The Economics of Begging*

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(Job Market Paper)

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Abstract

We collect novel data on begging activity and incentivized measures of preferences and perceptions of beggars and donors in India. Extensive field observations and experiments reveal three main empirical findings. First, about 30% of the beggars use costly signaling, offering low-cost, low-value items to signal a preference for paid work, which increases donations by 35%, thus more than compensating for the costs of items. Second, 87% choose paid work over free cash, thus suggesting that begging is not a choice, and instead a consequence of limited access to employment, with its prevalence resistant to legal penalties or increased donor generosity. Third, donors have strong preferences for giving only in case of real need (when paid work is not an option), but they underestimate how many beggars actually prefer paid work. Viewed through the lens of our theoretical model, these misperceptions, combined with fairness preferences, result in suboptimal donations. Thus, addressing barriers to employment, rather than focusing on discouraging donations or legal punitive measures, may be more effective in reducing begging.

Keywords: Beggars, Charity, Deservingness, Signaling

JEL Codes: C93, D63, D64, H0, J22, J68

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1 Introduction

Begging – the act of soliciting alms in public spaces – is a pervasive phenomenon worldwide. Although exact statistics on the number of beggars are unavailable, the large scale of begging is reflected in charitable behavior: 60% of the global population reported "helping a stranger," often a beggar, in the past year (Charity Aid Foundation, World Giving Index, 2023).There is significant policy interest in addressing begging, as street beggars represent a highly vulnerable population and serve as a visible marker of poverty and inequality within society. Anecdotal evidence highlights that governments worldwide often allocate millions of dollars to *conceal* begging and homelessness during international events, frequently employing forced relocations and crackdowns on public spaces.[1] The most prevalent policy response, however, is the criminalization of begging, with approximately 65% of the countries implementing some form of legal regulation to restrict it. Yet, there remains a limited understanding of the drivers of begging and charitable giving to beggars.

The informal and transient nature of the population of beggars poses particular challenges for standard data collection and economic research, as they have no fixed addresses, or phones, and are often missed by traditional surveys or census efforts, rendering them a largely invisible group. Moreover, the existing survey measures and experimental tools to study the preferences and behavior of the general population do not export well for the population of beggars as they are highly marginalized groups of people. In this paper, we report on a unique effort to study the backgrounds and economic preferences of beggars in Delhi, exploring the reasons beggars resort to begging and how passersby make donation decisions toward them. Specifically, we focus on the role of donors' fairness preferences and perceptions of beggars' deservingness in shaping charitable behavior toward them. While other social preferences may influence giving, the rhetoric surrounding beggars often centers on fairness and the deservingness of beggars. Anecdotal evidence suggests that people's charitable attitudes and anti-begging legislation, beginning with England's Vagabonds and Beggars Act of 1494, are rooted in theories of justice and fairness, which consider beggars to be unwilling to work and hence undeserving of charity.[2]

We model begging as an alternative to participation in the formal labor market. Just as labor market participation provides utility from wages (and hence consumption) and disutility from having to work, begging provides utility from donations (and hence consumption) and disutility from stigma, harassment, and exposure to economic and environmental shocks. The supply of beggars depends on the comparison of payoffs from begging and labor market participation. We assume a minimum consumption bundle below which, consumption is the only source of utility,

[1]For instance, Brazil during the 2014 FIFA World Cup and 2016 Olympics, India during the 2010 Commonwealth Games, China for the 2008 Beijing Olympics, and the U.S. during events like the 1996 Atlanta Olympics and the 2016 Super Bowl in San Francisco.

[2]The following quote from one of the most prominent philanthropists in American history further illustrates how perceptions of begging, as driven by luck versus merit, may influence charitable attitudes toward beggars (Carnegie, 1962). "One of the serious obstacles to the improvement of our race is indiscriminate charity. It were better for mankind that the millions of the rich were thrown into the sea than so spent as to encourage the slothful, the drunken, the unworthy."

and a person's labor market productivity rises in consumption. Begging may be by necessity when abilities and hence wages are insufficient to meet survival needs or misfortune when barriers to accessing the labour market push individuals out of formal employment. Conversely, a low preference for paid work may lead to begging by choice. On the demand side, charitable behavior depends on a passerby's generosity and the perception that the recipient is "begging by choice." Donors with fairness preferences get a disutility from helping beggars by choice. Thus, donations to a beggar decline with donors' perceived probability that the beggar is begging by choice.

Donors' fairness preferences create an incentive for beggars to signal their deservingness or a high preference but inability to engage in paid work rather than being a choice. For credibility, a signal has to be effort costly, such that only the beggars with a high preference for paid work are incentivized to send it. However, if donations are too insufficient to meet the minimum consumption needs, then there is no heterogeneity in beggars' types (high or low preference for paid work) as satisfying hunger is the only priority. In this case, any beggar who expects positive returns to signaling and has access to signaling tools does so. Since most beggars appear similar and may go unnoticed in brief, informal encounters, they need distinctive ways to signal deservingness. One dimension on which beggars differ is that some offer low-value items while soliciting charity, while others do not. Our theory informs three testable hypotheses: 1) donors perceive beggars with items to have higher preferences for paid work and higher ability (consistent with begging by misfortune); 2) donors with meritocratic preferences consider beggars with items to be more deserving of charity; and 3) beggars with items receive higher amounts in charity.

To test hypotheses one and two, we measure donors' beliefs about beggars' economic preferences and abilities. We first conduct a *beggars' preferences survey* of 1200 beggars across 83 crowded areas in Delhi to measure their economic preferences (preferences for paid work, free-riding, honesty) and abilities using laboratory experimental tools. To measure whether a beggar prefers paid work, we ask them to choose between free cash of 50 INR and a real-effort task to earn up to 100 INR. We measure dishonesty at the group level (beggars - with or without items) using a coin-flipping task where each beggar privately flips a coin ten times, and receives a monetary reward for every head reported (Bucciol and Piovesan, 2011). Free-riding preferences are measured using a social vignette. We measure beggars' ability with a numeracy task, paying them the INR equivalent of the number they can count to, up to 100.

To measure the donors' preferences for test the signaling effect of begging with items on donors' perceptions, we use between-subjects experimental design. We survey 1,204 donors across 40 randomly selected neighborhoods in Delhi and ask them to guess the proportion of beggars who choose free-cash, agree with free-riding, can count to 100 and the total number of heads reported. The respondents see a collage of beggars, differing only in whether the beggars hold items or not. The incentivized belief elicitation exercise is followed by a survey of respondents' socio-economic backgrounds and economic values. Finally, to test the signaling effect on perceived deservingness for charity, we make the donors play an incentivized allocation

game. They split a fixed sum between two randomly selected beggars who differ only in their begging styles (with or without items).

We test hypothesis three, i.e., if beggars with items indeed receive higher amounts in donations by collecting survey data from the field (83 crowded areas in Delhi). We conduct a successful interaction survey in which, surveyors work in pairs and immediately after observing an interaction with an exchange of money, one approaches the beggar and the other the donor to ask about the donation amount and items exchanged.[3] As the data on amounts of donations only comes from successful interactions, we also test for differences in rates of donations to beggars with and without items (extensive margin) to ascertain overall differences in average charitable receipts. We do this by conducting an observational survey of begging activity in the same 83 crowded areas. In this survey, we document the observable demographic characteristics of all the beggars and passersby, their rates of soliciting and rates of success per solicit collecting evidence on 4619 begging interactions.

Data from the donors' perceptions survey experiment reveal that donors perceive the beggars with items to be significantly more deserving of charity and have a significantly higher preference for paid work (0.15 standard deviations), a significantly lower preference for free-riding (0.12 standard deviations), a significantly higher ability (0.1 standard deviations), but no difference in honesty (0.04 standard deviations). In the allocation game, respondents allocated a significantly higher amount than half of the funds to a beggar with items (58 INR out of 100), considering them more deserving of charity. However, we find no significant differences in the actual preferences of the beggars based on their begging styles (with and without items). Moreover, donors highly underestimate the beggars' preferences for paid work and overestimate their preferences for free-riding. Beliefs about dishonesty are not biased in either direction but donors overestimate beggars' ability, more so for beggars with items than without items. Our experimental findings on perceptions are consistent with field evidence such that, on average, passersby make significantly higher donations to beggars with items than to beggars without items (controlling for several beggar, donor and street characteristics), with no differences in the rates of donating.

Together, our findings suggest that donations are likely pushed too low (due to a significant underestimation of beggars who prefer paid work). All beggars who expect positive returns to signaling beg with items (due to no actual differences in the economic preferences of beggars with and without items), consistent with the theoretical prediction under low donations.[4] Low donations and smaller role of preferences in shaping the actual than perceived begging behavior also suggests that the rate of begging is likely inelastic to pecuniary and non-pecuniary returns of begging. As a result, policies such as banning or criminalizing begging which increase the

[3]We limit data collection to one successful interaction per street to minimize behavioral alterations once beggars become aware of the survey, especially since participation is incentivized. To ensure credible measurement, we inform both the beggar and the donor that their reported amounts would be matched, which worked in 98% of the 634 documented interactions between beggars and passersby.

[4]We also measure the counterfactual beliefs of all beggars about how much they would receive if they were not offering the item and vice-versa finding consistent evidence.

cost of begging by posing the risk of getting caught or police harrassment; they are not effective. The returns to begging are already too low, and a high proportion of beggars are begging by misfortune. Welfare policies such as cash transfers and upskilling or workfare policies which pay beggars in return for work would be more effective than legal regulations in reducing begging in such a case. Between welfare and workfare though, workfare policies are more likely to receive support by the general population than welfare policies in societies where people have meritocratic preferences and beggars' willingness and ability to work influence perceived deservingness for charity. Indeed, 80% of our respondents prefer unproductive workfare to unconditional cash transfers.

This paper contributes to the vast literature on the economics of charity by introducing the economics of begging to it (Andreoni, 1989, 1990; Glazer and Konrad, 1996; Vesterlund, 2006; Landry et al., 2006; List, 2008, 2011; Vesterlund, 2016). The previous economics literature on charity is mostly limited to research in the context of formal charities and contributions to government's welfare schemes. We provide a conceptual framework to study begging and demonstrate ways to collect evidence on it. Moreover, by conducting our empirical analyses in India, we respond to a major gap in this literature - a study of charitable behavior in the non-western world, as pointed out by List and Price (2012)[5].

Our paper is closely related to the studies on the effect of fairness preferences and beliefs on charitable behavior. For example, prior literature shows that donations in a dictator game are higher to recipients who are 'trying to find a job" than a lazy" recipient (Fong, 2007; Fong and Luttmer, 2011). Further, Fong and Luttmer (2011) finds that dictators purchase signals about why the recipients are poor (laziness versus misfortune) and donate lesser to recipients perceived to be lazy, similar to our finding on lower donations to beggars without items. Finally, in a recent paper, authors show that altruism is persuadable and information on recipient's choice of exerting effort or not influences donations (Gangadharan et al., 2023). Relatedly, we contribute to the literature on the effect of fairness consideration on redistribution preferences, which is widely studied due to its relevance for public policies such as tax rates and social security spending (Eckel and Grossman, 1996; Alesina and Angeletos, 2005; Cappelen et al., 2007; Almås et al., 2020). Our findings suggest broader political implications. People with meritocratic preferences and beliefs are more responsive to signals of beggars' deservingness for charity and choose significantly higher premiums to beggars with items compared to those who do not report meritocratic preferences.

However, prior research on the impact of fairness considerations on economic outcomes relies on self-reported values or dictator games, raising validity concerns (Eckel and Grossman, 1996; Alesina and Angeletos, 2005; Fong, 2007; Cappelen et al., 2007; Fong and Luttmer, 2011; Almås et al., 2020; Gangadharan et al., 2023). We argue that charity towards a beggar is a natural dictator game in the field and provides an ideal context to examine the effect of fairness

[5] *"A strong plea is made to engage researchers in the exploration of why non-Westerners give.... A first examination of whether the pecuniary and non-pecuniary incentive effects found in the USA and European data extend to other regions of the world would be of great interest."*

preferences and beliefs on direct charitable behavior and redistribution preferences. Therefore, our paper offers external validity and a rigorous test to confirm the previous findings. This is because beggars are arguably poorer recipients than those considered in the earlier studies and signals of their deservingness have to be sought and inferred rather than chosen or easily purchased as in a lab setting. Moreover, we model and present evidence on the economic behavior of the recipients in the presence of donors' fairness preferences, filling a significant gap in the existing literature.

