Southern Economic Journal

WILEY | SEA SOUTHERN ECONOMIC ASSOCIATION

RESEARCH ARTICLE OPEN ACCESS

Beggars as Rational Choosers

Peter T. Leeson[1] | R. August Hardy[2] | Paola A. Suarez[3]

[1]Department of Economics, George Mason University, Fairfax, Virginia, USA | [2]Department of Economics, Randolph College, Lynchburg, Virginia, USA | [3]Department of Economics and Legal Studies, Seton Hall University, South Orange, New Jersey, USA

Correspondence: R. August Hardy (ahardy@randolphcollege.edu)

Received: 18 January 2025 | **Accepted:** 7 August 2025

Funding: The authors received no specific funding for this work.

ABSTRACT

American municipalities increasingly regulate panhandling. That regulation is controversial. The determinants of panhandling activeness are unknown, and it is doubted whether panhandling activity responds rationally to incentives. To shed light on these issues, we collect data on hundreds of panhandlers and the passersby they solicit at Metrorail stations in Washington, DC. Consistent with a simple model of profit-maximizing panhandling, we find that panhandlers solicit more actively when they compete, when they have more human capital, and when passersby are more numerous and responsive to solicitation. Beggars are choosers and they appear to be rational ones.

1 | Introduction

Panhandlers—often called "beggars"—are street people who solicit donations from passersby in public spaces.[1] Despite panhandlers' ubiquity in urban areas, little is known about their behavior, which literally begs for explanation.[2] Some panhandlers beckon you with cardboard signs. Others beseech you with impassioned vocal pleas or by noisily shaking a cup. Some panhandlers stand passively, like urban wishing wells waiting to receive your change. Others perform music or give away newspapers. And still others lie on the ground practically asleep. Panhandlers may solicit fixed sums from passersby, or they may invite you to pay what you want. Do panhandling activities display patterns? If so, what do they look like, and what explains them?

Answering these questions is important to American municipalities, which increasingly regulate panhandling. Between 2006 and 2019, the prevalence of citywide municipal bans on various panhandling activities more than doubled (NLCHP 2019). Of central interest to such regulations is so-called "aggressive" panhandling. While the meaning of "aggressive" varies by municipality, its general concern is with more active forms of panhandler solicitation. Regulation of panhandling, however, is controversial. Apart from the question of its constitutionality, there is also the question of its utility.[3] The determinants of panhandling activeness are unknown, and it is doubted whether panhandling activity responds rationally to incentives.

Popular perception of homeless people, of which most panhandlers are a subset (Snow and Anderson 1993; O'Flaherty 1996; Lee and Farrell 2003; Lei 2013), often sees them as a "distinct 'other' due to their" allegedly "irrational public behavior" (Kim et al. 2023, 190). In one recent survey of attitudes toward homeless people taken in South Carolina, for example, the mean respondent at least somewhat agreed with the statement that one "cannot reason with a homeless person" (Snow-Hill 2019, 78). Some legal and policy scholarship expresses similar doubts about the rationality of street people. According to one such expression, "the whole subject of rationality is difficult with homeless populations, because such a high proportion of the sample are substance abusers and/or mentally ill" (Conroy 2001, 300). Similarly, according to another, "'rational utility maximizer' ... is an improbable characterization of the homeless person who has had to confront 'life on the street'" (Strauss and Tomback 1985, 559).

[Correction added on September 12, 2025, after first online publication: author affiliation has been updated in this version]

Whether panhandlers can be so characterized is an important question for policymakers given that policy is of dubious usefulness for influencing behavior that does not respond rationally to incentives (Leeson and Hardy 2022). In the context of this paper, panhandling behavior can be said to respond rationally to incentives if it is consistent with the simple model of profit-maximizing panhandling developed below, and vice versa. That model analyzes a panhandler's choice of how actively to solicit.

Two recent studies economically analyze other aspects of panhandling behavior. Dordick et al. (2018) find that panhandlers in downtown Manhattan moved to locations where passerby traffic increased following an influx of tourists—a movement consistent with rational responsiveness to incentives. Leeson et al. (2022) find that panhandling rates of return tend toward equality across Metrorail stations in Washington, DC—a tendency consistent with panhandler locational choices that are maximizing. The present study investigates determinants of panhandling activeness and its response to incentives.

For that purpose we collect data on hundreds of panhandlers and the passersby they solicit at Metrorail stations in Washington, DC. To measure how actively panhandlers solicit and to discern their pricing schemes, we observe panhandlers soliciting. To measure panhandlers' human capital, we give them a written quiz containing mathematical story problems. To measure passerby responsiveness to solicitation, we solicit Metrorail riders for directions. And to measure competition between panhandlers, we count the number of panhandlers present at each Metrorail station during the same hour.

The data reveal clear panhandling behavioral patterns. Panhandlers solicit more actively when they have more human capital, when passersby are more responsive to solicitation, and when passersby are more numerous. Panhandlers solicit less actively when they compete. Most panhandlers use pay-what-you-want pricing. These behaviors are consistent with a simple model of profit-maximizing panhandling. Beggars are choosers and they appear to be rational ones.

2 | A Model of Profit-Maximizing Panhandling

We begin by developing a model of profit-maximizing panhandling. Our model is grounded in a few observations. First, panhandlers "support themselves by ... engaging the consciences of passersby" through solicitation (Lankenau 1999, 204). Second, panhandler solicitation is generally regarded as a nuisance. It threatens to create "psychological discomfort ... in pedestrians," such as guilt, awkwardness, shame, even fear (Ellickson 1996, 1181; Burns 1992).[4] Third, pedestrians are willing to pay a modest price to avoid that discomfort. Passersby will, for example, divert their paths to circumvent panhandlers if they can do so easily (Goldstein 1993; Ellickson 1996; Lee and Farrell 2003; Smith 2005)—but often they cannot.

Given these observations we treat panhandling as a form of harassment. In this we follow Becker (1996), according to whom passersby give to panhandlers because the "appeals of beggars make them feel uncomfortable or guilty" if they decline, "induc[ing] them to part with a little of their wealth" (p. 232). Solicitation by a panhandler in our model thus imposes psychological discomfort on passersby unless they pay him their value of avoiding that discomfort.

