation to complete a degree, or (b) do not believe it would be useful to obtain a degree, it is likely that the

[8] In our survey instrument formulation, we note that non-four-year degree certifications such as vocational or technical schools can also enable poverty reduction. We therefore define 'higher education' broadly in terms of associate degrees and vocational or technical school.

behavioral intervention mechanisms identified above will result in significant increases in the uptake of higher education.

Welfare Participation and Stigma

Use of welfare assistance falls well short of eligibility, and in many cases has fallen over time. For example, usage of TANF (Temporary Assistance for Needy Families) has fallen to 21% of poor households, relative to 68% in 1996 (i.e., at the time welfare reforms enacted TANF).[9] This effect is not limited to TANF (which might also have lower usage because it is time limited). Another example is SNAP (Supplemental Nutrition Assistance Program). In the 12 months leading up to the pandemic, only 78% of the estimated eligible population used it.

Past research has pointed to stigma as a major mechanism for low welfare participation in the U.S. This work goes back to Moffitt (1983), who builds an economic model of welfare stigma consistent with the low uptake of welfare assistance. More recently, Celhay et al. (2022) document a relationship between prevalence of welfare participation in local networks and underreporting of participation in surveys, which they interpret as due to stigma. Our results complement their explanations. By diagnosing social norms as influencing welfare participation, we are able to characterize the source of the stigma. Furthermore, we can do so by manipulating empirical and normative expectations through vignettes. This allows us to emphasize the importance of collective approval (normative expectations) relative to the prevalence (empirical expectations) of welfare use. Our data show that welfare participation is influenced by social expectations, suggesting that policy design should aim to change social expectations (and therefore social norms) about welfare participation. Our results about the role of embarrassment in preventing welfare participation points to the fact that particular (i.e. means tested) welfare benefits are often perceived by both the recipient and the general public in a negative light. On the contrary, universal welfare – as typical of Europe – because it is universal, is perceived less negatively and elicits much less embarrassment in those who benefit from it. One of the main suggestions we can draw from our data is that policies aimed at changing the stigma connected to receiving welfare would have a major effect on increasing welfare use for the needy.

Trust and Norms Change

Our study shows that interpersonal trust significantly declines as the social expectations about the state of the social environment become more negative. Our measures of behavioral trust are very sensitive to expectations of antisocial behaviors (i.e., littering, stealing, violence). In particular, trust tends to decline when the expected prevalence and approval of these behaviors increases, and it reaches the lowest level in a social environment where many people engage and approve of antisocial behavior. It follows that norm change interventions that would reduce these negative behaviors would have an important function in increasing trust. ‘Broken windows’ types of experiments have consistently shown that even small improvements such as

[9] https://www.cbpp.org/research/family-income-support/policy-brief-cash-assistance-should-reach-millions-more-families

increasing the cleanliness of the environment can have a significant effect on the rates of stealing and littering (Keizer et al. 2008). Norm change interventions may just start with operating significant changes in the physical environment, as these changes can affect expectations about a variety of negative behaviors, even if unrelated. As Keizer et al. (2008) note, an environment plagued by many signs of disorder would need a more comprehensive intervention about norm change. Without early interventions to address small and isolated signs of disorder, disorder spreads like a contagion and affects many different areas of life. In that case, as Keizer at al. (2008) suggests, “an effective intervention should now address the goal to act appropriately on all fronts.” In turn, we know that a significant and durable change in empirical expectations can lead to a change in the normative ones, i.e. what is now perceived as common is also perceived as good and desirable (Bicchieri 2024).

Interpersonal trust is very important in improving the chances of expanding one’s network, and getting financial and other kinds of help when needed (for example, for finding better jobs, accessing childcare when needed, borrowing money and so on). Working to ameliorate the social environment is thus very important in fostering stronger interpersonal trust and therefore offering better chances of upward mobility.

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Appendix

Higher Education

Table A1: College Vignette Logistic Regression Coefficients

	Full Sample		<=150% FPL		>150% FPL	
	Excl. Controls	Incl. Controls	Excl. Controls	Incl. Controls	Excl. Controls	Incl. Controls
Characteristic[1]	OR[2,3]	OR[2,3]	OR[2,3]	OR[2,3]	OR[2,3]	OR[2,3]
College Common	1.21***	1.21***	1.15***	1.17***	1.20***	1.22***
College Approval	1.14***	1.13***	1.11***	1.12***	1.13***	1.13***
Poverty Status (150% FPL)						
<=150% FPL		—				
>150% FPL		2.04***				
Urbanicity						
Rural		—		—		—
Suburban		1.07		0.79		1.15
Urban		0.65***		0.73		0.63***
Combined Race/Ethnicity						
White		—		—		—
Black		0.84		0.71		0.92

Hispanic		1.10		1.16		1.08
Asian-Pacific Islander		2.44***		3.42*		2.29**
Gender						
Female		—		—		—
Male		0.94		1.02		0.92
Age - 4 Categories						
18-29		—		—		—
30-44		3.74***		2.95***		4.06***
45-59		2.75***		2.80***		2.84***
60+		2.58***		2.72***		2.65***
Log-likelihood	-3,077	-2,746	-420	-368	-2,548	-2,367
BIC	6,180	5,604	863	830	5,120	4,830
No. Obs.	5,876	5,615	2,835	2,679	3,041	2,936

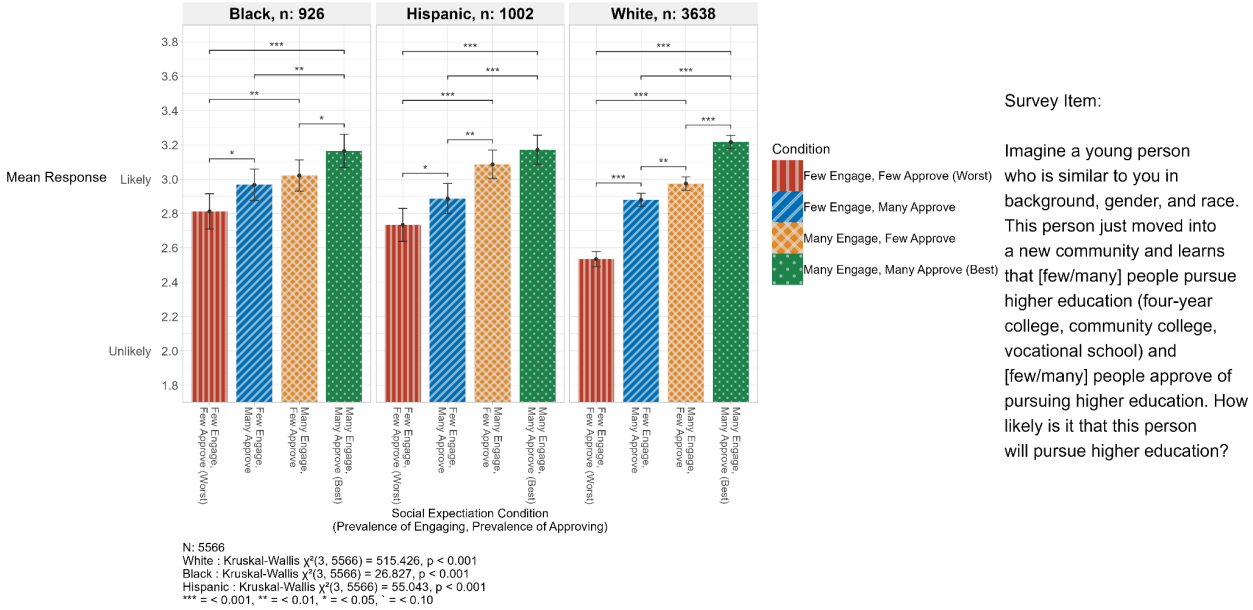
[1]Weighted [2]*p<0.05; **p<0.01; ***p<0.001 [3]OR = Odds Ratio

Table A2: College Vignette Logistic Regression Coefficients by Ethnicity

	White	Black	Hispanic	Asian-Pacific Islander
Characteristic[1]	OR[2,3]	OR[2,3]	OR[2,3]	OR[2,3]
College Common	1.29***	1.05	1.13***	1.06
College Approval	1.13***	1.17***	1.15***	1.00
Poverty Status (150% FPL)				
<=150% FPL	—	—	—	—
>150% FPL	1.83***	3.25***	1.98***	1.21
Urbanicity				
Rural	—	—	—	—
Suburban	0.93	0.97	1.95***	0.56
Urban	0.58***	0.38**	2.06*	0.15
Gender				
Female	—	—	—	—
Male	1.03	0.64*	1.17	0.58
Age - 4 Categories				
18-29	—	—	—	—
30-44	4.25***	3.33**	2.87***	5.55***
45-59	3.13***	1.56	2.91***	20.2***

60+	2.82***	3.08***	2.62***	0.61
Log-likelihood	-1,641	-343	-549	-127
BIC	3,364	753	1,167	307
No. Obs.	3,551	892	970	202

Figure A1. Mean Response by College Vignette Social Environment Conditions and Race/Ethnicity



Survey Item:

Imagine a young person who is similar to you in background, gender, and race. This person just moved into a new community and learns that [few/many] people pursue higher education (four-year college, community college, vocational school) and [few/many] people approve of pursuing higher education. How likely is it that this person will pursue higher education?

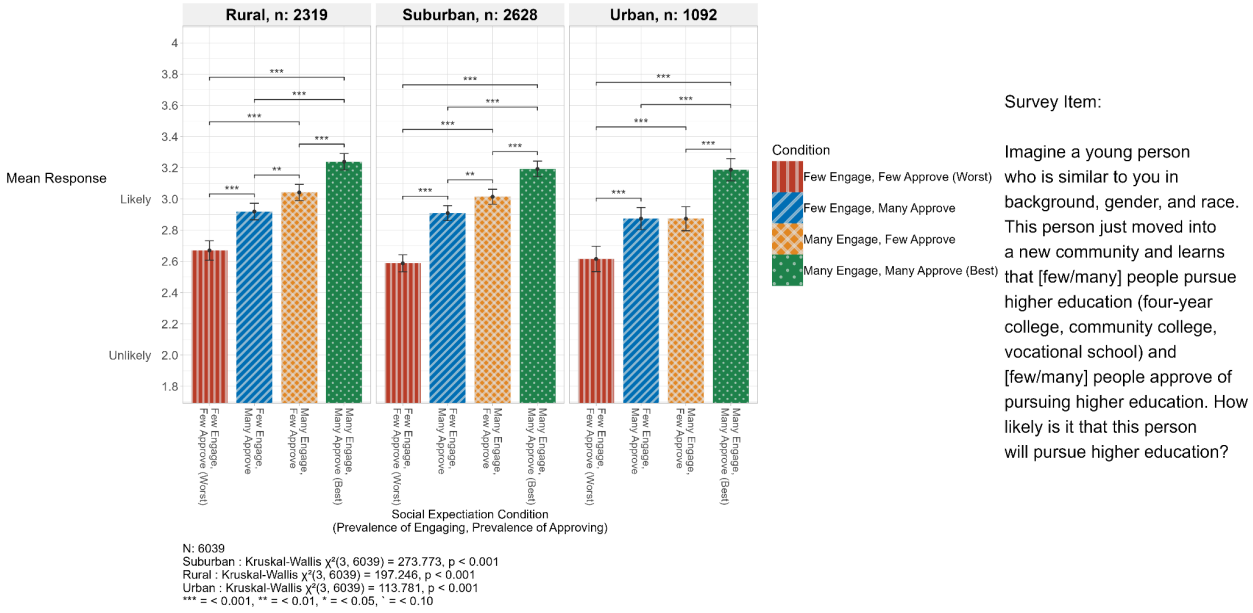
Table A3: College Vignette Logistic Regression Coefficients by Urbanicity

Characteristic[1]	Rural		Suburban		Urban	
	OR[2,3]	OR[2,3]	OR[2,3]	OR[2,3]	OR[2,3]	OR[2,3]
College Common	1.19***	1.15***	1.23***	1.27***	1.17***	1.18***
College Approval	1.14***	1.13***	1.11***	1.10***	1.21***	1.19***
Poverty Status (150% FPL)						
<=150% FPL		—		—		—
>150% FPL		1.97***		2.63***		1.67*
Race Ethnicity						
White		—		—		—
Black		0.78		0.88		0.48*
Hispanic		0.73*		1.40*		2.32*
Asian-Pacific Islander		2.93***		2.09***		1.37
Gender						
Female		—		—		—
Male		1.34*		0.79*		0.69
Age 4						
18-29		—		—		—
30-44		4.11***		3.72***		2.86***
45-59		1.69**		4.52***		2.03*

60+		2.84***		3.19***		1.52
Log-likelihood	-1,022	-890	-1,620	-1,433	-408	-366
BIC	2,067	1,864	3,263	2,953	838	808
No. Obs.	2,268	2,155	2,554	2,449	1,054	1,011

[1]Weighted [2]*p<0.05; **p<0.01; ***p<0.001 [3]OR = Odds Ratio

Figure A2. Mean Response by College Vignette Social Environment Conditions and Urbanicity



Survey Item:

Imagine a young person who is similar to you in background, gender, and race. This person just moved into a new community and learns that [few/many] people pursue higher education (four-year college, community college, vocational school) and [few/many] people approve of pursuing higher education. How likely is it that this person will pursue higher education?

