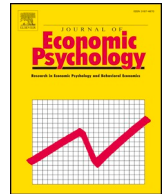


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# Poverty identity and preference for challenge: Evidence from the U.S. and India<sup>☆</sup>

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## ABSTRACT

One's personal identity can play an important role in decision-making. We propose that a key identity that shapes behavior among poor populations is conceptualizing oneself as financially insecure, which we term "poverty identity." Two experiments suggest that this identity can influence one's propensity to engage in challenging tasks. We first demonstrate in a lab experiment with students that making financial insecurity temporarily salient can reduce preference for challenging tasks. Subsequently, in a lab-in-field experiment conducted in Dharavi, a slum in Mumbai, India, we show that a verbal self-affirmation intervention involving simple, one-on-one conversations with each individual can counteract the effects of persistent identity salience for the poor by fostering greater preference for more challenging labor tasks. We suggest that the persistence of scarcity can make poverty a continually salient characteristic by which the truly impoverished define who they are. Further, we outline an identity-based theoretical framework that explains behavior among people who temporarily feel poor but also suggests that similar perturbations in identity salience may have a negligible impact on behavior among the very poor. These findings have important implications for models of identity and policy design aimed at improving well-being for disadvantaged populations.

## 1. Introduction

Research across the social sciences finds that people's preferences and behaviors are often shaped by the social groups they identify with (Akerlof & Kranton, 2000; Benjamin, Choi, & Strickland, 2010). Past work has found that people who hold social identities defined by race (Benjamin et al., 2010), religious beliefs (Benjamin, Choi, & Fisher, 2016), a history of charitable giving (Kessler & Milkman, 2016), or even a criminal past (Cohn, Maréchal, & Noll, 2015) all tend to align their behavior with the perceived norms of the groups that define who they are. We propose that one crucially important identity is the image one might have of oneself

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as being financially insecure—which we term a “poverty identity.” That is, if an individual conceptualizes themselves as being an “impoverished person” (in either an absolute or relative sense), this view of themselves may harm their perceived self-efficacy in achieving positive outcomes in the future. One consequence of this is that poverty identity may reduce one’s willingness to engage in challenging tasks, which would have important implications for labor market outcomes.

Indeed, one’s willingness to engage in demanding tasks is essential for human capital accumulation in the modern economy, from choosing to pursue higher education, to seeking more challenging (and financially rewarding) employment opportunities, to taking on greater responsibility in the pursuit of job promotions. People who experience chronic states of impoverishment can potentially exhibit lowered self-efficacy, which can have important effects on a wide range of economically meaningful outcomes such as test scores (Krishnan & Krutikova, 2013), investment in education (Bernard, Dercon, Orkin, & Taffesse, 2014), and savings behavior (Ghosal, Jana, Mani, Mitra, & Roy, 2016). While prior research has outlined some of the structural factors that may contribute to persistent, cross-generational poverty traps (Genicot & Ray, 2017; Galor & Özak, 2016; Wuepper & Sauer, 2016), in the current work we examine a different, psychological mechanism. Specifically, we argue that financial insecurity may shape how people define who they are and what they are capable of, thereby forming in them a salient poverty identity that influences their willingness to engage in more challenging, and potentially more lucrative, tasks.

Our work builds on a growing body of literature that explores how poverty influences individual decision making processes, offering insights into the psychological world of the impoverished (e.g., see Mullainathan and Shafir (2013), Schilbach, Schofield, and Mullainathan (2016)). This work finds that temporarily inducing a “scarcity mindset” can influence individuals’ preferences and behaviors, from borrowing, to investment choices, to time management. However, a limitation of existing research in this area is its substantial reliance on student and online populations (e.g., Roux, Goldsmith, and Bonezzi (2015), Mehta and Zhu (2015), Shah, Mullainathan, and Shafir (2012), Shah, Shafir, and Mullainathan (2015)), who may not experience meaningful poverty from a global perspective. In light of this, our work adds to the relatively small body of work studying the mindsets of the truly poor (e.g., Hall, Zhao, and Shafir (2014), Mani, Mullainathan, Shafir, and Zhao (2013)), by using not only a lab experiment with students, but also a lab-in-field experiment with a population of poor individuals living in Dharavi, a slum in Mumbai, India. However, our conceptual lens for studying the behavior of the poor differs from past work on scarcity mindsets. Specifically, we suggest that financial insecurity can constitute an important component of an individual’s identity; for truly impoverished populations, this may be a stable and salient element.

The identity-based theoretical framework we adopt allows us to offer an explanation for differences in behavior between populations in response to an increase in the salience of a poverty identity. While we do not explicitly test this framework, it provides a concise account of the current findings. Specifically, we suggest that identity salience manipulations have a smaller impact on decisions for those who associate strongly with the identity because the identity is already highly saturated. This framework builds on earlier theoretical work in this domain (most notably Benjamin et al. (2010)) to explain differences across developed and developing-world populations, but also more broadly allows us to account for other, previously unexplained empirical findings in the identity priming literature. Importantly, by adopting this identity-based theoretical framework, we are also able to pinpoint an effective, behaviorally-targeted verbal self-affirmation intervention. Specifically, we posit that simple, one-on-one conversations with individuals who experience persistent states of impoverishment can build people up and serve as a tool to relax the burdens associated with a poverty identity.

We first report on a controlled lab experiment at a public U.S. university (Study 1), where we find that temporarily increasing the salience of one’s economic insecurity leads students to select less challenging (and less financially rewarding) labor tasks. In this study, lab participants answered a series of questions that either did or did not make financial insecurity salient before making a labor decision that involved choosing between a leisurely, poorly-compensated task and a challenging, better-compensated task. Our findings show that reminders of financial insecurity lead to lower selection into challenging tasks, without any impact on risk and time preferences within this developed-world student population.

Second, we present a lab-in-field experiment conducted in the Dharavi slum in Mumbai, India (Study 2) to better understand if and how poverty identity salience manipulations influence behavior in truly impoverished populations. Recent research indicates that for the very poor, the psychological effects of poverty pervade everyday life (Shah, Zhao, Mullainathan, & Shafir, 2018), suggesting that persistent scarcity may make poverty a perpetually salient feature of life for these populations. In our experiment in Mumbai, we do not find evidence that small perturbations in poverty identity salience impact preferences for challenge among those who already experience impoverishment on a daily basis. We account for these findings within an identity-based theoretical framework, which suggests stronger effects on behavior when changing the salience of less saturated identities. We also simultaneously tested a second treatment condition involving a verbal self-affirmation (based on Hall et al. (2014)), an intervention that involved a one-on-one conversation with each individual regarding their positive traits. This intervention was designed to increase the salience of a less saturated identity positively associated with self-efficacy. We find that verbal self-affirmation increased participants’ likelihood of selecting into more challenging labor opportunities. This result supports the idea that impoverished individuals bear not only heavy economic burdens, but also considerable psychological burdens associated with the persistent identity of being poor.

The current work makes several contributions to existing literature. First, building on prior work (e.g., Mani et al. (2013)) we extend the idea of a “poverty identity” in a labor market context, arguing that economically-impoverished individuals not only experience financial difficulties but may also define who they are and what they are capable of by this economic condition. We conjecture that persistent scarcity, experienced as a result of living in poverty for extended periods of time, can lead people to strongly define themselves by their impoverishment. This conceptualization of poverty as an identity allows us to account for important differences in how two distinct populations respond to identity salience manipulations. Second, we present evidence suggesting that an individual’s poverty identity can influence willingness to engage in challenging tasks. In a developed-world

population, temporarily increasing the salience of one's financial insecurity significantly reduced preference for more challenging, but more lucrative, tasks. Third, we outline an identity-based theoretical framework that offers a possible explanation for why those who experience persistent poverty may respond differently to reminders of financial insecurity than those who temporarily feel poor. Building on Benjamin et al. (2010), this framework suggests that generally, perturbations in the salience of an identity have smaller effects on behavior when an identity is more- versus less-strongly held. Fourth, applying this theoretical framework and building on Hall et al. (2014), we provide evidence supporting the use of a verbal self-affirmation intervention that can combat the negative effects of a salient poverty identity and may be an important tool for addressing undesirable identity-driven effects more generally. Our findings suggest that among impoverished individuals, "building up" specific self-identities prior to choice could encourage individuals to seek more challenging, and financially rewarding, opportunities (such as applying for jobs, college admission, etc.).

Our findings also have broader implications for labor market outcomes and persistent inequality. In particular, this work points to a previously unexamined mechanism that makes it difficult to escape poverty. Specifically, the effects of poverty identity on preferences have the potential to form a dynamically self-reinforcing poverty trap; that is, impoverished individuals may select away from challenging environments in a way that perpetuates their impoverished status due to identity-driven preferences. In a world where one's willingness to pursue difficult tasks is increasingly associated with economic achievement, such reinforcing identity effects have serious consequences for the very poor.

## 2. Background

### 2.1. Conceptual Background

An important stream of recent work in economics has documented the impact of various personal identities on economic preferences (Akerlof & Kranton, 2000; Akerlof & Kranton, 2010). This literature has established, for instance, that increasing the salience of racial identity can lead individuals to exhibit distinct time and risk preferences (Benjamin et al., 2010), activating religious identities and donor identities can increase public good contributions and charitable giving (Benjamin et al., 2016; Kessler & Milkman, 2016), and priming one's professional bank employee identity or criminal identity can increase dishonest behavior (Cohn, Fehr, & Maréchal, 2014; Cohn et al., 2015). Building on literature in psychology, this research indicates that a salient social identity can shape preferences and behavior in a manner that corresponds with the associated group. Prior research in psychology and more recent work in economics has focused on performance effects, showing that Black students (but not White students) perform worse on GRE exam questions when race is made salient (Steele & Aronson, 1995). In work conducted in developing countries, increasing the salience of one's caste in Uttar Pradesh, India has been shown to impair the intellectual performance of individuals from a low caste (Hoff & Pandey, 2014; Hoff & Pandey, 2006) and that increasing the salience of one's hukou identity in Beijing, China can also reduce the performance of rural migrant children (Afridi, Li, & Ren, 2015). Researchers have theorized that greater mental taxation under resource scarcity or stereotype threat can magnify cognitive biases, in that individuals become more inclined to rely upon intuitive decision making processes (which are more prone to error), rather than deliberative decision processes (Schilbach et al., 2016; Schmader, Johns, & Forbes, 2008).