Consider first a public space worked by a single profit-maximizing panhandler. The space is traveled by a continuum of $\dot{n} \in [0, N]$ passersby (per unit of time) who encounter the panhandler and whom he solicits. Each passerby can feel some maximum amount of panhandling-imposed discomfort, whose avoidance she values g_i. Passersby have unit demand for avoiding that discomfort, distributed uniformly on the interval $[0, G]$.

If the panhandler's solicitation threatened passersby with the maximum discomfort they can feel, the panhandler would face the aggregate discomfort-avoidance demand curve $D_{\max} \equiv g = G - \dot{n}G/N$, the highest demand curve achievable in this space, where the panhandler's total revenue equals the area under $D_{\max}$. The actual demand curve the panhandler faces, however, depends on two additional factors: how actively he solicits, $a \in [0, 1]$, and his human capital endowment, $k \in [0, 1]$. Call this realized demand curve $D \equiv g = Ga^{1/2}k - \dot{n}G/N$, which may lie on or below $D_{\max}$, where the panhandler's total revenue equals the area under D.

The panhandler chooses how actively to solicit, a. He might, for example, simply sit on the ground in view of passersby, which is minimally active. Somewhat more actively, he might present a sign to passersby or, more actively yet, address passersby vocally. Still more actively, the panhandler might, for instance, give away newspapers to passersby or perform music.

The panhandler knows the distribution of g_i but not its value for any passerby. He therefore solicits all N passersby and does so with the same a. More active solicitation threatens passersby with more discomfort. Passersby feel guiltier declining a panhandler who, for instance, makes an impassioned vocal plea for help than declining a panhandler who sits silently. The panhandler therefore extracts larger payments from passersby when he solicits more actively. Inframarginal passersby, who pay the panhandler a positive amount even if he solicits less actively, now pay him more. And marginal passersby, who do not pay the panhandler anything if he solicits less actively, now pay him a positive amount.

The panhandler's human capital endowment, k, moderates the effectiveness of his solicitation activeness in extracting payments from passersby by moderating its effectiveness in threatening passersby with discomfort. For a given activeness, the more human capital the panhandler has, the more discomfort his solicitation threatens. A panhandler who solicits with a sign, for example, can design a more persuasive sign if he has more human capital, thereby imposing more discomfort on passersby if they decline him.

When the panhandler solicits as actively as possible ($a = 1$) and his human capital endowment is as large as possible ($k = 1$), $D = D_{\max}$. He thus receives payments from N passersby and earns total revenue $GN/2$. When the panhandler solicits less actively ($a < 1$) or has less human capital ($k < 1$), $D < D_{\max}$. He thus receives payments from $a^{1/2}kN$ passersby and earns total revenue $Gak^2N/2$.

Although it yields him more revenue, soliciting more actively is more costly for the panhandler. Performing, for example,

requires more effort than simply sitting. The amount of effort the panhandler must expend to solicit with a given activeness (per unit of time) is the same whether he encounters few passersby or many, such that his total cost of panhandling is a^2.

Figure 1 illustrates the panhandler's choice problem graphically. The panhandler maximizes

$$\max_a \; Gak^2N/2 - a^2$$

He thus chooses

$$a^* = \begin{cases} \mathrm{Gk^2N}/4 & \text{if } G < 4/k^2N \\ 1 & \text{if } G \geq 4/k^2N \end{cases}$$

and by doing so earns

$$\Pi^* = \begin{cases} \left(\mathrm{Gk^2N}/4\right)^2 & \text{if } a^* < 1 \\ \left(\mathrm{Gk^2N} - 2\right)/2 & \text{if } a^* = 1 \end{cases}$$

a^* and Π^* are increasing in k, G, and N. The panhandler solicits more actively and earns more profit when he has more human capital, when passersby are more responsive to solicitation, and when passersby are more numerous.

To analyze panhandling competition, suppose the space is worked by $s > 1$ panhandlers who vary in k. Competition proportionately reduces the number of passersby that each panhandler encounters such that each solicits only N/s passersby. At a subway station, for example, when multiple panhandlers are present, each panhandler establishes his own "space within the space," for instance by positioning himself such that he encounters a stream of passersby coming up one escalator while another panhandler does the same for a different escalator. Exiting subway riders tend to distribute themselves equally across escalators since doing so permits them to exit more quickly. The result is an equal stream of passersby for each panhandler.

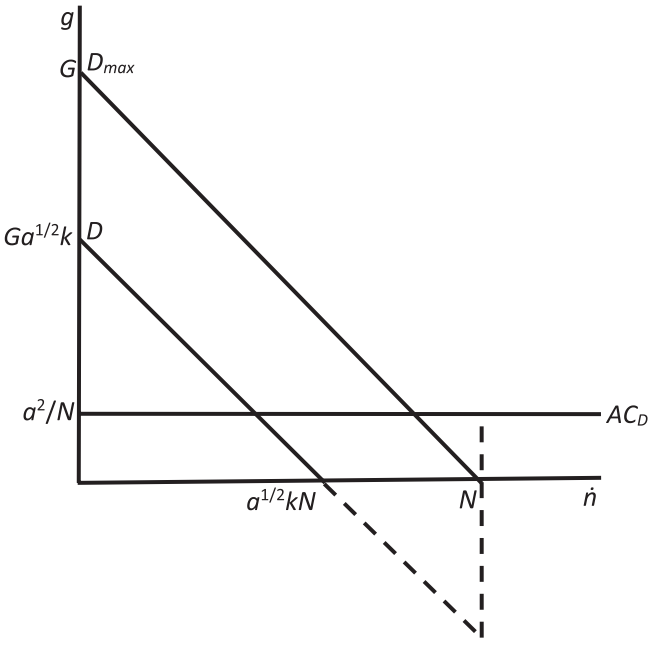

FIGURE 1 | Panhandler choice problem.