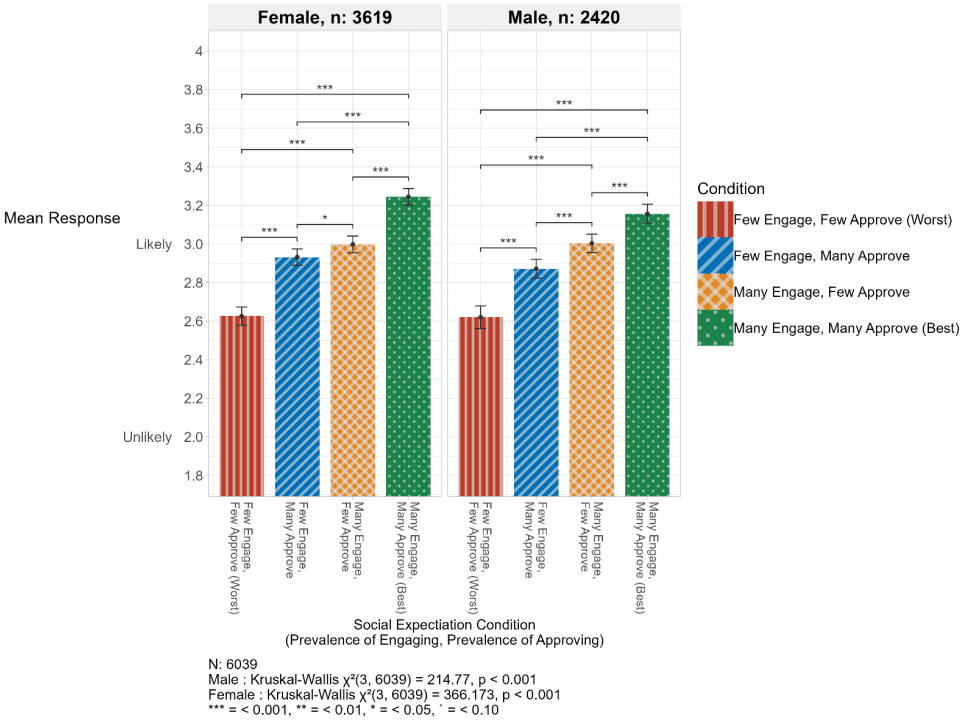
Table A4: College Vignette Logistic Regression Coefficients by Gender

	Male		Female	
Characteristic[1]	**OR**[2,3]	**OR**[2,3]	**OR**[2,3]	**OR**[2,3]
College Common	1.15***	1.16***	1.28***	1.28***
College Approval	1.14***	1.12***	1.13***	1.12***
Poverty Status (150% FPL)				
<=150% FPL		—		—
>150% FPL		2.25***		1.83***
Rural Urban				
Rural		—		—
Suburban		1.33**		0.79*
Urban		1.13		0.38***
Race Ethnicity				
White		—		—
Black		1.15		0.63***
Hispanic		1.14		1.31
Asian-Pacific Islander		2.73***		2.16**
Age 4				
18-29		—		—
30-44		3.10***		6.46***

45-59		2.55***		4.72***
60+		1.74***		5.16***
Log-likelihood	-1,549	-1,373	-1,518	-1,326
BIC	3,123	2,843	3,059	2,745
No. Obs.	3,523	3,357	2,353	2,258

[1]Weighted [2]*p<0.05; **p<0.01; ***p<0.001 [3]OR = Odds Ratio

Figure A3. Mean Response by College Vignette Social Environment Conditions and Gender



Survey Item:

Imagine a young person who is similar to you in background, gender, and race. This person just moved into a new community and learns that [few/many] people pursue higher education (four-year college, community college, vocational school) and [few/many] people approve of pursuing higher education. How likely is it that this person will pursue higher education?

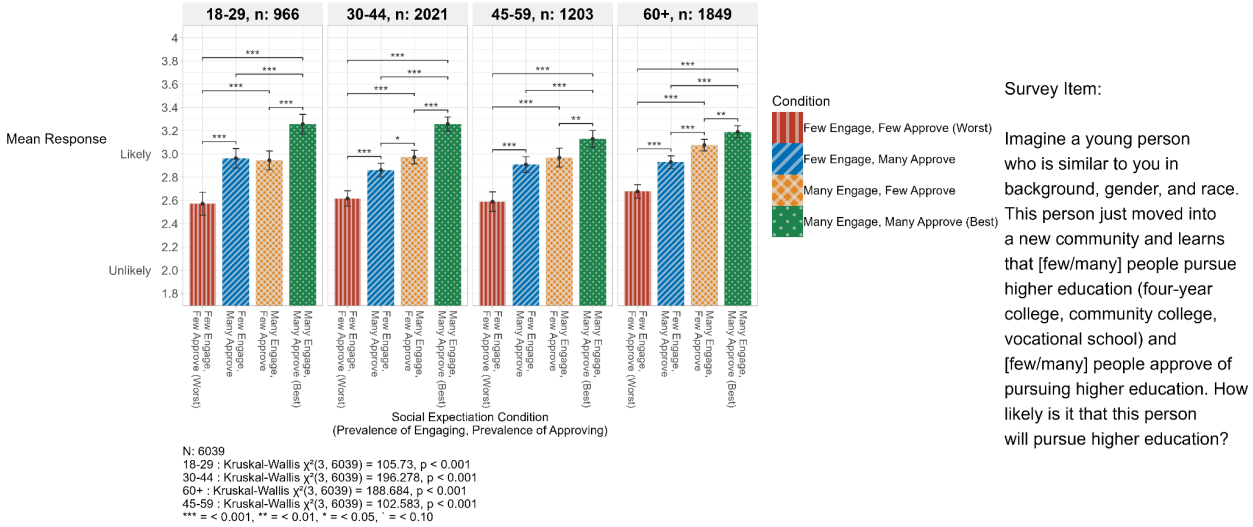
Table A5: College Vignette Logistic Regression Coefficients by Age Group

Characteristic[1]	18-29 OR[2,3]	30-44 OR[2,3]	45-59 OR[2,3]	60+ OR[2,3]
College Common	1.08*	1.26***	1.37***	1.20***
College Approval	1.06	1.19***	1.07**	1.17***
Poverty Status (150% FPL)				
<=150% FPL	—	—	—	—
>150% FPL	2.56***	2.36***	1.73**	1.49*
Rural Urban				
Rural	—	—	—	—
Suburban	0.96	0.76	2.27***	0.82
Urban	0.85	0.62*	0.95	0.38***
Race Ethnicity				
White	—	—	—	—
Black	1.04	1.02	0.55**	0.91
Hispanic	1.03	0.96	1.29	1.58*
Asian-Pacific Islander	2.27**	6.49***	18.1***	0.36*
Gender				
Female	—	—	—	—
Male	0.54***	0.96	0.82	1.83***

Log-likelihood	-654	-554	-629	-790
BIC	1,375	1,182	1,328	1,655
No. Obs.	865	1,872	1,128	1,750

[1]Weighted [2]*p<0.05; **p<0.01; ***p<0.001 [3]OR = Odds Ratio

Figure A4. Mean Response by College Vignette Social Environment Conditions and Age Group



N: 6039
18-29 : Kruskal-Wallis $\chi^2(3, 6039) = 105.73$, $p < 0.001$
30-44 : Kruskal-Wallis $\chi^2(3, 6039) = 196.278$, $p < 0.001$
60+ : Kruskal-Wallis $\chi^2(3, 6039) = 188.684$, $p < 0.001$
45-59 : Kruskal-Wallis $\chi^2(3, 6039) = 102.583$, $p < 0.001$
*** = < 0.001, ** = < 0.01, * = < 0.05, ˙ = < 0.10

Survey Item:

Imagine a young person who is similar to you in background, gender, and race. This person just moved into a new community and learns that [few/many] people pursue higher education (four-year college, community college, vocational school) and [few/many] people approve of pursuing higher education. How likely is it that this person will pursue higher education?

Drop Out

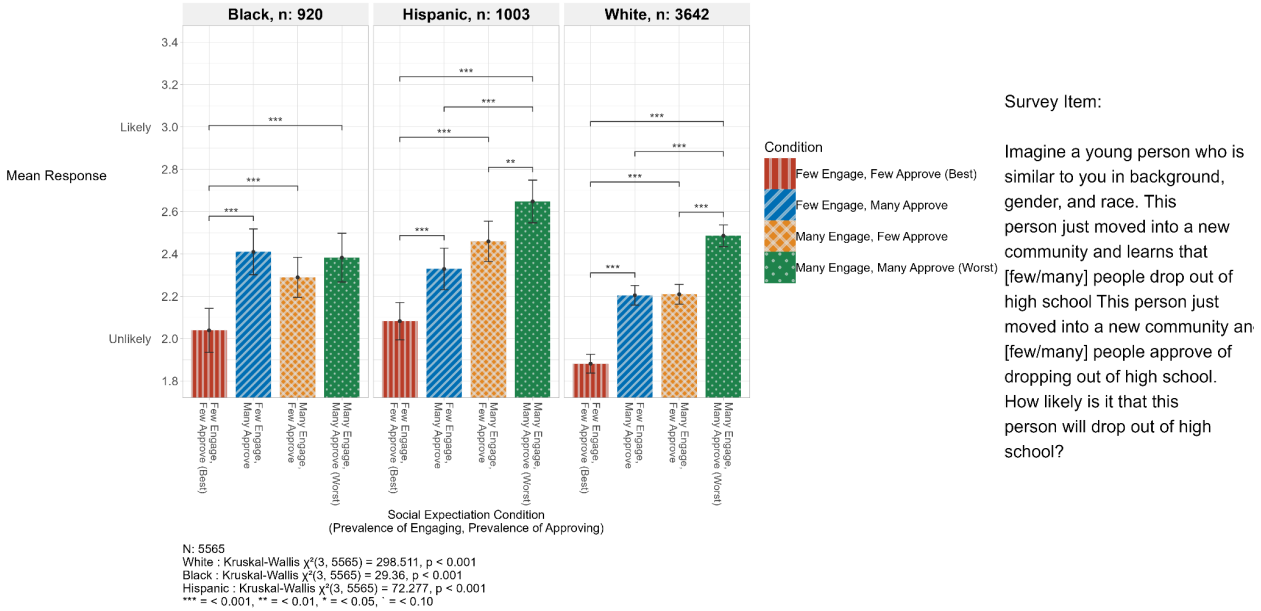
Table A6: Drop Out Vignette Logistic Regression Coefficients by Ethnicity

	White	Black	Hispanic	Asian-Pacific Islander
Characteristic[1]	OR[2,3]	OR[2,3]	OR[2,3]	OR[2,3]
Drop Out Common	1.15***	1.24*	1.15*	0.92
Drop Out Approval	1.08	0.84	1.08	1.47
Poverty Status (150% FPL)				
<=150% FPL	—	—	—	—
>150% FPL	0.38***	0.10***	0.32***	0.91
Rural Urban				
Rural	—	—	—	—
Suburban	0.97	1.65	0.87	3.79
Urban	1.18	1.39	1.22	0.00
Gender				
Female	—	—	—	—
Male	1.26	1.05	1.75*	0.43
Age 4				
18-29	—	—	—	—
30-44	0.06***	0.19***	0.29***	0.00
45-59	0.04***	0.13***	0.29***	0.16

60+	0.10***	0.09***	0.17***	0.37
Log-likelihood	-737	-125	-282	-63.8
BIC	1,556	318	633	181
No. Obs.	3,589	887	976	201

[1]Weighted [2]*p<0.05; **p<0.01; ***p<0.001 [3]OR = Odds Ratio

Figure A5. Mean Response by Drop Out Vignette Social Environment Conditions and Race/Ethnicity



Survey Item:

Imagine a young person who is similar to you in background, gender, and race. This person just moved into a new community and learns that [few/many] people drop out of high school This person just moved into a new community an [few/many] people approve of dropping out of high school. How likely is it that this person will drop out of high school?