Our conceptualization of a poverty identity builds on evidence suggesting that persistent conditions of "being poor" can develop into a strong and stable component of one's personal identity. Stigmas associated with being poor include perceptions of incompetence, and of being lazy, unmotivated, and a societal burden (Kerbo, 1976; Hall et al., 2014; Horan & Austin, 1974; Rogers-Dillon, 1995), and individuals frequently self-identify with their disadvantaged economic status (Hoff & Walsh, 2017). In fact, prompting people to consider their scarce economic resources can result in self-fulfilling negative outcomes such as reduced cognitive performance (Mani et al., 2013) and antisocial behavior (Prediger, Volland, & Herrmann, 2014). Those who experience financial difficulties even fail to take advantage of benefits offered at no cost to the recipient because they wish to avoid the associated stigma (Kissane, 2003). The psychological effects of poverty seem to pervade everyday life for the poor; thoughts about financial constraints are central and can be triggered by very mundane circumstances, suggesting that the poor may come to see economic challenge in all kinds of situations they experience throughout their daily lives (Shah et al., 2018). We posit that the persistent experiences of scarcity that are inherent to a life in poverty can lead people to define who they are and what they are capable of by their conditions of impoverishment and that this salient poverty identity subsequently shapes preferences in ways that are economically meaningful.

Specifically, we argue that a salient poverty identity may inhibit one's willingness to engage in challenging tasks. There are multiple reasons why this could be the case. First, individuals holding a strong poverty identity may align their preferences with the stereotypes of laziness or failure associated with being poor. Alternatively, poverty identity might induce feelings of learned helplessness, whereby individuals in poverty might feel they lack control over the direction of their lives, and thereby feel they are unable to achieve in challenging contexts (Seligman, 1972). Relatedly, a salient poverty identity could lead people to feel that they are less capable and reduce self-efficacy. In addition, individuals who strongly hold the identity of being poor may feel that more demanding (and financially-rewarding) opportunities are incongruent with their identity, or simply are not meant for "people like me." Furthermore, through repeated exposure to conditions of scarcity, people may experience an adaptation of their preferences by following simplifying rules, heuristics, and norms that allow low-income individuals to navigate the environment within which they operate.

Individual preferences regarding one's willingness to engage in demanding tasks are important to study in the context of poverty because this tendency is likely associated with a variety of economically meaningful outcomes. Preferences for challenge can impact both major life decisions (such as selecting a college major) and everyday decisions (such as deciding whether or not to work overtime). Indeed, recent literature has increasingly acknowledged the importance of various noncognitive skills in explaining individual differences in achievement. For example, related work on resilience and grit has shown that individual tendencies to

persevere on difficult tasks are associated with better college GPAs, greater educational attainment, and an increased likelihood of keeping one's job (Duckworth, Peterson, Matthews, & Kelly, 2007; Duckworth & Quinn, 2009; Eskreis-Winkler, Duckworth, Shulman, & Beal, 2014; Maddi, Matthews, Kelly, Villarreal, & White, 2012).

Furthermore, recent research provides evidence on the impact of interventions designed to lift the psychological burdens associated with being poor in order to improve educational and economic outcomes. For instance, García, Harker, and Cuartas Ricaurte (2016) study the combination of a large scale conditional cash transfer program, information on returns to education, and interactions with role models in Colombia, finding that this multi-pronged intervention approach yielded significant increases in the educational aspirations of parents and their children, particularly among the poorest households. In a study in rural Ethiopia, Bernard et al. (2014) also found that participants who watched a one-hour documentary featuring successful peers developed higher aspirations, and subsequently worked more and took less leisure six months post-treatment. While these interventions were effective, there remains an opportunity to develop lighter-touch intervention strategies that address the behavioral bottlenecks inhibiting achievement.

To this end, we extend and evaluate a low-cost, behaviorally-targeted intervention strategy that builds upon established findings in psychology. While personal identities are often static, an array of studies suggest a method for reducing the harmful consequences of identity-salience. This intervention strategy is broadly known as self-affirmation, a process in which people affirm to themselves core values that they consider to be important (Cohen & Sherman, 2014; Cohen, Garcia, Apfel, & Master, 2006; McQueen & Klein, 2006). Notably, our intervention applies the most robust elements from prior work in the self-affirmation literature by adopting a "verbal self-affirmation" procedure consisting of an extended, one-on-one conversation with each individual (based in particular on Hall et al. (2014)). This procedure demands a high degree of involvement from each participant. The verbal self-affirmation intervention functions by strengthening the so-called "psychological immune system," which can insulate an individual against threats to their confidence and sense of self. Because those who live in impoverishment may hold a perpetually salient poverty identity, verbal self-affirmation can block the negative effects of this threatening identity and build up one's conceptualization of oneself as being capable of achieving success. For instance, prior research in psychology has shown that after undergoing self-affirmation, women improved their performance on difficult math tests (Martens, Johns, Greenberg, & Schimel, 2006), minority students improved their educational performance (Cohen et al., 2006), and low-income individuals in the U.S. improved their cognitive performance (Hall et al., 2014). We extend these findings to consider how self-affirmation might also alter preferences for engaging in challenging tasks. Specifically, we hypothesize that a verbal self-affirmation intervention targeting individuals who identify with their impoverished status might lift the stigmas associated with being poor and enable individuals to select into more challenging (and more financially rewarding) labor opportunities.

## 2.2. Theoretical framework

Building on this conceptualization of poverty as being more than a temporary mindset, we extend a theoretical framework introduced in Benjamin et al. (2010) that captures identity-driven motivations, where identities are held with different degrees of strength. This simple model is not formally evaluated within our experiments, but instead provides a useful framework that accounts for the current findings and could be extended to make predictions in new contexts.

First, consider some action  $x$ , such as one's likelihood of pursuing higher education. Individuals identify with a social group  $C$  (such as "women" or "people of low socioeconomic status") with strength  $s$ , and each social group is associated with a prescribed action,  $x_C$ . Further note that  $x_0$  is defined as one's baseline preferences (i.e., what an individual prefers in the absence of any identity considerations). Benjamin et al. (2010) proposed that an individual selects  $x$  so as to maximize:

$$U = -(1 - w(s))(x - x_0)^2 - w(s)(x - x_C)^2$$

where  $w(s) \in [0, 1]$  denotes the weight of social category  $C$  on decisions. In this setup, the more that an action deviates from the norm associated with the group, the greater the disutility incurred by individuals who adopt that course of action.

We make extensions to this framework by proposing that individuals may identify simultaneously with  $n$  different social groups,  $C_j$ , each with strength  $s_j$ , such that  $\sum_{j=0}^n w(s_j) = 1$ . The weights  $w$  capture the relative impact of various social identities on preferences. Then, an individual selects  $x$  to maximize:

$$U = - \sum_{j=0}^n w(s_j)(x - x_j)^2$$

where  $x_j$  is the prescribed action for members of the social group  $C_j$ . First order conditions imply that the optimal action,  $x^* = \sum_{j=0}^n w(s_j)x_j$ , is a weighted average of the actions prescribed by each social group.

The strength of a particular group identity,  $s_j$ , can be changed by environmental stimuli that increase its salience. Although Benjamin et al. (2010) remained agnostic regarding the shape of  $w(s)$ , we suggest that  $w(s)$  may be S-shaped, where  $w$  is convex near  $s = 0$  and concave near  $s = 1$ . That is, in concave regions of the domain (i.e., where  $w' > 0$  and  $w'' < 0$ ), the more strongly one identifies with a given social group,  $C$ , the more weight such identity-related motivations will have on their preferences, but this relationship between  $s$  and  $w(s)$  is increasing at a diminishing rate. By contrast, in convex regions of the domain (i.e., where  $w' > 0$  and  $w'' > 0$ ), greater identity strength also leads to a greater influence on preferences and will have a growing impact on preferences.

The intuition for an S-shape is as follows. Consider for example people living in a constant state of poverty, who strongly hold a poverty identity (i.e.,  $s$  near 1); because the identity is already highly saturated for these individuals, reminders of financial insecurity

may have a small impact on their decisions relative to those who experience some, but not constant, poverty. This idea is captured by concavity in  $w$ . However, concavity alone would also imply that increasing the strength of an identity will have the greatest impact on preferences when  $s$  is near 0. This would lead to the intuitively unreasonable prediction that increasing the salience of an identity that individuals do not hold at all (e.g., the identity of being a dentist for non-dentists) would have the largest impact on preferences. Thus, we suggest that convex  $w(s)$  near  $s = 0$  is more plausible. Taken together with concave  $w(s)$  near  $s = 1$ , this results in an S-shape whereby increasing the strength of partially-held identities has the greatest impact on preferences. Within this framework, our data are consistent with participants being in a range of  $s$  where  $w(s)$  is concave; however, we do not formally test for an S-shape in the present work.

