

Workers' Preferences over Payment Schedules: Evidence from Ridesharing Drivers



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Research questions

- ▶ How much do workers care about the **timing of their payment?**
- ▶ What explains potential heterogeneity in this preference?

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Main results

- ▶ Median driver would **forego 1/3 of earnings** in exchange for same-day remuneration.
- ▶ Experimental evidence that money right away is preferred as a **default choice**.

Background

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Implication: If true, we should expect workers to value this feature of the job. Is that the case?

Key outcome measurement strategy

Valuable features of a job can be measured in terms of forgone earnings.

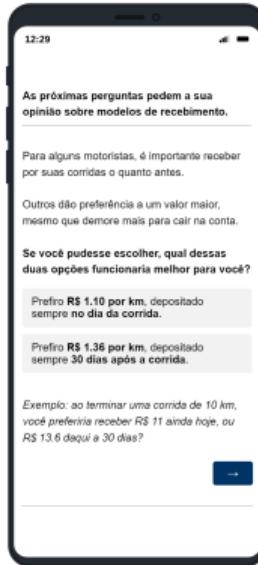
- ▶ Fringe benefits (Eriksson and Kristensen 2014)
- ▶ Work flexibility (Mas and Pallais 2017; Chen et al. 2020)
- ▶ Stability (Wiswall and Zafar 2018)
- ▶ Less commute time (Le Barbanchon et al. 2021)
- ▶ Identity alignment (Oh 2023)
- ▶ Time to payment

Context features supporting the realism of the elicitation protocol

- ▶ The nature of the task is well-defined and homogeneous;
- ▶ Clear, salient link between work and earnings;
- ▶ Time to payment defined at the platform's discretion;
- ▶ Choice variables familiar and meaningful to the subjects.

Research implementation

- ▶ Partnership with a ridesharing platform active in all States of Brazil.
- ▶ Survey distributed to the drivers' mobile phones (Jan. 2023).
- ▶ **Sample size:** 14,265 drivers.



Sample description:

Who are the ridesharing drivers in Brazil?

Ridesharing drivers reflect the diversity of the Brazilian workforce...

- ▶ **Mixed-race or black** (62.8% among drivers vs. 54.4% among the adult urban workforce)
- ▶ **18 to 37 years old** (52.4% vs. 49.7%)
- ▶ **High school or less** (63.1% vs. 66.2%)
- ▶ **Adults in the household** (2.4 vs. 2.5)
- ▶ **Kids in the household** (1.0 vs. 0.8)

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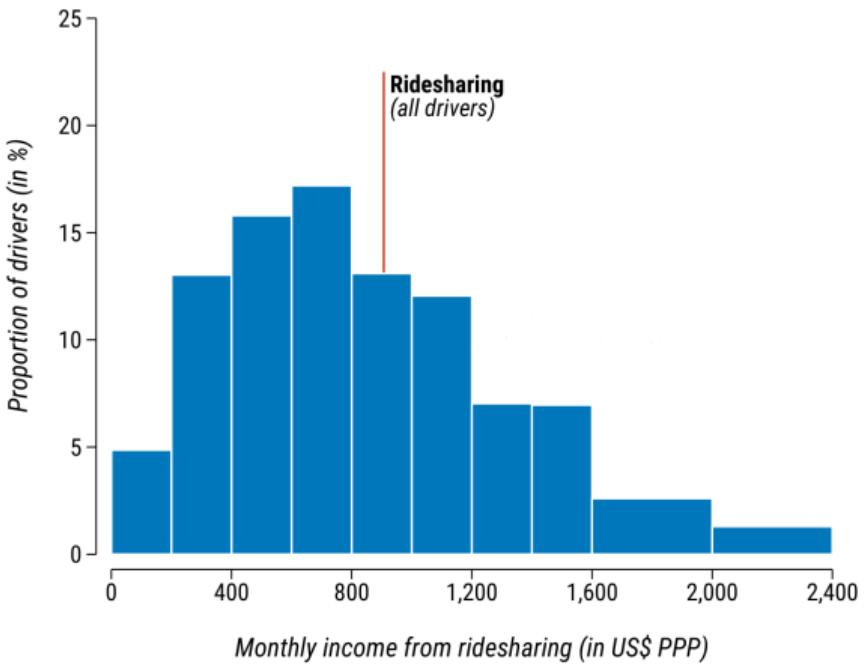
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... except that drivers are predominantly male.

- ▶ **Men** (93.2% vs. 54.8%)

Monthly income from ridesharing

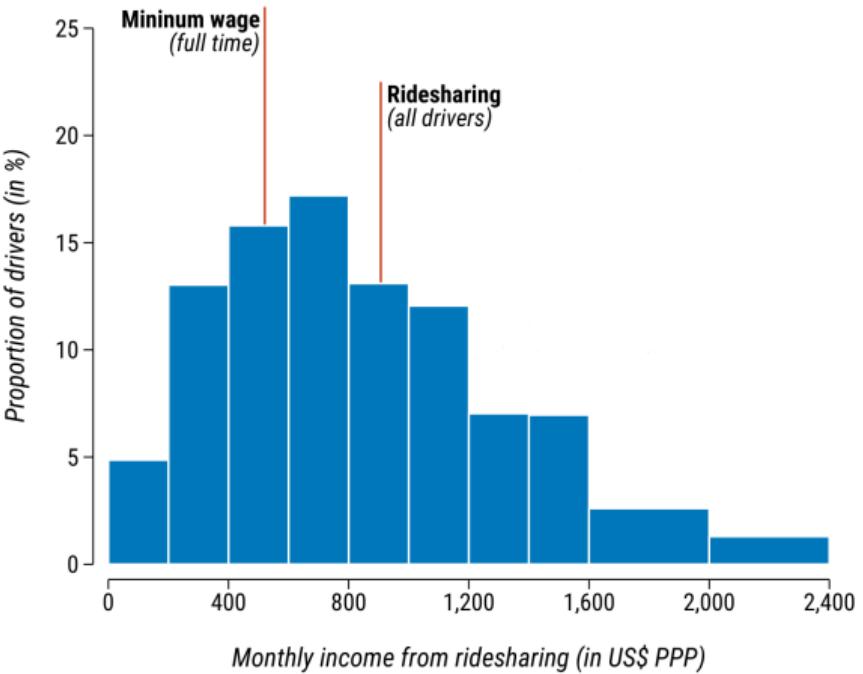
Net monthly earnings: US\$ 900 PPP



Note: US\$ 1.00 = R\$ 2.50 adjusting for PPP.