Our inference aligns with findings that people prefer workfare over unconditional transfers for redistribution (Macchi and Stalder, 2023; Drenik and Perez-Truglia, 2018). These studies show that public support for aid often depends on whether recipients are perceived to be making an effort to improve their situation, similar to beggars using items. Although workfare may be preferred by voters and relevant in a political economy, our findings and recent evidence suggest that direct welfare programs, such as cash transfers and upskilling, can also be effective without incentivizing more begging (Cunha et al., 2024). This is especially true as we also find that people tend to overestimate the importance of merit in these interactions, indicating a "shallow meritocracy," as evidenced by their misconceptions about beggars' work preferences and higher perceived than actual differences in those preferences based on the presence of items (Andre, 2024).

Our paper also contributes to the literature on material offerings and charitable behavior. Prior research presents two hypotheses: material offerings may increase donations by being perceived as a direct repayment (Buraschi and Cornelli, 2002; Andreoni and Petrie, 2004), or they could reduce donations by crowding out intrinsic motivations and warm glow effects (Zuckerman et al., 1979). However, these studies typically focus on formal charitable organizations, lacking direct donor-recipient interaction. In contrast, our findings show that material offerings in informal settings increase donations by signaling higher deservingness. Finally, our analysis of transfers to beggars with items as acts of charity—rather than payments for the items—aligns with recent finding that people in Delhi primarily purchase items from beggars for charitable reasons (Jain, 2024).

This paper also contributes to the development economics literature by examining the economic and behavioral preferences of the ultra-poor, focusing on beggars (Banerjee, 2011; Mani et al., 2013; Sen, 2014; Schilbach et al., 2016). We propose the first conceptual framework to study the market for begging and its economic and behavioral drivers, and demonstrate novel large-scale data collection methods with this hard-to-study population. Prior research shows that beggars act as profit maximizers despite extreme behavioral traits (Leeson et al., 2022), yield positive returns (Adriaenssens and Hendrickx, 2011), and their numbers remain inelastic to both economic conditions and donor generosity (Dordick et al., 2018). We extend these findings by modeling begging behavior as a rational choice model while also analyzing donor preferences. Our inference of inelastic supply of beggars in response to the costs and benefits of begging—and the suboptimality of legal regulation—based on our theory and data from India aligns with findings from Manhattan (Dordick et al., 2018), suggesting external

validity of our findings to meritocratic societies. Finally, the discussion of optimal policies to reduce information asymmetry between beggars and donors such that willing donors are able to identify deserving beggars is similar to the role of begging with items in our paper (Dordick and O'Flaherty, 2017).

The rest of this paper is structured as follows. We describe our model of begging in section 2 to understand when signaling of deservingness matter and how such signals may impact the perceptions and charitable behavior of donors. In section 3, we provide the details of our survey and experimental design. We first present our sample selection protocol in section 4.1, and then present the summary statistics from our surveys in section 4.2. In section 5, we show our findings of higher donations and improved perceptions about beggars with items. We discuss the inferences and policy implications of this research in Section 6.

2 A model of begging

In this section, we describe a model of begging as an alternative to labor market participation derived from the neoclassical model of labor-leisure choice. Begging by necessity happens when labor income cannot buy the consumption bundle required for survival, even if one spends all their time in labor. Begging by choice happens when labor income can meet survival needs, but begging is preferred due to utility from leisure. Finally, begging by misfortune occurs when individuals prefer to work in the labor market but are forced into begging due to unemployment or other labor market barriers.

2.1 The Baseline Model

Preferences and Types - People derive utility from consuming goods (c) and enjoying leisure (l). However, leisure (and other non-material sources of utility) only becomes valuable once the basic survival needs for consumption are met. We denote the minimum consumption requirement as $\underline{c}$. Beyond this threshold, people differ in their preferences for consumption versus leisure, represented by the parameter α_i. The utility function is thus defined as follows:

$$U_i(c, l) = \begin{cases} c & \text{if } c \leq \underline{c} \\ \underline{c} + (c - \underline{c})^{\alpha_i} l^{(1-\alpha_i)} & \text{if } c > \underline{c} \end{cases} \tag{1}$$

Following are the usual budget constraints where the price of consumption is normalised to 1, w_i is the hourly wage for individual i, h is the hours of work, T is the total time endowment and l and c denote leisure and consumption respectively.

$$c = w_i h \tag{2}$$

$$T = h + l \tag{3}$$

Wages are determined by an individual's labor market productivity, which is given by an individual's ability. However, productivity is also an increasing function of consumption until one consumes their minimum survival consumption bundle. Our assumptions of utility and productivity realizations being limited by consumption bundles, and the low bargaining power of workers pushing their wages to marginal productivity are consistent with findings in behavioral development economics and labor economics, especially relevant for the poor (Mani et al., 2013; Schilbach et al., 2016). We describe the individual production function as follows.

$$F_i(\pi_i, c, h) = \begin{cases} f(c)\pi_i h & \text{if } c \leq \underline{c} \\ \pi_i h & \text{if } c \geq \underline{c} \end{cases} \tag{4}$$

where, $f(0) = 0$, $f' > 0$ and $f'' \geq 0$. $\pi_i > 0$ is individual i's constant marginal productivity of labor, and an individual's wage w_i is given by,

$$w_i = \begin{cases} f(c)\pi_i & \text{if } c \leq \underline{c} \\ \pi_i & \text{if } c \geq \underline{c} \end{cases} \tag{5}$$

This gives us a range of a for which there is no viable solution in the labor market ($\pi_i < \underline{\pi}_1$), where $\underline{\pi}_1 = \frac{\underline{c}}{T}$. Even if people spend all their time working in the labor market ($h = T$), they would not be able to buy the consumption bundle necessary to supply that labor. The viable range of consumption is increasing in an individual's ability π_i. In figure 1, we illustrate how low ability people have no viable solution in the labor market.

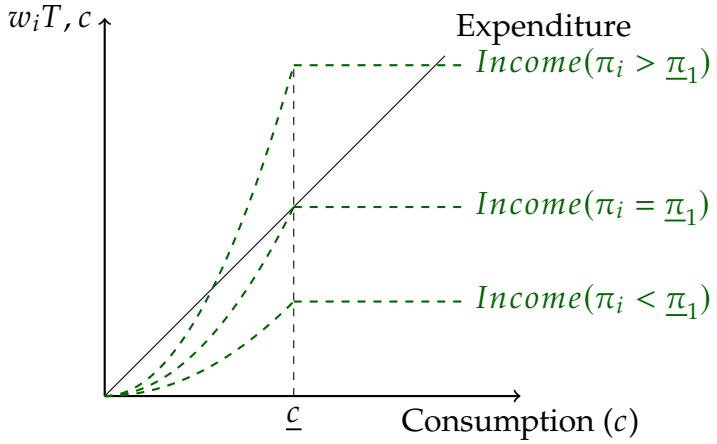

Figure 1: Income and Expenditure at different levels of ability ($T = h$).

Labor market equilibrium - Maximizing the above utility with respect to consumption and leisure, gives the optimal values of consumption, leisure and utility given ability π_i and preference for consumption versus leisure α_i in the labor market. The labor market equilibrium

is characterized as follows.

$$(c_i^*, h^*, l^*) = \begin{cases} (0,0,0) & \text{if } \pi_i < \underline{\pi}_1 \\ (\underline{c}, T, 0) & \text{if } \underline{\pi}_1 \leq \pi_i < \underline{\pi}_2(\alpha_i) \text{ and } \alpha > 0.5 \\ \left(T\pi_i\alpha_i - \alpha_i\underline{c}, \alpha_i T - \dfrac{\alpha_i\underline{c}}{\pi_i}, (1-\alpha_i)T + \dfrac{\alpha_i\underline{c}}{\pi_i}\right) & \text{if } \pi_i > \underline{\pi}_1 \text{ and } \alpha < 0.5 \\ & \text{or } \pi_i \geq \underline{\pi}_2(\alpha_i) \text{ and } \alpha > 0.5 \end{cases} \tag{6}$$

where, $\underline{\pi}_1 = \dfrac{\underline{c}}{T}$ and $\underline{\pi}_2 = \dfrac{(1-\alpha_i)\underline{c}}{\alpha_i T}$.

When labor ability is too low, specifically when $\pi_i < \underline{\pi}_1$, the labor market is not a viable option for the individual. This is because even if they put all their hours to work, their income won't cover the cost of even the minimum required consumption bundle. However, when $\pi_i > \underline{\pi}$, the situation changes. At this point, there is a range of consumption bundles that the individual may choose from, and they can begin to trade off consumption against leisure. But, there exists another threshold of ability, denoted as $\underline{\pi}_2(\alpha_i)$, below which, wage rate is too low relative to the importance of leisure that the individual gets a higher payoff by spending all their time working to buy consumption, even if that consumption is only meeting the basic survival needs 1.

The threshold $\underline{\pi}_2(\alpha_i)$ is decreasing in α_i, where α_i represents the individual's preference for consumption relative to non-material utility from leisure. As $\alpha_i \to 0$, $\underline{\pi}_2(\alpha_i) \to \infty$, and conversely, as $\alpha_i \to 1$, $\underline{\pi}_2(\alpha_i) \to 0$.

The corresponding optimized utility from labor market is given by,

$$U_i^L = \begin{cases} 0 & \text{if } \pi_i < \underline{\pi}_1 \\ \underline{c} & \text{if } \underline{\pi}_1 \leq \pi_i < \underline{\pi}_2(\alpha_i) \text{ and } \alpha > 0.5 \\ \underline{c} + (c^* - \underline{c})^{\alpha_i}(l^*)^{1-\alpha_i} & \text{if } \pi_i > \underline{\pi}_1 \text{ and } \alpha < 0.5 \\ & \text{or } \pi_i \geq \underline{\pi}_2(\alpha_i) \text{ and } \alpha > 0.5 \end{cases} \tag{7}$$

Donations and payoff from begging - Let the total donations received from begging be denoted by D. D optimizes a representative or average donor's utility from charity. Let the average donor's utility from giving x to a beggar be given by,

$$U(x) = g(x) - x \tag{8}$$

where, $g(0) = 0, g' > 0, g'' < 0$. Thus, donation D is given by, $g'(D) = 1$.

We assume that beggars face internalized and social stigma, harassment and exposure to risks such as weather and crime shocks. We denote these socio-psychological costs of begging by s, deducted from the non-material leisure payoff. Moreover, the stigma of begging also prevents a beggar from partly working in the labor market, which leads to leisure $l = T$ for a

beggar. Thus, utility payoff from begging is given as follows.

$$U_i^B = U_i(D, s) = \begin{cases} D & \text{if } D < \underline{c} \\ \underline{c} + (D - \underline{c})^{\alpha_i}(T - s)^{1-\alpha_i} & \text{if } D \geq \underline{c} \end{cases} \tag{9}$$

Begging versus labor market participation - Comparing the payoffs from begging and labor market participation provides the conditions under which an individual engages in begging, leading to our first theoretical result.

Unemployment - Let there be a probability γ that an individual does not find a job in the labor market. In this case, even if begging is not preferred, the individual is forced to beg for survival.

Proposition 1. *If $\pi_i < \underline{\pi}_1$, begging is the dominant choice for all $\alpha \in [0, 1]$ and for all $D > 0$. If $\pi_i \geq \underline{\pi}_1$, then there exists $\alpha_i \in (0, 1)$ such that:*

1. *If $\alpha_i < \underline{\alpha}(D, \pi_i, s)$, begging is the dominant choice.*
2. *If $\alpha_i > \underline{\alpha}(D, \pi_i, s)$, labor market participation is the dominant choice.*

Here, $\underline{\alpha}(D, \pi_i, s)$ is the threshold determined by comparing the utility from labor market participation (U_L) and the utility from begging (U_B).

The proof of this proposition, along with the remaining propositions, is provided in Appendix D. Next, we define different types of begging—by necessity, by choice, and by misfortune—as follows.

Definition.