Because  $\sum_{j=0}^n w(s_j)$  is fixed, increasing the relative salience of one group identity will then necessarily reduce the weight placed on at least one other identity.<sup>1</sup> This aspect of the framework allows us to account for phenomena that have not been captured in recent models, including for example that individuals can hold multiple identities each having a distinct impact on behavior (e.g., Shih, Pittinsky, and Ambady (1999), Ambady, Shih, Kim, and Pittinsky (2001), Cadsby, Servátka, and Song (2013)). As an implication, this framework points to new intervention strategies that can rectify undesirable distortions of behavior driven by identity-related motivations. In a poverty identity context, the framework suggests that when individuals from disadvantaged groups have a strongly-held, saturated poverty identity, policymakers should not attempt to directly reduce the salience of the saturated identity but should instead increase the salience of other, unsaturated identities held by the individual that are positively associated with desirable behaviors. That is, since  $w(t_j + \varepsilon) - w(t_j) < w(s_j + \varepsilon) - w(s_j)$  in concave regions of  $w$ , where  $t_j > s_j$ , efforts to increase the salience of a positive, unsaturated identity will have a greater impact on decisions than similar efforts to decrease the salience of a saturated identity. In addition, by increasing the salience of an unsaturated identity, weights on other identities must fall (potentially including the negative, saturated identity of interest).

In line with these ideas, we examine a verbal self-affirmation intervention strategy designed to make salient an identity positively associated with feelings of capability. We remain agnostic regarding which particular identity the verbal self-affirmation intervention makes salient. That is, the intervention may operate by increasing weights placed on one's baseline preferences held in the absence of any identity considerations,  $w(s_0)$ , or it may increase the salience of a different, ideal-self identity,  $w(s_k)$ , which may vary on an individual basis. Both possibilities are encapsulated by the model and make the prediction that preference for challenge will increase when other identities positively associated with self-efficacy are made salient among individuals who already hold a highly-saturated poverty identity.

### 3. Study 1: Methods and results

We first conducted a controlled lab experiment in the U.S. in the spring of 2017 to examine how making a poverty identity salient to students (through reminders of socioeconomic status and, most importantly, situations in which they did not have enough money to achieve their goals) influenced their willingness to engage in challenging tasks. Similar to Niederle and Yestrumkas (2008), participants chose between completing either an easy or a hard task.

#### 3.1. Methods

A total of 212 participants completed the study in a behavioral research laboratory for partial course credit at a large public U.S. university. We aimed to recruit as many participants as possible during the week in which the study was administered. All participants were from the same course, and they were given the opportunity to earn additional financial bonuses based on their decisions. The number of participants who completed the study ranged from 34 to 72 individuals per day across the four weekdays in which the study was conducted. The ordering of the tasks in the study proceeded as follows: (1) participants completed short answer questions which differed based on the treatment; (2) they made a decision to either complete a challenging labor task or an easy leisure task; (3) they completed the task that they had selected; and (4) they responded to a survey including psychographic scales and demographic questions, and subsequently completed risk and time preference elicitation tasks.

The key manipulation in the experiment centered around the nature of the questions immediately preceding the task choice (step (1) above), which sought to manipulate the salience of a poverty identity. To be clear, we do not suggest that most students at a public university define themselves by a state of impoverishment. Instead we aimed to simulate transient feelings of poverty by providing reminders of not having enough money to purchase items, an experience shared by individuals at a range of different income levels. Indeed, prior research broadly conceptualizes poverty as the gap between one's needs and the resources available to fulfill them, which may apply to individuals in both the developing and developed worlds (Mani et al., 2013). Consistent with prior lab paradigms (e.g., Roux et al. (2015), Mehta and Zhu (2015)), this study thus examines whether temporary feelings of perceived poverty are sufficient to influence one's willingness to engage in challenging tasks.

Specifically, participants were randomly assigned to one of two experimental conditions: either a treatment condition ("Poverty Identity") or a control condition ("Control"). In the Poverty Identity condition, participants answered questions about their parents' education, occupation, and household income; we further increased the salience of their own personal economic hardships by asking them to describe in detail a situation in which they did not have enough money to purchase something. This procedure was based on

<sup>1</sup> Note that the weight of an individual identity is influenced by the number of available identities with positive weights. While we do not formally model this aspect, one may anticipate that individuals consider only a limited number of possibilities (i.e.,  $n$  is finite and small).



**Table 1**  
US experimental conditions.

Control	Poverty Identity
What is your father's approximate age?	What is your father's occupation?
What is your mother's approximate age?	What is your mother's occupation?
What is your father's approximate height?	What is the highest level of education your father completed?
What is your mother's approximate height?	What is the highest level of education your mother completed?
What is the approximate population of the town you live in?	Information about income is very important to understand. Would you please give your best guess? Please indicate the answer that includes your entire household income in (previous year) before taxes.
Please describe a recent situation when you paid for something (a bill, a product, etc.). Below, try to describe the situation in as much detail as possible. What was the context? Why did you want it? How did you feel?	Please describe a recent situation when you didn't have enough money to pay for something (a bill, a product, etc.). Below, try to describe the situation in as much detail as possible. What was the context? Why were you not able to afford it? How did you feel?

those used in existing literature involving identity salience manipulations in both economics and psychology (e.g., Benjamin et al. (2010), Benjamin et al. (2016), Cohn et al. (2015), Croizet and Claire (1998), Mani et al. (2013), Roux et al. (2015), Mehta and Zhu (2015)). In the Control condition, participants were not asked economic status questions, but were instead asked a set of neutral questions about their parents' age and height and the population of their home city, and were then asked to describe a recent situation in which they paid for something. Table 1 shows the specific questions used in each condition. Importantly, a major element of the manipulation involved describing a past situation in which money was or was not an issue (i.e., a recent situation when they did not have enough money to purchase something or a recent situation when they paid for something). Timing data indicated that participants spent on average 95 s answering this single essay question, whereas they spent on average a combined total of 44 s answering the preceding five questions. As in prior research, to mask the intent of the questions, all participants were also asked to report their year in school and whether they live on or off campus.

After answering this series of questions, participants made their task selection. Specifically, they were asked to choose either: (1) a challenging labor task involving the completion of difficult puzzles; or (2) an easy leisure task in which participants were allowed to watch a short, entertaining video for a few minutes. Importantly, while both tasks took the same amount of time, choosing the former option (the challenging task) had a higher associated payout on expectation. For each puzzle solved, participants earned a ticket into a raffle for a \$50 Amazon gift card, whereas participants choosing the video would forego any chance to win the gift card. This was made clear to participants in the instructions, as was the fact that the two options would take the same amount of time.

Those who chose the challenging task completed the 2-step version of the N-back task (i.e., the 2-back task; see Jaeggi, Buschkuhl, Jonides, and Perrig (2008)). In the 2-back task, participants viewed a sequence of shapes on screen and were asked whether the current shape displayed was identical to the shape shown two trials earlier. In order to perform effectively, participants needed to maintain a buffer of shapes in their memory, thus demanding considerable attention. Each shape was presented for 1500 ms, with a 2000 ms inter-trial interval. Participants were provided with written instructions and a set of practice trials before completing a 60-round session in which performance was linked to participants' likelihood of winning the gift card, as described above.

Participants who instead chose the easier leisure task were routed to a different page. After having made the decision regarding which task to complete, individuals were informed that they could select from five different video options between 2-3 min in length. These options were offered so that participants could watch something that they liked.

After completing their chosen task, all participants responded to several follow up questions including the Financial Well-Being Index (Sharma & Alter, 2012), task confidence, and identification strength (adapted from Benjamin, Choi, and Strickland (2007), Luhtanen and Crocker (1992)). Participants in the Control condition also provided information regarding their incomes at this point (note that participants in the Poverty Identity condition had already provided this information as part of the manipulation). Subsequently, all participants completed incentive-compatible risk preference and time preference elicitation tasks (Holt & Laury, 2002; Eckel & Grossman, 2002; Epper, Fehr-Duda, & Bruhin, 2011), to allow for these to be factored into the analysis. See Appendix A for question details. For one participant selected at random, a randomly determined question from the risk preference task was used for actual payment. For a different participant selected at random, a randomly determined item from the time preference task was also implemented. Payments were provided in the form of Amazon gift cards.

### 3.2. Results

**Demographics and balance check.** Table 2 shows the mean values for the demographic variables collected for participants in the Control and Poverty Identity conditions, namely age, gender, and income category. It also reports on an F-test conducted to check for balance on these observable demographics, which suggest some imbalance in the sample. In particular, while age and gender were roughly the same in the two conditions, the distributions of income in the two groups differed slightly. Note that self-reported household income was captured as part of the manipulation in the Poverty Identity condition (along with parents' occupation and education) and was instead captured as a separate post-task demographic item in the Control condition. As a result of this imbalance from randomization, we control for these demographic variables to improve precision in our estimates.

**Table 2**  
U.S.: Demographics.

	Control	Poverty Identity
Age	23.00	23.11
Female	38.89%	33.65%
Income: Less Than \$10,000	8.33%	2.88%
Income: \$10,000-\$19,999	16.67%	3.85%
Income: \$20,000-\$29,999	11.11%	6.73%
Income: \$30,000-\$39,999	3.70%	5.77%
Income: \$40,000-\$49,999	7.41%	5.77%
Income: \$50,000-\$59,999	7.41%	8.65%
Income: \$60,000-\$69,999	5.56%	8.65%
Income: \$70,000-\$79,999	6.48%	3.85%
Income: \$80,000-\$89,999	0.93%	5.77%
Income: \$90,000-\$99,999	2.78%	2.88%
Income: \$100,000-\$149,999	9.26%	19.23%
Income: \$150,000 or more	20.37%	25.96%
<i>N</i>	108	104
<i>F</i> -test statistic		2.54
<i>F</i> -test <i>p</i> -value		0.0030

*Notes:* This table presents the mean values of the demographic variables collected from participants in Study 1. The table also reports on a *F*-test conducted to test for balance between the conditions on these demographic variables.