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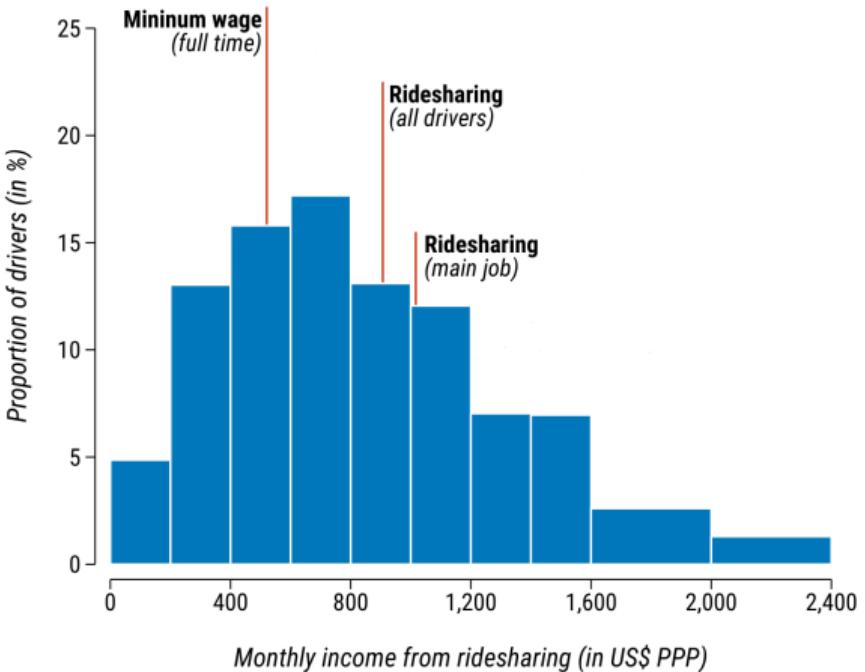
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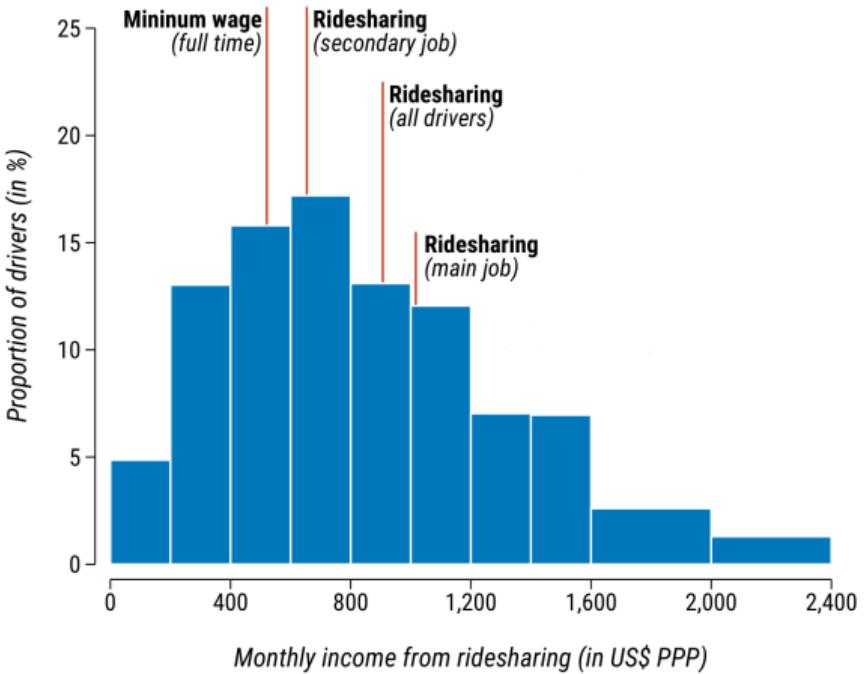
Monthly income from ridesharing

Net monthly earnings: US\$ 900 PPP

If main job: US\$ 1,000 (for 240 h/month)

If secondary job: US\$ 640 (for 132 h/month)

Note: US\$ 1.00 = R\$ 2.50 adjusting for PPP.



