

The influence of the **omission bias** in **digitalized & AI-based debt collection communication** in a **Covid-19** influenced debtor behaviour

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What is PAIR Finance

Debt Collection?

- the process of pursuing payments of debts owed by individuals or businesses
- An organization specialized in debt collection is known as a collection agency ("DCA")
- DCAs mainly operate as agent of creditors and collect debts for a fee or percentage of the total amount owed

What people think we do

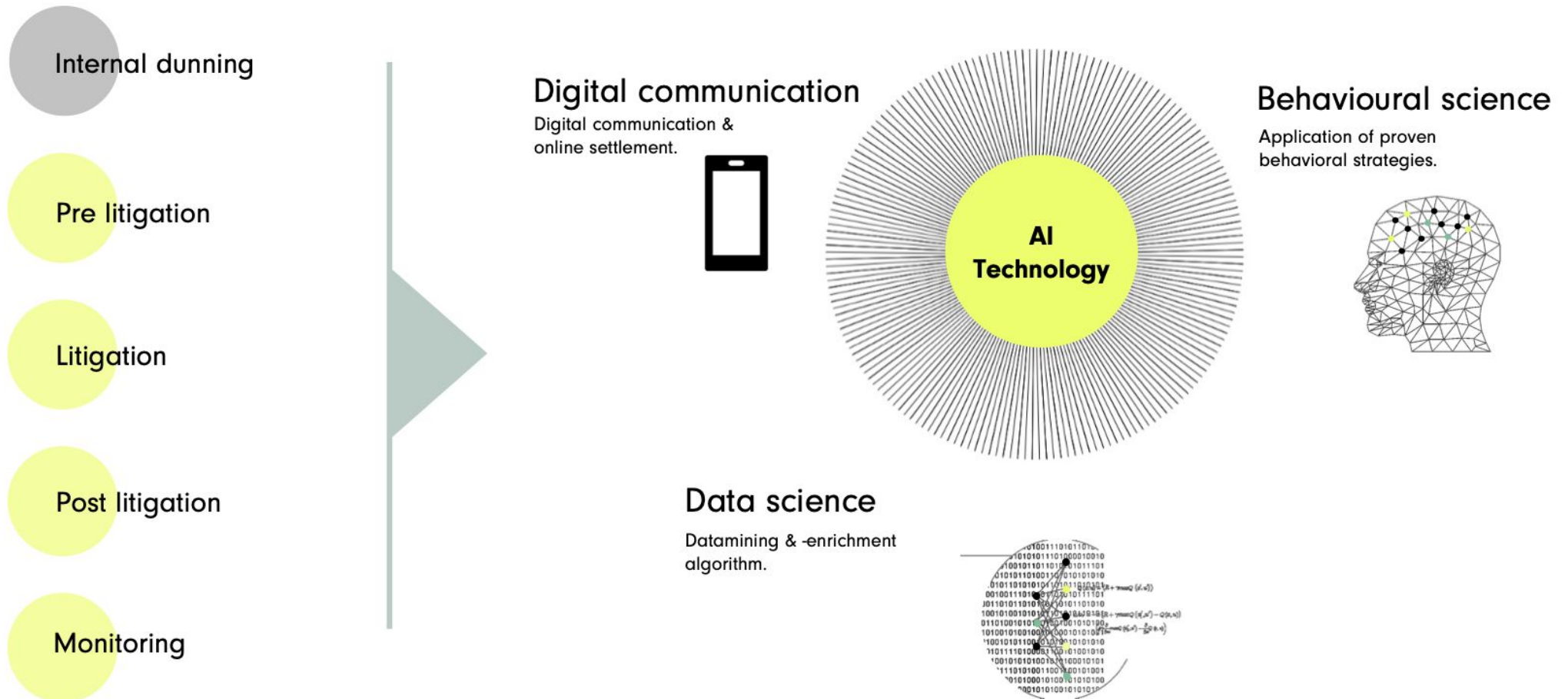


What we actually do



Unique AI technology

A digital-first communication strategy powered by machine learning and based on behavioral science.