1. ***Begging by Necessity**: Occurs when begging is the only viable option for survival due to an inability to participate in the labor market, i.e., $\pi_i < \underline{\pi}_1$.*
2. ***Begging by Choice**: Occurs when labor market participation is viable but begging is preferred due to a higher preference for leisure, i.e., $\pi_i \geq \underline{\pi}_1$ but $\alpha_i < \underline{\alpha}(D, \pi_i, s)$.*
3. ***Begging by Misfortune**: Occurs when labor market participation is both viable ($\pi_i \geq \underline{\pi}_1$) and preferred ($\alpha_i > \underline{\alpha}(D, \pi_i, s)$), but unemployment forces the individual to beg with probability γ.*

The distributions of π_i (ability) and α_i (preference for leisure) determine the proportion of beggars by the cause of begging—necessity, choice, and misfortune—for given values of D (donations) and s (non-material factors). The number of beggars by necessity is unaffected by the returns to begging. However, a decline in donation amounts or non-material utility from begging pushes the marginal beggar by choice into labor market participation.

2.2 Fairness concerns and Signaling

Next, we model the market for begging when donors have fairness concerns and enjoy lower utility from donating to a beggar who is perceived to be begging by choice.

The average donor's utility from donating x can be written as:

$$U(x) = (1 - \hat{p})g(x) + \hat{p}\beta g(x) - x \tag{10}$$

where, $\hat{p}$ is the donor's perceived probability that the beggar is begging by choice; $\beta < 1$ is a measure of the donor's fairness preference, reflecting a lower utility from donating when the beggar is perceived to be begging by choice; and $g(x)$ represents the donor's utility from donating x, with $g'(D) = 1$ at the optimal donation level.

Given that $g'(D) = 1$, the optimal donation under fairness concerns is less than the optimal donation without fairness concerns, i.e., $D_F < D$ if $\hat{p} < 1$.

This implies that the donation to a beggar decreases as the perceived probability $\hat{p}$ that the beggar is begging by choice increases. Since a beggar's cause (whether by choice or by necessity) is determined by their ability and preference for leisure, the donor's perception of these factors ($\hat{\pi}$ and $\hat{\alpha}$) affects the likelihood of donation.

Signaling Donors consider it less fair to donate to beggars who are begging due to a high preference for leisure or low ability, or deem such beggars to be less deserving of charity, leading to lower donations to them. This creates an incentive for beggars to signal a high preference for leisure and ability so that donors perceive them to be begging by misfortune and hence deserving of charity.

Proposition 2. *Let p denote the monetary cost and e denote the effort cost of signaling deservingness. Suppose the monetary cost p is small enough such that*

$$p < D_F(\hat{p}_s) - D_F(\hat{p}),$$

where $D_F(\hat{p}_s)$ and $D_F(\hat{p})$ represent the donations received with and without signaling, respectively, then:

1. *If $D_F(\hat{p}_s) < \underline{c}$, where $\underline{c}$ is the minimum consumption required for survival, then all beggars, regardless of their ability π_i or preference for leisure α_i, choose to signal higher deservingness.*

2. *If $D_F(\hat{p}_s) > \underline{c}$, there exists a threshold $\underline{\alpha}(\pi_i, s, e, m, D_F(\hat{p}_s) - D_F(\hat{p}))$, such that iff a beggar's preference for consumption instead of leisure α_i satisfies*

$$\alpha_i > \underline{\alpha}(\pi_i, s, e, m, D_F(\hat{p}_s) - D_F(\hat{p})),$$

the beggar chooses to signal higher deservingness.

3. *Similarly, there exists a threshold* $\underline{\pi}(\alpha_i, s, e, m, D_F(\hat{p}_s) - D_F(\hat{p}))$*, such that if a beggar's ability* π_i *satisfies*

$$\pi_i > \underline{\pi}(\alpha_i, s, e, m, D_F(\hat{p}_s) - D_F(\hat{p})),$$

the beggar chooses to signal higher deservingness.

Overall, our model of begging, where donors have fairness concerns, suggests that beggars use signals of deservingness that are not too costly monetarily but require effort and reduce leisure. These signals help beggars indicate a high preference for work and ability. Donors respond to such signals by improving their perception of the beggar's ability and preference for leisure, which leads to an increase in donations. When donations are too low, the preference for leisure approaches zero, as captured in our utility function. As a result, any beggar who expects a positive return from signaling will send the signal. However, when donations are high enough, beggars with higher ability and a lower preference for leisure are more likely to send the signal. If a beggar's ability is observably very low, then signaling is unnecessary because begging is unlikely to be perceived as a choice. This applies to beggars with disabilities or severe mental health issues, who have few viable options in the labor market.

One such signal of deservingness is offering low-cost, low-value items while soliciting charity. The effort involved in procuring these items makes it easier for beggars who are forced to beg due to labor market misfortune. On the other hand, beggars who beg by choice may find it harder to offer items. Thus, begging with items serves as a credible signal, reducing the donors' perception that the beggar is begging by choice, and leading to an increase in donations. If donations are too low, all beggars experience low consumption and have little to no preference for leisure. In such cases, beggars will be more likely to adopt any strategy that can increase their consumption, such as offering items, if they understand that it signals deservingness and can lead to higher donations.

Testable hypotheses - The key testable hypothesis based on our theory is that on average, donors are more likely to perceive beggars with items as having a higher preference for work (as opposed to leisure), higher ability, and as being more deserving of charity than those without items. Beggars with and without items differ in their preferences for leisure, work, and ability, when donations at least cover the minimum survival consumption needs. However, both groups of beggars—those with and without items—have similarly low preferences for leisure and ability, when donations are too low and do not even cover the minimum survival needs of consumption.

3 Research Design

We study the impact of offering items while soliciting charity on donation behavior and donors' perceptions about beggars' deservingness for charity. Our approach involves experimental

methods and observational surveys. First, we measure the impact of begging with an item on donors' beliefs regarding the beggars' willingness to engage in paid work. We accomplish this through a survey experiment where donors are incentivized to accurately guess the preferences for paid work of both types of beggars, identified through lab experimental games. Beggars' preferences are measured as a part of a detailed survey of beggars, which also includes information on their socio-economic conditions, labor market experiences, and aspirations. Second, we complement our experimental evidence with field data to compare the donation rates and amounts given to beggars with and without items, using an observational survey of begging activities and a real-time survey of successful interactions (where some money was donated).

Below, we provide details on our designs for experimental and field surveys.

3.1 Experimental design

The experimental design comprises of two components: first, we measure the innate preferences of beggars with and without items. Then, we incentivize donors to report their beliefs about beggars' preferences by rewarding correct guesses. Below, we provide details about the design to measure beggars' preferences, donors' beliefs about those preferences, and perceptions about the deservingness of the two kinds of beggars.

Beggars' Preferences Survey. In this survey, we interview beggars with and without items across crowded streets in Delhi, including religious sites, metro stations and marketplaces. The survey documents the beggars' socio-economic background, experience with the labor market, economic values, aspirations, and migration status. Moreover, in a lab-in-the-field experiment, we collect incentivized measures of their preference for paid work, free-riding, and honesty, along with basic numeracy. This survey took 40-60 minutes per respondent, and the enumerator conducted the survey with every beggar they observed on the randomly assigned street. Despite being on the street, we consciously ensured that the beggars were interviewed privately without being overheard.

To measure whether a beggar prefers paid work, we ask them to choose between free cash of 50 INR and a real-effort task of sorting black and white chickpeas in up to 4 boxes at a piece-rate of 25 INR per box. We measure free-riding preferences using a vignette describing a person who chose not to contribute efforts in a community setting and beggars reported whether they agree or disagree with his choice of free-riding. Dishonesty was measured at the group level (beggars - with or without items) using a coin-flipping task where each beggar had to privately flip a coin ten times, and report heads or tails and receive a monetary reward for every head reported (Bucciol and Piovesan, 2011). While individual lying cannot be detected, we can compare the group responses for beggars with and without items with the underlying distribution (50-50 heads and tails) to infer lying. Finally, we measure beggars' ability by using a simple numeracy task where they had to count from 1 to 100 for payment of the number up until they count. Note

that all tasks were incentivized, except free-riding. All tasks were also contextually validated through several rounds of field-testing and pilot.

Donors' Perceptions Survey Experiment. The main aim of this survey is to elicit donors' beliefs about beggars' preferences for paid work, free-riding, honesty, and proficiency in basic numeracy. Each participant is randomly assigned to report beliefs about one of two types of beggars: those with or without items, using a between-subjects design. Respondents report the percentage of beggars who they they think chose free-cash, justified free-riding, could count to 100 and the percentage of heads reported in the coin flipping task (Bucciol and Piovesan, 2011). Beliefs were incentivized and respondents were paid if their guess is within ten percent of the true corresponding distributions among beggars. We used the random lottery payment mechanism to ensure that the respondents reported their beliefs about each task, considering them as separate tasks and that the stakes were not distributed among the different belief elicitation exercises.

Following the belief elicitation task, participants answer questions about their socio-economic and family background and economic values. Additionally, beliefs about the other type of beggar are elicited, allowing for within-subject comparisons. In the end, each participant is asked to distribute INR 100 between two randomly selected beggars (or one, if they choose to allocate the entire amount to only one type), which is implemented as such. This allocation task helps us ascertain the donors' perception of relative deservingness for charity based on begging style.

The survey took between 20 and 30 minutes and was conducted with adults in their homes, excluding those who had not been outside at least once in the past week, to ensure similarity to passers-by and potential donors. Conducting the survey in homes ensured respondents' attention for the required half hour and provided privacy from other respondents.

For the belief-elicitation exercise, photo collages of real beggars were used, as approved by the Institutional Review Board at New York University. Each collage features photos of four beggars (one man, one woman, one girl, and one boy), each photographed twice – once with an item and once without – to create identical collages and identify the causal impact of items on beliefs about the beggars' preferences. We used two photo collages of beggars with items and two corresponding collages of the same beggars without items, enabling both between-subjects and within-subjects designs, with randomization conducted at the individual level. The four photo collages used are provided in appendix figure C.1.

3.2 Field surveys design

Next, we describe our approach to verifying whether signaling of deservingness influences actual donation behavior in the field. We conducted a real-time survey of successful interactions (where some money was donated) to measure differences at the intensive margin and an observational survey of begging activities to study the signaling effect on the extensive margin.

Successful Interactions Survey - Intensive margin The interaction survey captures charitable interactions between beggars and passers-by to compare the amount of donations to beggars with and without items. Surveyors worked in pairs, and immediately after observing an interaction, one of them approached the beggar, and the other approached the donor, asking them about the amount of money (and item, if any) that was exchanged. This survey was intentionally kept short and took between 5 and 10 minutes to finish. To ensure credible measurement of charitable transfers, both the beggar and the donor were asked about the transfer amount immediately post-interaction. They were also informed that their reported amounts would be matched. Participation was incentivized with a flat participation fee of 100 INR. The survey covered 634 interactions across Delhi, with about 300 each for beggars with and without items.

As the difference in the donation amounts to beggars with and without items may be due to a difference in the relevant underlying characteristics of the donors to beggars with items and beggars without items, such as innate altruism, income, gullibility, religiosity and other demographic characteristics. We include these in our survey to control for such sources of selection bias and get as close as we can to the effect of begging with an item on donation amounts.[6] Further, we collect information on donors to beggars with items' use for the product, reason for buying, whether they kept the item, and whether they are willing to give away the item for free to identify the charitable interactions. To examine further the soliciting and donation choices of both beggars and donors, we ask them about their counterfactual beliefs regarding the amount of donation if the begging style had been reversed.

Observational Survey - Extensive margin In this survey, we collect data on the success rates of beggar-donor interactions, specifically, the proportion of interactions resulting in a donation for beggars with and without items. This allows us to compare the charitable behavior of donors toward the two types of beggars on an extensive margin—whether or not a donation is made. We record the total number of beggars, categorized by type (with or without items), observed over a 3-hour window across 83 streets in Delhi. Surveyors worked in pairs: one documented observable demographic characteristics (such as gender, approximate age, whether in a group, or with a child) for beggars with items, while the other did the same for beggars without items. Each surveyor observed up to six beggars of their assigned type for 20 minutes each, documenting details of each passer-by the beggar approached and whether the interaction resulted in a donation.[7]

[6]Note that we do not exogenously vary the type of the beggar, i.e., randomly assign beggars to solicit charity with and without items due to ethical concerns with such an approach, especially as begging is an illegal activity.

[7]Surveyors documented interactions of all the beggars of their assigned type on that street if fewer than six were present within the 3-hour window.

4 Data

In this section, we first describe our sampling design for the surveys conducted on the streets and households. Next, we discuss the key summary statistics of the participants from each of the four surveys.