**Preference for challenge.** Our outcome variable of interest was whether or not participants selected the more challenging task. We begin with a simple comparison of the average rate at which participants choose the challenging task in the two experimental conditions. We find that significantly fewer people chose to enroll in the challenging task in the Poverty Identity condition than in the Control condition (62.5% vs. 81.5%). A regression analysis, outlined in Table 3, confirms this result. Note that columns 1–3 in Table 3 present regressions both without and with controls for demographic characteristics (gender, age, and income category), participants' risk preferences (as measured by the Holt-Laury Risk Score drawn from the risk tasks, ranging from 0 to 9 with lower numbers indicating greater risk aversion), and participants' impatience score (numbers range from 1 to 5 with higher numbers indicating greater impatience; task based on Epper et al. (2011)). In the regression specification with controls for demographics, risk preferences, and impatience (column 3), the Poverty Identity condition is associated with a 19.3 percentage point decrease in the probability of choosing the challenging task relative to the Control condition. Controlling for risk preferences in this manner is in line

**Table 3**  
U.S.: ATE on Choice of Challenging Task.

	DV: Choice of Challenging Task			
	(1)	(2)	(3)	(4)
Poverty Identity	-0.190*** (0.0607)	-0.206*** (0.0641)	-0.193*** (0.0633)	-0.157** (0.0683)
Holt-Laury Risk Score			0.0387** (0.0188)	0.0401** (0.0180)
Impatience Score			-0.00190 (0.0306)	0.00195 (0.0304)
Positive Emotion Score				-0.00472 (0.00671)
Negative Emotion Score				-0.0305*** (0.0111)
Constant	0.815*** (0.0376)	0.790*** (0.206)	0.514* (0.262)	0.559** (0.265)
Observations	212	212	212	212
<i>R</i> <sup>2</sup>	0.045	0.082	0.109	0.137
Demographic Controls	No	Yes	Yes	Yes

*Notes:* This table presents the results from four regressions, assessing the average treatment effects of the Poverty Identity condition on choice of challenging task in Study 1, relative to the Control. Specifications both without and with controls for demographics (gender, age, and income), risk and impatience measures, and emotion measures derived from text analysis using LIWC are presented. \**p* < 0.10, \*\**p* < 0.05, \*\*\**p* < 0.01.

with the techniques used in related literature (Niederle & Vesterlund, 2011) and helps us isolate a treatment effect on preference for challenging tasks in this instance (as distinct from a treatment effect on risk preferences more generally). These findings illustrate that making economic hardships and an associated “poverty identity” salient can lower an individual’s propensity to engage in challenging tasks.

While we acknowledge that the median public university student likely does not possess a deeply-held poverty identity, we argue that temporary feelings of perceived poverty, or the relative inability to meet one’s financial goals, can be sufficient to influence one’s willingness to engage in challenging tasks. When we disaggregate our sample into three categories by reported household income (less than \$50,000, \$50,000 to \$149,999, and \$150,000 or more), we observe negative point estimates for the treatment effect on preference for the challenging task for all three income subgroups, though these estimates are not significant. Specifically, the point estimate of the treatment effect is  $-0.141$  for the lowest-income participants ( $t(76) = 1.06, p = 0.294$ ),  $-0.212$  for participants in the middle-income bracket ( $t(85) = 1.96, p = 0.054$ ), and  $-0.037$  for the highest-income bracket ( $t(48) = .32, p = 0.749$ ). While caution is required when disaggregating a relatively small sample in this case, these disaggregated point estimates are directionally consistent with an S-shaped  $w(s)$  identity weighting function in our theoretical model, in which the effects of increasing the salience of an identity are strongest among partially-held identities (middle-income) rather than highly saturated or unsaturated identities (lowest-income and highest-income, respectively).

**Robustness checks with text analysis.** We also present the results from an additional robustness check to assess whether the effect we observe could be accounted for by emotional differences between conditions. That is, writing about not having enough money to make a purchase may have induced a negative emotional state for participants in the Poverty Identity condition, who subsequently may have wanted to repair their mood by watching a video (rather than engaging in the cognitively demanding labor task). To evaluate this possibility, we conduct a linguistic analysis of the responses provided by participants using LIWC (Linguistic Inquiry and Word Count; see Pennebaker, Boyd, Jordan, and Blackburn (2015) for methodological details). This analysis identifies instances in which positive and negative emotion words were used by participants, quantifying the emotional properties of each individual’s response. When including measures of positive and negative emotion in our regression model (column 4 in Table 3), we find that greater negative emotion is associated with decreased choice of the challenging option, whereas positive emotion is not. Importantly, however, we continue to observe a significant effect of the treatment on task choice, suggesting that identity salience influenced preference for the challenging task independently of emotion, as well as risk and time preferences.

#### 4. Study 2: Methods and results

In our second experiment, we aimed to extend our study to a population of individuals who experience persistent states of poverty. This study was conducted in the summer of 2017 in Dharavi, a slum located in Mumbai, India (see Fig. 1, a map of Mumbai with Dharavi marked; Mumbai Slum Rehabilitation Authority (2016)). Dharavi is the third-largest slum in the world, with a population of approximately 1 million. Though there are no hard data on income levels, most residents of the Dharavi slum reportedly

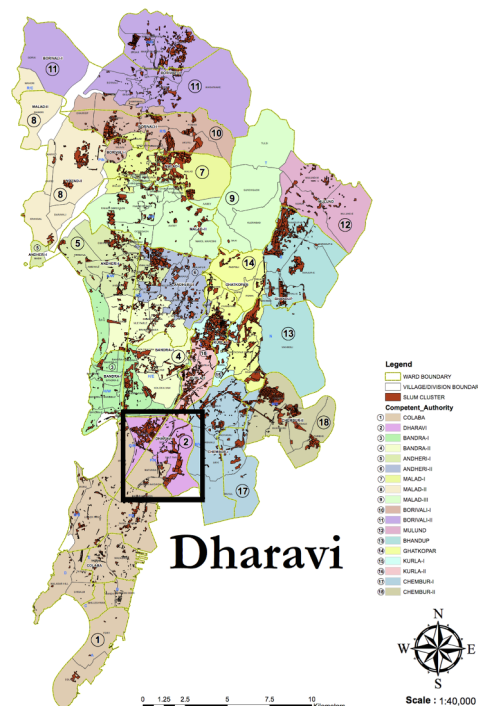


Fig. 1. Ward and village-wise slum cluster map of Greater Mumbai.



live on \$1–2 a day (Asian Century Institute, 2016), meaning that the population in Dharavi is quite poor by global standards. Furthermore, Dharavi is located in a city with highly visible wealth inequality. In keeping with the growing number of lab-style experimental studies in the development economics literature (Bhanot, Han, & Jang, 2018; Haushofer et al., 2014; Lowe, 2018; Kramer & Kunst, 2019), we chose this context because the residents of Dharavi represent an ideal sample for this study, constituting individuals for whom poverty may strongly define how they view themselves (Shah et al., 2018).

In this experiment, we adapted versions of the “Control” and “Poverty Identity” conditions from Study 1 and applied a paradigm in which participants selected between easy and challenging payoff options (based broadly on Niederle and Vesterlund (2007)). Our ex-ante theoretical prediction was that changing identity salience in the “Poverty Identity” condition would not influence preference for more challenging labor tasks in this impoverished population because individuals living with persistent scarcity would have economic hardship in mind throughout all situations (as in Shah et al. (2018)), leading to a saturated poverty identity. Because of this null prediction, we also included a condition that tested the efficacy of a targeted intervention designed to highlight participants’ positive attributes to counteract the influence of poverty identity on decisions by making salient a less-saturated identity positively associated with self-efficacy. This intervention involved a verbal self-affirmation strategy in which individuals discussed their positive traits prior to making labor decisions, building on intervention strategies originally developed in psychology to specifically counter undesirable identity-linked behaviors (Cohen & Sherman, 2014). We hypothesized that this intervention would encourage greater willingness to complete more challenging tasks by making salient a less strongly-held identity positively associated with a sense of capability.

#### 4.1. Methods

The participants in this study were 456 low-income individuals from two areas of Dharavi: Shastri Nagar and Kamala Nehru Nagar. The study was conducted in 82 sessions (ranging from 3 to 8 sessions per day), with 2 to 7 participants involved per session. We aimed to recruit as many participants as possible in the period during which the study could be administered. The experiment was conducted on-site at three local centers of the Dharavi Office of the Integrated Child Development Services (ICDS), colloquially known as *anganwadis*. The *sevika* (the local officer of the *anganwadi*) assisted in participant recruitment due to her accrued trust in the local communities, and participants were selected using two inclusion criteria, namely: (1) they were above the age of 18; and (2) they had maximum monthly household earnings of approximately 15,000 rupees (229 USD). The experimenters and the *sevika* surveyed the areas a week prior to experimentation and went door-to-door to invite participants.

Because residents of Dharavi speak several different languages, a team of six research assistants who spoke either Hindi or Marathi performed the study. All research assistants were blind to the hypotheses, and we took steps to disguise the purpose from them. During the experiment, participants could neither see nor hear each other due to physical dividers. Furthermore, participants were told that any attempt to communicate with other participants during the session would result in a penalty, which proved a sufficient instruction to eliminate any attempts at communication. These steps were taken to reduce the potential for social influence across participants in decisions during the experiment.

The experiment proceeded as follows. First, participants answered a set of basic demographic questions (age, religion, education, marital status, and number of children). Then each participant was handed a steel plate that was divided into three parts using cut pieces of an aluminum plate, with mixed red and yellow lentils in the middle (see Fig. 2). The participants’ task was to sort the lentils by color (this procedure was similar to that used in Bhanot et al. (2018)). As a baseline measure of their ability to complete the task, participants were instructed to sort as many lentils as possible for three minutes and were informed that they would be paid one rupee per gram of sorted lentils of both colors. At the end of the baseline task, participants were informed of the amount they sorted.

Next, the experimental manipulation was administered. The manipulation involved a series of questions that varied across three conditions: “Control”, “Poverty Identity”, and “Self-Affirmation.” The condition was randomly determined ex-ante at a session-level across the 82 sessions, such that every participant in a given research session was assigned to the same treatment. Because the study



Fig. 2. India: Lentil sorting task.