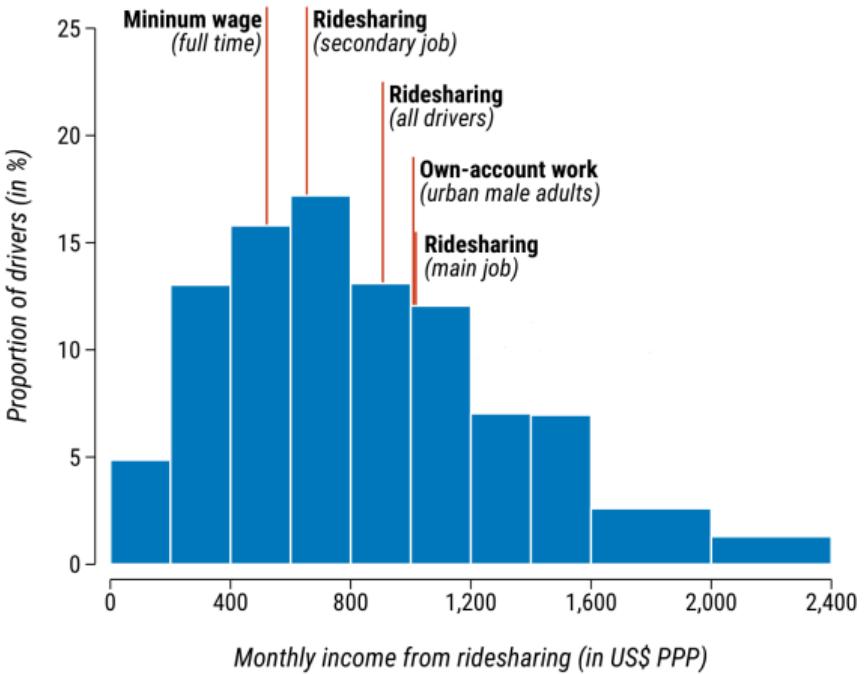
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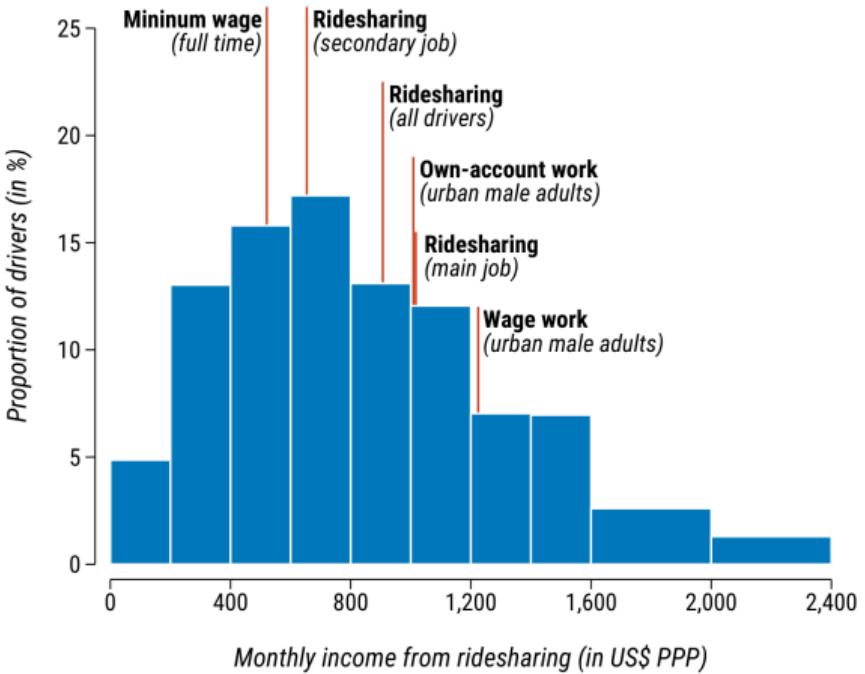
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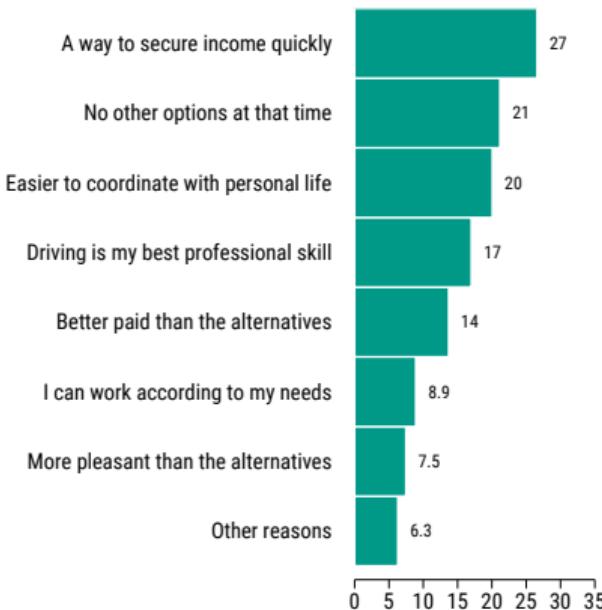
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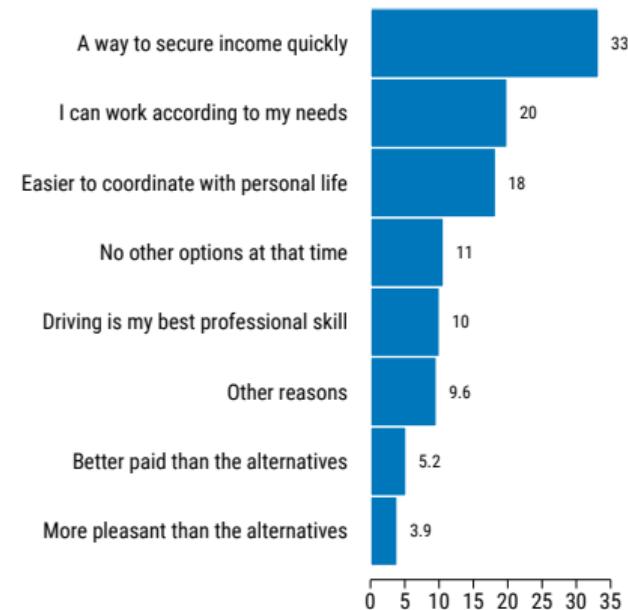


Main reasons for working with ridesharing

(a) Main job drivers



(b) Secondary job drivers



How much do drivers value a short time to payment?

Elicitation of preferences

If you could choose, which of these two options would work best for you?

I prefer R\$ **1.00** per km, always deposited **on the day of the ride**.

I prefer R\$ **1.48** per km, always deposited **30 days after the ride**.

Elicitation of preferences

If you could choose, which of these two options would work best for you?

I prefer R\$ 1.00 per km, always deposited on the day of the ride.

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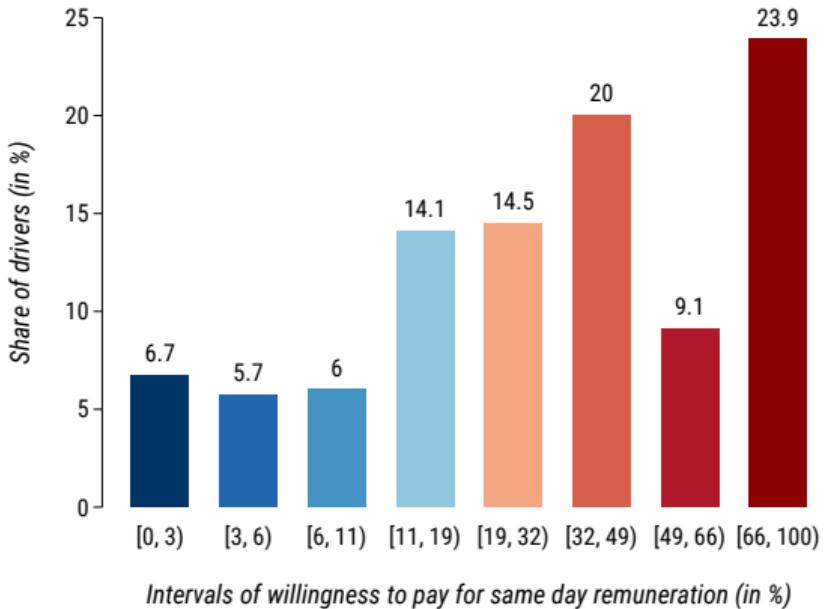
Defining the (compensated) willingness to pay

If I select the first contract, I am willing to forgo at least 0.48 out of every 1.48 of my potential earnings (1/3) to have the benefit of being paid on the same day that I work.