4.1 Sampling

Our field data on begging is collected across 83 crowded streets in Delhi, India. We collect information on the backgrounds, preferences and experiences of beggars by conducting incentivized surveys of 1219 beggars (607 with items and 612 without items) across the streets of Delhi.Further, we conduct the donors' perception survey experiment with an income-representative sample of 1204 potential donors, i.e., people from the general population of Delhi in their households. Below, we describe the sampling strategy for the surveys done on streets and households.

Street Sampling Our sample size for the observational survey of interactions is 4619 interactions between beggars and donors across 83 areas, spanning 461 unique beggars and 1627 unique passers-by or potential donors. The successful interactions survey has a sample size of 634 interactions, implying 634 unique beggars and 634 unique donors. The beggars' perceptions survey includes evidence from 1204 beggars. Each of these three surveys was conducted across 83 crowded streets in Delhi, where begging is most prominently observed. To select the sample of streets, we gathered data on prominent temples, shopping centers, and metro stations in Delhi using available online information. We used the live traffic data (obtained using a third-party service provider) and merged it with each site. We provide comprehensive details about sampling and use of live traffic data along with the final list of locations in appendix A.

Households Sampling For the potential donors' survey, our sampling strategy uses information from two main sources: Municipal Corporation of Delhi (MCD) and the Chief Electoral Officer (CEO) Delhi. All information is publicly available. Specifically, the MCD dataset that categorizes colonies by income is merged with the Geo IQ data that provides the population details by locality and the polling booths' data, which contains information on the nearest polling booth for assembly constituencies in Delhi. We provide further details about household sample selection in appendix A.

Table 1 summarizes our sample sizes.

4.2 Summary Statistics

In this section, we provide summary statistics about the characteristics of beggars and donors included in our samples from donors, beggars, and field surveys. Since the field surveys involve information on both donors and beggars, we organize this section based on the surveys.

Table 1: **Sample Size of Surveys**

		Beggars		Donors	
Survey Type	**N**	**With**	**Without**	**With**	**Without**
Beggars Preferences Survey	1219	607	612	-	-
Donors Perceptions Survey[a]	1204	-	-	597	607
Successful Interactions Survey	634	316	318	316	318
Observational Survey of Interactions[b]	4619	221	240	812	815

Notes: This tables reports the total number of observations corresponding to each survey. a. The donors perceptions survey experiment involved eliciting beliefs about either beggars with items or beggars without items for a between subjects comparison. b. The observational survey of all begging activity includes multiple interactions of same beggars with different passers-by and multiple interactions of same passers-by with different beggars. We report the number of unique interactions, unique beggars and unique donors or passers-by.

Donors' Perceptions Survey In this subsection, we verify and confirm that our sample is balanced across treatments as shown in table B.1. Specifically, we check that the demographic and socio-economic characteristics of participants randomly assigned to report beliefs about beggars with items are not significantly different from those assigned to report on beggars without items. Among the experiment participants assigned to report beliefs about beggars with items, 45% are women, 52% belong to forward castes, 63% married people, out of which 93% have children and 31% are migrants from other parts of India. The participants assigned to report beliefs about the beggars without items are similar in all of these characteristics. In Table B.2, we also show that the participants are similar to the actual donors found in our interactions survey.

The sample is stratified based on income such that surveys are conducted in households across Municipal Corporation of Delhi's (MCD) Neighborhood Income Categories D, E, F and G, which cover 80% of Delhi's population.[8]

Beggars' Perceptions Survey Out of the 1219 beggars with whom we conducted our extensive preferences surveys, 607 beggars are beggars with items and 612 are beggars without items. For beggars with items, Table B.3 shows that among the population of beggars, there are about 63% women, 58% migrants from rural India, 74% living in temporary houses or shacks, and about 92% belonging to backward castes, with no significant differences in these characteristics among beggars without items. However, the sampled beggars differ in age distribution, education, and labor market experience. 43% of the beggars with items are children compared with 35% of the beggars without items. Beggars with item are more likely to have greater than primary education and less likely to have no education compared with beggars without items.

[8]These categories span from A to H, going from the richest to poorest neighborhoods (see more details in appendix A).

Observational Survey - Extensive Margin Our sample of 83 crowded streets including 36 religious areas (near temples), 26 commuting zones (around metro stations), and 21 marketplaces. Table B.4 presents detailed information on the beggars observed in these areas. Overall, there are, on average, 8 beggars per street, and on average, the beggar population comprises approximately 31% who offer items and 69% who do not. While most beggars are mobile, a significant proportion (around 35%) is stationary. Gender composition is roughly balanced, and age distribution shows that a majority of the beggars are adults (62%), while the rest are either children under 19 or seniors over 60. The majority (approx. 72%) of beggars are alone, and only 16% are observed with a child, either alone or in a group. A small proportion of beggars displays extreme vulnerabilities such as disabilities, partial clothing, or lack of footwear (4%, 11%, and 20%, respectively).

The table also presents disaggregated information by begging styles (beggars with items and without items). Roughly 71% of the beggars with items, as opposed to 61% of the beggars without items, are mobile. The gender composition of beggars differs between those with and without items. A higher percentage of beggars with items are men (57% men, 43% women), while a higher percentage of beggars without items are women (45% men, 54% women). Both groups have a majority of teenagers and adult beggars (around 81% and 73%, respectively). These demographic patterns – mobile beggars, more men and younger beggars offering items while begging, and more stationary, more women and older beggars not offering items – align with our theory that signals of labor market misfortune and willingness to work are more relevant for groups who can work than for those who have fewer work opportunities and are more likely to beg out of necessity.

We also find interesting patterns among the sample of passers-by or potential donors whom the beggars reached out to solicit charity as shown in Panel B of Appendix Table B.5. Beggars without items are equally likely to solicit charity from men and women, while those with items are more likely to approach men. This suggests that beggars may perceive men to be more responsive to signals of deservingness than women. Beggars with items also tend to approach groups, while beggars without items are more likely to approach individuals. This difference in soliciting behavior may suggest that supporting beggars with items is considered socially desirable.

Overall, beggars with and without items approach a similar number of people for charity – about per hour. Of these interactions, around 35 result in receiving a donation, regardless of whether the beggar has an item or not. The above findings on significant differences in key demographic differences of beggars with and without items underscore the importance of our extensive data collection on relevant controls to analyze donation differences on both the extensive and the intensive margin. While informative of the market for begging, these field differences also suggest that the findings from the experimental approach are more reliable when studying the effect of deservingness signals while begging.

Interactions Survey - Intensive Margin Below, we describe the demographic characteristics of the beggars and passers-by included in the successful interaction survey, where we document the amounts of money donated in successful interactions. This survey was also conducted in the same 83 areas as the passive observational survey, with about 8 successful interactions documented per area (4 with items and 4 without items).

Columns (1) and (2) in Table B.3 report the demographic and socio-economic characteristics of the beggars with and without items who are included in the sample of successful interactions. There is no significant difference in the gender composition by begging style. However, a majority of the beggars without items are adults (60%) while the beggars with items are evenly split between children and adults (44% and 48%, respectively). Most beggars of both kinds have no formal education but beggars with items are more likely to have primary education than the beggars without items. Only about 20% of the beggars have ever had a job and about 40% are migrants from rural parts of India, with no significant differences by begging style. Interestingly, among the beggars with items, only about half of them even mentioned the item, the rest solicited charity and invoked passers-bys generosity by mentioning faith or God or hunger or both.

The sample of donors who made transfers and participated in the successful interactions survey is detailed in Table B.2. Approximately 48% of the donors, both donating to beggars with and without items, are women. Donors to both categories exhibit similar demographic characteristics, including gender, age, education, migrant status, and income. Donors report similar soliciting words used by beggars as reported in Table B.3 where charity is most frequently solicited in the name of God and hunger, with roughly 50% of beggars with items mentioning the specific item. Most donors report charity as the primary reason for their giving, while a small percentage cite wanting to get rid of the beggar (9%) or the need for the item (28% of donors to beggars with items). While 82% of the donors to beggars with items accepted the item from the beggar, 66% of them were willing to give it away for free.

5 Empirical Analyses and Findings

In what follows, we provide causal evidence that begging with items improves donors' perceptions of beggars' preferences for paid work, numeracy, and free-riding. On average, donors allocate larger sums from a charitable pool to beggars with items than without, suggesting that improved perceptions have financial implications for their deservingness of charity.

5.1 Experimental Evidence

Below we show comparisons of donors' perceptions about preferences and abilities of beggars with and without items.

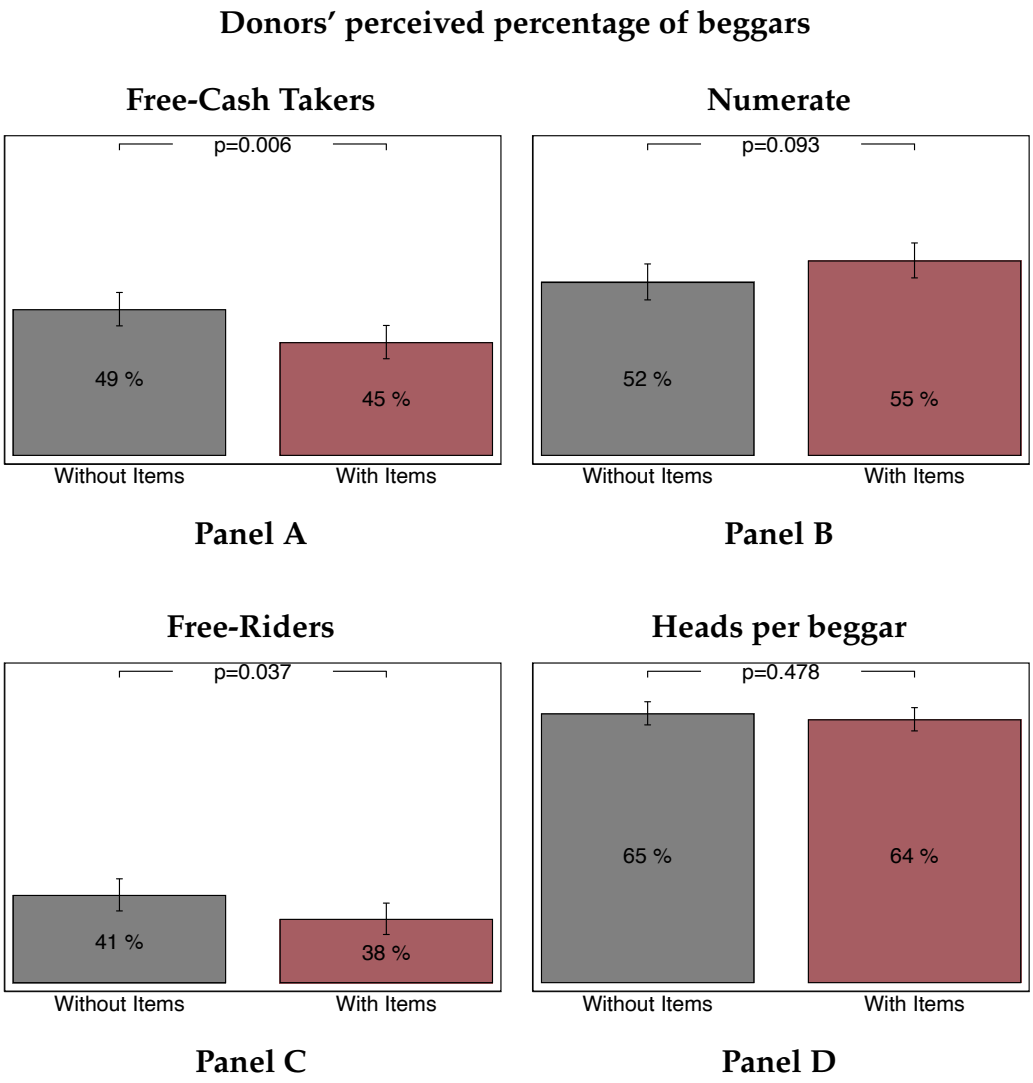

Figure 2: This figure illustrates donors' average perceptions of beggars across various metrics: **Panel A** shows the perceived percentage of beggars who chose free cash, **Panel B** shows the perceived percentage of beggars who could count to 100, **Panel C** shows the perceived percentage of beggars who agree with free-riding, and **Panel D** displays the perceived percentage private coin flips for which heads was reported per beggar (with values above 50 reflecting perceptions of dishonesty).