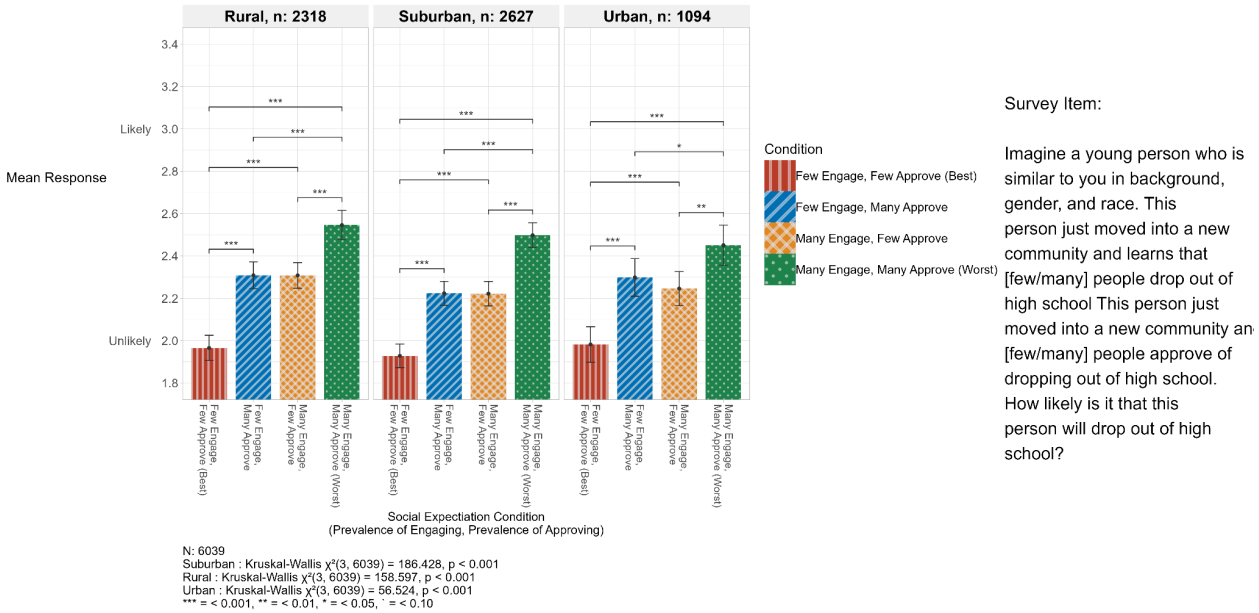
Table A7: Drop Out Vignette Logistic Regression Coefficients by Urbanicity

Characteristic[1]	Rural		Suburban		Urban	
	OR[2,3]	OR[2,3]	OR[2,3]	OR[2,3]	OR[2,3]	OR[2,3]
Drop Out Common	1.19***	1.20**	1.12**	1.12**	1.21**	1.27**
Drop Out Approval	1.03	0.99	1.12**	1.10*	1.01	1.03
Poverty Status (150% FPL)						
<=150% FPL		—		—		—
>150% FPL		0.30***		0.31***		0.43**
Race Ethnicity						
White		—		—		—
Black		0.52*		0.77		0.84
Hispanic		1.25		1.27		1.73
Asian-Pacific Islander		0.23*		1.32		0.00
Gender						
Female		—		—		—
Male		0.95		1.13		1.53
Age 4						
18-29		—		—		—
30-44		0.09***		0.11***		0.07***
45-59		0.16***		0.05***		0.05***

60+		0.03***		0.13***		0.16***
Log-likelihood	-538	-387	-838	-650	-257	-187
BIC	1,100	859	1,700	1,386	535	450
No. Obs.	2,271	2,158	2,572	2,463	1,073	1,032

[1]Weighted [2]*p<0.05; **p<0.01; ***p<0.001 [3]OR = Odds Ratio

Figure A6. Mean Response by Drop Out Vignette Social Environment Conditions and Urbanicity



Survey Item:

Imagine a young person who is similar to you in background, gender, and race. This person just moved into a new community and learns that [few/many] people drop out of high school This person just moved into a new community an [few/many] people approve of dropping out of high school. How likely is it that this person will drop out of high school?

Table A8: Drop Out Vignette Logistic Regression Coefficients by Gender

	Male		Female	
Characteristic[1]	**OR**[2,3]	**OR**[2,3]	**OR**[2,3]	**OR**[2,3]
Drop Out Common	1.08*	1.10**	1.29***	1.29***
Drop Out Approval	1.11**	1.11**	1.02	0.97
Poverty Status (150% FPL)				
<=150% FPL		—		—
>150% FPL		0.46***		0.25***
Rural Urban				
Rural		—		—
Suburban		1.03		1.33
Urban		1.02		1.72
Race Ethnicity				
White		—		—
Black		0.70		0.60
Hispanic		1.05		1.46

Asian-Pacific Islander		0.96		0.41
Age 4				
18-29		—		—
30-44		0.12***		0.08***
45-59		0.18***		0.04***
60+		0.11***		0.10***
Log-likelihood	-927	-764	-691	-472
BIC	1,879	1,626	1,406	1,037
No. Obs.	3,541	3,374	2,375	2,279

[1]Weighted [2]*p<0.05; **p<0.01; ***p<0.001 [3]OR = Odds Ratio

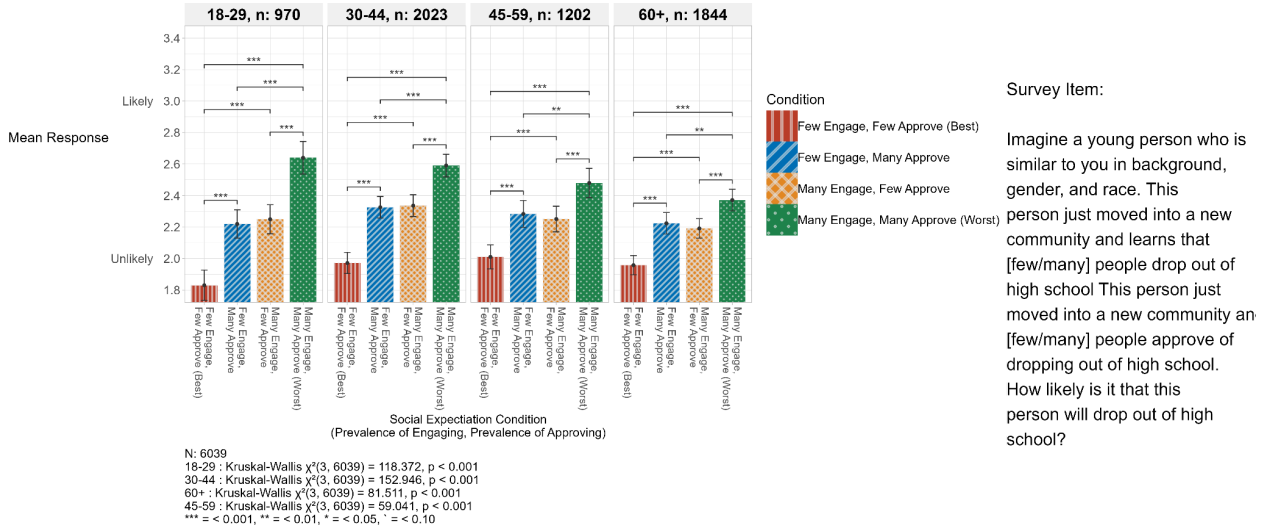
Table A9: Drop Out Vignette Logistic Regression Coefficients by Age Group

Characteristic[1]	18-29 OR[2,3]	30-44 OR[2,3]	45-59 OR[2,3]	60+ OR[2,3]
Drop Out Common	1.07	1.10	1.16	1.43***
Drop Out Approval	1.01	1.15	1.04	0.97
Poverty Status (150% FPL)				
<=150% FPL	—	—	—	—
>150% FPL	0.47**	0.21***	0.12***	0.35***
Rural Urban				
Rural	—	—	—	—
Suburban	1.00	1.50	0.35*	5.06***
Urban	1.10	1.24	0.48	7.42***
Race Ethnicity				
White	—	—	—	—
Black	0.58*	1.42	0.87	0.79
Hispanic	0.83	2.56*	2.52	1.31
Asian-Pacific Islander	0.80	0.00	1.13	1.16
Gender				
Female	—	—	—	—
Male	1.64**	1.08	0.55	1.63

Log-likelihood	-616	-170	-146	-264
BIC	1,301	416	362	602
No. Obs.	878	1,888	1,134	1,753

[1]Weighted [2]*p<0.05; **p<0.01; ***p<0.001 [3]OR = Odds Ratio

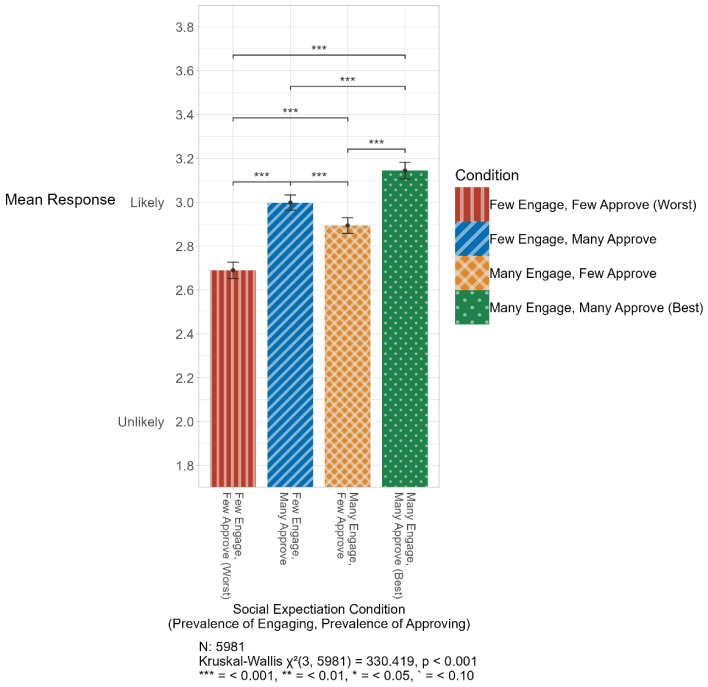
Figure A7. Mean Response by Drop Out Vignette Social Environment Conditions and Age



Survey Item:

Imagine a young person who is similar to you in background, gender, and race. This person just moved into a new community and learns that [few/many] people drop out of high school This person just moved into a new community an [few/many] people approve of dropping out of high school. How likely is it that this person will drop out of high school?

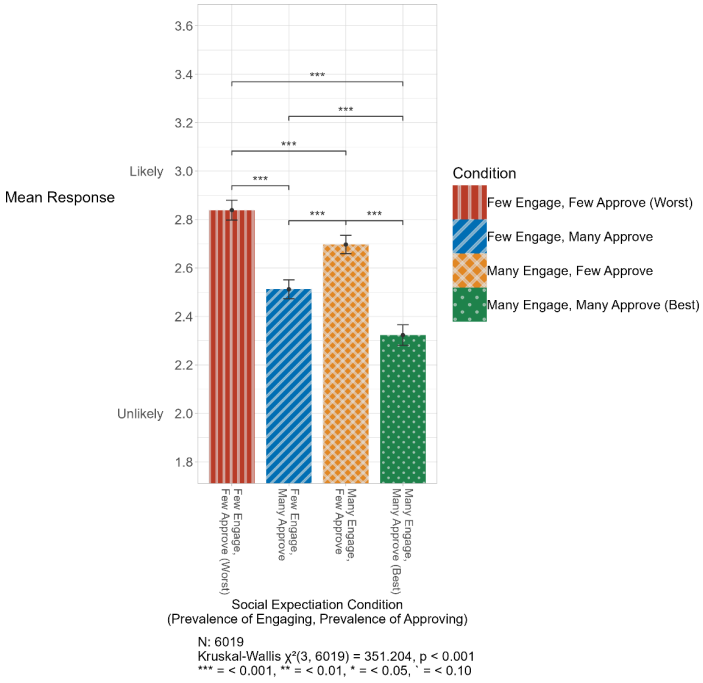
Figure A8. Mean Response by Social Welfare Vignette Social Environment Conditions



Survey Item:

Imagine a person who is similar to you in age, gender, and race. This person just moved to a new community and is eligible for welfare services. This person learns that [few/many] people in that community receive welfare services and [few/many] people in that community approve of those who receive welfare services. How likely is it that the person will apply for welfare services?