A panhandler, j, who competes with $s-1$ other panhandlers therefore chooses

$$A_j^* = \begin{cases} a_j^*/\mathrm{s} & \text{if } G < 4s/k_j^2N \\ 1 & \text{if } G \geq 4s/k_j^2N \end{cases}$$

and earns

$$\pi_j^* = \begin{cases} \Pi_j^*/\mathrm{s2} & \text{if } A_j^* < 1 \\ \Pi_j^*\left[\left(\mathrm{Gk_j^2N} - 2\mathrm{s}\right)/\left(\mathrm{Gk_j^2Ns} - 2\mathrm{s}\right)\right] & \text{if } A_j^* = 1 \end{cases}$$

A^* and π^* are decreasing in s. Panhandlers solicit less actively and earn less profit when they face more panhandling competition.

Finally, consider panhandler pricing. Recall that to avoid the discomfort with which a panhandler's solicitation threatens her, a passerby must pay the panhandler her value of avoiding that discomfort, g_i, the "pizzo" required by her conscience to protect itself against the psychological injury of declining the panhandler's solicitation. That is extremely useful to panhandlers who, recall, know the distribution of g_i but not its value for any passerby. For by simply letting passersby pay what they want, panhandlers let passersby "price discriminate themselves" perfectly. "True" fixed pricing—whereby a panhandler solicits a fixed sum from passersby and refuses donations that are smaller—can therefore never increase his profit.

In contrast, "suggested-sum" fixed pricing—whereby a panhandler solicits a fixed sum from passersby but accepts donations of any size—does not sacrifice perfect price discrimination and may increase profit for some panhandlers. To see how, consider a panhandler who solicits passersby by freely giving them newspapers he has purchased. Such a panhandler's higher solicitation cost goes beyond exerting more effort, which is largely observable to passersby. His purchase of newspapers entails an unobservable cost of which many passersby are thus unaware. Passersby may feel guiltier declining the panhandler if they know he had to buy the paper than if they think it was given to him for free, for in the former case, passersby impose a pecuniary loss on the panhandler if they decline him. To extract the largest payment possible, the panhandler thus needs to communicate to passersby the unobservable portion of his higher cost. He can do that by soliciting a fixed sum that includes his cost of buying the paper, and his message is credible if the party from whom he bought the paper will verify the fact.

3 | Data and Procedures[5]

3.1 | Metrorail Stations

For 10 months in 2016–2017, we visited 25 Metrorail stations and the intersection of Wisconsin Avenue and M Street in Georgetown—a popular shopping corridor—to collect data on

panhandlers and the passersby they solicit.[6] Metrorail (Metro) is the public rapid-transit system that serves the Washington metropolitan area.[7] It has six lines, 91 stations, and is the third busiest rapid-transit system in the United States, hosting more than 260 million riders annually (APTA 2017).[8]

Metro provides an ideal setting to study the behavior of panhandlers. Its stations furnish well-defined public spaces where we can observe large numbers of panhandlers and the passersby they solicit. DC code permits panhandling on public property but not at transportation stations. It does not, however, specify the distance from Metro station exits at which panhandling becomes permissible. Whatever that distance, it is satisfied by the panhandlers who solicit at the Metro stations in our study. We observed hundreds of panhandlers for hundreds of hours over a period of 10 months and did not observe a single panhandler being interfered with by Metro Transit Police or other authorities. Lawful or simply ignored, panhandling in the Metro spaces we study proceeds unmolested.

Figure A1 maps Metrorail. Solid circles identify stations in our sample. They cover all six Metro lines and service nearly half of all Metro riders during our study period. Table A1 reports the average number of riders who exited each sample station per sample month.[9] The busiest station averages nearly 600,000 exiting riders per month. The least busy station averages just over 40,000 exiting riders per month.

3.2 | Panhandlers

We made a total of 242 Metro station visits to collect data on panhandlers. We visited each sample station an average of approximately nine times over 4 months.[10] On each visit we canvassed a one square-block area around the station exit(s) for panhandlers.[11] Every street person observed soliciting donations from passersby was considered a panhandler. That includes street people handing out items freely, most notably the "street newspaper" *Street Sense*, for which the masthead informs a "donation" is "suggested" and therefore optional.[12] It excludes vendors selling merchandise such as flowers or umbrellas, for which payment is required. Street people were identified by appearance: the "disheveled, [and] apparently destitute" (O'Flaherty 1996, 7). Our data contain 258 panhandlers from 14 Metro stations. Two-hundred eighteen of those panhandlers are unique.

For each panhandler we collected five types of data: his solicitation activities; his pricing scheme; his willingness to take a short math quiz in exchange for cash payment; his quiz performance (if so willing); and his observable demographic characteristics.

To collect data on panhandlers' solicitation activities, we discreetly observed panhandlers solicit. We assigned panhandler solicitation activities to one or more of five categories "according to the degree of physical activity or directness shown in their begging deportment" (Fabrega 1971, 282). From least to most active the categories are: (1) lying or sitting on the ground in view of passersby; (2) standing in view of passersby; (3) presenting a sign to passersby; (4) addressing passersby vocally or noisily shaking a cup; (5) performing or giving away items to passersby.[13] Table 1 reports the frequency with which the unique panhandlers in our data solicit with these activities. Approximately 60% lie or sit the ground; 40% stand; 20% use a sign; 55% are vocal or noisily shake a cup; 22% perform or give away items. No panhandlers we observed who performed or gave away items were passerby "attractions," and we did not see—and cannot imagine—passersby expending time or effort to deliberately expose themselves to these panhandlers. Thus, while in some panhandling environments certain panhandlers, such as skilled performers, might be regarded as providing passersby "public goods," no panhandlers observed in the environment we studied could be so regarded.

We used the same procedure as above to collect data on panhandlers' pricing behavior. We assigned panhandler pricing schemes to one of two categories: requested a fixed amount from passersby or did not, in which case "an amount is ... left to the hit [i.e., passerby] to decide" (Stark 1992, 346).[14] Table 1 reports the frequency with which the unique panhandlers in our data request a fixed sum. Approximately 17% of panhandlers request a fixed sum, all of whom give away *Street Sense*, whose masthead suggests a donation of $2.