Perceptions of beggars' preferences and abilities We find that begging with items signals preference for work and ability, indicating that such beggars are perceived to be begging by misfortune rather than choice as predicted by our theoretical model. As shown in figure 2 and table 2, donors perceive the beggars with items to be significantly less likely to choose free-cash (0.15 standard deviations). On average, respondents believe that 49% of the beggars with item chose free cash compared with 45% of the beggars without items (p-value = 0.006). Respondents also believe that beggars with items are more likely to be numerate, a difference of 0.1 standard deviations (p-value = 0.093). Since people with higher abilities have higher payoffs in the labor market, they are expected to be more likely begging by misfortune and not by choice.

We also find significant differences in donors' perceptions about beggars' free-riding

Table 2: **Donors' perceptions (between-subjects differences)**

	Perceived percentage			
	Freecash takers	Numerate	Free-riders	Heads per beggar
Effect of begging WithItems	-4.017 (1.537) [0.009]	2.940 (1.636) [0.073]	-3.130 (1.450) [0.031]	-0.693 (1.073) [0.519]
Mean [of beggar w/o items]	48.82	52.31	41.33	64.61
Effect Size [SD]	-0.15	0.10	-0.12	-0.04
Controls	Yes	Yes	Yes	Yes
No. of Observations	1204	1204	1204	1204

Notes: Coefficients are based on OLS regressions. Standard errors are clustered at the neighborhood level and reported in parentheses and p-values are reported in square brackets. Controls include respondents characteristics such as age, gender, caste, migration status, education, marital status, children, the ratio of non-earning members to household size. We include neighborhood income strata fixed effects. Numerate refers to the percentage of beggars who could correctly count to 100.

preferences, similar to preference for work versus leisure. Despite being an unincentivized task for the beggars where they merely had to report whether they agree with free-riding or not, donors have differential perceptions of free-riding for beggars with and without items. Donors think that 41% of the beggars without items would have supported free-riding choice in a hypothetical vignette relative to 38% of beggars with items (p-value = 0.037).[9] In general, donors have a pessimistic view about beggars' free-riding preferences. This is strong evidence of donors' perception that about half of the people begging are lazy and prefer to live off of others' hard-earned money. We further show that begging with items does not signal other moral virtues such as honesty. Both groups of beggars are predicted to report 65% of their ten private coin flips as heads.[10]

As expected due to randomization, our findings remain the same regardless of whether we include control variables or not. We observe similar differences in perceptions of beggars in Figure 2 (without controls) and Table 2 (with controls). The control variables include donor characteristics (gender, age, marital status, migrant status, education, caste, parenthood), household characteristics (ratio of non-earning members), and neighborhood income-level fixed effects. Our results are robust to alternative empirical methods, such as distributional comparisons and non-parametric tests, including the Kolmogorov-Smirnov and Somer's D statistics, as shown in Figure C.2 of Appendix C. We find similar within-subjects differences as shown in Appendix Table B.7.

[9]Donors' beliefs about free-riding were also incentivized, the task itself was unincentivized for beggars though.

[10]The perceived and actual dishonesty rate of beggars matches the average dishonesty rate found in global studies. A meta-analysis shows that, on average, 65% of coin flips in similar experiments are reported as the winning side (Gerlach et al., 2019). This suggests that people do not perceive beggars as more dishonest than the general population, nor do beggars exhibit distinct levels of dishonesty.

Deservingness for Charity Next, we present results from our allocation game, where respondents split 100 INR between a randomly selected beggar with an item and one without, knowing that the allocation is implemented with real beggars and not hypothetical. 43% of the respondents chose higher charitable transfers to beggars with items while only 15% chose higher transfers to beggars without items. Overall, on average, respondents allocate 58 out of the 100 INR to a beggar with items (as shown in figure 3). The average split is statistically different from 50-50, favoring beggars with items over without (p-value = 0.001).

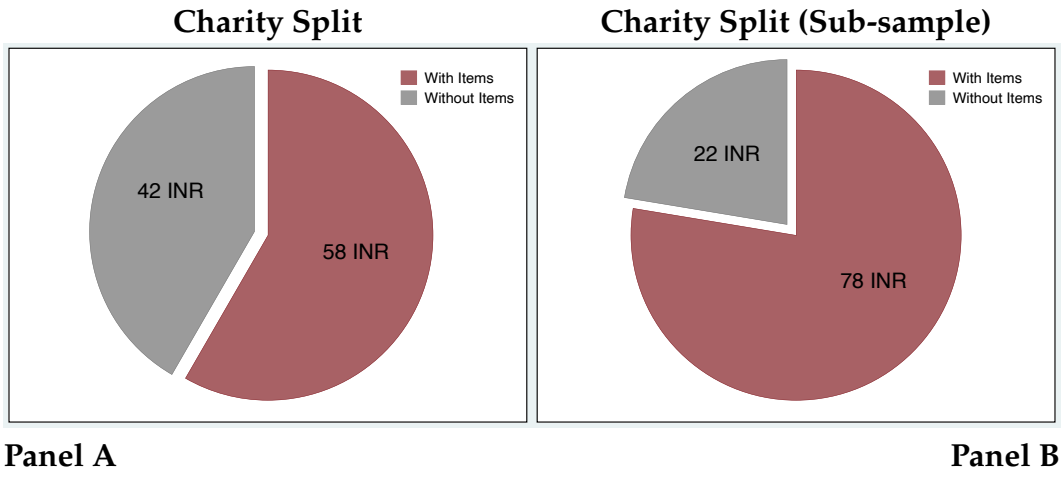

Figure 3: This figure shows the average split of 100 INR to randomly selected beggars with and without items for the full sample in **Panel A** and for the subsample of respondents who allocated more to beggars with items in **Panel B**.

Table 3: **Bias in donors' perceptions (between-subjects differences)**

	Perceived minus actual percentage			
	Freecash takers	Numerate	Free-riders	Heads per beggar
Begging with items	-2.917	0.040	-0.430	-0.693
	(1.537)	(1.636)	(1.450)	(1.073)
	[0.058]	[0.980]	[0.767]	[0.519]
Mean [of beggar w/o items]	34.62	27.71	14.13	0.81
Effect Size [SD]	-0.11	0.00	-0.02	-0.04
Controls	Yes	Yes	Yes	Yes
No. of Observations	1204	1204	1204	1204

Notes: Coefficients are based on OLS regressions. Standard errors are clustered at the neighborhood level and reported in parentheses, and p-values are in square brackets. Controls include respondent characteristics such as age, gender, caste, migration status, education, marital status, and household size. Neighborhood income strata fixed effects are included.

Biased Perceptions Our design allows us to evaluate if donors' perceptions about beggars' preferences and response to the signal match the underlying preferences of beggars and differences by begging style. Figure 4 shows that most beggars prefer paid work over free cash, and few have even basic numeracy skills or the ability to count to 100. Most disagree with free-riding behavior and have a dishonesty rate similar to the general population worldwide (Gerlach et al., 2019). Comparing the actual preferences and abilities of beggars with donors' perceptions (figures 4 and 2) reveals that donors think of beggars to have much lower preferences for paid work and much higher abilities than they actually do, on average. This suggests that while beggars may be begging by necessity, donors perceive them to be begging by choice.

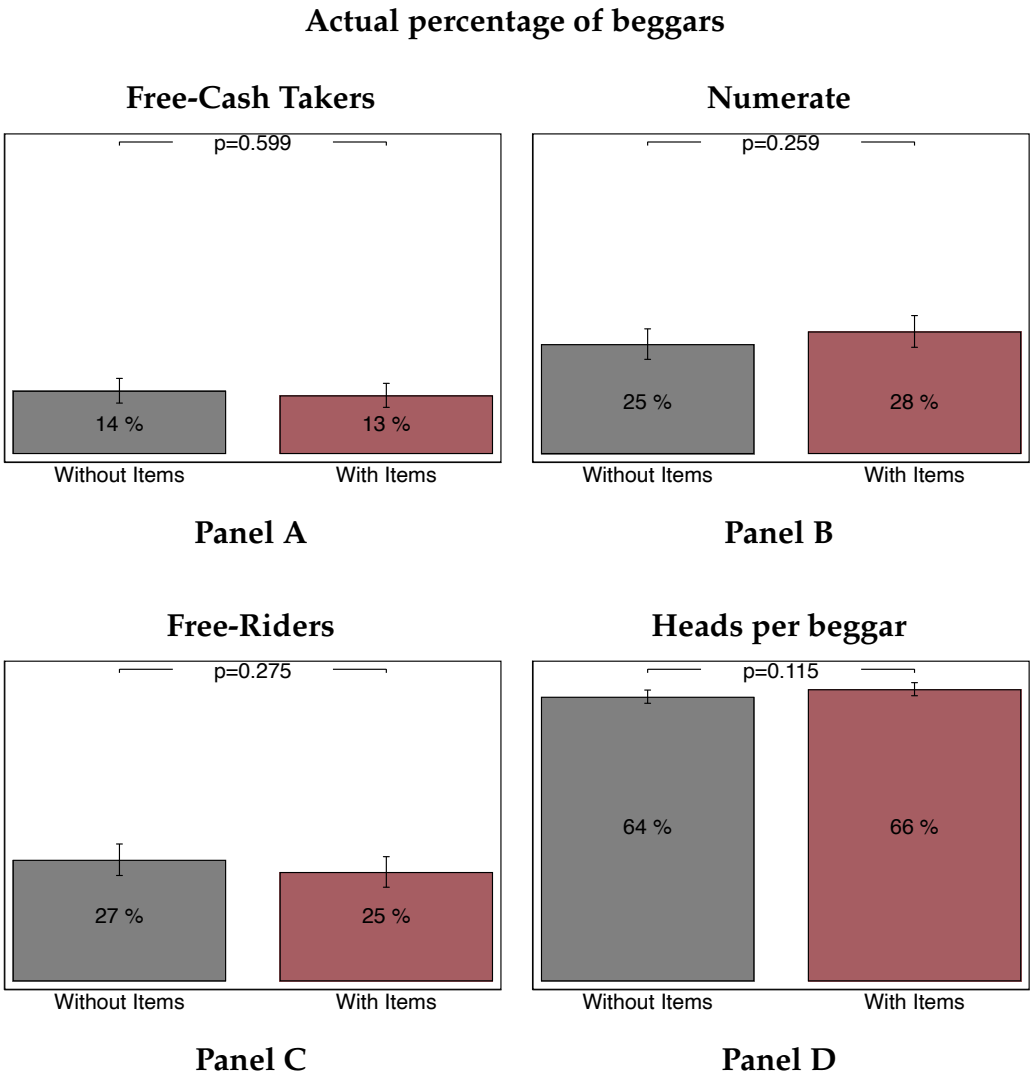

Figure 4: This figure illustrates beggars' actual economic preferences and abilities **Panel A** shows the actual percentage of beggars who chose free cash, **Panel B** shows the actual percentage of beggars who could count to 100, **Panel C** shows the actual percentage of beggars who agree with free-riding, and **Panel D** displays the actual percentage private coin flips for which heads was reported per beggar (with values above 50 reflecting dishonesty).

In table 3, we present the level of bias in perceptions and whether the signal (begging

with items) influences it. We construct the variable Bias for each participant of the donors perceptions survey experiment for each respondent for each preference and ability category, Bias = Donor's perceived percentage of beggars − Mean actual percentage of beggars. As there are no significant differences in actual preferences for paid work of beggars with and without items, while donors perceive them to be statistically different, we also find higher bias in perceptions of beggars without items than beggars with items. While there exists a statistically significant bias, the rate of bias is similar for beggars with and without items for numeracy, free-riding and dishonesty preferences of the beggars.

5.2 Field Evidence

Above, we showed causal evidence that begging with items impacts donors' perceptions about beggars' preferences and abilities, and overall deservingness for charity. Next, we present complimentary evidence from the field showing that the beggars with items indeed receive significantly higher amounts in charity but the rates of soliciting and receiving something in charity are statistically indistinguishable across beggars with and without items. Finally, we also show that givers' characteristics and begging with items explain a larger share of the variation in donation amounts to beggars.