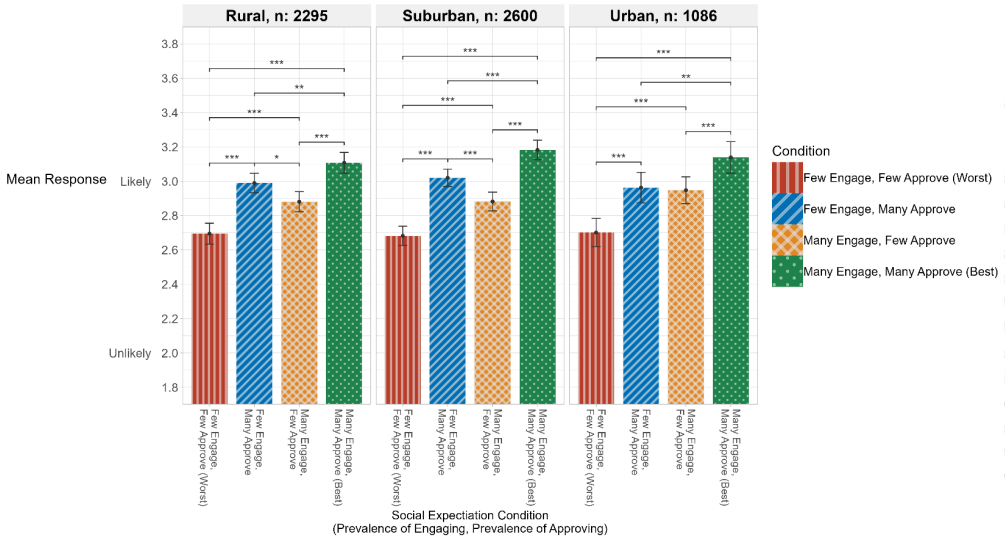
Figure A9. Mean Response by Social Welfare Vignette (Embarrassed) Social Environment Conditions



Survey Item:

Imagine a person who is similar to you in age, gender, and race. This person moves to a new community and needs welfare services. [Few/many] people in the community receive welfare services. [Few/many] approve of people receiving welfare services. How likely is it that the person will be embarrassed about receiving welfare services?

Figure A10. Mean Response by Social Welfare Vignette Social Environment Conditions and Urbanicity

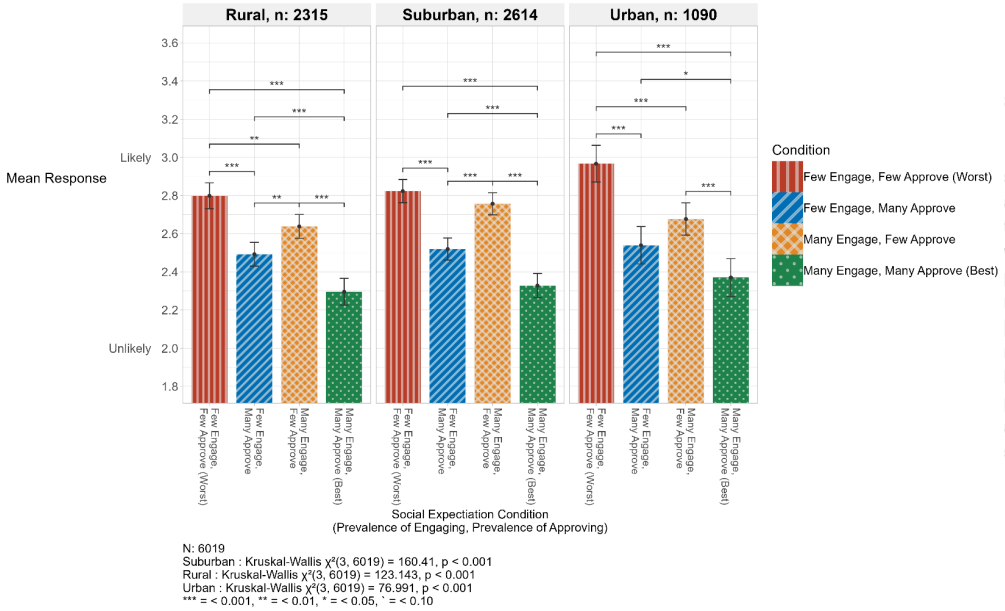


N: 5981
Suburban : Kruskal-Wallis $\chi^2(3, 5981) = 171.659$, $p < 0.001$
Rural : Kruskal-Wallis $\chi^2(3, 5981) = 104.616$, $p < 0.001$
Urban : Kruskal-Wallis $\chi^2(3, 5981) = 59.226$, $p < 0.001$
*** = < 0.001, ** = < 0.01, * = < 0.05, ` = < 0.10

Survey Item:

Imagine a person who is similar to you in age, gender, and race. This person just moved to a new community and is eligible for welfare services. This person learns that [few/many] people in that community receive welfare services and [few/many] people in that community approve of those who receive welfare services. How likely is it that the person will apply for welfare services?

Figure A11. Mean Response by Social Welfare Vignette (Embarrassed) Social Environment Conditions and Urbanicity

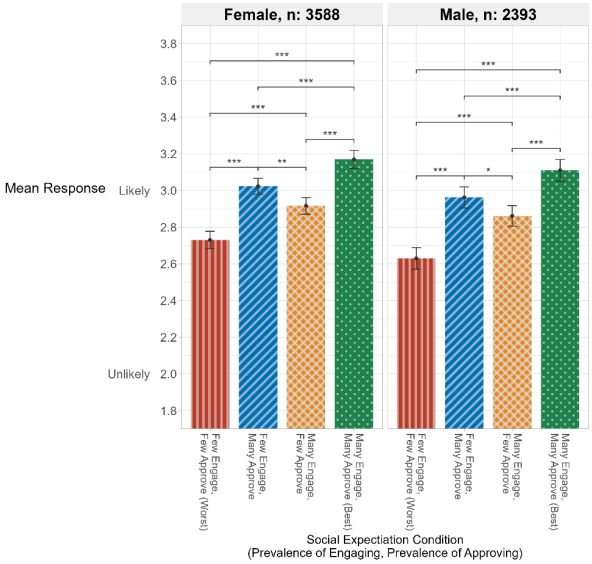


N: 6019
Suburban : Kruskal-Wallis $\chi^2(3, 6019) = 160.41$, $p < 0.001$
Rural : Kruskal-Wallis $\chi^2(3, 6019) = 123.143$, $p < 0.001$
Urban : Kruskal-Wallis $\chi^2(3, 6019) = 76.991$, $p < 0.001$
*** = < 0.001, ** = < 0.01, * = < 0.05, ` = < 0.10

Survey Item:

Imagine a person who is similar to you in age, gender, and race. This person moves to a new community and needs welfare services. [Few/many] people in the community receive welfare services. [Few/many] approve of people receiving welfare services. How likely is it that the person will be embarrassed about receiving welfare services?

Figure A12. Mean Response by Social Welfare Vignette Social Environment Conditions and Gender

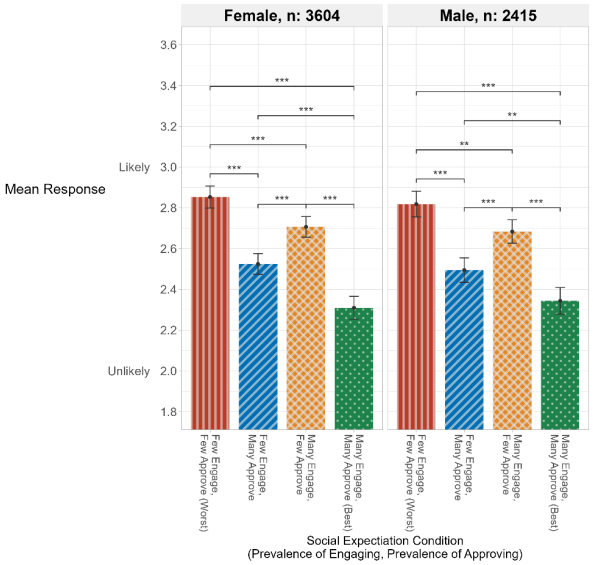


N: 5981
Male : Kruskal-Wallis $\chi^2(3, 5981) = 140.174$, $p < 0.001$
Female : Kruskal-Wallis $\chi^2(3, 5981) = 191.812$, $p < 0.001$
*** = < 0.001, ** = < 0.01, * = < 0.05, ` = < 0.10

Survey Item:

Imagine a person who is similar to you in age, gender, and race. This person just moved to a new community and is eligible for welfare services. This person learns that [few/many] people in that community receive welfare services and [few/many] people in that community approve of those who receive welfare services. How likely is it that the person will apply for welfare services?

Figure A13. Mean Response by Social Welfare Vignette (Embarrassed) Social Environment Conditions and Gender

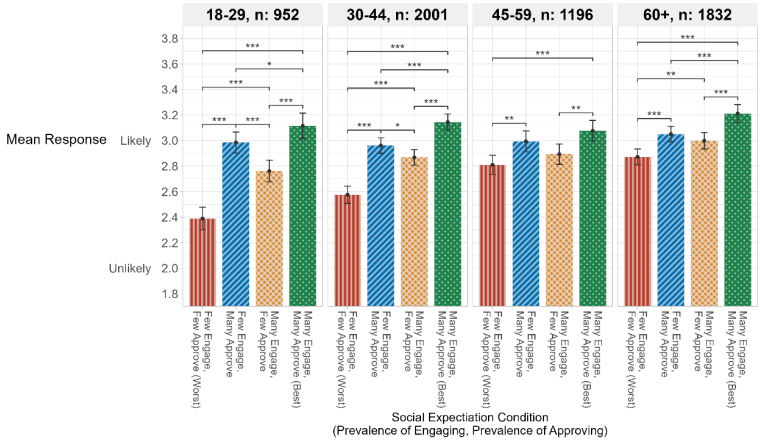


N: 6019
Male : Kruskal-Wallis $\chi^2(3, 6019) = 133.418$, $p < 0.001$
Female : Kruskal-Wallis $\chi^2(3, 6019) = 218.516$, $p < 0.001$
*** = < 0.001, ** = < 0.01, * = < 0.05, ` = < 0.10

Survey Item:

Imagine a person who is similar to you in age, gender, and race. This person moves to a new community and needs welfare services. [Few/many] people in the community receive welfare services. [Few/many] approve of people receiving welfare services. How likely is it that the person will be embarrassed about receiving welfare services?