**Table 4**  
India: Experimental Conditions

Control	Poverty Identity	Self-Affirmation
What is your favorite TV show?	Do you own: 1. A smartphone? 2. A TV? 3. An AC? 4. A refrigerator? 5. A microwave? 6. A laptop? 7. A two-wheeler? 8. A four wheeler?	Who in your eyes is very successful?
Who is your favorite actor/actress?	What is your father's education level? What is your mother's education level?	What do you think the person did to become this successful? What traits do they have?
What do you do to relax?	How often do you find yourself unable to pay the bills?	Describe some traits that you have that are similar to this successful person.
What is your favorite dish?	How often do you borrow from family or friends to make ends meet?	What are some concrete steps you can take to build up those traits on the road to success?
What do you think about the weather?	Have there been any incidences when your kids demanded something but you haven't been able to fulfill their wishes? Describe your last financial emergency. Consider a family that is more financially secure than yours. How do you think their life is different than yours?	

was implemented verbally due to literacy issues, this design was employed to minimize the possibility of spillover effects across conditions (which may occur if, for example, participants were to overhear any conversations in adjacent spaces). In addition, to prevent any potential time-of-day confounds, the order in which sessions were allocated to each experimental condition was shuffled each day.

Each of the three experimental conditions involved verbally answering a different series of questions through conversation. The Poverty Identity condition involved a set of questions designed to increase the salience of participants' impoverished status. Specifically, in order to increase identity salience, the questions pertained to whether participants did or did not own nonessential goods (such as an air conditioner, a laptop, etc.), their parents' education level, and their problems with financial security. In contrast, the Self-Affirmation condition was designed to affirm the participant by discussing the traits they share with successful people, building on an intervention strategy developed in psychology (see [Cohen and Sherman \(2014\)](#) for a recent review, and specifically [Hall et al. \(2014\)](#)). The Control condition involved neutral questions regarding participants' general preferences and hobbies. All questions used are shown in [Table 4](#).

Following the experimental manipulation, participants were handed a second plate of lentils to sort and were told that they would again complete a sorting task for three minutes. However, participants could now choose between two different payoff structures: an easy payoff option, or a more challenging (and more lucrative) payoff option. The first option (Option A) was the same piece-rate setup as in the baseline, under which they would be paid one rupee per gram sorted. The second option (Option B) was a more challenging threshold-based payoff setup, whereby they would be paid three rupees per gram, but only if they sorted 25 grams or more in the three-minute period (failure to sort 25 grams or more would result in no task-based pay). This decision to use a piece-rate vs. threshold payoff structure was based on related tasks in the literature (e.g., [Niederle, Segal, and Vesterlund \(2013\)](#), [Buser, Niederle, and Oosterbeek \(2014\)](#), [Niederle and Vesterlund \(2007\)](#), [Gneezy, Leonard, and List \(2009\)](#)). Participants were informed of their performance in the second sorting task at the very end of the experiment, rather than immediately after the task, in order to prevent any income effects on ensuing choices.

Participants next completed a variant of the classic public goods game, providing a measure of social preferences. The participants were given 10 plastic chips, each worth 2 rupees. They were instructed that the total value of the coins (20 rupees) was their endowment. They were then told to decide how many chips to contribute to the "group pot" and how many to keep for themselves, where the pooled value of the coins in the group pot would be doubled and equally distributed among all individuals in their group. Note that the "group" in this case was all participants in the same session (which ranged from 2 to 7). In order to ensure that they understood the game, participants were reminded that what they chose to give would not influence what other participants would give in any way. The reason for playing this modified public goods game was twofold. First and foremost, it was intended to help mask the intent of the study from the research assistants implementing it in the field, by introducing a faux outcome variable. Second, it helped us rule out the possibility that our manipulations were influencing choices through the channel of social preferences (which would be possible if participants misunderstood the "threshold" aspect of the payoff structure and thought their choice may actually hurt others in the room).

Next, to measure risk preferences, participants were asked to make a simple decision involving a gamble. This risky choice involved choosing between a guaranteed payment (120 rupees) or a 50–50 gamble (involving an actual coin) with the potential for a higher (200 rupees) or lower (40 rupees) reward. This simple task was selected for the Dharavi population based on pilot testing, which suggested it was far easier for participants to understand than more involved risk measures. The rupee values used in the decision were calibrated to make sure that neither choice was significantly more appealing (on average) than the other. Importantly, participants were instructed before their decision that the coin flip and the resulting payout would only actually be implemented for one participant at the end of the session. The lucky participant was determined by a random draw using [random.org](#). This task was conducted to help us control for risk preferences in our analysis, as in prior related work ([Niederle & Vesterlund, 2011](#)).

At the end of the study, participants were asked a series of general information and demographic questions. They indicated where they could urgently get money of different denominations, how capable they thought they were with regards to the people around them, and a set of questions about their hometown, rent, and last month's electricity bill (proxies for income).

## 4.2. Results

**Demographics and balance check.** Table 5 shows the mean values for the various demographic variables collected for participants in the three conditions. It also reports on two F-tests, conducted to check for balance between each “treatment” condition (Poverty Identity and Self-Affirmation) and the control. These F-tests suggest balance between the Control and Poverty Identity conditions, but some imbalance in the Self-Affirmation condition relative to the Control. As a result, we control for these demographic variables throughout our analyses to improve precision in our estimates and ensure robustness.

**Preference for challenge.** Turning to our main results, we first examine how the experimental manipulations influenced willingness to select into the more challenging payoff scheme. Our outcome variable of interest is whether or not participants select the “threshold”-based payment structure rather than the piece rate payment structure.

We first compare mean rates of choice for the more challenging payoff scheme across conditions. We find no evidence of significantly different levels of selection into the challenging task in the Control and Poverty Identity conditions (23.3% vs. 24.5%), as visible in column 1 in Table 6 (note that this and all specifications in Table 6 use standard errors clustered at the session level, as randomization occurred at the session level). Thus, while reminders of financial insecurity decreased preference for challenging tasks in the relatively more affluent U.S. sample in Study 1, similar reminders had no effect on preferences for a truly impoverished population in India.

In contrast, we observe a large effect of verbal self-affirmation on choice for the more challenging payoff scheme (36% in the self-affirmation condition vs. 23.3% in the Control), as visible in column 1 in Table 6. Notably, this intervention did not significantly impact performance, as the number of lentils sorted in the second task was similar across conditions, as visible in Table 7 (which again clusters standard errors at the session level).

This finding is consistent with insights garnered from the gender and competitiveness literature, which has illustrated that women choose not to compete in part because of lower self-confidence, even though they do not exhibit performance disadvantages (Niederle & Vesterlund, 2011). Similarly, the current findings suggest that the verbal self-affirmation strategy improved self-efficacy by specifically influencing attitudes toward engaging in a more challenging task. The intervention led to an increased propensity to select the more challenging, threshold-based payoff structure without impacting performance.

To confirm the robustness of these results, Table 6 displays regression results with controls for various covariates, including risk preference, baseline task performance, and demographic characteristics. In our preferred specification, column 5 in Table 6, we also include research assistant fixed effects to account for any potential differences in the implementation of the experiment. The results are robust to all specifications. Controlling for all other factors, verbal self-affirmation is associated with a 14.5 percentage point increase in the likelihood of participants choosing the more challenging labor option (statistically significant at the 5% level).

**Table 5**  
India: Demographics

	Control	Poverty Identity	Self-Affirmation
Owns Home	65.56%	63.87%	62.67%
Married	66.89%	73.55%	74.67%
Female	85.43%	86.45%	91.33%
Number of Children	1.66	2.12	2.01
Task 1 Sort Amount	8.26	8.07	8.84
Age: 18–25	32.45%	29.03%	26.00%
Age: 26–35	30.46%	35.48%	35.33%
Age: 36–45	19.21%	14.19%	19.33%
Age: 46–55	14.57%	12.90%	7.33%
Age: 56–65	2.65%	7.74%	10.00%
Age: 66+	0.66%	0.65%	2.00%
Education: None	7.95%	14.84%	10.00%
Education: Some Primary	11.26%	9.03%	17.33%
Education: Some Secondary	27.81%	25.81%	26.67%
Education: 10th Std Grad	11.92%	14.19%	10.00%
Education: Some Higher Secondary	7.28%	5.81%	4.67%
Education: 12th Std Grad	9.93%	9.03%	5.33%
Education: Some College	7.95%	6.45%	4.67%
Education: College Grad and Above	3.97%	3.23%	9.33%
Education: Not Specified	11.92%	11.61%	12.00%
<i>N</i>	151	155	150
<i>F</i> -test statistic		1.31	3.69
<i>F</i> -test <i>p</i> -value		0.1219	0.0000

*Notes:* This table presents the mean values of the demographic variables collected from participants in Study 2. The table also reports on F-tests conducted to test for balance between each of the treatment conditions and the control condition on these demographic variables. Note that these F-tests are based on three categorical variables in addition to those reported in the table, which we omitted from the table for space reasons, namely: home electricity source, home type, and religion.