Table 4: **Extensive Margin: Donations rates comparison by begging style**

	OLS		**Poisson**	
	Interaction Rate	Donation Rate	Interaction Rate	Donation Rate
Beggar with Items	0.442	-0.009	0.043	-0.023
	(0.604)	(0.064)	(0.060)	(0.142)
	[0.467]	[0.891]	[0.476]	[0.873]
Mean [of beggar w/o item]	9.88	0.45	9.88	0.45
Effect size [SD]	0.10	-0.02	0.01	-0.05
Controls	Yes	Yes	Yes	Yes
No. of Observations	427	427	427	427

Notes: Coefficients in columns (1) is based on an OLS model and (2) is based on Linear Probability model and columns (3) and (4) are based on Poisson model. Interaction rate is the number of interactions per beggar within a 20 minute time frame. Donation rate is the probability that an interaction between a beggar and a passer-by results in a donation. Robust standard errors, clustered at the street level are reported in parentheses and p-values are reported in square brackets. Controls include beggars' and non-beggars' characteristics: age group, gender, whether in group, whether with child, whether wearing footwear (only for beggar), whether fully clothed (only for beggar), day of the week, and street type (religious, commuting or marketplace) fixed effects.

Extensive Margin Next, we test whether beggars with and without items differ in their rates of soliciting and receiving charity, measured by our observational survey. Based on a sample of 4619 interactions across 83 streets spanning 427 beggars, we find that, on average, beggars solicit charity from 10 passersby per 20 minute period of observation. Of these soliciting interactions,

45% result in some charitable transfer, with no statistical difference in rate of soliciting or success, by begging style. The finding of similar rates of soliciting and receiving is robust to alternative model specification including the Linear Probability Model or Poisson Model, reported in table 4 or the Negative Binomial Model as shown in appendix table B.6.

Therefore, we conclude that begging with items decreases the perceived probability that begging is by choice and improves perceptions of beggars' deservingness for charity along with actual donation amounts, but does not make them more or less likely to receive something in charity per solicit. Overall, our experimental and field evidence suggests that fairness concerns and signals of deservingness influence charitable behavior towards beggars.

Table 5: **Intensive Margin: Donations comparison by begging style**

	Donations	Donations (sub-sample)	Donations Net Cost
Beggar with Items	5.802	3.494	1.782
	(0.984)	(0.920)	(0.878)
	[0.000]	[0.000]	[0.046]
Mean [of beggar w/o item]	10.05	10.05	10.05
Effect size [SD]	0.72	0.43	0.22
Controls	Yes	Yes	Yes
No. of Observations	638	540	638

Notes: Robust standard errors, clustered at the street level are reported in parentheses and p-values are reported in square brackets. Controls include beggars'characteristics (age, gender, persuasiveness, education, disability, migration status, whether in group, whether with a child, religion) , donors' characteristics (age, gender, education, disability, migration status, whether in group, whether with a child, religion, gullibility, monthly income, religiosity, and altruism) and area characteristics.

Intensive Margin We document randomly selected successful interactions between beggars and passersby on crowded streets where an interaction is successful when some money is transferred. Immediately after the interaction, one surveyor approaches the beggar and the other approaches the giver to measure and match the charitable transfers. On every street, we conduct this successful interactions survey with 6-8 beggars with and without items, to ultimately compare donations by begging style. As this is non-experimental evidence, we measure a long list of relevant beggar and donor characteristics both observable and unobservable (age, gender, religion, education, monthly expenditure, disability, whether on the street in a group and/or with a small infant, beggars' persuasiveness, and donors' gullibility and innate altruism), begging area type (religious areas with a prominent temple, marketplaces and popular areas of commute with major metro stations), and day of the week. Controlling for all these potential confounders, we estimate that beggars with items receive 6 INR more than beggars without items, per successful interaction, as shown in column 1 of table 5, a statistically significant difference (p-value = 0.000).

Note that of all the donors to beggars with items, 17% did not take the item and 66% of those who took it, wanted to dispose it off immediately willing to give it away to us for free. In column 2, we restrict the sample to the donors who either did not take or wanted to dispose of the item and those who donated to beggars without items, and show that the higher transfers to beggars with items do not reflect the value of the item to the donor. Further, we also find that donations to beggars with items remain significantly higher than beggars without items even after deducting the beggars' self-reported cost of the item (which is likely inflated making this an underestimate), as shown in column 3 of table 5.

Shapley Decomposition Table 6 illustrates the Shapley decomposition of charitable giving to beggars, shedding light on the various factors influencing donation behaviors(Shapley, 1953; Shorrocks et al., 1999). The results indicate that begging with items explains 21% of the variance in donations, while all other beggar characteristics taken together such as age, gender, migration status, and disability account for 28.18% of the variation. The most substantial contribution comes from donor characteristics, such as age, gender, education, and innate altruism, which explain 49.24% of the variance in donations. Interestingly, area type contributes a mere 1.35%, indicating that the context of begging has a relatively minor influence on donation decisions compared to the characteristics of both beggars and donors.

Table 6: **Shapley Decomposition of Charitable Giving to Beggars**

Group	Shapley Value	Relative Contribution (%)
Begging With Items	0.033	21.230%
Beggar Characteristics	0.044	28.179%
Donor Characteristics	0.077	49.237%
Area Type	0.002	1.353%

Notes: This table shows the Shapley decomposition of charitable donations to beggars. Beggars' characteristics include age, gender, migration status, education, group status (with/without an infant), disability, and self-reported persuasiveness. Donor characteristics include age, gender, innate altruism, self-reported gullibility, family size, education, income, religion, group status (with/without an infant), disability, and sitting during interaction.

5.3 Broader political implications

We have shown above that donors' perceptions regarding preferences for paid work and merit or deservingness differ for beggars with and without items. However, we expect that these perceptions are more relevant for donors who care about meritocracy in the first place. To test this hypothesis, we compare the premium that meritocratic donors assign to beggars with items against the premium given by non-meritocratic donors in the allocation game. To measure

donors' meritocracy, our donors' perceptions survey includes a module on economic values adapted from the world values survey. We ask the following 6 questions that measure high (low) meritocracy: (1) difference between rich and poor attributed to hardwork (luck); (2) control (no control) over one's circumstances; (3) hardwork (luck) leads to better life; (4) giving money promotes (helps) beggary (poor); (5) beg because lazy (no other means); (6) government should provide workfare programs (basic income).

In Table 7, we outline our results for each of the 6 questions separately for donors with meritocratic opinions versus donors who do not possess such opinions, illustrating the respective *additional* charitable behavior towards beggars with items. While a 50-50 split between the two categories of beggars would indicate no differentiation between beggars by donors. Positive coefficients indicate asymmetric distribution with a larger percentage allocated to beggars with items.

In all the results, we consistently find that donors with meritocratic opinions positively differentiate between beggars with items and those without. In particular, we find between 2.7% ($p = 0.029$) to 6.7% ($p < 0.001$) additional distribution for beggars with item than without.

Table 7: **Meritocracy and Donation Behavior**

	Inequality due to Hardwork	Circumstances Control	Life Better by Hardwork	Giving Money Beggary	Begging because Lazy	Poverty Solution Workfare
Meritocratic	0.910	5.927	2.715	6.692	2.030	4.024
	(1.359)	(1.297)	(1.239)	(1.286)	(1.296)	(1.744)
	[0.503]	[0.000]	[0.029]	[0.000]	[0.118]	[0.021]
Mean [of Non Meritocratic]	7.72	4.30	6.53	5.14	6.54	4.86
Effect size [SD]	0.04	0.31	0.13	0.32	0.11	0.21
Controls	Yes	Yes	Yes	Yes	Yes	Yes
No. of Observations	1204	1204	1204	1204	1204	1204

Notes: Coefficients are based on OLS regressions. Robust standard errors are reported in parentheses and p-values are reported in square brackets. Controls include potential donors' covariates and include age, gender, caste, first-generation migrant to Delhi, education, marital status, children, the ratio of non-earning member to household size. Fixed effects for income-strata by colonies are included.

While these results imply that meritocracy is integral in driving donors' differential charitable behavior across beggars with and without items, the analysis treats each statement of opinion separately. We conduct an additional analysis where we construct a dummy taking a value of 1 for donors who respond yes to meritocratic opinions more often than non-meritocratic opinions. Using this categorization of donors, we illustrate in Panel A of figure 5 an additional 7% donations allocated to beggars with items by the meritocratic donor types relative to 3% by the non-meritocratic donor types. The asymmetric split of donations for beggars with items versus without corroborates our previous results.

Furthermore, our analysis reveals that donors' perceptions of the relative deservingness of beggars with items, compared to those without, are correlated with their policy preferences aimed at reducing begging. We asked respondents to rate their support for two policy options on a scale of 1 to 10, where 1 indicates full support for the first idea and 10 indicates full support for the second:

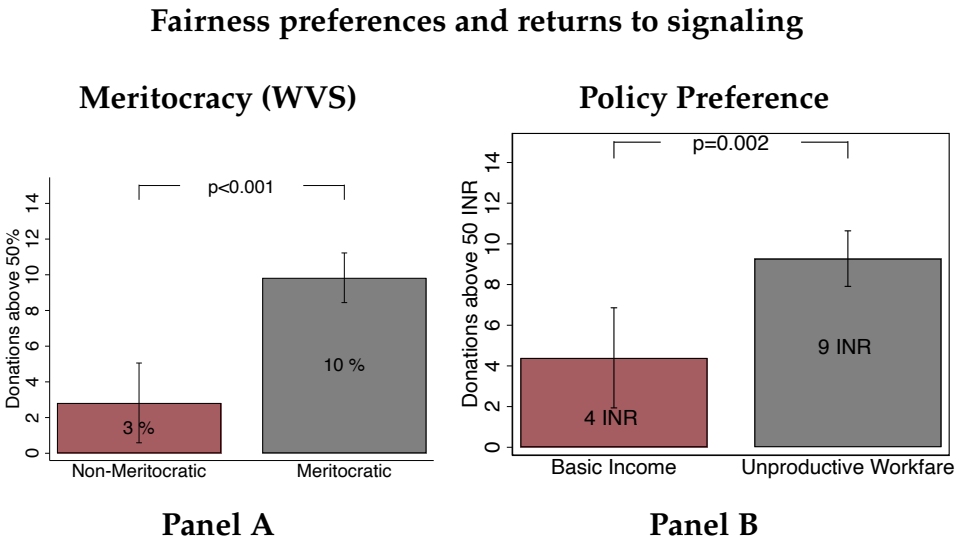

Figure 5: This figure illustrates the relation of returns to signaling with meritocratic beliefs and policy preferences regarding charity. **Panel A** depicts the differential returns to signaling for meritocratic and non-meritocratic donors, while **Panel B** shows the respondents' preferences for policy solutions to address begging.

If there is no source of employment, the government should provide a basic income to every individual, regardless of available work. If there is no source of employment, the government should pay individuals by assigning them tasks that may lack utility or value. As shown in Panel B of figure 5, we find that the premium awarded to beggars with items in the allocation game is significantly correlated with the likelihood that the respondent states a strong support for unproductive workfare policies.

6 Discussion

In this paper, we describe an economic framework to study begging and provide the the first set of evidence on the market for begging, focusing on the role of fairness concerns in shaping it. To model begging, we extend the standard theory of labor supply to incorporate two stylized facts in behavioral development economics. Firstly, we assume that leisure and other non-material sources of utility such as dignity and social status do not matter until hunger is satisfied, i.e., a minimum consumption bundle is consumed. Secondly, we assume that an individual's labor market productivity is dampened until they consume this minimum consumption bundle. This second assumption leads to a range of low-enough ability for which an individual has no viable options in the labor market. For the remaining ranges of ability, payoff maximization gives optimal labor leisure choice and corresponding utility from the labor market. This utility is compared with the utility from begging.

Begging by necessity happens when labor income cannot buy the consumption bundle required for survival, even if one spends all their time in labor. Begging by choice happens

when labor income can meet survival needs, but begging is preferred due to utility from leisure. Finally, begging by misfortune occurs when individuals prefer to work in the labor market but are forced into begging due to unemployment or other labor market barriers. Next assumption in the model is that donors have fairness preferences and prefer donating to a beggar by necessity or misfortune than a beggar by choice. Thus, donations to a beggar are declining in donors' perceived probability that a beggar is begging by choice, which in turn is a function of beggars' productivity and preference for leisure versus work. Donors' fairness preferences create an incentive for the beggars to signal deservingness or that they are not begging by choice. We posit that begging with items is a signal of beggars' deservingness and collect experimental and field data to test this hypothesis.

Our experimental data reveals that begging with items serves as a signal that begging is not by choice or a dis-preference for paid work, influencing donors to view them as more deserving of charity. While donors tend to overestimate the proportion of beggars who prefer free-cash over paid work in both groups, this overestimation is less pronounced among beggars with items. This suggests that donations may be too low for beggars to be choosing to beg out of a preference for leisure. Most beggars exhibit very low numeracy skills, our proxy for ability, further indicating that they may lack viable options in the labor market. In fact, the signal provided by items is not informative of beggars' preferences as there are no significant differences between beggars with and without items.