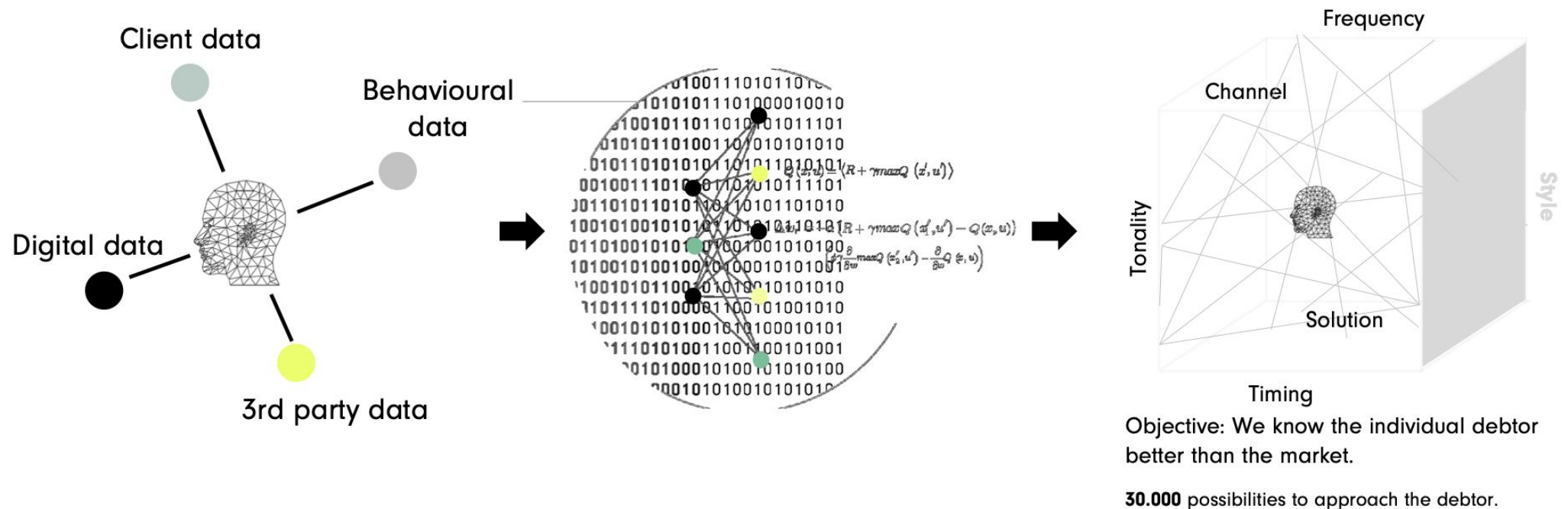


PAIR Finance full debt collection agency service in accordance with § 10 Abs. 1 RDG.

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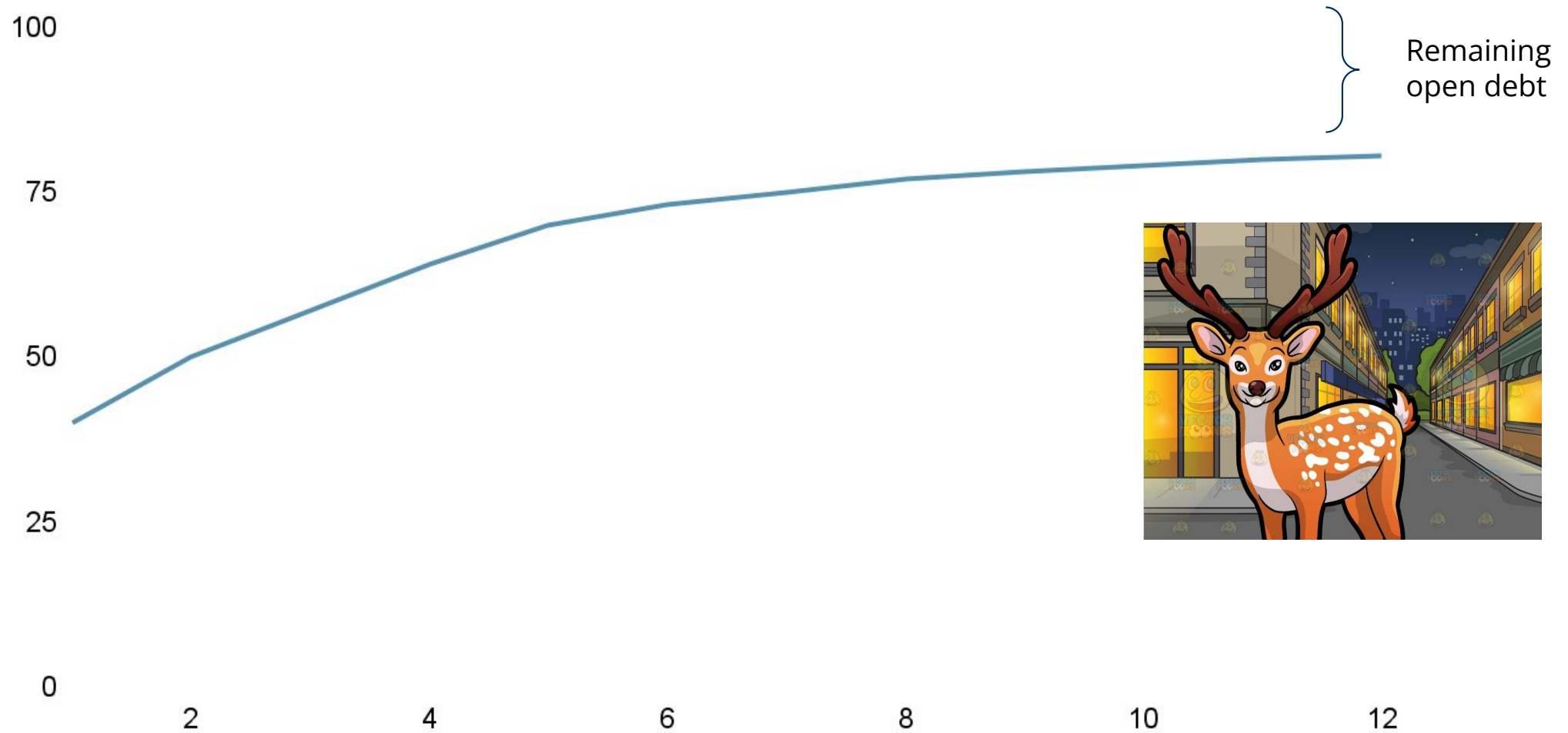
Data driven debt collection