1st question	choice	2nd question	choice	3rd question	choice	willingness to pay
{ b × 1.24 } in 30 days or { b } the same day	same day	{ b × 1.96 } in 30 days or { b } the same day	same day	{ b × 2.92 } in 30 days or { b } the same day	same day	above 66%
			in 30 days		in 30 days	48% to 66%
in 30 days		{ b × 1.06 } in 30 days or { b } the same day	same day	{ b × 1.48 } in 30 days or { b } the same day	same day	32% to 48%
			in 30 days		in 30 days	19% to 32%
				{ b × 1.12 } in 30 days or { b } the same day	same day	11% to 19%
					in 30 days	6% to 11%
				{ b × 1.03 } in 30 days or { b } the same day	same day	3% to 6%
					in 30 days	under 3%

Distribution of drivers over the indifference ranges

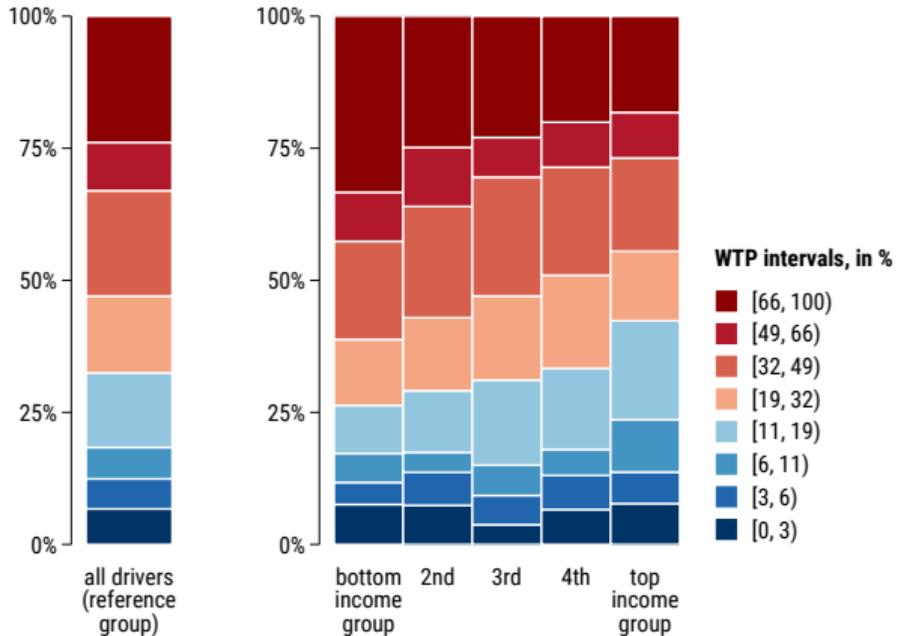
- ▶ Large dispersion of preferences.
- ▶ The **median driver** would forgo 1/3 of their earnings to be paid the same day.



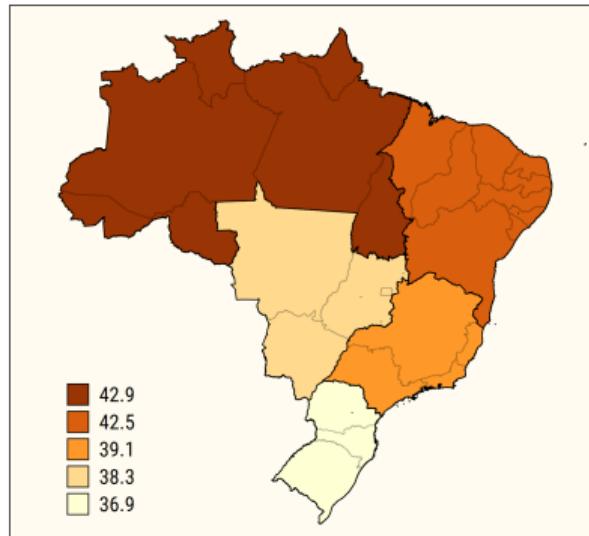
Payment preference by total income per capita

Preferences by demographics

- ▶ The poorest drivers are more likely to prioritize faster pay over larger pay.
- ▶ The average preference for same-day payment decreases monotonically with household income per capita.

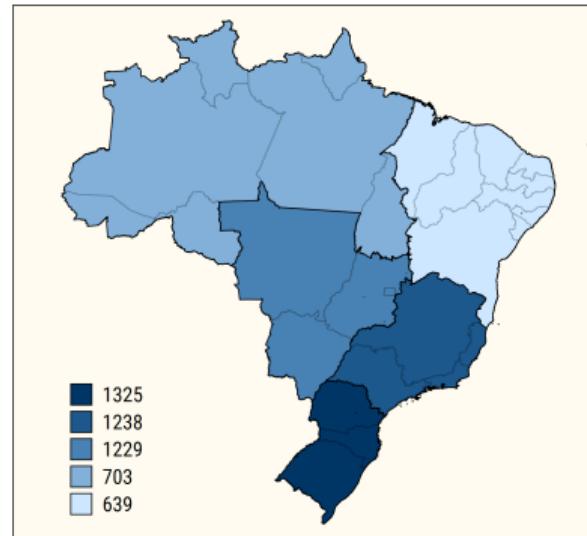


Payment timing preferences and median income level by region



Avg. willingness to pay for same-day remuneration

Source: Brazil Drivers Survey.