We derive the theoretical conditions on preference for leisure and ability under which people beg by necessity, choice or misfortune. If donors underestimate the proportion of beggars by misfortune, then they donate less than optimal. In such a case, policies such as banning or criminalizing begging are not effective as returns to begging are already too low, and a high proportion of beggars are begging by misfortune. Welfare policies such as cash transfers and upskilling would be more effective in reducing begging in such a case. However, if donors do not have fairness concerns or underestimate the proportion of beggars by choice, then banning begging would be more effective. Thus, optimal policy to reduce begging can be ascertained by understanding the true causes (choice versus misfortune) and donors' perceptions about the deservingness of beggars and whether any signals of deservingness matter for donations.

Overall, our findings suggest that policies such as banning or criminalizing begging which increase the cost of begging by posing the risk of getting caught or police harrassment; they are not effective. The returns to begging are already too low, and a high proportion of beggars are begging by misfortune. Welfare policies such as cash transfers and upskilling or workfare policies which pay beggars in return for work would be more effective than legal regulations in reducing begging in such a case. Between welfare and workfare though, workfare policies are more likely to receive support by the general population than welfare policies societies where people care a lot about the notions of deservingness for charity tied to willingness and ability to work. Indeed, 80% of our respondents prefer unproductive workfare to unconditional cash transfers.

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A Appendix Survey Locations

A.1 Streets Sample

The following are details about the street sample selection for an observational survey of begging activity, a successful interaction survey of donated amounts, and a survey of beggars' backgrounds and preferences.

1. Temples: We compile the data on temples in Delhi by using travel- and tourism-related sites with the Government of India's website about Delhi Tourism (https://delhitourism.gov.in/) as our primary source.[11] We conduct manual searches for temples, their official websites, Google Business profiles and other available directories to gather complete address of each temple.

2. Shopping Centers and marketplaces: Similar to the process we follow for temples, we collect information about the most popular shopping centers in Delhi using the relevant travel- and tourism-websites where the Government of India's website about Delhi Tourism (https://delhitourism.gov.in/) remains our primary source.[12] After compiling the list, we use the shopping center's Google Business profile or other available directories to get complete addresses.

3. Metro Stations: Dehli metro website https://delhimetrorail.info/ provides a comprehensive list and network of metro stations in Delhi.

4. Live Traffic Data: We append their corresponding GPS coordinates for each site. Using the latitude and longitude information corresponding to each location, we obtain live traffic information within a 100-meter radius of the geographic coordinates. For each road segment within the 100-meter radius of the geo-coordinate, we use "HERE" https://www.here.com/ which provides traffic-related information such as speed (the expected speed in meters per second along the roadway), jamFactor (a value indicating the amount of traffic on the roadway), traversability (whether the road is open or closed), among other statistics.

Based on the information retrieved from the HERE service, we construct a "Jam Score" for each location, reflecting the degree of congestion in the neighborhood within the 100-meter radius. Using local contextual knowledge, we further review the locations (temples, shopping centers, and metro stations) and shortlist them. When finalizing the selection of sample locations, we prioritize locations with a higher "Jam Score" as a proxy for busy spots, indicating a higher

[11] Additional websites used to compile the list of temples in Delhi include Travelogy India (https://www.travelogyindia.com/), Tour My India (https://www.tourmyindia.com/), and Lonely Planet (https://www.lonelyplanet.com/).

[12] Additional websites used for compiling the list included Trip Advisor (https://www.tripadvisor.in/), Trip Savvy (https://www.tripsavvy.com/), among others.

probability of location our respondents would visit/ individuals soliciting charity with or without items would be found.

A.2 Households Sample

Following are the details of the sample selection of households for the perceptions survey experiment with potential donors or the general population of Delhi.

1. MCD Dataset: The Municipal Corporation of Delhi (MCD) provides a dataset containing various colonies under its jurisdiction. These colonies are categorized into A, B, C, D, E, F, G, and H based on the property circle rate in each colony. Category A comprises colonies with the highest property circle rate, while Category H includes colonies with the lowest property circle rate, mostly comprising slums. We use the property circle rate as a proxy for the income level of the residents of the colony.

   The dataset comprises 2311 observations, with details such as the colony name, colony category (A-H), ward name, and ward zone.[13] Using publicly available GEO IQ data on population and area by locality, we merged this data with MCD dataset. The resulting dataset contains income categories (A, B, C, D, E, F, G, or H), population, and the area (in square km) of each locality.

   We calculate the population density of each locality i. We create a dummy taking a value of 1 if the population density of locality i is within 1 standard deviation of Delhi's average population density. We keep all the localities that have a dummy of 1 and belong to income categories D, E, F, or G (removing the extreme tails and retaining upper and lower middle income localities). We conduct 30 surveys in 10 colonies for a total of 300 surveys within each category. We randomize the order of colonies within each income category and conduct the surveys in that order, moving to the next colony if any colony from the random order fails to be included for logistical reasons.

2. Polling Stations Data: The website of Chief Electoral Officer (CEO), Delhi, provides district- and assembly-constituency-wise data for the polling booths in Delhi. Separate files, one for each assembly constituency, are used from this source to create a comprehensive list of polling booths in Delhi. The dataset contains information such as the district name, assembly constituency name, locality, polling area coverage, and the address of each polling station.[14]

   For each selected colony from our merged MCD and GEO IQ dataset, our team identifies the nearest polling stations using the polling data and communicates this information to the field team. The polling stations serve as the starting point for the field team, from which they initiate the data collection process. In cases where a colony has multiple

[13]The full dataset is available here: https://app.mapmyindia.com/mcdApp/colonyList.jsp.
[14]The full dataset is available here: https://ceodelhi.gov.in/PS_ListOn15thOctn.aspx.

associated polling stations, we randomly select one station as the primary polling station, designating the others as backups in case the primary option is inaccessible for any logistical reasons. Surveyors knocked on every fifth household starting from the polling station to conducted the survey, and the surveys within a colony are completed within a day to avoid selection and spillover concerns.

B Appendix Tables

Table B.1: **Balance Table (Donors perceptions survey experiment)**

Variable	With Item (1)	Without Item (2)	p-value (3)
Female	0.449	0.473	0.405
Age (Years)	34.482	34.046	0.530
Caste			
General	0.519	0.494	0.385
SC	0.214	0.208	0.772
ST	0.008	0.018	0.140
OBC	0.204	0.236	0.191
Education (Years)	12.22	12.21	0.939
Married	0.632	0.621	0.709
Have Children (Sample: Married Respondents)	0.928	0.947	0.292
Migrant	0.310	0.290	0.450
Monthly Expenditure (INR)	13960	13297	0.530
MCD Category			
D	0.235	0.260	0.300
E	0.253	0.244	0.715
F	0.248	0.249	0.973
G	0.265	0.247	0.486
Dependency Ratio	0.584	0.598	0.182
Observations	597	607	0.779

*Notes:*This table presents the summary statistics for the donor's covariates by their random assignment to two groups: beggars with items and without.

Table B.2: **Donors Descriptive Statistics**

	Interaction			Active Donors
Variable	**With Item (1)**	**Without item (2)**	**p-value (3)**	**Value (4)**
Female	0.472	0.481	0.809	0.461
Age Category				
Child	0.066	0.060	0.728	0.000
Adult	0.930	0.931	0.983	0.954
Senior	0.003	0.009	0.319	0.046
Education				
None	0.028	0.050	0.158	0.014
Less than Primary	0.022	0.016	0.553	0.055
Greater than Primary	0.949	0.934	0.408	0.931
Religion				
Hinduism	0.807	0.723	0.013	0.886
Islam	0.108	0.182	0.008	0.093
Christianity	0.025	0.022	0.784	0.005
Sikhism	0.028	0.047	0.218	0.007
Migrant	0.364	0.399	0.358	0.300
Dependency	0.270	0.269	0.891	0.591
Do you give money to this person regularly?	0.256	0.233	0.489	
What they said				
Product related	0.491			
God related	0.449	0.623	0.000	
Hunger related	0.522	0.645	0.002	
Children related	0.070	0.091	0.318	
Nothing	0.066	0.075	0.658	
Why donated				
I had a need for the product	0.282			
For charity/help/need	0.630	0.896	0.000	
To get rid of the person	0.089	0.094	0.802	
Beggar received money	0.927	0.984	0.000	
Are you willing to give this item away for free?	0.658			
Giver accepted item	0.823			
Amount (Rs.) just donated	15.839	9.802	0.000	
Amount (out of Rs. 10K) that the giver will donate (hyp.)	5032.595	4410.535	0.011	
Expected monthly income (in Rs.)	32491.200	31647.940	0.672	
Expected monthly expenditure (in Rs.)				13625.940
Caste				
General				0.507
SC				0.211
ST				0.013
OBC				0.220
MCD Code				
D				0.248
E				0.248
F				0.248
G				0.256
Observations	316	318		1204

Notes: This Table presents the summary statistics for the donors in our **Interaction** and **Active Donors** Surveys.

Table B.3: **Beggars Descriptive Statistics**

	Interaction			Active Beggars		
Variable	**With Item (1)**	**Without Item (2)**	**p-value (3)**	**With Item (4)**	**Without item (5)**	**p-value (6)**
Female	0.680	0.664	0.651	0.628	0.631	0.912
Age Category						
Child	0.440	0.277	0.000	0.427	0.345	0.003
Adult	0.478	0.591	0.004	0.506	0.528	0.442
Senior	0.082	0.132	0.043	0.068	0.127	0.000
Education						
None	0.604	0.708	0.006	0.410	0.461	0.075
Less than Primary	0.345	0.211	0.000	0.423	0.412	0.681
Greater than Primary	0.051	0.079	0.152	0.157	0.123	0.087
Migrant	0.364	0.399	0.358	0.581	0.558	0.528
House Type						
None	0.339	0.418	0.039	0.053	0.042	0.401
Kuccha	0.595	0.519	0.054	0.740	0.752	0.632
Pucca	0.066	0.060	0.728	0.203	0.206	0.888
Ever had a job	0.231	0.195	0.268	0.275	0.330	0.037
Soliciting words						
Product related	0.532					
God related	0.475	0.610	0.001			
Hunger related	0.503	0.692	0.000			
Children related	0.117	0.107	0.685			
Nothing	0.054	0.082	0.161			
Amount received (in Rs.)	15.981	9.934	0.000			
Caste						
General				0.077	0.101	0.144
SC				0.208	0.201	0.775
ST				0.035	0.031	0.728
OBC				0.241	0.193	0.043
Want to do a job				0.840	0.801	0.072
Police Misbehavior				0.264	0.194	0.004
Have an ID Card				0.858	0.830	0.174
Treatment in Hospital				0.654	0.691	0.167
Married				0.381	0.400	0.479
Have Children				0.926	0.930	0.878
Want to study				0.555	0.573	0.580
Want to educate children				0.744	0.735	0.871
Monthly Expenditure (in Rs.)				7050.878	7044.977	0.985
Money (in Rs.) collected in a day (exp)				238.797	200.163	0.000
Observations	316	318		607	612	

Notes: This Table presents the summary statistics for the beggars in our **Interaction** and **Active Beggars** Surveys.