**Table 6**  
India: ATE on Choice of Challenging Task.

	DV: Choice of Challenging Task (Binary)				
	(1)	(2)	(3)	(4)	(5)
Poverty Identity	0.0134 (0.0556)	0.00992 (0.0554)	0.0145 (0.0485)	0.0154 (0.0481)	0.0142 (0.0487)
Self-Affirmation	0.128* (0.0712)	0.125* (0.0702)	0.112* (0.0633)	0.147** (0.0675)	0.145** (0.0673)
Risk Dummy		0.101** (0.0426)	0.101** (0.0423)	0.0723* (0.0420)	0.0628 (0.0425)
Amount Sorted in Baseline			0.0236*** (0.00479)	0.0154*** (0.00557)	0.0169*** (0.00570)
Constant	0.232*** (0.0394)	0.188*** (0.0471)	-0.00693 (0.0493)	0.0150 (0.193)	0.123 (0.216)
Observations	456	456	456	456	456
R <sup>2</sup>	0.016	0.029	0.079	0.188	0.202
Demographic Controls	No	No	No	Yes	Yes
RA Fixed Effects	No	No	No	No	Yes

Notes: This table presents the results from five regressions, assessing the average treatment effects of the Poverty Identity and Self-Affirmation conditions on choice of challenging task in Study 2, relative to the Control. Specifications both without and with controls for risk, amount sorted at baseline, and demographics (home type, home electricity type, home ownership status, gender, age, marital status, number of children, education level, and religion), as well as RA fixed effects, are presented. Standard errors are clustered at the session level. \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

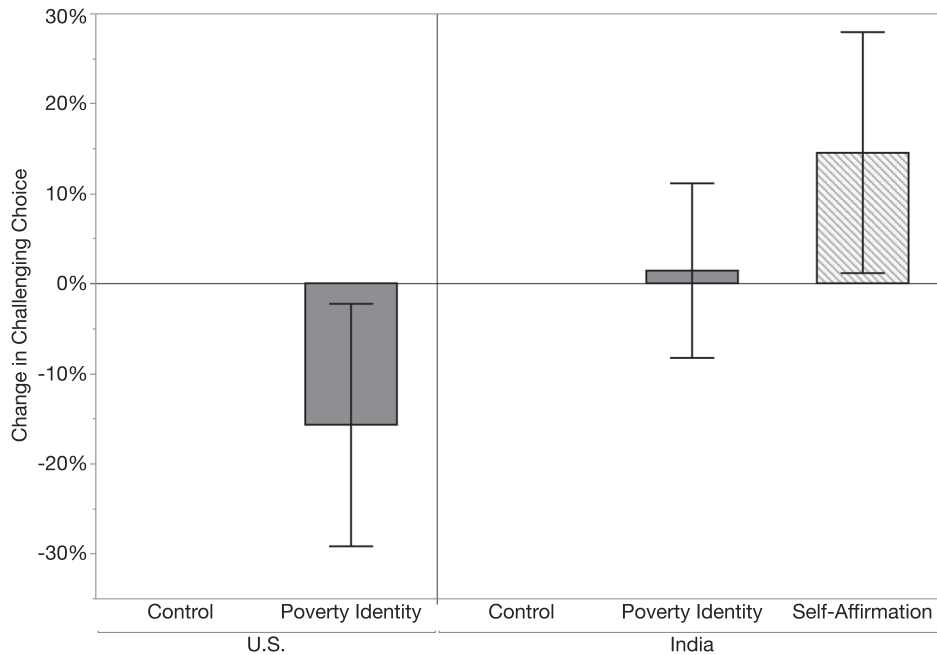
**Table 7**  
India: ATE on Amount Sorted in Second Task.

	DV: Amount Sorted in Second Task			
	(1)	(2)	(3)	(4)
Poverty Identity	-0.0261 (1.042)	0.231 (0.372)	0.180 (0.353)	0.182 (0.348)
Self-Affirmation	1.212 (1.312)	0.449 (0.394)	0.456 (0.374)	0.452 (0.388)
Amount Sorted in Baseline		1.327*** (0.111)	1.240*** (0.147)	1.228*** (0.144)
Constant	10.76*** (0.727)	-0.207 (0.916)	-0.274 (1.866)	-1.232 (2.244)
Observations	456	456	456	456
R <sup>2</sup>	0.007	0.717	0.761	0.769
Demographic Controls	No	No	Yes	Yes
RA Fixed Effects	No	No	No	Yes

Notes: This table presents the results from four regressions, assessing the average treatment effects of the Poverty Identity and Self-Affirmation conditions on the amount of lentils sorted (in grams) in the second sorting task in Study 2, relative to the Control. Specifications both without and with controls for the amount sorted at baseline and demographics (home type, home electricity type, home ownership status, gender, age, marital status, number of children, education level, and religion), as well as RA fixed effects, are presented. Standard errors are clustered at the session level. \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

## 5. Discussion and conclusions

Our findings suggest that identity considerations, and more specifically the extent to which one identifies with a “poverty identity,” can have a significant impact on one’s preference for challenging tasks. In particular, we argue that individuals who hold a salient poverty identity are less willing to engage in challenging labor tasks, which may influence their choices in markets for human capital and labor, as well as their lives more generally. We furthermore describe an important distinction regarding how the effects of modulating the salience of an identity may depend on its preexisting saturation level, which is dictated by the person’s living conditions. Specifically, an identity-based conceptualization of poverty accounts for important differences in behavior between



**Fig. 3.** Across Experiments and Conditions: Change in Preference for Challenging Tasks Relative to Control. *Note:* This figure displays average treatment effects on choice of challenging task relative to the study control from all treatments across the two studies we report in this paper. These results mirror those reported in Table 3, column 4, and Table 6, column 5. 95% confidence intervals around the estimates are shown. Note that clustered standard errors at the session level are used to compute the confidence intervals for the India results shown.

individuals who temporarily feel poor and those who experience persistent scarcity on a daily basis. This perspective has important implications regarding how perpetual conditions of impoverishment may manifest in terms of how people define who they are and, consequently, the economic preferences they express. Thus, we suggest more broadly that conceptualizing economic scarcity as a stable component of one's identity rather than a temporary mindset may more accurately capture behavior while simultaneously pointing to new intervention strategies that could improve the well-being of disadvantaged populations.

Our first experiment, a controlled lab-study conducted at a public university in the United States, demonstrated that reminders of financial insecurity decreased willingness to select into a challenging labor task: participants in the treatment condition were more inclined to select an easy task that guaranteed no financial bonus rather than engage in a cognitively-challenging task to potentially receive a large financial bonus. However, in a second experiment, conducted in the field with a very poor population in an Indian slum, similar reminders of financial insecurity had no effect on task preference: participants in the treatment condition were as likely to select the challenging labor option as those in the control. These findings are summarized in Fig. 3. It is worth pointing out that because our samples were not especially large, further research evaluating the extent to which similar effects emerge in different contexts is critical to validate our findings and their generalizability.

While our two experiments were not designed to focus on formal model-testing, our findings do align with the identity-based theoretical framework we present, which builds on Benjamin et al. (2010). Specifically, we suggest that poverty may constitute more than a mindset, instead operating as an identity, whereby one's financial condition constitutes a central characteristic around which the truly impoverished strongly define themselves. Adopting this identity-based theoretical framework, we suggest that because of diminishing sensitivity to changes in identity salience, reminders of financial insecurity have smaller effects on behavior among those with highly-saturated identities (e.g., those who experience persistent conditions of impoverishment) compared to those with less-saturated identities (e.g., university students in a developed country). That is, whereas prompting thoughts about scarcity may temporarily change the extent to which college students in the United States who loosely hold a poverty identity “feel poor,” similar reminders may have little to no effect on those who deeply define themselves by their impoverished status, such as individuals who experience poverty every day while living in the slums of India.

Applying our theoretical framework, we also present evidence supporting the efficacy of a different, low-cost, and psychologically-grounded intervention strategy that can combat the undesirable effects of poverty identity on preferences for challenging tasks. Specifically, we demonstrate in our second experiment in India that a verbal self-affirmation intervention in which individuals have simple one-on-one conversations elaborating on their positive traits can increase their willingness to challenge themselves. Because these self-affirmation procedures insulate individuals against the harmful consequences of negative self-conceptualizations, this result lends support to the notion that poor individuals not only experience impoverishment through a scarcity mindset, but may also see this condition as a defining component of their identity. We conclude that focusing intervention strategies on increasing the salience of other identities positively associated with self-efficacy may increase selection into challenging tasks and potentially improve labor



market outcomes for low-income populations. Moreover, similar interventions that raise the salience of positive identities may be effective in addressing other undesirable effects caused by identity-related motivations more generally.

Notably, our theoretical framework characterizes individuals as holding many different identities with differing weights. This is not only a more realistic model, in our view, of how identities manifest within individuals, but also helps us interpret both our findings and those in the broader literature on identity salience. Prior work suggests that individuals tend to identify with many social groups, each of which may prescribe different normative behaviors that may pull a person in different directions (e.g., associating with both “female” and “professional” identities; see [Cadsby et al. \(2013\)](#)). Our theoretical framework suggests that increasing the salience of an identity will increase its relative decision weight, leading individuals to express behavior that is most closely in line with the most salient identity. These phenomena are not captured by recent models of identity-driven preferences (e.g., [Benjamin et al. \(2010\)](#), [Kessler and Milkman \(2016\)](#)). We hope our work offers a useful framework for further research that examines the ways in which multiple identities can simultaneously influence preferences.

Furthermore, this characterization produces interesting new policy implications that involve the simultaneous impact of multiple identities. Positing that the identity weighting function  $w(s)$  is concave within relevant domains, our framework suggests that interventions aiming to modulate saturated identities may be less effective than those aimed at “building up” less strongly held identities that are positively associated with a desired behavior. Take, for instance, the findings in [Hoxby and Avery \(2013\)](#), which suggest that the vast majority of high-achieving students from low-income backgrounds choose not to apply to any selective college or universities despite the fact that these institutions often cost less due to financial aid, and that similar students who do apply typically gain admission and successfully graduate. Our framework suggests that in this context, an intervention that serves to increase the extent to which such students define who they are as a “high-achieving student” (such as verbal affirmations of their strengths and skills by guidance counselors) may be especially effective in increasing applications to highly-selective institutions as compared to interventions that aim to reduce the influence of a saturated poverty identity (such as counseling sessions seeking to encourage students to worry less about their financial background). Our findings indicate that these interventions might be especially effective as verbal interactions, applied close to the moment in which a decision is being made.

Our results also offer some insights regarding the shape of the identity weighting function,  $w(s)$ . [Benjamin et al. \(2010\)](#) postulated that  $w(s)$  may be either convex or concave; however, we believe that  $w(s)$  may in fact be S-shaped, where convexity and concavity both manifest within different parts of the domain. This is broadly consistent with the effect sizes by income bracket in Study 1 (largest for the middle income bracket, and smaller for the lowest and highest income brackets). If so, this curvature in  $w(s)$  would imply that when multiple social identities are similarly associated with positive behaviors, policymakers should focus efforts on strengthening partially-held identities, and in particular the identity where  $w(s)$  has the greatest slope (as in the “high-achieving student” example). Importantly, we do not formally test the shape of the  $w(s)$  function but believe that future research could explore this further. One practical benefit of such work is that it could inform policy makers seeking to design effective interventions that promote behavior change among individuals who hold identities at varying levels of strength.