Figure A14. Mean Response by Social Welfare Vignette Social Environment Conditions and Age

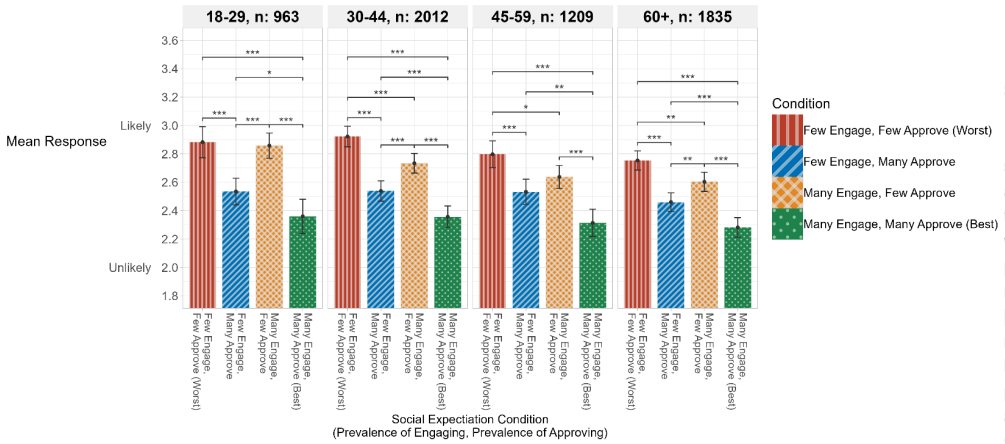


N: 5981
18-29 : Kruskal-Wallis $\chi^2(3, 5981) = 130.324$, $p < 0.001$
30-44 : Kruskal-Wallis $\chi^2(3, 5981) = 154.627$, $p < 0.001$
60+ : Kruskal-Wallis $\chi^2(3, 5981) = 64.763$, $p < 0.001$
45-59 : Kruskal-Wallis $\chi^2(3, 5981) = 27.903$, $p < 0.001$
*** = < 0.001, ** = < 0.01, * = < 0.05, ` = < 0.10

Survey Item:

Imagine a person who is similar to you in age, gender, and race. This person just moved to a new community and is eligible for welfare services. This person learns that [few/many] people in that community receive welfare services and [few/many] people in that community approve of those who receive welfare services. How likely is it that the person will apply for welfare services?

Figure A15. Mean Response by Social Welfare Vignette (Embarrassed) Social Environment Conditions and Age



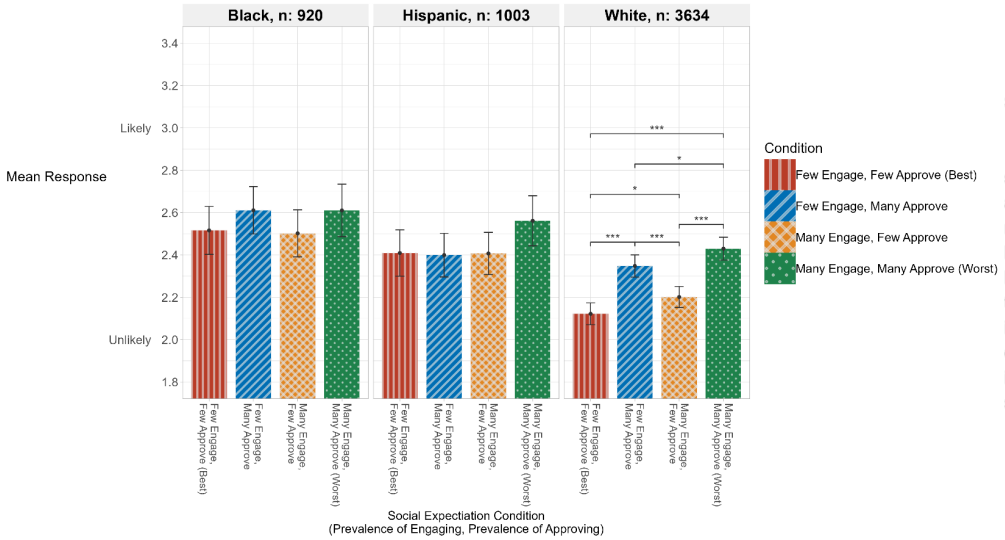
N: 6019
18-29 : Kruskal-Wallis $\chi^2(3, 6019) = 67.247$, $p < 0.001$
30-44 : Kruskal-Wallis $\chi^2(3, 6019) = 124.418$, $p < 0.001$
60+ : Kruskal-Wallis $\chi^2(3, 6019) = 109.544$, $p < 0.001$
45-59 : Kruskal-Wallis $\chi^2(3, 6019) = 56.628$, $p < 0.001$
*** = < 0.001, ** = < 0.01, * = < 0.05, ` = < 0.10

Survey Item:

Imagine a person who is similar to you in age, gender, and race. This person moves to a new community and needs welfare services. [Few/many] people in the community receive welfare services. [Few/many] approve of people receiving welfare services. How likely is it that the person will be embarrassed about receiving welfare services?

Hitting Vignette

Figure A16. Mean Response by Hitting Vignette Social Environment Conditions and Race/Ethnicity

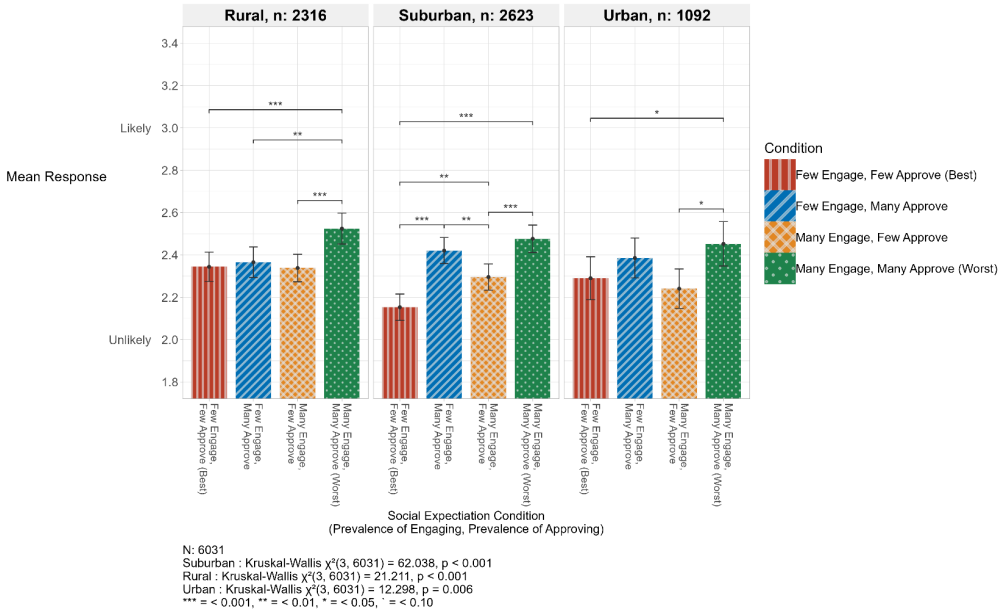


N: 5557
White : Kruskal-Wallis $\chi^2(3, 5557) = 90.25$, $p < 0.001$
Black : Kruskal-Wallis $\chi^2(3, 5557) = 3.336$, $p = 0.343$
Hispanic : Kruskal-Wallis $\chi^2(3, 5557) = 5.895$, $p = 0.117$
*** = < 0.001, ** = < 0.01, * = < 0.05, ` = < 0.10

Survey Item:

Imagine a person who is similar to you in age, gender, and race. This person just moved into a new community an learns that [few/many] people hit those who disrespect them. [Few/many] people think it's okay to hit those who disrespect them. How likely is it that this person will hit someone who disrespects them?

Figure A17. Mean Response by Hitting Vignette Social Environment Conditions and Urbanicity

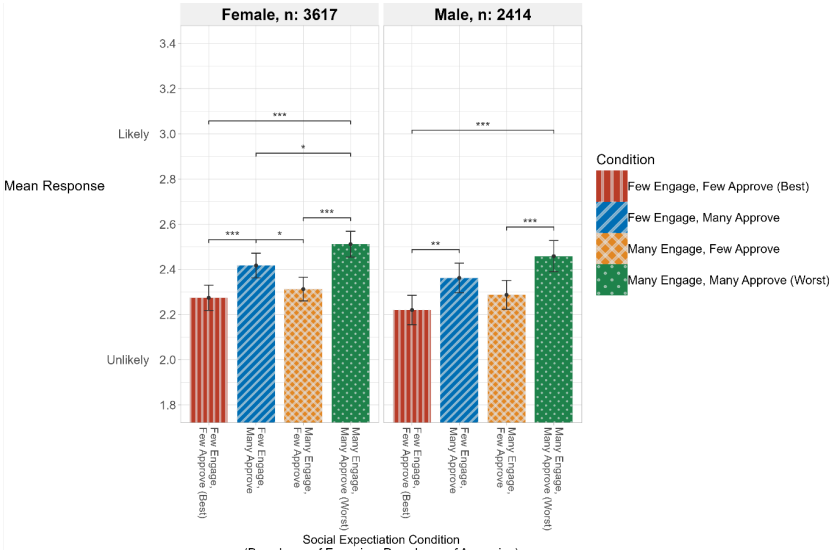


N: 6031
Suburban : Kruskal-Wallis $\chi^2(3, 6031) = 62.038$, $p < 0.001$
Rural : Kruskal-Wallis $\chi^2(3, 6031) = 21.211$, $p < 0.001$
Urban : Kruskal-Wallis $\chi^2(3, 6031) = 12.298$, $p = 0.006$
*** = < 0.001, ** = < 0.01, * = < 0.05, ` = < 0.10

Survey Item:

Imagine a person who is similar to you in age, gender, and race. This person just moved into a new community an learns that [few/many] people hit those who disrespect them. [Few/many] people think it's okay to hit those who disrespect them. How likely is it that this person will hit someone who disrespects them?

Figure A18. Mean Response by Hitting Vignette Social Environment Conditions and Gender

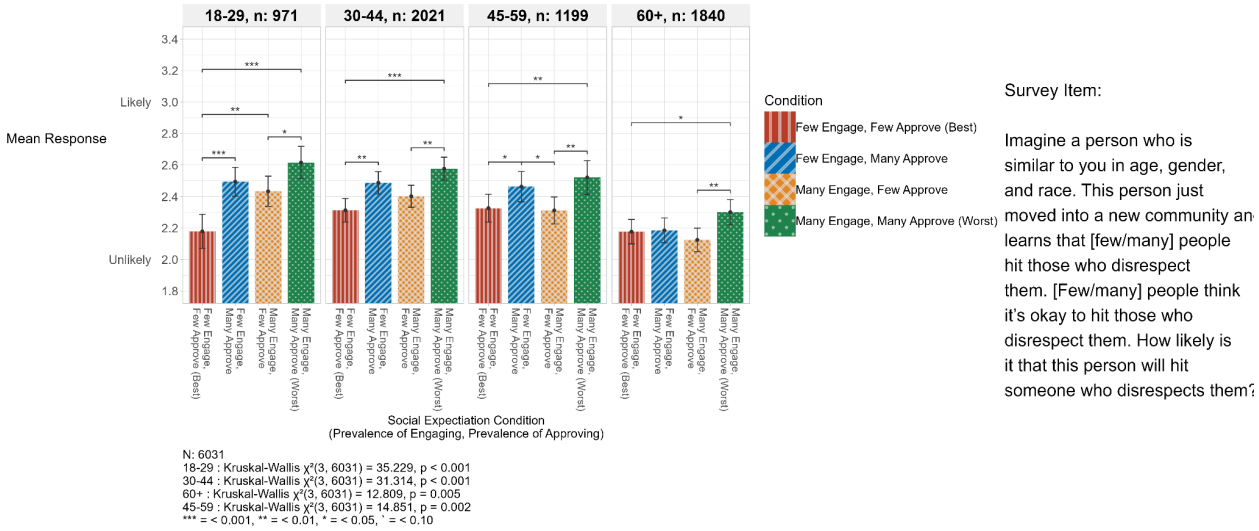


N: 6031
Male : Kruskal-Wallis $\chi^2(3, 6031) = 29.187$, $p < 0.001$
Female : Kruskal-Wallis $\chi^2(3, 6031) = 49.394$, $p < 0.001$
*** = < 0.001, ** = < 0.01, * = < 0.05, ` = < 0.10

Survey Item:

Imagine a person who is similar to you in age, gender, and race. This person just moved into a new community an learns that [few/many] people hit those who disrespect them. [Few/many] people think it's okay to hit those who disrespect them. How likely is it that this person will hit someone who disrespects them?

Figure A19. Mean Response by Hitting Vignette Social Environment Conditions and Age Group



N: 6031
18-29 : Kruskal-Wallis $\chi^2(3, 6031) = 35.229$, $p < 0.001$
30-44 : Kruskal-Wallis $\chi^2(3, 6031) = 31.314$, $p < 0.001$
60+ : Kruskal-Wallis $\chi^2(3, 6031) = 12.809$, $p = 0.005$
45-59 : Kruskal-Wallis $\chi^2(3, 6031) = 14.851$, $p = 0.002$
*** = < 0.001, ** = < 0.01, * = < 0.05, ` = < 0.10

Survey Item:

Imagine a person who is similar to you in age, gender, and race. This person just moved into a new community an learns that [few/many] people hit those who disrespect them. [Few/many] people think it's okay to hit those who disrespect them. How likely is it that this person will hit someone who disrespects them?