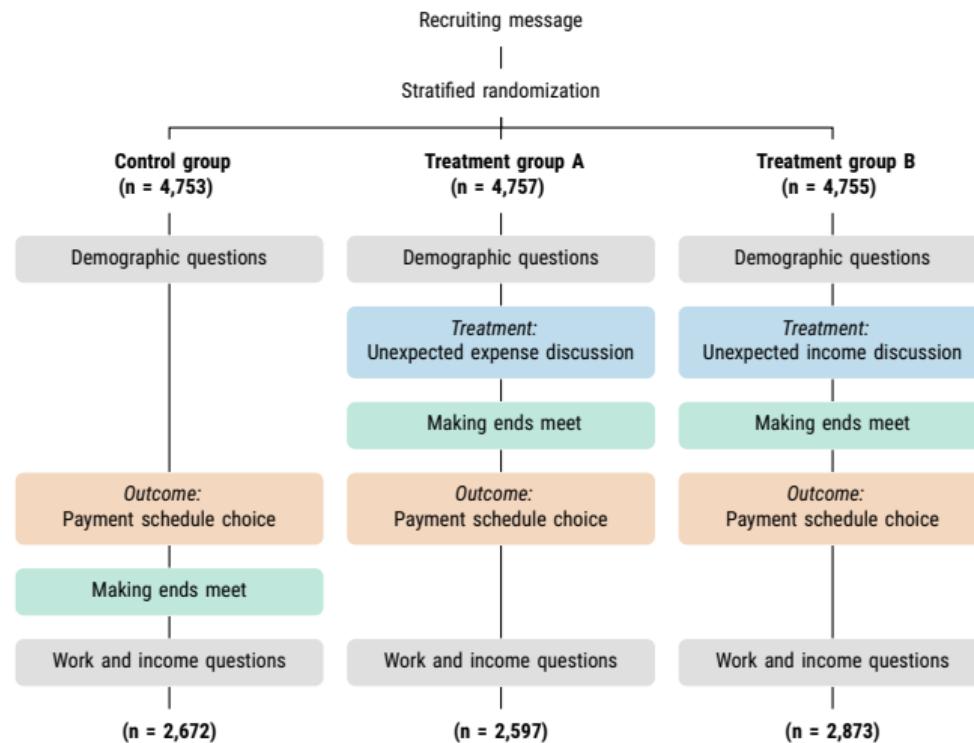
Median household income per capita

Source: National Household Survey.

**How is the preference for quick payment affected
by how people think about their domestic budget?**

Treatment assignment

Attrition by treatment



Treatment A:
Discuss potential liquidity sources

Imagine you received news of a **domestic emergency** (an urgent home repair, or a health treatment that cannot wait).

Because of this **you will have to disburse R\$ 1 400 more than expected this week.**

What is the first word that comes to your mind?

In practice, how would you cover this unexpected expense of R\$ 1 400 right now?

Treatment A:
Discuss potential liquidity sources

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Because of this **you will have to disburse R\$ 1 400** more than expected this week.

What is the first word that comes to your mind?

In practice, how would you cover this unexpected expense of R\$ 1 400 right now?

Treatment B:
Discuss the use of extra income

Imagine you received news of a **surprise payment** (the result of a lottery or an unexpected refund, for example).

Because of this **you will receive an extra deposit of R\$ 1 400** this week.

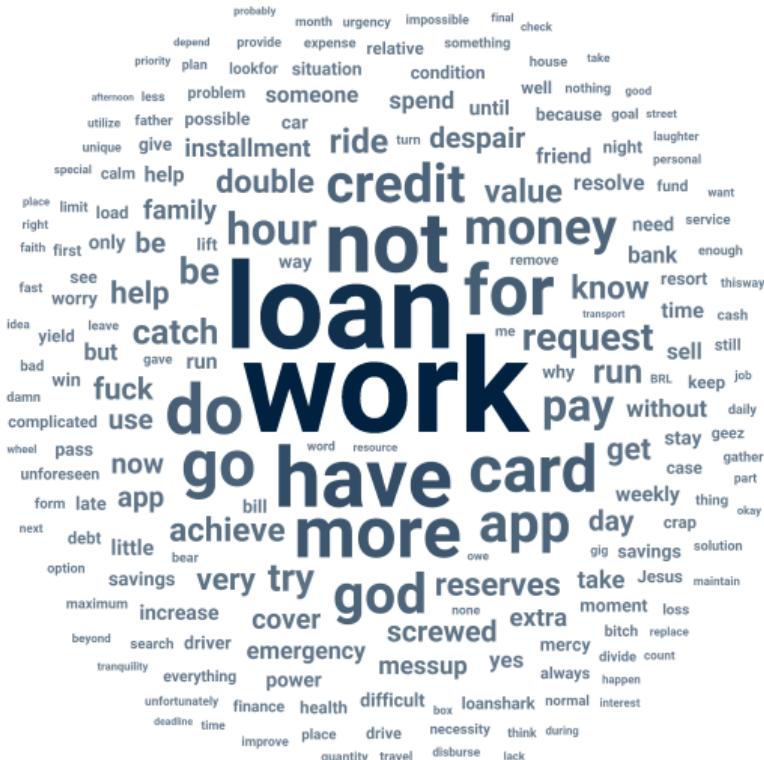
What is the first word that comes to your mind?

In practice, what would you do with this unexpected income of R\$ 1 400 right now?

Top 200 terms from drivers' answers to:

how would you cover this unexpected expense?

Original terms in Portuguese



Top 200 terms from drivers' answers to:

***what would you do with
this unexpected income?***

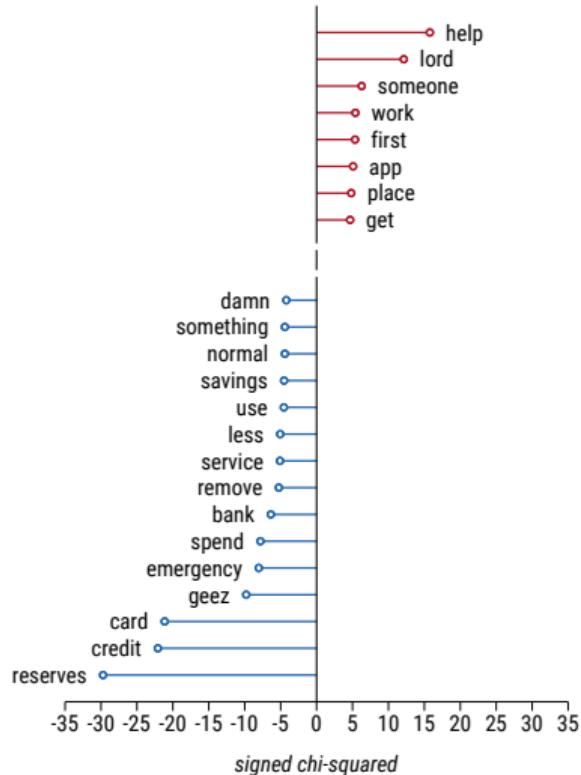
Original terms in Portuguese

A word cloud visualization showing the frequency of 200 terms from drivers' answers. The most prominent words are 'car', 'bill', 'pay', 'thanks', 'debt', 'buy', 'tax', 'god', 'for', 'gratitude', 'help', 'not', 'app', 'rent', 'vehicle', 'try', 'tire', 'late', 'son', 'luck', 'maturity', 'surprised', 'glory', 'go', 'more', 'stop', 'gift', 'power', 'come', 'year', 'figure', 'change', 'day', 'save', 'too', 'new', 'try', 'tire', 'great', 'only', 'lack', 'credit', 'daughter', 'without', 'thisway', 'mother', 'leave', 'stay', 'maintenance', 'happiness', 'review', 'small', 'certainty', 'yay', 'weekly', 'arrive', 'alleviate', 'school', 'installment', 'use', 'situation', 'safe', 'legal', 'remaining', 'advance', 'expense', 'water', 'always', 'monthly', 'nothing', 'run', 'document', 'emergency', 'doubt', 'mistake', 'recognition', 'laughter', 'walk', 'continue', 'ride', 'something', 'health', 'want', 'origin', 'owe', 'unforeseen', 'passenger'.

Keywords associated with a strong preference for quick pay

***how would you cover
this unexpected expense?***

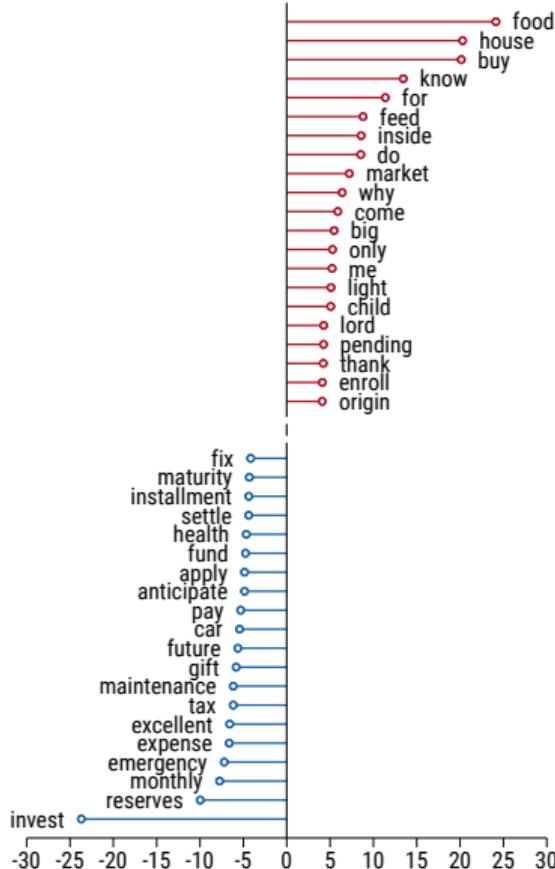
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Keywords associated with a strong preference for quick pay

what would you do with this unexpected income?

Original terms in Portuguese



Average treatment effects on the preference for same-day remuneration

Doubly robust methods

Effects by reference level

- ▶ Drivers exposed to any treatment had a **marginally lower** willingness to pay for same-day remuneration.
- ▶ Pushing people to think about their budget **increases the value they assign to being paid more over being paid fast.**

	outcome: WTP midpoint		outcome: WTP interval
	Difference in Means	OLS	Interval Regression
	(1)	(2)	(3)
<i>Treatment A:</i>			
Unexpected expense discussion	-1.3 (0.7)	-1.7 (0.7)	-1.6 (0.7)
<i>Treatment B:</i>			
Unexpected income discussion	-0.7 (0.8)	-1.6 (0.7)	-1.5 (0.6)
<i>Reference level:</i>			
Control group mean	39.9 (0.7)	39.9 (0.7)	37.4 (0.6)
Number of observations	8,142	8,142	8,142

Notes: The standard errors (reported in parenthesis under the point estimate) are clustered at the regional level. For the interval regression, the estimation results are bootstrapped over 500 replications. The controls in (2) and (3) include geographical area, gender, race, age, education, household composition, work experience, previous labor market status, number of apps, vehicle ownership, work days per week, work hours per day, extra jobs, looking for another job, work income from driving, total household income, savings, and pension contribution.

Average treatment effects on the time spent on contract choice

Doubly robust methods

	outcome: Seconds on Q1	outcome: Seconds on Q2	outcome: Seconds on Q3	outcome: Total seconds
	OLS (1)	OLS (2)	OLS (3)	OLS (4)
<i>Treatment A:</i>				
Unexpected expense discussion	2.5 (0.9)	1.1 (0.4)	1.1 (0.3)	5.0 (1.5)
<i>Treatment B:</i>				
Unexpected income discussion	0.9 (1.1)	0.8 (0.5)	1.3 (0.3)	3.0 (1.8)
<i>Reference level:</i>				
Control group mean	49.9 (1.0)	22.5 (0.4)	15.8 (0.2)	90.1 (1.5)
Number of observations	8,142	8,142	8,142	8,142

- Treated drivers spent a few more seconds choosing their contract.

Notes: Response times are winsorized at 1 percent. The standard errors (reported in parenthesis under the point estimate) are clustered at the regional level. Controls include geographical area, gender, race, age, education, household composition, work experience, previous labor market status, number of apps, vehicle ownership, work days per week, work hours per day, extra jobs, looking for another job, work income from driving, total household income, savings, and pension contribution.

Limitations to the interpretation of the results

Hypothetical choices.

- ▶ Reported choices are meaningful, but contract choices were not binding.

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Results are not representative of the whole working population.

- ▶ Drivers probably have higher payment urgency.

Results and implications

1. Fast payment can be an attractive feature of a job

- ▶ Everything else constant, people prefer jobs that pay right away.
- ▶ Digital companies are best positioned to exploit this margin.

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3. Complex welfare implications for workers in the long run

- ▶ Benefit of addressing immediate needs vs. risk of persistent poverty.