Notably, other work studying low-income populations has also examined how changing the salience of one’s impoverished condition impacts behavior, and some existing work presents contrasting findings to ours.<sup>2</sup> Most notably, in a population of low-income farmers in rural Uganda, [Bartos, Bauer, Chytilová, and Levely \(2018\)](#) find that poverty priming increases preference for immediate diversions and delayed work. These results seem to suggest that increasing the salience of a poverty identity can indeed yield behavioral effects even within impoverished populations. While there are a variety of protocol and conceptual differences between the Uganda study and our current study in Dharavi, we suspect that one variable that explains these differences—and which may moderate how poverty priming impacts behavior more generally—is the visibility of inequality. That is, in many urban contexts (including Dharavi in Mumbai), expensive homes and apartments are often adjacent to slum dwellings, making inequality quite stark and presenting constant reminders of one’s condition of impoverishment. By contrast, in more rural areas, such as in the remote villages of Northern Uganda studied in [Bartos et al. \(2018\)](#), those who live on less may not face the same type of persistent reminder of their relative poverty, which may diminish the extent to which people define themselves by their financial insecurity and result in a less-saturated poverty identity. Of course, this is simply one potential explanation, and further research could explore (among various possibilities) how the psychological lives of the urban and rural poor differ. We believe that our studies and their relationship to related findings point to the need for future work examining how real and persistent conditions of impoverishment truly shape behavior.

Importantly, our conceptualization of poverty as a crucial force in identity formation has implications regarding both labor market success and issues around persistent inequality. If it is the case that impoverished people internalize their poverty in a way that influences their labor choices, this would create a self-perpetuating cycle whereby poverty identity inhibits the precise behaviors that may help individuals escape poverty. At the micro level, this has implications for managers hiring workers, who need to be more aware of the identity-related threats that might shape individual preferences and willingness to take on challenging tasks. At the macro level, these effects of poverty identity could restrict social mobility and exacerbate income inequality in society. Policymakers interested in addressing the large and growing social and economic gaps between the rich and the poor would be well-served to consider this important channel influencing behavior in order to devise better techniques to address these identity-driven challenges at the individual level.

<sup>2</sup> Note that while [Dalton, Nhung, and Rüschenpöhler \(2019\)](#) find that bringing financial worries to mind changes risk preferences within a population of shopowners in an urban center in Vietnam, the shopowners studied are relatively well-off. Therefore they may not define themselves by their financial insecurity, and thus may have a less-saturated baseline poverty identity.

## Appendix A. Study 1 Materials

### I. Treatment Questions

See [Table 1](#) within the main text.

### II. Task Choice

Which task would you like to complete?

1. Sit back and watch an entertaining short video of your choice for about 3 min. You will not be entered into the raffle.
2. Complete a cognitively demanding task that requires your focused attention. The task will take about 3 min. For each question that you solve correctly, you will receive an additional raffle ticket into a \$50 Amazon.com gift card grand prize lottery.

### III. Completing the Selected Task

**N-back task:** Participants who selected the challenging labor task were given additional details on the 2-back task:

You will be completing what is known as the N-Back task, a procedure designed to test attention and working memory. The basic version that you will complete today is called the 2-back task. You will be presented with a sequence of images, and your job will be to respond whether the image you see is the same image as the one presented two trials before – or in other words, whether it's the same as what was “2 steps back” from the current image. To perform effectively, you should keep a buffer in mind of what the last two images were and update as you move along.

**Video options:** Among participants who chose to watch the video instead of completing the challenging labor task, these video options were offered to participants after making the task choice:

1. Casey Neistat - Snowboarding with the NYPD [2:42]
2. Oktapodi - Animated Short Film, 2009 Oscar Nominee [2:25]
3. Vox - The World War II meme that circled the world [2:07]
4. GoPro: Backflip Over 72ft Canyon - Kelly McGarry Red Bull Rampage 2013 [2:03]
5. Dwight Interviews Himself // The Office US [2:16]

### IV. Additional Measures

**Financial Well-Being Index (items from Sharma and Alter 2012):** Responses provided on 7-point scales with anchors 1 = much worse, 7 = much better.

1. Compared to my financial position last year, my financial position this year is:
2. In comparison to most of my peers, I am financially:
3. Compared to my material possessions last year, my material possessions this year are generally:
4. In comparison to most of my peers' material possessions, my material possessions are:
5. In comparison to last year, my ability to spend money freely is:

### Identification Strength (items adapted from Benjamin et al., 2007):

Responses provided on 7-point scales with anchors 1 = strongly disagree, 7 = strongly agree.

1. My socioeconomic identity is an important part of my self-image.
2. My socioeconomic identity is an important reflection of who I am.
3. My socioeconomic identity has very little to do with how I feel about myself. [reverse]
4. My socioeconomic identity is unimportant to my sense of what kind of person I am. [reverse]

**Confidence in task performance:** Responses provided on 7-point scales with anchors 1 = strongly disagree, 7 = strongly agree.

1. I feel that I would perform better than most other participants on the Cognitive Performance Task I had an opportunity to complete earlier.

### Risk preference elicitation questions, based on Holt and Laury (2002):

1. Which of the two lotteries below would you prefer?
  - 10% chance of \$4.00, and 90% chance of \$3.20
  - 10% chance of \$7.70, and 90% chance of \$2.00

2. Which of the two lotteries below would you prefer?  
20% chance of \$4.00, and 80% chance of \$3.20  
20% chance of \$7.70, and 80% chance of \$2.00
3. Which of the two lotteries below would you prefer?  
30% chance of \$4.00, and 70% chance of \$3.20  
30% chance of \$7.70, and 70% chance of \$2.00
4. Which of the two lotteries below would you prefer?  
40% chance of \$4.00, and 60% chance of \$3.20  
40% chance of \$7.70, and 60% chance of \$2.00
5. Which of the two lotteries below would you prefer?  
50% chance of \$4.00, and 50% chance of \$3.20  
50% chance of \$7.70, and 50% chance of \$2.00
6. Which of the two lotteries below would you prefer?  
60% chance of \$4.00, and 40% chance of \$3.20  
60% chance of \$7.70, and 40% chance of \$2.00
7. Which of the two lotteries below would you prefer?  
70% chance of \$4.00, and 30% chance of \$3.20  
70% chance of \$7.70, and 30% chance of \$2.00
8. Which of the two lotteries below would you prefer?  
80% chance of \$4.00, and 20% chance of \$3.20  
80% chance of \$7.70, and 20% chance of \$2.00
9. Which of the two lotteries below would you prefer?  
90% chance of \$4.00, and 10% chance of \$3.20  
90% chance of \$7.70, and 10% chance of \$2.00

**Risk preference elicitation question, based on [Eckel and Grossman \(2002\)](#):**

1. Which of the six different lotteries below would you prefer the most?  
100% chance of \$2.80  
50% chance of \$2.40, and 50% chance of \$3.60  
50% chance of \$2.00, and 50% chance of \$4.40  
50% chance of \$1.60, and 50% chance of \$5.20  
50% chance of \$1.20, and 50% chance of \$6.00  
50% chance of \$0.20, and 50% chance of \$7.00

**Time preference elicitation questions, based on [Epper et al. \(2011\)](#):**

Notice that Prospect A is the same throughout while Prospect B gets better towards the bottom. Choose the option where you begin to prefer Prospect B we will then assume that you prefer Prospect A in all the comparisons above and that you prefer Prospect B in all the comparisons below.

1. At which comparison do you begin to prefer Prospect B over Prospect A?  
Prospect A: Receive \$12 in 1 month vs. Prospect B: Receive \$2 today  
Prospect A: Receive \$12 in 1 month vs. Prospect B: Receive \$4 today  
Prospect A: Receive \$12 in 1 month vs. Prospect B: Receive \$6 today  
Prospect A: Receive \$12 in 1 month vs. Prospect B: Receive \$8 today  
Prospect A: Receive \$12 in 1 month vs. Prospect B: Receive \$10 today
2. At which comparison do you begin to prefer Prospect B over Prospect A?  
Prospect A: Receive \$12 in 3 months vs. Prospect B: Receive \$2 today  
Prospect A: Receive \$12 in 3 months vs. Prospect B: Receive \$4 today  
Prospect A: Receive \$12 in 3 months vs. Prospect B: Receive \$6 today  
Prospect A: Receive \$12 in 3 months vs. Prospect B: Receive \$8 today  
Prospect A: Receive \$12 in 3 months vs. Prospect B: Receive \$10 today
3. At which comparison do you begin to prefer Prospect B over Prospect A?  
Prospect A: Receive \$30 in 1 month vs. Prospect B: Receive \$5 today  
Prospect A: Receive \$30 in 1 month vs. Prospect B: Receive \$10 today  
Prospect A: Receive \$30 in 1 month vs. Prospect B: Receive \$15 today  
Prospect A: Receive \$30 in 1 month vs. Prospect B: Receive \$20 today  
Prospect A: Receive \$30 in 1 month vs. Prospect B: Receive \$25 today