Table B.4: **Descriptive Statistics - Beggars With and Without Items**

Type	All			With Item			Without Item		
	Mean	SD	%	Mean	SD	%	Mean	SD	%
Total Beggars	7.78	9.16	100	2.41	3.39	100	5.37	8.11	100
Mobility									
Moving	5.01	5.92	64.42	1.72	2.98	71.21	3.29	4.98	61.36
Stationary	2.76	4.78	35.42	0.70	1.39	28.79	2.06	4.29	38.41
Gender									
Male	3.79	5.42	48.75	1.37	1.89	56.57	2.43	4.86	45.23
Female	3.95	5.07	50.78	1.05	1.74	43.43	2.90	4.69	54.09
Other	0.10	0.51	1.25	0	0	0	0.10	0.51	1.82
Age									
Kids	0.93	1.86	11.91	0.27	0.75	11.11	0.66	1.64	12.27
Teenagers	1.02	1.59	13.17	0.60	1.17	24.75	0.43	1.12	7.95
Adults	4.83	6.14	62.07	1.37	1.91	56.57	3.46	5.58	64.55
Seniors	1	2.65	12.85	0.18	0.52	7.58	0.82	2.54	15.23
Grouping Status									
Alone	5.56	6.70	71.47	2.02	2.92	83.84	3.54	5.71	65.91
In-Group	2.11	4.01	27.12	0.39	0.97	16.16	1.72	3.93	32.05
Child Present									
In-Group w. Child	0.56	1.13	7.21	0.07	0.31	3.03	0.49	1.11	9.09
Alone w. Child	0.68	1.60	8.78	0.11	0.42	4.55	0.57	1.56	10.68
Without Child	6.48	7.98	83.23	2.18	3.22	90.40	4.29	7.01	80
Disability									
Disabled	0.33	0.82	4.23	0.02	0.16	1.01	0.30	0.75	5.68
Abled	7.44	8.79	95.61	2.39	3.39	98.99	5.05	7.74	94.09
Footwear									
With Footwear	6.26	7.68	80.41	1.94	2.96	80.30	4.32	6.68	80.45
Without Footwear	1.51	2.62	19.44	0.48	0.88	19.70	1.04	2.50	19.32
Clothing									
Fully Clothed	6.56	8.12	84.33	2.02	2.89	83.84	4.54	7.21	84.55
Partially Clothed	0.83	1.76	10.66	0.28	0.69	11.62	0.55	1.60	10.23
Religiously Clothed	0.38	1.04	4.86	0.11	0.57	4.55	0.27	0.86	5

Notes: The table reports descriptive statistics of the beggars in the marketplace, commuting zone and religious places.

Table B.5: **Field Surveys**

Variable		With Item (1)	Without item (2)	p-value (3)
Panel A: Beggars' Characteristics				
Female		0.380	0.569	0.000
Age Category				
	Child	0.315	0.214	0.002
	Adult	0.608	0.643	0.341
	Senior	0.048	0.133	0.000
With Child		0.154	0.163	0.762
Observations		314	406	
Panel B: Donors' Characteristics				
Female		0.400	0.486	0.000
Senior		0.233	0.178	0.000
In Group		0.556	0.362	0.000
With Child		0.342	0.139	0.000
Observations		2695	2378	
Panel C: Interaction Characteristics				
Total Interactions (per beggar in 20 mins)		27.084	28.723	0.619
Successful Interactions (per beggar in 20 mins)		11.783	12.012	0.881
Observations		83	83	

Notes: This Table presents the summary statistics for the beggars' and donors' characteristics and the interaction rates in our **observational surveys**.

Table B.6: **Extensive Margin: Negative Binomial**

	Interaction Rate	Donation Rate
Beggar with item	0.052	0.005
	(0.038)	(0.041)
	[0.170]	[0.893]
Mean [of beggar w/o item]	11.27	0.45
Effect size [SD]	0.01	0.01
Controls	Yes	Yes
No. of Observations	2970	2962

Notes: Coefficients in columns (1) and (2) are based on Negative Binomial model. Interaction rate is the number of interactions per beggar within a 20 minute time frame. Donation rate is the probability that an interaction between a beggar and a passer-by results in a donation. Robust standard errors, clustered at the the beggar-giver pair level are reported in parentheses and p-values are reported in square brackets. Controls include beggars' and non-beggars' characteristics: age group, gender, whether in group, whether with child, whether wearing footwear (only for beggar), whether fully clothed (only for beggar), day of the week, and street type (religious, commuting or marketplace) fixed effects.

Table B.7: **Within Design: Potential Donors' Perception**

	Free-cash takers	Free-riders	Heads per beggar	Low Numeracy	Gang Affliation
Beggar with item	-6.532	-4.619	-1.781	-5.800	-4.610
	(0.793)	(0.812)	(0.576)	(0.780)	(0.675)
	[0.000]	[0.000]	[0.002]	[0.000]	[0.000]
Mean [of beggar w/o item]	50.34	43.16	65.37	48.61	42.39
Effect size [SD]	-0.24	-0.17	-0.10	-0.20	-0.17
Controls	Yes	Yes	Yes	Yes	Yes
No. of Observations	2408	2408	2408	2408	2408

Notes: Coefficients are based on OLS regressions. Robust standard errors are reported in parentheses and p-values are reported in square brackets. Controls include potential donors' covariates and include age, gender, caste, first-generation migrant to Delhi, education, marital status, children, the ratio of non-earning member to household size. Fixed effects for income-strata by colonies are included.

C Appendix Figures

C.1 Photo collages used for the belief elicitation experiment

Figure C.1: This figure illustrates the two sets of collages that we used in the belief elicitation survey experiment with the general population of potential donors at their households. The pictures are of actual beggars, photographed with their consent for research purposes.

C.2 Distribution of donors' perceptions of beggars (between-subjects differences)

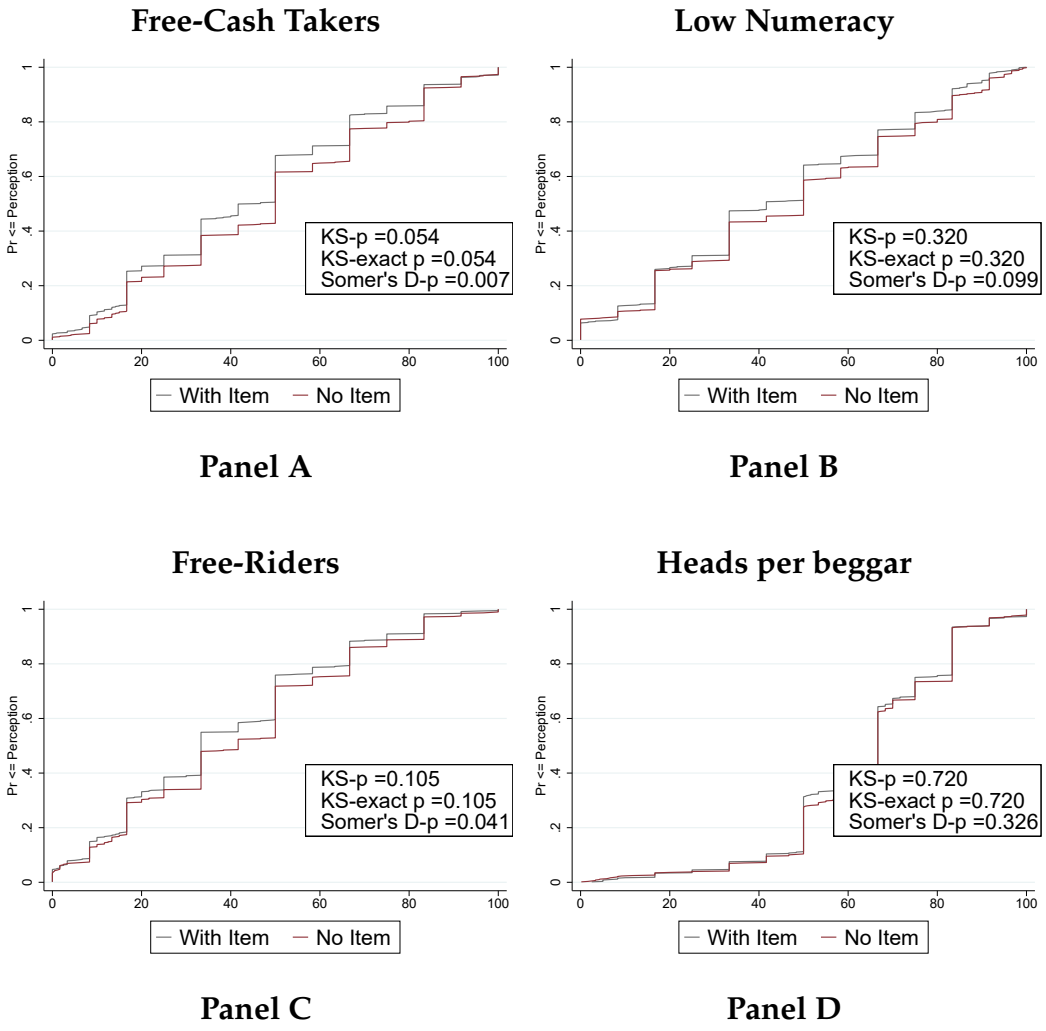

Figure C.2: This figure illustrates the distribution of potential donors' perceptions of beggars across various metrics using the between-subject analysis: **Panel A** shows the percentage opting for free cash, **Panel B** presents the percentage with numeracy levels below 100, **Panel C** indicates the percentage perceived as free-riding, and **Panel D** displays the number of times heads is reported per beggar (with values above 50 reflecting perceptions of dishonesty).

C.3 Distribution of donors' perceptions of beggars (within-subjects differences)

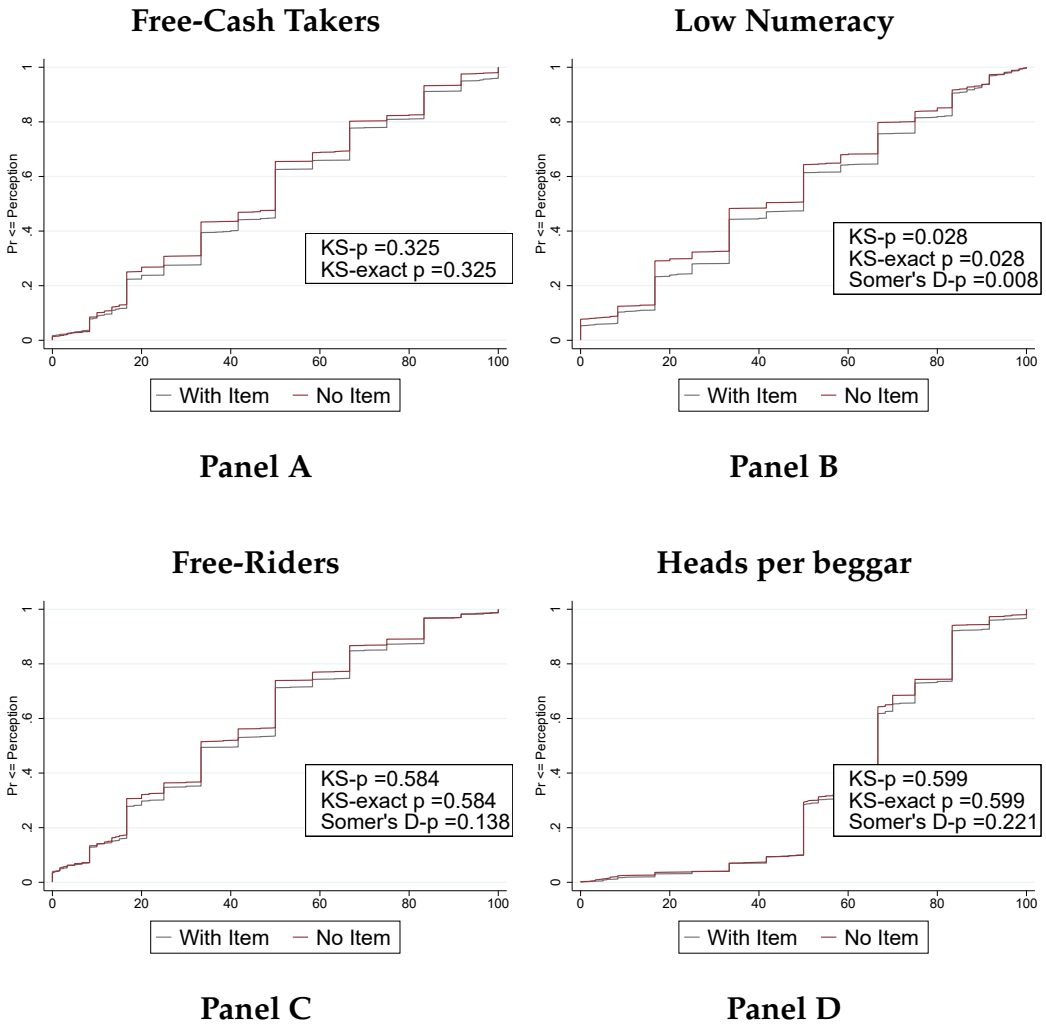

Figure C.3: This figure illustrates the distribution of donors' perception of beggars across various metrics using the within analysis: **Panel A** shows the perceived percentage opting for free cash, **Panel B** presents the perceived percentage with numeracy levels below 100, **Panel C** indicates the percentage perceived as free-riding, and **Panel D** displays the predicted number of times heads is reported per beggar (with values above 50 reflecting perceptions of dishonesty).