TABLE 1 | Panhandler and passerby characteristics.

Panel A: Categories	**1**	**2**	**3**	**4**	**5**	**Use fixed pricing**	**Total**
Panhandler activeness, %	59.63	40.37	20.18	54.59	21.56	17.43	
Number of panhandlers	130	88	44	119	47	38	218
Panhandler human capital, %	4.0	96.0	72.67	32.0	1.33		
Number of panhandlers	6	144	109	48	2		150
Passerby responsiveness, %	23.11	15.41	61.48	51.78	22.68		
Number of passersby	162	108	431	363	159		701

Panel B: Demographics	**Male**	**Female**	**Black**	**White**	**Other race**	**English difficulty**	**Physically disabled**
%	75.23	24.77	86.19	8.57	5.24	3.21	1.83
Number of panhandlers	164	54	181	18	11	7	4

Note: Panhandler activeness categories: 1 = lies or sits on the ground; 2 = stands; 3 = presents a sign; 4 = vocal or noisily shakes a cup; 5 = performs or gives away items. Panhandler human capital categories: 1 = illiterate; 2 = literate; 3 = answers Q1 correctly; 4 = answers Q2 correctly; 5 = answers Q3 correctly. Passerby responsiveness categories: 1 = ignores; 2 = acknowledges but keeps walking; 3 = stops to acknowledge; 4 = stops and provides directions; 5 = stops and provides directions with a map. Use fixed pricing = requests a fixed sum from passersby. Race unknown for eight panhandlers (not included in race cells).

To every panhandler we extended the following offer: "Hello, would you like to earn some money by taking a short math quiz? You'll receive a dollar for your participation and an additional dollar for each correct answer. You can earn a total of $4. Would you like to participate?" One hundred fifty unique panhandlers, or approximately 70% in our data, accepted our offer. Each was given a pen and a piece of paper with the following questions:

Q1: Andy has $22. If he buys dinner for $7, how much money does he have left?

Q2: There are 21 men on the bus. That is three times the number of women on the bus. How many women are on the bus?

Q3: If you flip a quarter four times, what is the probability it is heads all four times?

Answering Q1 correctly requires the ability to add/subtract; Q2, the ability to multiply/divide; Q3, the ability to calculate probability.

If a panhandler indicated that he could not read the quiz, he was recorded as illiterate and the questions were read to him. If not, he was recorded as literate. Written and oral answers were accepted and there was no time limit. When a panhandler indicated that he was done with the quiz, his score was calculated and he was paid cash.

We assigned panhandlers' quiz outcomes, including literacy, to one or more of five categories. From lowest to highest outcome, the categories are: (1) illiterate; (2) literate; (3) answered Q1 correctly; (4) answered Q2 correctly; (5) answered Q3 correctly. Table 1 reports the frequency with which the unique panhandlers in our data achieve these outcomes. Ninety-six percent are literate; 73% answer Q1 correctly; nearly a third answer Q2 correctly; 1.3% answer Q3 correctly.[15]

We did not observe panhandlers' ages or panhandling receipts. We did, however, observe whether panhandlers were black, white, or another race; their gender; whether they had difficulty speaking English; and whether they appeared physically disabled. Table 1 reports the frequency of these demographic traits among the unique panhandlers in our data. More than 86% are black; approximately 9% are white; 5% are other races. More than three-quarters of panhandlers are male; about 3% have difficulty speaking English; and 1.8% appear physically disabled.

3.3 | Passersby

We collected data on the passersby whom panhandlers solicit during 93 of our 242 Metro station visits. We visited each station for that purpose an average of approximately four times over 2 months. Any adult observed exiting a Metro station escalator was considered a passerby.[16] We solicited them with the following request: "Hello, can you give me directions to [local landmark]?" After a solicited passerby had traveled at least a block away, we solicited the next person to exit the station escalator. We repeated this procedure for three train arrivals.[17] Our data contain 701 passersby.

Table A1 identifies the local landmark to which we solicited directions at each station. All landmarks would be known to passersby familiar with the area and are within walking distance of their respective stations. No landmarks are visible from the data collection area.

We assigned passerby responses to solicitation to one or more of five categories. From least to most responsive, the categories are: (1) ignored solicitation; (2) acknowledged solicitation but kept walking; (3) stopped to acknowledge solicitation; (4) stopped and provided directions; and (5) stopped and provided directions by sharing a map. Table 1 reports the frequency with which the passersby in our data respond to solicitation in these ways. Approximately 23% ignore solicitation; 15% acknowledge solicitation but keep walking; 61% stop to acknowledge solicitation; 52% stop and provide directions; 23% stop and provide directions by sharing a map.

3.4 | Variables

We use the foregoing data to construct several variables for empirical analysis. The first variable measures how actively each panhandler solicits. Its value ranges from one to five, corresponding to a panhandler's most active solicitation activity, where a higher value means more activeness. For example, our panhandler activeness variable assigns a value of four to a panhandler who addressed passersby vocally (category 4) while lying on the ground (category 1) but did not perform or give away items (category 5). We measure each panhandler's human capital the same way. Our panhandler human capital variable thus corresponds to a panhandler's highest quiz outcome, one to five, where a higher value means more human capital. Our third variable measures passerby responsiveness to solicitation at each Metro station. It computes the average of passersby's most responsive reaction to solicitation, one to five, where a higher value means more responsiveness.

As an alternative way to measure these variables, we create an additive version of each. Our additive panhandler activeness variable sums the values of each solicitation activity in which a panhandler engaged, one to five, where a higher value means more activeness. For example, our additive panhandler activeness variable assigns a value of five to a panhandler who addressed passersby vocally (category 4) while lying on the ground (category 1) but did not use a sign (category 3) or perform or give away items (category 5). We construct our additive panhandler human capital variable the same way. Similarly, our additive passerby responsiveness variable computes the station average of passersby's summed reactions to solicitation.