Table A10: Dunn-Bonferroni Comparisons of Trust Outcomes by 'Using Violence' Vignette Social Expectation Condition & Poverty Status (150% FPL)

Trust Behavior	Poverty Status 150% FPL	Kruskal-Wallis	Condition A	Condition B	Mean Diff.
Lend Phone	>150% FPL, n: 1024	$\chi^2(3, 1990) = 93.466$, $p < 0.001$	EE Low, NE Low	EE High, NE High	0.62***
				EE Low, NE High	0.33***
				EE High, NE Low	0.48***
			EE Low, NE High	EE High, NE Low	0.14*
				EE High, NE High	0.29***
			EE High, NE Low	EE High, NE High	0.15*
	<=150% FPL, n: 966	$\chi^2(3, 1990) = 33.508$, $p < 0.001$	EE Low, NE Low	EE Low, NE High	0.12
				EE High, NE Low	0.26***
				EE High, NE High	0.38***
			EE Low, NE High	EE High, NE Low	0.14
				EE High, NE High	0.25***
			EE High, NE Low	EE High, NE High	0.12
Favor	>150% FPL, n: 1023	$\chi^2(3, 1987) = 52.076$, $p < 0.001$	EE Low, NE Low	EE High, NE High	0.41***
				EE Low, NE High	0.20**
				EE High, NE Low	0.37***
			EE Low, NE High	EE High, NE Low	0.17**
				EE High, NE High	0.22***
			EE High, NE Low	EE High, NE High	0.04
	<=150% FPL, n: 964	$\chi^2(3, 1987) = 22.999$, $p < 0.001$	EE Low, NE Low	EE Low, NE High	0.13
				EE High, NE Low	0.22***

Trust Behavior	Poverty Status 150% FPL	Kruskal-Wallis	Condition A	Condition B	Mean Diff.
				EE High, NE High	0.30***
			EE Low, NE High	EE High, NE Low	0.09
				EE High, NE High	0.17*
			EE High, NE Low	EE High, NE High	0.08
Wallet	>150% FPL, n: 1023	$\chi^2(3, 1987) = 96.333, p < 0.001$	EE Low, NE Low	EE High, NE High	0.62***
				EE Low, NE High	0.30***
				EE High, NE Low	0.52***
			EE Low, NE High	EE High, NE Low	0.22**
				EE High, NE High	0.32***
			EE High, NE Low	EE High, NE High	0.10
	<=150% FPL, n: 964	$\chi^2(3, 1987) = 29.32, p < 0.001$	EE Low, NE Low	EE Low, NE High	0.18*
				EE High, NE Low	0.26***
				EE High, NE High	0.38***
			EE Low, NE High	EE High, NE Low	0.08
				EE High, NE High	0.20*
			EE High, NE Low	EE High, NE High	0.12
Mechanic	>150% FPL, n: 1018	$\chi^2(3, 1983) = 77.421, p < 0.001$	EE Low, NE Low	EE High, NE High	0.54***
				EE Low, NE High	0.32***
				EE High, NE Low	0.38***
			EE Low, NE High	EE High, NE Low	0.06
				EE High, NE High	0.22***

Trust Behavior	Poverty Status 150% FPL	Kruskal-Wallis	Condition A	Condition B	Mean Diff.
			EE High, NE Low	EE High, NE High	0.15*
	<=150% FPL, n: 965	$\chi^2(3, 1983) = 16.583$, p = 0.001	EE Low, NE Low	EE Low, NE High	0.10
				EE High, NE Low	0.19**
				EE High, NE High	0.25**
			EE Low, NE High	EE High, NE Low	0.10
				EE High, NE High	0.15
			EE High, NE Low	EE High, NE High	0.05

Table A11: Dunn-Bonferroni Comparisons of Trust Outcomes by 'Stealing' Vignette Social Expectation Condition & Poverty Status (150% FPL)

Trust Behavior	Poverty Status 150% FPL	Kruskal-Wallis	Condition A	Condition B	Mean Diff.
Lend Phone	>150% FPL, n: 1029	$\chi^2(3, 2041) = 93.08, p < 0.001$	EE Low, NE Low (Best)	EE High, NE High (Worst)	0.64***
				EE Low, NE High	0.27***
				EE High, NE Low	0.47***
			EE Low, NE High	EE High, NE Low	0.20**
				EE High, NE High (Worst)	0.37***
			EE High, NE Low	EE High, NE High (Worst)	0.16*
	<=150% FPL, n: 1012	$\chi^2(3, 2041) = 17.221, p = 0.001$	EE Low, NE Low (Best)	EE Low, NE High	0.14*
				EE High, NE Low	0.18**
				EE High, NE High (Worst)	0.26***
			EE Low, NE High	EE High, NE Low	0.04NA
				EE High, NE High (Worst)	0.12NA
			EE High, NE Low	EE High, NE High (Worst)	0.08NA

Return Favor	>150% FPL, n: 1026	$\chi^2(3, 2034) = 74.64, p < 0.001$	EE Low, NE Low (Best)	EE High, NE High (Worst)	0.49***
				EE Low, NE High	0.20**
				EE High, NE Low	0.45***
			EE Low, NE High	EE High, NE Low	0.24***
				EE High, NE High (Worst)	0.28***
			EE High, NE Low	EE High, NE High (Worst)	0.04NA
	<=150% FPL, n: 1008	$\chi^2(3, 2034) = 13.213, p = 0.004$	EE Low, NE Low (Best)	EE Low, NE High	0.15**
				EE High, NE Low	0.17**
				EE High, NE High (Worst)	0.16**
			EE Low, NE High	EE High, NE Low	0.02NA
				EE High, NE High (Worst)	0.01NA
			EE High, NE Low	EE High, NE High (Worst)	-0.01NA

Return Wallet	>150% FPL, n: 1026	$\chi^2(3, 2035) = 110.651, p < 0.001$	EE Low, NE Low (Best)	EE High, NE High (Worst)	0.69***
				EE Low, NE High	0.38***
				EE High, NE Low	0.61***
			EE Low, NE High	EE High, NE Low	0.23***
				EE High, NE High (Worst)	0.31***
			EE High, NE Low	EE High, NE High (Worst)	0.08NA
	<=150% FPL, n: 1009	$\chi^2(3, 2035) = 38.018, p < 0.001$	EE Low, NE Low (Best)	EE Low, NE High	0.27***
				EE High, NE Low	0.35***
				EE High, NE High (Worst)	0.38***
			EE Low, NE High	EE High, NE Low	0.08NA
				EE High, NE High (Worst)	0.11NA
			EE High, NE Low	EE High, NE High (Worst)	0.03NA
Trust Mechanic	>150% FPL, n: 1021	$\chi^2(3, 2031) = 88.138, p < 0.001$	EE Low, NE Low (Best)	EE High, NE High (Worst)	0.59***

				EE Low, NE High	0.30***
				EE High, NE Low	0.42***
			EE Low, NE High	EE High, NE Low	0.12*
				EE High, NE High (Worst)	0.29***
			EE High, NE Low	EE High, NE High (Worst)	0.17*
	<=150% FPL, n: 1010	$\chi^2(3, 2031) = 30.158, p < 0.001$	EE Low, NE Low (Best)	EE Low, NE High	0.27***
				EE High, NE Low	0.24***
				EE High, NE High (Worst)	0.28***
			EE Low, NE High	EE High, NE Low	-0.04NA
				EE High, NE High (Worst)	0.00NA
			EE High, NE Low	EE High, NE High (Worst)	0.04NA

Table A12: Dunn-Bonferroni Comparisons of Trust Outcomes by 'Littering' Vignette Social Expectation Condition & Poverty Status (150% FPL)

Trust Behavior	Poverty Status 150% FPL	Kruskal-Wallis	Condition A	Condition B	Mean Diff.
Phone	>150% FPL, n: 1010	$\chi^2(3, 1948) = 27.97, p < 0.001$	EE Low, NE Low	EE High, NE High	0.30***
				EE Low, NE High	0.17**
				EE High, NE Low	0.23***
			EE Low, NE High	EE High, NE Low	0.06NA
				EE High, NE High	0.13NA
			EE High, NE Low	EE High, NE High	0.07NA
	<=150% FPL, n: 938	$\chi^2(3, 1948) = 5.39, p = 0.145$	EE Low, NE Low	EE Low, NE High	0.08NA
				EE High, NE Low	0.14NA
				EE High, NE High	0.10NA
			EE Low, NE High	EE High, NE Low	0.06NA
				EE High, NE High	0.02NA
			EE High, NE Low	EE High, NE High	-0.04NA
Return Favor	>150% FPL, n: 1008	$\chi^2(3, 1940) = 21.553, p < 0.001$	EE Low, NE Low	EE High, NE High	0.18**
				EE Low, NE High	0.08NA

				EE High, NE Low	0.21***
			EE Low, NE High	EE High, NE Low	0.13*
				EE High, NE High	0.10NA
			EE High, NE Low	EE High, NE High	-0.03NA
	<=150% FPL, n: 932	$\chi^2(3, 1940) = 5.956, p = 0.114$	EE Low, NE Low	EE Low, NE High	0.05NA
				EE High, NE Low	0.06NA
				EE High, NE High	0.14NA
			EE Low, NE High	EE High, NE Low	0.01NA
				EE High, NE High	0.09NA
			EE High, NE Low	EE High, NE High	0.08NA
Return Wallet	>150% FPL, n: 1009	$\chi^2(3, 1941) = 58.761, p < 0.001$	EE Low, NE Low	EE High, NE High	0.45***
				EE Low, NE High	0.22***
				EE High, NE Low	0.34***
			EE Low, NE High	EE High, NE Low	0.12*
				EE High, NE High	0.23***

			EE High, NE Low	EE High, NE High	0.11NA
	<=150% FPL, n: 932	$\chi^2(3, 1941) = 16.007, p = 0.001$	EE Low, NE Low	EE Low, NE High	0.16NA
				EE High, NE Low	0.13NA
				EE High, NE High	0.29***
			EE Low, NE High	EE High, NE Low	-0.03NA
				EE High, NE High	0.13NA
			EE High, NE Low	EE High, NE High	0.16NA
Truthful Mechanic	>150% FPL, n: 1008	$\chi^2(3, 1934) = 26.616, p < 0.001$	EE Low, NE Low	EE High, NE High	0.28***
				EE Low, NE High	0.16**
				EE High, NE Low	0.21***
			EE Low, NE High	EE High, NE Low	0.05NA
				EE High, NE High	0.12NA
			EE High, NE Low	EE High, NE High	0.07NA
	<=150% FPL, n: 926	$\chi^2(3, 1934) = 10.326, p = 0.016$	EE Low, NE Low	EE Low, NE High	0.09NA

				EE High, NE Low	0.08NA
				EE High, NE High	0.21**
			EE Low, NE High	EE High, NE Low	-0.01NA
				EE High, NE High	0.12NA
			EE High, NE Low	EE High, NE High	0.13NA

Table A13: Dunn-Bonferroni Comparisons of Trust Outcomes by 'Violence' Vignette Social Expectation Condition & Race/Ethnicity

Trust Behavior	Race Ethnicity	Kruskal-Wallis	Condition A	Condition B	Mean Diff.
Phone	White, n: 1176	$\chi^2(3, 1832) = 106.648, p < 0.001$	EE Low, NE Low	EE High, NE High	0.61***
				EE Low, NE High	0.28***
				EE High, NE Low	0.46***
			EE Low, NE High	EE High, NE Low	0.18**
				EE High, NE High	0.33***
			EE High, NE Low	EE High, NE High	0.15*
	Black, n: 303	$\chi^2(3, 1832) = 3.902, p = 0.272$	EE Low, NE Low	EE Low, NE High	0.09NA
				EE High, NE Low	0.05NA
				EE High, NE High	0.25NA
			EE Low, NE High	EE High, NE Low	-0.04NA
				EE High, NE High	0.17NA
			EE High, NE Low	EE High, NE High	0.21NA
	Hispanic, n: 353	$\chi^2(3, 1832) = 13.32, p = 0.004$	EE Low, NE Low	EE Low, NE High	0.19NA
				EE High, NE Low	0.28NA