4. At which comparison do you begin to prefer Prospect B over Prospect A?  
 Prospect A: Receive \$30 in 3 months vs. Prospect B: Receive \$5 today  
 Prospect A: Receive \$30 in 3 months vs. Prospect B: Receive \$10 today  
 Prospect A: Receive \$30 in 3 months vs. Prospect B: Receive \$15 today  
 Prospect A: Receive \$30 in 3 months vs. Prospect B: Receive \$20 today  
 Prospect A: Receive \$30 in 3 months vs. Prospect B: Receive \$25 today
5. At which comparison do you begin to prefer Prospect B over Prospect A?  
 Prospect A: Receive \$24 in 2 months vs. Prospect B: Receive \$4 today  
 Prospect A: Receive \$24 in 2 months vs. Prospect B: Receive \$8 today  
 Prospect A: Receive \$24 in 2 months vs. Prospect B: Receive \$12 today  
 Prospect A: Receive \$24 in 2 months vs. Prospect B: Receive \$16 today  
 Prospect A: Receive \$24 in 2 months vs. Prospect B: Receive \$20 today
6. At which comparison do you begin to prefer Prospect B over Prospect A?  
 Prospect A: Receive \$6 in 2 months vs. Prospect B: Receive \$1 today  
 Prospect A: Receive \$6 in 2 months vs. Prospect B: Receive \$2 today  
 Prospect A: Receive \$6 in 2 months vs. Prospect B: Receive \$3 today  
 Prospect A: Receive \$6 in 2 months vs. Prospect B: Receive \$4 today  
 Prospect A: Receive \$6 in 2 months vs. Prospect B: Receive \$5 today

## Appendix B. Study 2 Materials

### I. Pre-Experiment Questionnaire:

1. Gender: 1. Male 2. Female 3. Other
2. Languages spoken: 1. Marathi 2. Hindi 3. English 4. Gujarati 5. Tamil 6. Telugu 7. Haryanvi 8. Other
3. Age: 1. 18–25 2. 26–35 3. 36–45 4. 46–55 5. 56–65 6. 66+
4. Religion: 1. Hindu 2. Muslim 3. Buddhist 4. Christian 5. Other
5. Education: 1. No education 2. Some primary (Std 1 to 5) 3. Some secondary (Std 6–10) 4. 10th Std graduate 5. Some higher secondary (Std 11 to 12) 6. Some college 7. College graduate and above
6. Are you: 1. Married 2. Single 3. Divorced 4. Widowed
7. How many children do you have?

### II. Baseline Task

You are asked to sort the lentils. You will receive one rupee per gram of both kinds of lentils sorted.

### III. Treatment Questions

Please refer [Table 4](#) within the main text.

### IV. Payment Choice

You are asked to sort the lentils again, but this time you have an option in the choice of payment: Option A - same as before, Re 1 per gram (flat-rate pay) or Option B, if you sort 25 or more grams, you would get Rs 3 per gram (challenging pay)

### V. Additional Measures

**Public goods game:** You have been given ten plastic coins, each worth 2 rupees. So in total, you have 20 rupees. This money is now yours. You have to make a decision now: You can either contribute at least a part of your money, or not. It is okay if you do not wish to give anything either. Whatever you and the other participants in this room give, we will pool it, double it, and distribute the doubled amount equally among all. Think for a minute before you answer.

**Risk task:** Now you have another decision to make. You can either have 120 rupees, or choose to toss a coin. If heads appears, then you get 200 rupees, if tails appears, you get 40 rupees. Only one person randomly chosen from this round will get the payment.

**Life Orientation Test - Revised:** Participants were handed a laminated piece of paper with five colors on it - dark green, representing strongly agree, and 1 on our scale, green, representing agree, and 2 on our scale, yellow, representing neither agree nor disagree, and 3 on our scale, red, representing disagree, and 4 on our scale, and dark red, representing strongly disagree, and 5 on our scale.

1. In uncertain times, I usually expect the best.
2. It is easy for me to relax.
3. If something can go wrong for me, it will.
4. I'm always optimistic about my future.
5. I enjoy my friends a lot.
6. It is important for me to keep busy.

7. I hardly ever expect things to go my way.
8. I don't get upset too easily.
9. I rarely count on good things happening to me.
10. Overall, I expect more good things to happen to me than bad.

**Financial emergency questions:** Each question had these options: 1. I have it 2. From family 3. From friends 4. I will take a loan from a moneylender 5. I will take a loan from a bank 6. Not sure 7. Definitely could not get it.

1. If you urgently need 100 rupees, where would you get it from?
2. If you urgently need 1,000 rupees, where would you get it from?
3. If you urgently need 10,000 rupees, where would you get it from?
4. If you urgently need 1,00,000 rupees, where would you get it from?

#### Miscellaneous:

1. What is your average spending on non-necessities every week?
2. As compared to people who live where I do, I feel — capable of getting things done: 1. More 2. Less 3. Just as
3. Name of hometown:
4. Population of hometown (in thousands):
5. Distance of nearest petrol pump/hospital in hometown:
6. Type of home: 1. Kutch 2. Pucca 3. 1RK 4. 1 BHK 5. 2 BHK
7. Ownership of the house: 1. Self 2. Rented
8. Rent (if applicable): 1. 300 2. 301–500 3. 501–700 4. 701–1000 5. 1001–1200 6. 1201–1500 7. 1501–1700 8. 1701–2000 9. 2000
9. Last month's electricity bill: 1. 300 2. 301–500 3. 501–700 4. 701–1000 5. 1001–1200 6. 1201–1500 7. 1501–1700 8. 1701–2000 9. 2000
10. Do you know anyone from this batch of participants? 1. Yes 2. No

#### Appendix C. Summary Statistics

	Control	PI	Self-Aff
Avg. weekly spending in rupees on non-necessities (self-report)	280.73	258.63	216.37
KM to nearest petrol pump/govt hospital (self-report)	16.93	17.42	10.54
Do you know anyone in this session?	71.5%	75.5%	72.7%

#### Life Orientation Test - Revised (1–5 scale)

	Control	PI	Self-Aff
In uncertain times I usually expect the best	4.54	4.52	4.68
It's easy for me to relax	3.39	3.05	3.21
If something can go wrong for me it will	3.50	3.57	3.23
I'm always optimistic about my future	4.78	4.71	4.77
I enjoy my friends a lot	4.57	4.26	4.32
It's important for me to keep busy	4.33	4.37	4.41
I hardly ever expect things to go my way	3.26	3.38	3.09
I don't get upset too easily	3.74	3.63	3.95
I rarely count on good things happening to me	2.86	3.06	2.80
Overall, I expect more good things to happen to me than bad	4.63	4.54	4.67

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#### As compared to people who live where I do I feel I am \_\_\_\_ of getting things done.

	Control	PI	Self-Aff
Less capable	21.2%	26.5%	10.7%
Just as capable	37.7%	37.4%	46.7%
More capable	41.1%	36.1%	42.7%

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## If you urgently needed \_\_\_\_, where could you get it?

	Control	PI	Self-Aff
100 Rupees - Have It	47.7%	40.6%	48.0%
100 Rupees - Family	51.7%	55.5%	55.3%
100 Rupees - Friends	45.7%	44.5%	36.0%
100 Rupees - Loan (Moneylender)	1.3%	3.2%	2.7%
100 Rupees - Loan (Bank)	0.0%	0.0%	0.7%
100 Rupees - Not Sure	0.0%	0.6%	0.0%
100 Rupees - Definitely Could Not Get It	2.0%	0.6%	0.0%

## If you urgently needed \_\_\_\_, where could you get it?

	Control	PI	Self-Aff
1,000 Rupees - Have It	17.2%	6.5%	17.3%
1,000 Rupees - Family	57.6%	63.2%	63.3%
1,000 Rupees - Friends	42.4%	38.1%	34.7%
1,000 Rupees - Loan (Moneylender)	3.3%	8.4%	6.7%
1,000 Rupees - Loan (Bank)	0.0%	1.3%	2.0%
1,000 Rupees - Not Sure	1.3%	0.6%	4.0%
1,000 Rupees - Definitely Could Not Get It	7.3%	7.1%	2.0%

## If you urgently needed \_\_\_\_, where could you get it?

	Control	PI	Self-Aff
10,000 Rupees - Have It	4.6%	1.3%	3.3%
10,000 Rupees - Family	51.0%	43.2%	44.7%
10,000 Rupees - Friends	21.2%	18.7%	16.0%
10,000 Rupees - Loan (Moneylender)	17.9%	16.8%	21.3%
10,000 Rupees - Loan (Bank)	10.6%	9.0%	18.0%
10,000 Rupees - Not Sure	4.6%	7.7%	8.0%
10,000 Rupees - Definitely Could Not Get It	17.9%	21.9%	13.3%

## If you urgently needed \_\_\_\_, where could you get it?

	Control	PI	Self-Aff
100,000 Rupees - Have It	1.3%	0.0%	1.3%
100,000 Rupees - Family	26.5%	16.8%	20.7%
100,000 Rupees - Friends	11.9%	4.5%	4.0%
100,000 Rupees - Loan (Moneylender)	15.2%	11.0%	12.7%
100,000 Rupees - Loan (Bank)	21.9%	22.6%	24.0%
100,000 Rupees - Not Sure	8.6%	14.2%	12.7%
100,000 Rupees - Definitely Could Not Get It	37.1%	41.3%	34.7%

## Amount of last month's electricity bill (rupees)

	Control	PI	Self-Aff
Elec. Bill < 300	7.3%	4.5%	5.3%
Elec. Bill 301–500	9.9%	8.4%	7.3%
Elec. Bill 501–700	8.6%	7.7%	10.0%
Elec. Bill 701–1000	9.9%	10.3%	17.3%
Elec. Bill 1001–1200	13.9%	9.0%	7.3%
Elec. Bill 1201–1500	7.3%	9.0%	10.7%
Elec. Bill 1501–1700	4.6%	8.4%	7.3%
Elec. Bill 1701–2000	9.3%	10.3%	9.3%
Elec. Bill 2000+	29.1%	32.3%	25.3%

## What type of home do you live in?

	Control	PI	Self-Aff
1 BHK	4.6%	6.5%	6.7%
1 RK	39.7%	33.5%	32.7%
2 BHK	4.6%	3.2%	2.7%
Kutcha	19.9%	23.2%	22.0%
Pucca	31.1%	33.5%	36.0%

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