To measure each panhandler's demographic characteristics, we create indicator variables for his (or her) gender, race, difficulty speaking English, and physically disabled appearance. To measure the degree of panhandling competition that each panhandler faces, we count other panhandlers present at the same Metro station during the same hour. Finally, to measure the number of passersby that panhandlers encounter, we use data from the Washington Metropolitan Area Transit Authority (WMATA) on the number of Metro riders who exit each station

every month during our study period. Table 2 presents summary statistics for all variables.

4 | Empirical Analysis

Table 3 investigates the determinants of how actively panhandlers solicit. Each observation is a unique panhandler. We estimate ordered probit and OLS models that use the benchmark version of our panhandler activeness, panhandler human capital, and passerby responsiveness variables. All regressions calculate robust standard errors clustered by Metro station and include hour and date fixed effects. Station fixed effects are possible only in specifications that exclude passerby responsiveness since that variable is measured at the station level.

Our results reveal clear panhandling behavioral patterns. Those patterns are consistent with profit-maximization per the model developed in Section 2. Panhandlers solicit more actively when they have more human capital, when passersby are more responsive to solicitation, and when passersby are more numerous. Panhandlers solicit less actively when they face more panhandling competition. Female panhandlers also solicit less actively.

A one standard deviation increase in panhandler human capital, passerby responsiveness, and the number of passersby is associated with a 0.21, 0.45, and 0.19 standard deviation increase in panhandler activeness, respectively. A one standard deviation increase in panhandling competition is associated with a 0.31 standard deviation decrease in panhandler activeness. Table A2 finds similar results using the additive versions of our variables.

Our data on panhandler pricing also displays a pattern. It, too, is consistent with profit-maximization per the logic developed in Section 2. Eighty-three percent of panhandlers in our sample do not request a fixed sum. Further, the 17% of panhandlers who do so—all of whom, recall, give away *Street Sense*—stand to benefit from "suggested-sum" fixed pricing.

Before such panhandlers have papers to give away, they must buy copies from the publisher, Street Sense Media, for 50 cents apiece. Requesting a fixed sum permits these panhandlers to communicate their higher input cost to passersby. Because that sum is fixed by Street Sense Media—printed on the paper's masthead—it also permits the panhandlers to communicate their higher input cost to passersby credibly.

Fixed pricing is profit-maximizing for *Street Sense*-distributing panhandlers only if it is the "suggested sum" variety, which does not sacrifice perfect price discrimination. In contrast, if *Street Sense*-distributing panhandlers reject donations smaller than $2—in other words, if they use "true" fixed pricing—their pricing behavior would reduce profits. We do not observe whether any panhandler in our sample declined a donation, so we cannot rule out the latter possibility. It is, however, hard to imagine a panhandler declining any donation, no matter how modest. The fixed-pricing behavior of panhandlers who give away *Street Sense* thus also seems likely to be profit-maximizing.

5 | Conclusion

A growing number of American municipalities regulate panhandling. That regulation is controversial. Apart from the question of its constitutionality, there is also the question of its utility. The determinants of panhandling activeness are unknown, and it is doubted whether panhandling activity responds rationally to incentives. To shed light on these issues, we collected data on hundreds of panhandlers and the passersby they solicit at Metrorail stations in Washington, DC. Panhandlers solicit more actively when they have more human capital, when passersby are more responsive to solicitation, and when passersby are

TABLE 2 | Summary statistics.

Variable	Obs.	Mean	SD	Min.	Max.
Panhandler activeness	218	3.234	1.480	1	5
Panhandler activeness, additive	218	5.271	3.507	1	13
Panhandler human capital	150	3.047	0.822	1	5
Panhandler human capital, additive	150	5.487	2.887	1	14
Passerby responsiveness	218	3.104	0.175	2.885	3.60
Passerby responsiveness, additive	218	5.736	0.631	4.769	7.467
Number of passersby	218	478.163	138.021	125.967	690.533
Panhandling competition	194	2.098	1.920	0	7
Female	218	0.248	0.433	0	1
White	210	0.086	0.281	0	1
Other race	210	0.052	0.223	0	1
English difficulty	218	0.032	0.177	0	1
Physically disabled	218	0.018	0.135	0	1

Note: Observations are unique panhandlers. See Table A3 for variable definitions.

TABLE 3 | Determinants of panhandler activeness.

	Ordered Probit					OLS
Dependent variable: Panhandler activeness	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Panhandler human capital		0.795	0.650	0.642	0.614	0.384
		(0.105)	(0.112)	(0.107)	(0.104)	(0.152)
Passerby responsiveness			4.671	4.220	4.770	3.792
			(1.268)	(1.044)	(0.959)	(1.084)
Number of passersby				0.001	0.003	0.002
				(0.001)	(0.001)	(0.001)
Panhandling competition					−0.267	−0.240
					(0.082)	(0.098)
Female	−0.692	−1.398	−0.927	−0.991	−1.064	−0.736
	(0.192)	(0.207)	(0.155)	(0.168)	(0.161)	(0.208)
White	−0.474	−2.181	−0.891	−0.941	−1.124	−0.920
	(0.289)	(0.250)	(0.541)	(0.546)	(0.503)	(0.667)
Other race	−0.729	0.020	−0.535	−0.442	−0.787	−0.710
	(0.556)	(0.966)	(0.877)	(0.835)	(0.968)	(0.947)
English difficulty	−0.268	−0.955	0.005	−0.206	0.738	0.775
	(0.684)	(1.043)	(1.128)	(1.141)	(1.095)	(1.010)
Physically disabled	−1.131	−1.504	−0.423	−0.600	−0.727	−0.299
	(0.832)	(0.633)	(0.353)	(0.377)	(0.352)	(0.312)
Station fixed effects	X	X				
Hour fixed effects	X	X	X	X	X	X
Date fixed effects	X	X	X	X	X	X
Adjusted R^2						0.25
Observations	186	131	131	131	131	131

Note: Observations are unique panhandlers. Columns 1–5 present ordered probit estimates. Column 6 presents OLS estimates. Robust standard errors clustered by Metro station in parentheses. See Table A3 for variable descriptions.

more numerous. Panhandlers solicit less actively when they compete. Most panhandlers use pay-what-you-want pricing. These behaviors are consistent with a simple model of profit-maximizing panhandling.