				EE High, NE High	0.42**
			EE Low, NE High	EE High, NE Low	0.09NA
				EE High, NE High	0.24NA
			EE High, NE Low	EE High, NE High	0.15NA
Return Favor	White, n: 1177	$\chi^2(3, 1830) = 61.012, p < 0.001$	EE Low, NE Low	EE High, NE High	0.43***
				EE Low, NE High	0.24***
				EE High, NE Low	0.34***
			EE Low, NE High	EE High, NE Low	0.10NA
				EE High, NE High	0.19**
			EE High, NE Low	EE High, NE High	0.09NA
	Black, n: 302	$\chi^2(3, 1830) = 1.591, p = 0.661$	EE Low, NE Low	EE Low, NE High	-0.03NA
				EE High, NE Low	0.02NA
				EE High, NE High	0.16NA
			EE Low, NE High	EE High, NE Low	0.05NA
				EE High, NE High	0.18NA

			EE High, NE Low	EE High, NE High	0.14NA
	Hispanic, n: 351	$\chi^2(3, 1830) = 9.992, p = 0.019$	EE Low, NE Low	EE Low, NE High	0.06NA
				EE High, NE Low	0.28NA
				EE High, NE High	0.28NA
			EE Low, NE High	EE High, NE Low	0.22NA
				EE High, NE High	0.22NA
			EE High, NE Low	EE High, NE High	0.01NA
Return Wallet	White, n: 1177	$\chi^2(3, 1830) = 101.123, p < 0.001$	EE Low, NE Low	EE High, NE High	0.61***
				EE Low, NE High	0.29***
				EE High, NE Low	0.46***
			EE Low, NE High	EE High, NE Low	0.16**
				EE High, NE High	0.31***
			EE High, NE Low	EE High, NE High	0.15*
	Black, n: 303	$\chi^2(3, 1830) = 3.127, p = 0.372$	EE Low, NE Low	EE Low, NE High	0.10NA
				EE High, NE Low	0.14NA

				EE High, NE High	0.22NA
			EE Low, NE High	EE High, NE Low	0.04NA
				EE High, NE High	0.12NA
			EE High, NE Low	EE High, NE High	0.08NA
	Hispanic, n: 350	$\chi^2(3, 1830) = 13.231, p = 0.004$	EE Low, NE Low	EE Low, NE High	0.16NA
				EE High, NE Low	0.35*
				EE High, NE High	0.38**
			EE Low, NE High	EE High, NE Low	0.19NA
				EE High, NE High	0.22NA
			EE High, NE Low	EE High, NE High	0.03NA
Truthful Mechanic	White, n: 1173	$\chi^2(3, 1826) = 76.433, p < 0.001$	EE Low, NE Low	EE High, NE High	0.49***
				EE Low, NE High	0.29***
				EE High, NE Low	0.37***
			EE Low, NE High	EE High, NE Low	0.08NA
				EE High, NE High	0.20***

			EE High, NE Low	EE High, NE High	0.12NA
	Black, n: 302	$\chi^2(3, 1826) = 0.968, p = 0.809$	EE Low, NE Low	EE Low, NE High	0.01NA
				EE High, NE Low	0.02NA
				EE High, NE High	0.10NA
			EE Low, NE High	EE High, NE Low	0.01NA
				EE High, NE High	0.09NA
			EE High, NE Low	EE High, NE High	0.08NA
	Hispanic, n: 351	$\chi^2(3, 1826) = 14.543, p = 0.002$	EE Low, NE Low	EE Low, NE High	0.11NA
				EE High, NE Low	0.28*
				EE High, NE High	0.39**
			EE Low, NE High	EE High, NE Low	0.17NA
				EE High, NE High	0.28*
			EE High, NE Low	EE High, NE High	0.11NA

Table A14: Dunn-Bonferroni Comparisons of Trust Outcomes by 'Stealing' Vignette Social Expectation Condition & Race/Ethnicity

Trust Behavior	Race Ethnicity	Kruskal-Wallis	Condition A	Condition B	Mean Diff.
Lend Phone	White, n: 1233	$\chi^2(3, 1884) = 100.231, p < 0.001$	EE Low, NE Low (Best)	EE High, NE High (Worst)	0.59***
				EE Low, NE High	0.29***
				EE High, NE Low	0.44***
			EE Low, NE High	EE High, NE Low	0.15*
				EE High, NE High (Worst)	0.30***
			EE High, NE Low	EE High, NE High (Worst)	0.15*
	Black, n: 331	$\chi^2(3, 1884) = 1.513, p = 0.679$	EE Low, NE Low (Best)	EE Low, NE High	0.08NA
				EE High, NE Low	-0.09NA
				EE High, NE High (Worst)	0.08NA
			EE Low, NE High	EE High, NE Low	-0.16NA
				EE High, NE High (Worst)	0.00NA

			EE High, NE Low	EE High, NE High (Worst)	0.16NA
	Hispanic, n: 320	$\chi^2(3, 1884) = 10.222, p = 0.017$	EE Low, NE Low (Best)	EE Low, NE High	-0.04NA
				EE High, NE Low	0.27NA
				EE High, NE High (Worst)	0.22NA
			EE Low, NE High	EE High, NE Low	0.31NA
				EE High, NE High (Worst)	0.26NA
			EE High, NE Low	EE High, NE High (Worst)	-0.05NA
Return Favor	White, n: 1231	$\chi^2(3, 1878) = 72.475, p < 0.001$	EE Low, NE Low (Best)	EE High, NE High (Worst)	0.45***
				EE Low, NE High	0.28***
				EE High, NE Low	0.39***
			EE Low, NE High	EE High, NE Low	0.12NA
				EE High, NE High (Worst)	0.17**
			EE High, NE Low	EE High, NE High (Worst)	0.05NA

	Black, n: 327	$\chi^2(3, 1878) = 2.536, p = 0.469$	EE Low, NE Low (Best)	EE Low, NE High	0.10NA
				EE High, NE Low	0.12NA
				EE High, NE High (Worst)	0.15NA
			EE Low, NE High	EE High, NE Low	0.02NA
				EE High, NE High (Worst)	0.05NA
			EE High, NE Low	EE High, NE High (Worst)	0.04NA
	Hispanic, n: 320	$\chi^2(3, 1878) = 4.306, p = 0.23$	EE Low, NE Low (Best)	EE Low, NE High	-0.10NA
				EE High, NE Low	0.14NA
				EE High, NE High (Worst)	0.05NA
			EE Low, NE High	EE High, NE Low	0.24NA
				EE High, NE High (Worst)	0.14NA
			EE High, NE Low	EE High, NE High (Worst)	-0.10NA

Return Wallet	White, n: 1229	$\chi^2(3, 1878) = 122.468, p < 0.001$	EE Low, NE Low (Best)	EE High, NE High (Worst)	0.65***
				EE Low, NE High	0.40***
				EE High, NE Low	0.53***
			EE Low, NE High	EE High, NE Low	0.13*
				EE High, NE High (Worst)	0.25***
			EE High, NE Low	EE High, NE High (Worst)	0.12*
	Black, n: 328	$\chi^2(3, 1878) = 4.164, p = 0.244$	EE Low, NE Low (Best)	EE Low, NE High	0.19NA
				EE High, NE Low	0.25NA
				EE High, NE High (Worst)	0.24NA
			EE Low, NE High	EE High, NE Low	0.05NA
				EE High, NE High (Worst)	0.05NA
			EE High, NE Low	EE High, NE High (Worst)	-0.01NA
	Hispanic, n: 321	$\chi^2(3, 1878) = 15.632, p = 0.001$	EE Low, NE Low (Best)	EE Low, NE High	0.18NA

				EE High, NE Low	0.46**
				EE High, NE High (Worst)	0.36*
			EE Low, NE High	EE High, NE Low	0.28NA
				EE High, NE High (Worst)	0.18NA
			EE High, NE Low	EE High, NE High (Worst)	-0.10NA
Truthful Mechanic	White, n: 1228	$\chi^2(3, 1875) = 100.946, p < 0.001$	EE Low, NE Low (Best)	EE High, NE High (Worst)	0.56***
				EE Low, NE High	0.38***
				EE High, NE Low	0.38***
			EE Low, NE High	EE High, NE Low	0.00NA
				EE High, NE High (Worst)	0.18**
			EE High, NE Low	EE High, NE High (Worst)	0.17**
	Black, n: 327	$\chi^2(3, 1875) = 2.366, p = 0.5$	EE Low, NE Low (Best)	EE Low, NE High	0.13NA
				EE High, NE Low	0.10NA

				EE High, NE High (Worst)	0.16NA
			EE Low, NE High	EE High, NE Low	-0.02NA
				EE High, NE High (Worst)	0.03NA
			EE High, NE Low	EE High, NE High (Worst)	0.06NA
	Hispanic, n: 320	$\chi^2(3, 1875) = 10.024, p = 0.018$	EE Low, NE Low (Best)	EE Low, NE High	0.05NA
				EE High, NE Low	0.30*
				EE High, NE High (Worst)	0.20NA
			EE Low, NE High	EE High, NE Low	0.26NA
				EE High, NE High (Worst)	0.15NA
			EE High, NE Low	EE High, NE High (Worst)	-0.11NA

Table A15: Dunn-Bonferroni Comparisons of Trust Outcomes by 'Littering' Vignette Social Expectation Condition & Race/Ethnicity

Trust Behavior	Race Ethnicity	Kruskal-Wallis	Condition A	Condition B	Mean Diff.
Phone	White, n: 1200	$\chi^2(3, 1792) = 35.003, p < 0.001$	EE Low, NE Low	EE High, NE High	0.29***
				EE Low, NE High	0.21***
				EE High, NE Low	0.26***
			EE Low, NE High	EE High, NE Low	0.04NA
				EE High, NE High	0.07NA
			EE High, NE Low	EE High, NE High	0.03NA
	Black, n: 276	$\chi^2(3, 1792) = 4.618, p = 0.202$	EE Low, NE Low	EE Low, NE High	-0.07NA
				EE High, NE Low	-0.03NA
				EE High, NE High	-0.27NA
			EE Low, NE High	EE High, NE Low	0.04NA
				EE High, NE High	-0.20NA
			EE High, NE Low	EE High, NE High	-0.24NA
	Hispanic, n: 316	$\chi^2(3, 1792) = 5.983, p = 0.112$	EE Low, NE Low	EE Low, NE High	-0.09NA

				EE High, NE Low	0.04NA
				EE High, NE High	0.16NA
			EE Low, NE High	EE High, NE Low	0.13NA
				EE High, NE High	0.26NA
			EE High, NE Low	EE High, NE High	0.12NA
Return Favor	White, n: 1195	$\chi^2(3, 1784) = 25.958, p < 0.001$	EE Low, NE Low	EE High, NE High	0.20***
				EE Low, NE High	0.08NA
				EE High, NE Low	0.21***
			EE Low, NE High	EE High, NE Low	0.13*
				EE High, NE High	0.12NA
			EE High, NE Low	EE High, NE High	-0.01NA
	Black, n: 276	$\chi^2(3, 1784) = 0.238, p = 0.971$	EE Low, NE Low	EE Low, NE High	0.00NA
				EE High, NE Low	-0.03NA
				EE High, NE High	0.03NA
			EE Low, NE High	EE High, NE Low	-0.03NA

				EE High, NE High	0.03NA
			EE High, NE Low	EE High, NE High	0.06NA
	Hispanic, n: 313	$\chi^2(3, 1784) = 2.702, p = 0.44$	EE Low, NE Low	EE Low, NE High	0.04NA
				EE High, NE Low	0.12NA
				EE High, NE High	0.12NA
			EE Low, NE High	EE High, NE Low	0.08NA
				EE High, NE High	0.07NA
			EE High, NE Low	EE High, NE High	-0.01NA
	White, n: 1195	$\chi^2(3, 1786) = 61.823, p < 0.001$	EE Low, NE Low	EE High, NE High	0.45***
				EE Low, NE High	0.29***
				EE High, NE Low	0.32***
			EE Low, NE High	EE High, NE Low	0.03NA
				EE High, NE High	0.16**
			EE High, NE Low	EE High, NE High	0.12NA