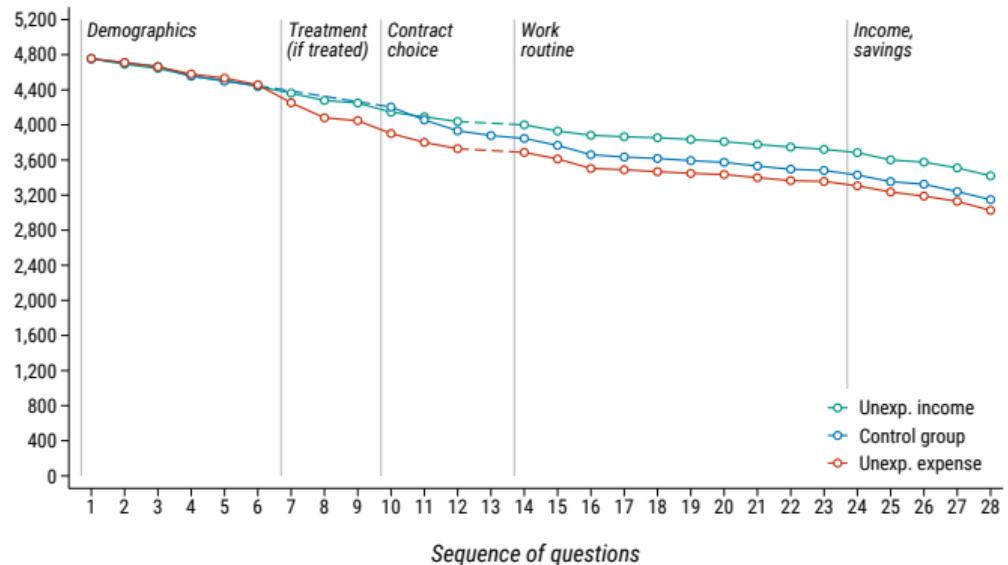
Appendix

Attrition by treatment group

Treatment assignment

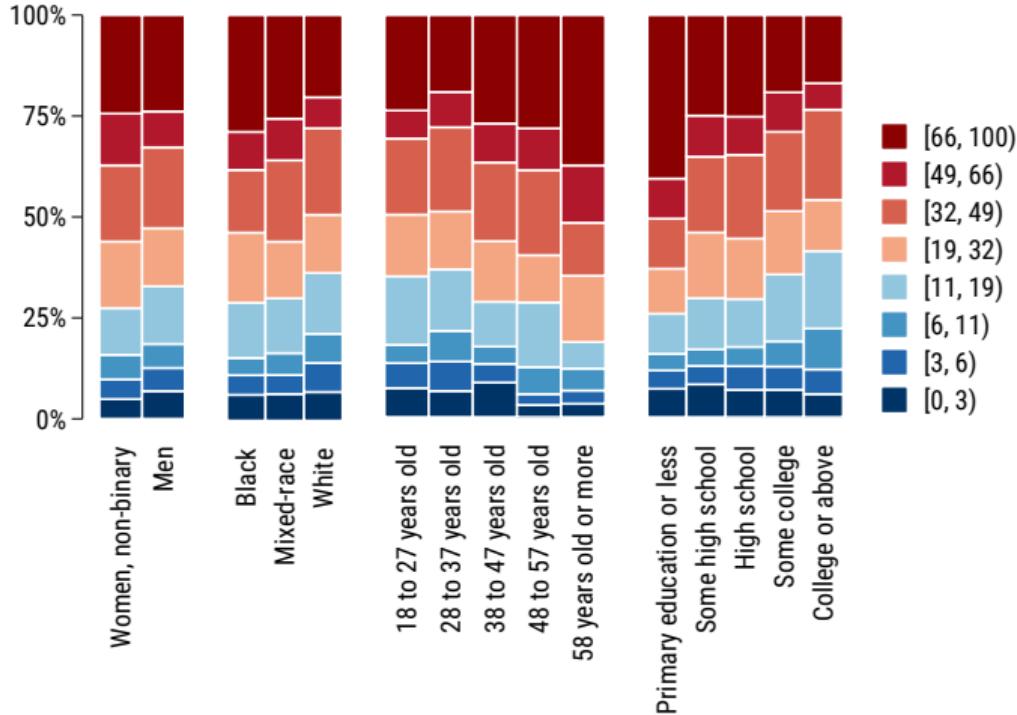
People are **more likely** to drop out after question on **unexp. expenses**, but this arm remains balanced on observables.

People are **less likely** to drop out after question on **unexp. income**; this arm is unbalanced on income (lower), other jobs (excess of only drivers), previous status (excess previously unemployed).



Payment preferences by demographics

Preferences by income



Top 200 terms from drivers' answers to:

**how would you cover
this unexpected expense?**

Terms in English

provavelmente caramba prejuizo ideia final
acontecer necessidade caixa levantar prover proximo
desembolsar retirar porque motorista problema unico
dever menos condicao alguem tempo bem putz utilizar
fundos aumentar sem foder banco render planejar
transporte diario merda corrida dinheiro resolver calma contar
tomar maximo momento arrumar bom dificil ainda durante
opcao precisar servico semanal tentar fazer conseguir caso dividir bico
situaçao mim pagar ir mais pegar ser recorrer
ganhar tirar roda lascar melhorar
economia agora naot ter hora ate financiar
repor agiota dobrar familia divida
meta carro ajuda estar pai rodar imprevisto
tarde saude saber fe mas vez certo
limite pois cobrir pensar ver pouco puta
alogo vender querer nada prazo normal arcar rua
rapido dirigir sim pensar valor falta
misericordia gastar ficar muito dar lugar
recurso poupanca pedir dia extra tudo juros
quantidade pessoal possivel emprego atrasar virar
urgencia correr mes noite assim
colocar forma passar usar reserva desespero amigo carga deixar
parte ruim socorrer parcelar emergencia preocupar juntar
bastante procurar complicado poder somente parente despesa palavra
tranquillidade viajar buscar guardar sempre primeiro manter
especial solucao grana depende nemhum reais impossivel infelizmente prioridade

Top 200 terms from drivers' answers to:

***what would you do with
this unexpected income?***

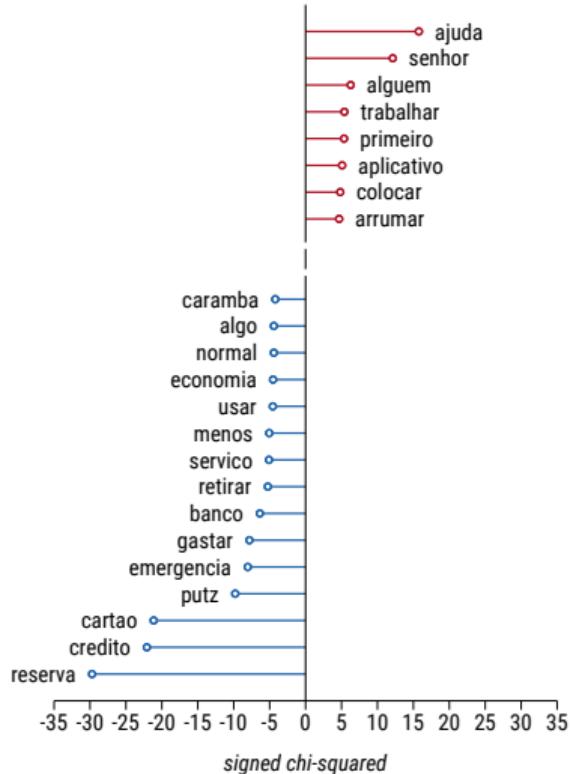
Terms in English

37

Keywords associated with a strong preference for quick pay

*how would you cover
this unexpected expense?*

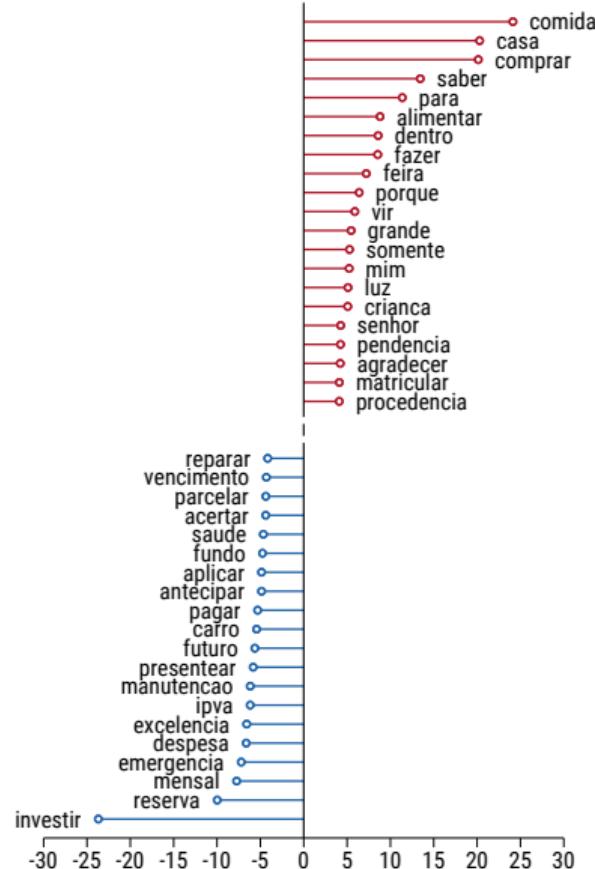
Terms in English



Keywords associated with a strong preference for quick pay

what would you do with this unexpected income?

Terms in English



Doubly robust estimation of the average treatment effects on the preference for same-day remuneration

Baseline results

- ▶ Doubly robust strategies combine an estimation for the outcome (y) with the propensity to be in a given treatment group (p).
- ▶ Results close to baseline.

	outcome: WTP midpoint		outcome: WTP interval
	Difference in Means (1)	Doubly Robust: Covariate Adj. via Regression and IPW (2)	Doubly Robust: Covariate Adj. via Interval Reg. and IPW (3)
<i>Treatment A:</i>			
Unexpected expense discussion	-1.3 (0.7)	-1.5 (0.7)	-1.5 (0.7)
<i>Treatment B:</i>			
Unexpected income discussion	-0.7 (0.7)	-1.5 (0.7)	-1.4 (0.6)
<i>Reference level:</i>			
Control group mean	39.9 (0.7)	40.2 (0.6)	38.9 (0.6)
Number of observations	8,142	8,142	8,142

Notes: The standard errors (in parenthesis) are clustered at the regional level. In (2) and (3), the standard errors also account for the estimation of the inverse probability weights (IPWs): in (2), the errors are calculated analytically; in (3), the two steps are bootstrapped over 500 replications. The covariates used in (2) and (3), both in the regression and the propensity estimation, are the same controls adopted at the baseline.

Treatment effects over different levels of preferences

Baseline results

	Linear Probability Model						
	Outcome: WTP > 3%	Outcome: WTP > 6%	Outcome: WTP > 11%	Outcome: WTP > 19%	Outcome: WTP > 32%	Outcome: WTP > 49%	Outcome: WTP > 66%
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>Treatment A:</i>							
Unexpected expense discussion	-1.9 (0.7)	-1.4 (0.8)	-0.8 (1.0)	-0.8 (1.6)	-2.2 (1.3)	-2.8 (1.0)	-2.5 (0.9)
<i>Treatment B:</i>							
Unexpected income discussion	0.4 (0.6)	0.3 (0.9)	-0.1 (1.2)	-1.5 (1.4)	-2.6 (1.4)	-3.0 (1.0)	-2.2 (1.0)
<i>Reference level:</i>							
Control group mean	93.3 (0.5)	87.6 (0.7)	81.6 (0.9)	67.5 (1.1)	53.0 (1.1)	33.0 (1.0)	23.9 (1.0)

Notes: The standard errors (reported in parenthesis under the point estimate) are clustered at the regional level. The controls include geographical area, gender, race, age, education, household composition, work experience, previous labor market status, number of apps, vehicle ownership, work days per week, work hours per day, extra jobs, looking for another job, work income from driving, total household income, savings, and pension contribution.

Doubly robust estimation of the average treatment effects on the time spent on contract choice

Baseline results

	outcome: Seconds on Q1	outcome: Seconds on Q2	outcome: Seconds on Q3	outcome: Total seconds
	Covariate Adj. via Regression and IPW			
	(1)	(2)	(3)	(4)
<i>Treatment A:</i>				
Unexpected expense discussion	2.3 (0.8)	1.1 (0.4)	1.2 (0.3)	4.8 (1.5)
<i>Treatment B:</i>				
Unexpected income discussion	0.9 (1.0)	0.8 (0.5)	1.3 (0.3)	3.0 (1.8)
<i>Reference level:</i>				
Control group mean	50.1 (1.0)	22.5 (0.4)	15.9 (0.2)	90.5 (1.4)
Number of observations	8,142	8,142	8,142	8,142

Notes: Response times are winsorized at 1 percent. The standard errors (in parenthesis) are clustered at the regional level and account for the joint estimation of the inverse probability weights (IPWs). The additional controls in the regression and the propensity estimation are the same covariates adopted in the baseline estimation.