How policymakers might use our findings to inform panhandling policy depends on policymakers' specific goals, including whether they aim merely to minimize the nuisance that panhandlers impose on passersby or seek also to account for the welfare of panhandlers. The purpose of our study is positive, so we demur from evaluating specific policies. It should be noted, however, that while our results suggest that panhandling activeness responds rationally to incentives, this does not imply that regulating panhandler behavior is the only, let alone most effective, tool for influencing panhandling activeness in ways that policymakers desire. Indeed, the most powerful determinant of panhandler activeness our analysis finds is passersby responsiveness to solicitation, which suggests the potential utility of policies aimed at regulating *passerby* behavior.

Policymakers who seek to influence panhandling activeness must also be wary of unintended consequences and tradeoffs. For example, our finding that panhandler activeness is lower when panhandlers compete suggests that efforts to disperse panhandlers may have the unintended effect of increasing their activeness. At the same time, efforts to "coral" panhandlers into a few designated spaces may trade higher panhandler activeness for a higher probability of passersby encountering a panhandler.

It is also important to bear in mind that laws which restrict panhandling in or to certain spaces are not the only policies that can affect panhandlers' locational incentives. The location of "homeless services," such as shelters, soup kitchens, and homeless-shuttle stops, may also affect those incentives. For instance, Leeson et al. (2022) find that panhandlers are more numerous at Metro stations within a short walking distance of city-provided homeless-shuttle stops.

Our study considered one panhandling context: that of Metrorail stations in Washington, DC. But panhandling

contexts vary across and even within cities. For example, although none of the panhandlers we observed could be regarded as providing passersby "public goods," in other panhandling environments some panhandlers (such as skilled as performers) may be passerby "attractions." Similarly, whereas in our model a public space's competing panhandlers "divide" its passersby, in alternative panhandling environments competition between a space's panhandlers may operate differently, potentially incentivizing more rather than less active solicitation. Variation in panhandling environments presents economists with opportunities to learn more about panhandling activeness and underscores the value of further economic studies of panhandling behavior. While we expect the rationality of that behavior to be uniform across panhandling contexts, the particular behaviors that maximize panhandling profit in those contexts may therefore differ.

Acknowledgments

We are grateful to Travis Boatright for helping us map Metrorail and to Art Carden for comments. Peter T. Leeson thanks Fratello Navetta for stimulating thoughts.

Conflicts of Interest

The authors declare no conflicts of interest.

Endnotes

[1] Street people are commonly called "the homeless." Most homeless people do not panhandle but, as noted below, most panhandlers are homeless (see, for instance, Snow and Anderson 1993; O'Flaherty 1996; Lee and Farrell 2003; Lei 2013).

[2] Studies of panhandlers are rare. For a survey of what is (and is not) known about panhandlers, see Leeson and Hardy (2022).

[3] On the question of constitutionality, see Lauriello (2016).

[4] Occasionally the threat is explicit, such as when a passerby attempts to walk away from a panhandler without giving and the panhandler shames him publicly, "calling him out" to other passersby.

[5] Our description of data and procedures partly overlaps with and draws from Leeson et al. (2022).

[6] In 2016 we visited during October, November, and December. In 2017 we visited during February, March, April, May, June, October, and November.

[7] Also known as the National Capital Region.

[8] Behind the NYC Subway and the Chicago L.

[9] Georgetown is assigned the number of Metro riders who exited Foggy Bottom-GWU, the Metro station closest to the intersection of Wisconsin Avenue and M Street.

[10] We refer to Georgetown as a "station" for convenience of exposition.

[11] In Georgetown, a one square-block area around the intersection of Wisconsin Avenue and M Street.

[12] *Street Sense* contains stories written by and highlighting the plights of Washington-area street people.

[13] Category 1 includes four panhandlers who were sitting in wheelchairs. All other "sitters" were on the ground.

[14] "Hit" is slang for a person whom a panhandler "hits up" for a donation, in other words a passerby he solicits.

[15] As a point of comparison, during the same data collection visits we offered the same quiz, under the same terms, to any merchandise vendors we encountered outside Metro station exits, such as people selling flowers or umbrellas. Thirteen accepted our offer. All were literate; all answered Q1 correctly; 85% answered Q2 correctly; 15% answered Q3 correctly.

[16] In Georgetown, anyone walking through the northwest intersection of Wisconsin Avenue and M Street.

[17] In Georgetown, for 15 min—the approximate time it takes for three train arrivals at a Metro station.

References

APTA. 2017. *Public Transportation Ridership Report, Fourth Quarter 2016*. American Public Transportation Authority.

Becker, G. S. 1996. *Accounting for Tastes*. Harvard University Press.

Burns, M. M. 1992. "Fearing the Mirror: Responding to Beggars in a 'Kinder and Gentler' America." *Hastings Constitutional Law Quarterly* 19: 783–844.

Conroy, S. J. 2001. "Predicting the Effects of Changes in Welfare Payments on the Probabilities of Receiving Alternate Sources of Income: The Case of Homeless Persons in Los Angeles." *Contemporary Economic Policy* 19: 299–312.

Dordick, G., B. O'Flaherty, J. Brounstein, S. Sinha, and J. Yoo. 2018. "What Happens When You Give Money to Panhandlers? The Case of Downtown Manhattan." *Journal of Urban Economics* 108: 107–123.

Ellickson, R. C. 1996. "Controlling Chronic Misconduct of City Spaces: Of Panhandlers, Skid Rows, and Public-Space Zoning." *Yale Law Journal* 105: 1165–1248.

Fabrega, H., Jr. 1971. "Begging in a Southeastern Mexican City." *Human Organization* 30: 277–287.

Goldstein, B. J. 1993. "Panhandlers at Yale: A Case Study in the Limits of Law." *Indiana Law Review* 27: 295–360.