	Black, n: 275	$\chi^2(3, 1786) = 0.799, p = 0.85$	EE Low, NE Low	EE Low, NE High	-0.11NA
				EE High, NE Low	-0.09NA
				EE High, NE High	-0.02NA
			EE Low, NE High	EE High, NE Low	0.02NA
				EE High, NE High	0.08NA
			EE High, NE Low	EE High, NE High	0.06NA
	Hispanic, n: 316	$\chi^2(3, 1786) = 8.742, p = 0.033$	EE Low, NE Low	EE Low, NE High	-0.00NA
				EE High, NE Low	0.16NA
				EE High, NE High	0.28NA
			EE Low, NE High	EE High, NE Low	0.17NA
				EE High, NE High	0.28NA
			EE High, NE Low	EE High, NE High	0.12NA
Return Wallet	White, n: 1193	$\chi^2(3, 1779) = 35.317, p < 0.001$	EE Low, NE Low	EE High, NE High	0.33***
				EE Low, NE High	0.19**
				EE High, NE Low	0.20***

			EE Low, NE High	EE High, NE Low	0.01NA
				EE High, NE High	0.14*
			EE High, NE Low	EE High, NE High	0.13*
	Black, n: 272	$\chi^2(3, 1779) = 0.153, p = 0.985$	EE Low, NE Low	EE Low, NE High	-0.00NA
				EE High, NE Low	-0.03NA
				EE High, NE High	-0.03NA
			EE Low, NE High	EE High, NE Low	-0.03NA
				EE High, NE High	-0.03NA
			EE High, NE Low	EE High, NE High	0.00NA
	Hispanic, n: 314	$\chi^2(3, 1779) = 3.601, p = 0.308$	EE Low, NE Low	EE Low, NE High	-0.10NA
				EE High, NE Low	0.08NA
				EE High, NE High	0.08NA
			EE Low, NE High	EE High, NE Low	0.17NA
				EE High, NE High	0.17NA
			EE High, NE Low	EE High, NE High	-0.00NA

Table A16: Kruskal-Wallis Tests of Trust Outcomes by 'Using Violence' Vignette Social Expectation Condition & Gender Identity

Trust Behavior	Gender	Kruskal-Wallis	Condition A	Condition B	Mean Diff.
Lend Phone	Female, n: 1189	$\chi^2(3, 1990) = 62.511, p < 0.001$	EE Low, NE Low	EE High, NE High	0.49***
				EE Low, NE High	0.20***
				EE High, NE Low	0.30***
			EE Low, NE High	EE High, NE Low	0.10
				EE High, NE High	0.29***
			EE High, NE Low	EE High, NE High	0.19**
	Male, n: 801	$\chi^2(3, 1990) = 61.159, p < 0.001$	EE Low, NE Low	EE Low, NE High	0.28***
				EE High, NE Low	0.47***
				EE High, NE High	0.54***
			EE Low, NE High	EE High, NE Low	0.19*
				EE High, NE High	0.26***
			EE High, NE Low	EE High, NE High	0.07
Favor	Female, n: 1186	$\chi^2(3, 1987) = 42.489, p < 0.001$	EE Low, NE Low	EE High, NE High	0.37***
				EE Low, NE High	0.18**
				EE High, NE Low	0.27***
			EE Low, NE High	EE High, NE Low	0.09
				EE High, NE High	0.19**
			EE High, NE Low	EE High, NE High	0.10
	Male, n: 801	$\chi^2(3, 1987) = 31.548, p < 0.001$	EE Low, NE Low	EE Low, NE High	0.13
				EE High, NE Low	0.33***
				EE High, NE High	0.36***
			EE Low, NE High	EE High, NE Low	0.19*
				EE High, NE High	0.23**

Trust Behavior	Gender	Kruskal-Wallis	Condition A	Condition B	Mean Diff.
			EE High, NE Low	EE High, NE High	0.04
Wallet	Female, n: 1187	$\chi^2(3, 1987) = 72.368, p < 0.001$	EE Low, NE Low	EE High, NE High	0.53***
				EE Low, NE High	0.24***
				EE High, NE Low	0.38***
			EE Low, NE High	EE High, NE Low	0.14*
				EE High, NE High	0.29***
			EE High, NE Low	EE High, NE High	0.15*
	Male, n: 800	$\chi^2(3, 1987) = 46.55, p < 0.001$	EE Low, NE Low	EE Low, NE High	0.22**
				EE High, NE Low	0.40***
				EE High, NE High	0.48***
			EE Low, NE High	EE High, NE Low	0.18*
				EE High, NE High	0.26**
			EE High, NE Low	EE High, NE High	0.08
Mechanic	Female, n: 1185	$\chi^2(3, 1983) = 46.608, p < 0.001$	EE Low, NE Low	EE High, NE High	0.38***
				EE Low, NE High	0.22***
				EE High, NE Low	0.29***
			EE Low, NE High	EE High, NE Low	0.07
				EE High, NE High	0.16**
			EE High, NE Low	EE High, NE High	0.09
	Male, n: 798	$\chi^2(3, 1983) = 37.915, p < 0.001$	EE Low, NE Low	EE Low, NE High	0.18*
				EE High, NE Low	0.29***
				EE High, NE High	0.43***
			EE Low, NE High	EE High, NE Low	0.11
				EE High, NE High	0.24**
			EE High, NE Low	EE High, NE High	0.13

Other Related Research

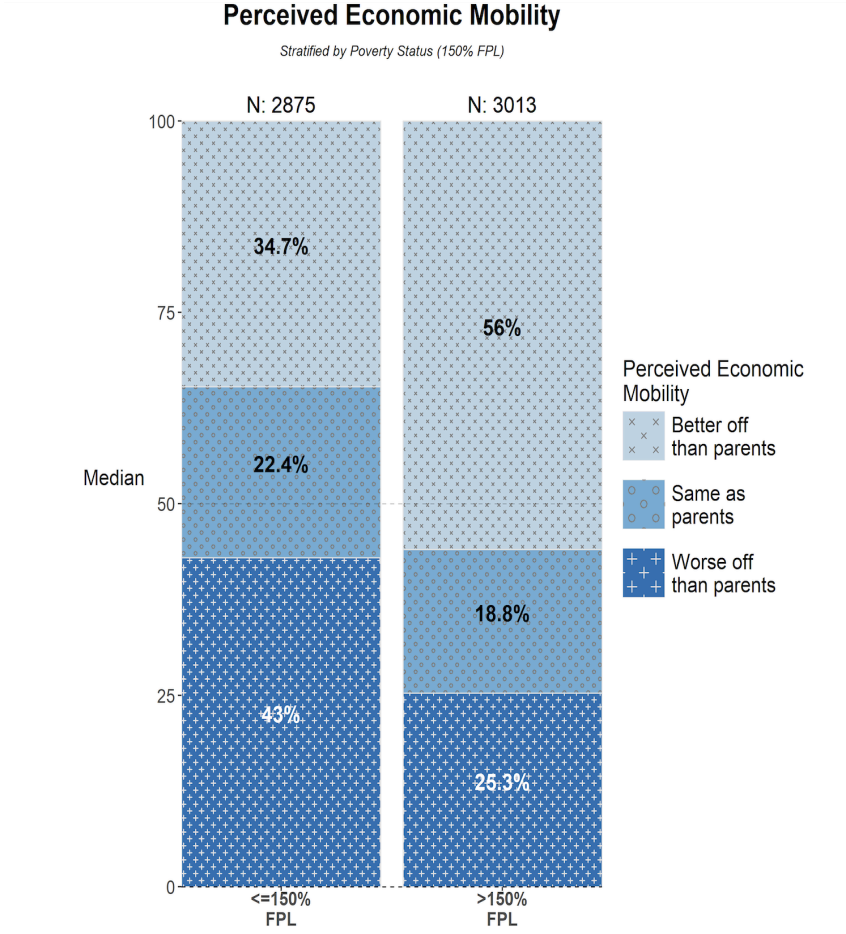
Perceived Intergenerational Upward and Downward Mobility

Social norms around education, personal finances, community trust and civic engagement shape individuals' perceptions of upward or downward mobility by influencing the expectations and behaviors that determine socioeconomic advancement. In communities where education is highly valued as a path to better life chances, individuals are more likely to invest in formal schooling, seeing it as a reliable means to improve their economic standing. Similarly, norms that promote investments in social and cultural capital enable individuals to accumulate resources for education, entrepreneurship, or homeownership. These shared norms help promote perceptions of upward economic mobility. However, in contexts where access to opportunities is unequal or saving opportunities are limited by economic insecurity across *racialized* and *marginalized* communities, the alignment between these norms and upward mobility may subside, fostering perceptions downward –as opposed to upward– mobility. Thus, the strength of the relationship between social norms and perceptions of upward mobility depends on the structural conditions that enable or constrain mobility.

Our research sheds light on the relationship between social norms, trust, and perceived upwards and downward mobility across US communities. Most Americans believe that it is unfair for things beyond their control to limit their access to opportunities, and the accident of birth should not determine one's life chances (Wright 2010; Beller and Hout 2006; Movahed and Neman 2024). Yet despite these popular notions, social science research in sociology and economics has presented strong evidence that the trend in intergenerational social mobility has been either *stagnant* (Song 2019:255) or falling (Chetty et al., 2019) over the past several decades. To what extent do poor Americans perceive themselves as downwardly mobile? What are the determinants of perceived upward and downward mobility across communities in the United States? Drawing on our novel and nationally representative survey data and using machine learning techniques, this research project also offers insights into the latest trends of perceptions of economic mobility in the United States. The striking finding of our survey data analysis is the substantial evidence we document in perceived downward mobility. As plotted in the figure below, 65% of poor Americans perceive themselves as either worse off than their parents or just the same. For those that are above 150% of the FPL, this distribution only changes by margins. Still, 43% of those above 150% federal poverty level state that either they are economically doing the same as their parents or worse. As a result, there is substantial evidence that some large swaths of the American population view themselves as either economically stagnant or worse off relative to their parents.

This study has two primary goals. First, it seeks to present descriptive accounts of the trends in the perceptions of intergenerational income mobility. Second, using machine learning techniques, the paper identifies the top most predictive factors of perceived upward and downward mobility across communities in the United States.

Perceived Economic Mobility by Poverty Status



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Subjective Income Expectations

While the main work of the project deals with the influence of social expectations on behavior, economic expectations are also important to understand the motivations and behavior of people experiencing poverty. Additional work from the survey investigates subjective income expectations—or expectations of future earnings which are collected via specialized survey modules. These subjective expectations produce information consistent with real-world decision-making (Delavande et al., 2011). Low-income Americans consistently report lower prospects for growth in their future financial situations as compared to middle-income and high-income Americans and are less optimistic about macroeconomic expectations (Rozsypal and Schlafmann, 2023; Das et al., 2020). These expectations matter for income mobility–and mobility out of poverty. The expectation that mobility is possible represents an essential ingredient in hope and aspirations (Lybbert and Wydick, 2018; Dalton et al., 2016). Low expectations of earnings growth might reduce effort, leading to a self-fulfilling prophecy of immobility. Similarly, increasing expectations related to activities like education may reduce dropping out from education (Jensen, 2010).

The use of subjective expectations modules has grown in influence and popularity among economists and other social scientists over the past several decades. However, while subjective expectations questions have proliferated, little has been done to test the impact of choices made when designing these specialized modules. With our nationally representative sample, we collect income expectations for the next year. Respondents are asked the question “What is the percent chance that your total household income, before taxes, will be **[less/more]** than **[Y]** over the next year?” where **Y** represents an income threshold (Dominitz and Manski, 1997). Each respondent sees several income thresholds. We manipulate the order of income thresholds presented–presenting these in either ascending or descending order–and the direction of comparison---asking if respondents will make “more” or “less”' than a given amount. In preliminary results, we find a strong relationship between the order in which income thresholds are presented and expected income. Presenting threshold in ascending order (relative to descending) shifts income expectations by almost $6000.

Additionally, we seek to understand how economic expectations are related to social capital and trust. Past research has documented a strong link between social capital and economic mobility (Chetty et al, 2022). However, it is unclear what drives this relationship. Planned work will examine the relationship between social networks and aspirations (i.e., self-efficacy and income expectations) as a potential link (Rungo et al., 2024). This could be for several reasons, including a role model effect (Riley, 2022), through referral networks (e.g., Heath, 2018), or because those with more social capital have higher aspirations to begin with. This work will not only study the relationship between these social capital variables and income expectations, but draw on rich survey data which may help understand what drives their relationship.

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