Kim, N. J., J. Lin, C. Hiller, C. Hildebrand, and C. Auerswald. 2023. "Analyzing U.S. Tweets for Stigma Against People Experiencing Homelessness." *Stigma and Health* 8: 187–195.

Lankenau, S. E. 1999. "Panhandling Repertoires and Routines for Overcoming the Nonperson Treatment." *Deviant Behavior* 20: 183–206.

Lauriello, A. D. 2016. "Panhandling Regulation After *Reed v. Town of Gilbert*." *Columbia Law Review* 116: 1105–1142.

Lee, B., and C. R. Farrell. 2003. "Buddy, Can You Spare a Dime? Homelessness, Panhandling, and the Public." *Urban Affairs Review* 38: 299–324.

Leeson, P. T., and R. A. Hardy. 2022. "American Panhandlers." *Cities* 124: 103601.

Leeson, P. T., R. A. Hardy, and P. A. Suarez. 2022. "Hobo Economicus." *Economic Journal* 132: 2325–2338.

Lei, L. 2013. "Employment, Day Labor, and Shadow Work Among Homeless Assistance Clients in the United States." *Journal of Poverty* 17: 253–272.

NLCHP. 2019. *Housing Not Handcuffs: Ending the Criminalization of Homelessness in U.S. Cities*. National Law Center on Homelessness and Poverty.

O'Flaherty, B. 1996. *Making Room: The Economics of Homelessness*. Harvard University Press.

Smith, P. K. 2005. "The Economics of Anti-Begging Regulations." *American Journal of Economics and Sociology* 64: 549–577.

Snow, D. A., and L. Anderson. 1993. *Down on Their Luck: A Study of Homeless Street People*. University of California Press.

Snow-Hill, N. L. 2019. "The Survey of Attitudes Toward Homeless People: The Validation of a New Instrument Assessing Negative Attitudes Toward Homeless People." PhD thesis, University of South Carolina.

Stark, L. R. 1992. "From Lemons to Lemonade: An Ethnographic Sketch of Late Twentieth-Century Panhandling." *New England Journal of Public Policy* 8: 341–352.

Strauss, S. H., and A. E. Tomback. 1985. "Homelessness: Halting the Race to the Bottom." *Yale Law and Policy Review* 3: 551–570.

Appendix A

TABLE A1 | Metrorail ridership and landmarks.

Metro station	Average riders exiting per sample month (thousands)	Local landmark
*Archives	203.152	Washington Monument
Arlington Cemetery	41.546	White House
*Ballston-MU	214.930	Ballston Common Mall
Capitol South	162.199	Capitol Building
Clarendon	106.044	Northside Social
Courthouse	146.403	Court House Movie Theater
Crystal City	242.868	Reagan National Airport
Dupont Circle	421.910	Embassy Row
*Farragut North	491.499	White House
*Farragut West	441.299	White House
*Federal Center SW	121.004	Capitol Building
*Federal Triangle	177.617	Washington Monument
*Foggy Bottom-GWU	453.115	White House
*Gallery Pl-Chinatown	597.374	Metro Center
*Georgetown	453.115	Key Bridge
*L'Enfant Plaza	442.591	Washington Monument
*McPherson Square	313.216	White House
*Metro Center	577.024	Verizon Center
Navy Yard-Ballpark	204.820	Canal Park
Pentagon	278.700	Pentagon Memorial
Pentagon City	306.030	Pentagon Memorial
Rosslyn	277.979	USMC Memorial
*Smithsonian	264.453	Museum of Natural History
*Vienna/Fairfax-GMU	192.499	Vienna (town of)
Virginia Square-GMU	81.170	George Mason University
Waterfront	95.348	Washington Channel

Note: Ridership data from WMATA. Sample months: 2016: October, November, December; 2017: February, March, April, May, June, October, November. "Georgetown" is the intersection of Wisconsin Avenue and M Street: it is assigned the ridership of Foggy Bottom-GWU, the Metro station closest to that intersection. Local landmark is the landmark to which directions were solicited from passersby at each Metro station. * denotes Metro stations where panhandlers were observed.

TABLE A2 | Determinants of panhandler activeness, additive.

Dependent variable: Panhandler activeness, additive	(1)	(2)	(3)	(4)	(5)
Panhandler human capital, additive		0.398	0.435	0.427	0.401
		(0.087)	(0.065)	(0.066)	(0.075)
Passerby responsiveness, additive			1.886	1.684	2.205
			(0.936)	(0.815)	(0.779)
Number of passersby				0.002	0.005
				(0.002)	(0.002)
Panhandling competition					−0.659
					(0.218)
Female	−1.559	−1.982	−1.410	−1.460	−1.589
	(0.556)	(0.661)	(0.426)	(0.471)	(0.377)
White	−0.793	−3.678	−1.689	−1.778	−2.195
	(0.950)	(0.605)	(1.478)	(1.554)	(1.343)
Other race	−1.581	−0.641	−1.393	−1.369	−2.083
	(1.495)	(2.200)	(2.091)	(2.084)	(2.383)
English difficulty	−0.220	0.869	1.744	1.624	3.365
	(1.467)	(2.561)	(2.746)	(2.758)	(2.568)
Physically disabled	−3.037	−2.874	−0.927	−1.084	−1.434
	(2.597)	(2.231)	(1.734)	(1.799)	(1.759)
Station fixed effects	X	X			
Hour fixed effects	X	X	X	X	X
Date fixed effects	X	X	X	X	X
Adjusted R^2	0.12	0.37	0.29	0.28	0.31
Observations	186	131	131	131	131

Note: Observations are unique panhandlers. All columns present OLS estimates. Robust standard errors clustered by Metro station in parentheses. See Table A3 for variable descriptions.

TABLE A3 | Variable descriptions.

Variable	Description
Panhandler activeness	Index of a panhandler's most active solicitation activity, scaled from 1 to 5, where 1 = lies or sits on ground; 2 = stands; 3 = presents sign; 4 = vocal or noisily shakes cup; 5 = performs or gives away items. Higher scores indicate more active solicitation. Data source: Authors' field work.
Panhandler activeness, additive	Index of a panhandler's combined solicitation activities. A 1 to 14 scale is constructed by adding each solicitation activity in which a panhandler engages, where 1 = lies or sits on ground; 2 = stands; 3 = presents sign; 4 = vocal or noisily shakes cup; 5 = performs or gives away items. Higher scores indicate more active solicitation. Data source: Authors' field work.
Panhandler human capital	Index of a panhandler's best quiz outcome, scaled from 1 to 5, where 1 = illiterate; 2 = literate; 3 = answers Q1 correctly; 4 = answers Q2 correctly; 5 = answers Q3 correctly. Higher scores indicate more human capital. Data source: Authors' field work.
Panhandler human capital, additive	Index of a panhandler's combined quiz outcomes. A 1 to 14 scale is constructed by adding each quiz outcome a panhandler achieves, where 1 = illiterate; 2 = literate; 3 = answers Q1 correctly; 4 = answers Q2 correctly; 5 = answers Q3 correctly. Higher scores indicate more human capital. Data source: Authors' field work.
Panhandling competition	Number of other panhandlers at the same Metro station during the same hour as a panhandler. Data source: Authors' field work.
Female	Binary variable equal to one if a panhandler is female and equal to zero otherwise. Data source: Authors' field work.
White	Binary variable equal to one if a panhandler is white and equal to zero otherwise. Data source: Authors' field work.
Other race	Binary variable equal to one if a panhandler is a race other than black or white and equal to zero otherwise. Data source: Authors' field work.
English difficulty	Binary variable equal to one if a panhandler has difficulty speaking English and equal to zero otherwise. Data source: Authors' field work.
Physically disabled	Binary variable equal to one if a panhandler appears physically disabled and equal to zero otherwise. Data source: Authors' field work.
Passerby responsiveness	Average of an index of each passerby's most responsive reaction to solicitation at a Metro station. The index is scaled from 1 to 5, where 1 = ignores; 2 = acknowledges but keeps walking; 3 = stops to acknowledge; 4 stops and provides directions; 5 = stops and provides directions with a map. Higher scores indicate more responsiveness. Data source: Authors' field work.
Passerby responsiveness, additive	Average of an index of each passerby's combined responses to solicitation at a Metro station. The index is scaled from 1 to 12 and constructed by adding each of a passerby's responses to solicitation, where 1 = ignores; 2 = acknowledges but keeps walking; 3 = stops to acknowledge; 4 stops and provides directions; 5 = stops and provides directions with a map. Higher scores indicate more responsiveness. Data source: Authors' field work.
Number of passersby	Number of Metro riders (in thousands) who exit a Metro station in a month. Data source: WMATA.

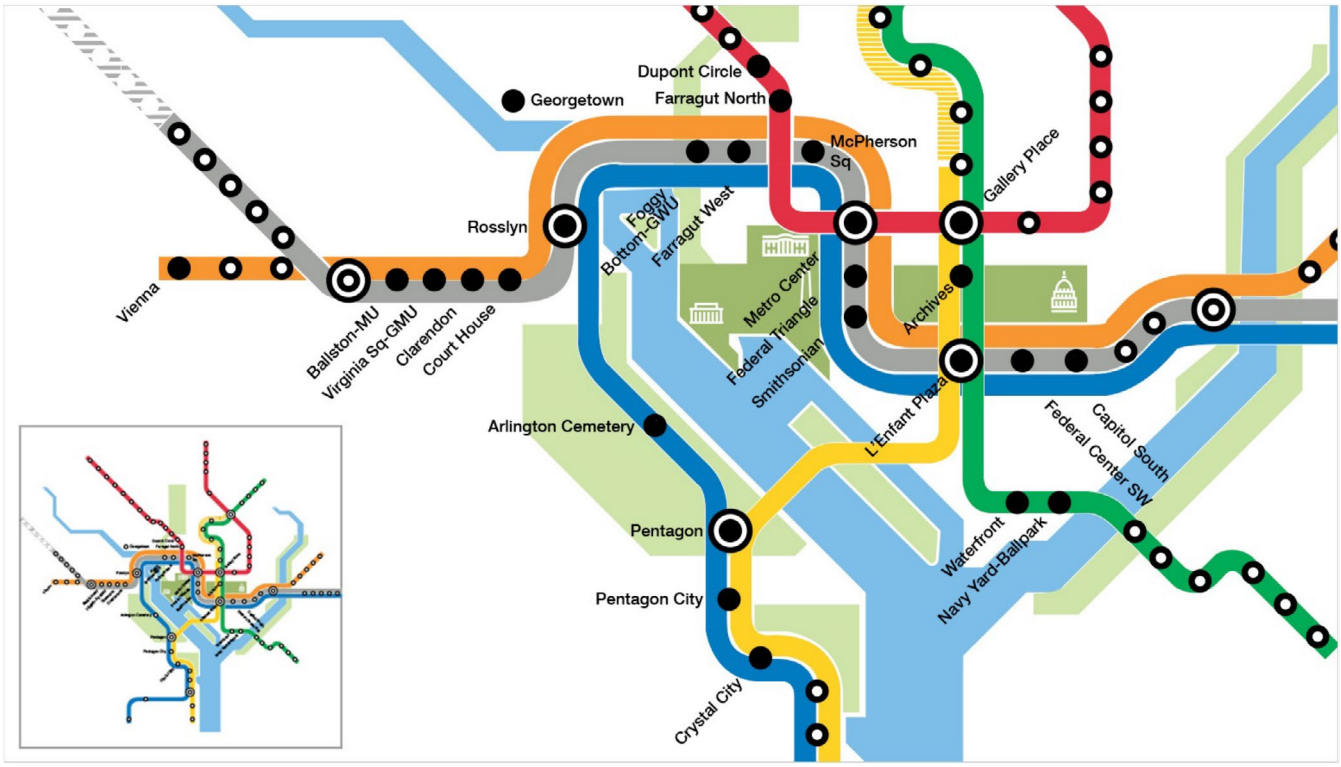

FIGURE A1 | Metrorail. Sample stations named and denoted with solid circles.