Our self-learning algorithm finds the right concept to individually approach customers.



Debtor behaviour

Recovered debt in % after X months (symbolic)



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Omission bias and other cognitive biases as foundation for our study

Omission bias (OB) = tendency to judge harmful actions as worse than harmful inactions, even if they result in similar consequences (Spranca, Minsk & Baron, 1991)

→ This results in the preference for harm caused by omission over equal or lesser harm caused by acts

Example: We judge people less harshly if they withhold an antidote from someone who has been poisoned than if they poison someone, even though the consequences are the same (Cushman et al., 2006)

Theoretical foundation:

- Prospect Theory (Kahneman & Tversky, 1980): preference for higher but uncertain loss
- Status quo bias (Samuelson & Zeckhauser, 1988): preference for current state of affairs
- Availability bias (Tversky & Kahneman, 1973): Favoring recent/vivid memories makes it more likely to recall the status quo
- Previous studies on the omission-to-commission-framing show to positively influence individuals' behavior: Sign. increase in likelihood of repayment rates (Hallsworth et al., 2015; Hernandez et al., 2017)

Why is our research of importance?

- **Very few research** on the omission bias as a nudging strategy
- **Results of previous studies speak for itself** (likelihood of repayment rates increases; see study by Hallswort et al. (2015) & Hernandez et al. (2017))
- **To lend insights** into both, the methodological query and the importance of the 'omission bias' in the debt collection field
- **Previous studies** esp. in the debt collection context have **only been done in other countries**: Study by Hernandez et al. (2017) done in Poland; study by Hallswort et al., (2015) done in the UK, but not in Germany
- **No** one has ever studied the usage of the omission-to-commission tonality in a **campaign communication** for debtors that have received several communication points though refused to pay for several times already
- **Limited evidence** on first-order questions such as: can framing manipulations have important economic effects in naturally-occurring markets?

Methodology

Research question: Does communication countering peoples' omission bias (omission-to-commission) influence debtors' reaction behavior in a naturally occurring debt collection setting?

Objectives:

1. to **increase recovery** rates
2. to **identify key framing** features of an effective campaign communication strategy especially by comparing the omission-to-commission tonality to other tonalities
3. to **identify specific consumer and claim characteristics** that show to be more susceptible to the omission-to-commission tonality

Hypotheses:

1. We expect to achieve higher reaction rates when reframing acts of omissions as acts of commissions (omission-to-commission).
2. Due to differences in gender, age and debt sizes, we assume differences in customers susceptibility to the omission-to-commission tonality

Methodology

- **Participants:** Consumers who were already part of the debt collection process for at least 6 weeks, unpaid & no solution found, initiated after 01/01/21 (i.e. “cold cases”)
- **Control condition: informative tonality** (solely mentioning debt size, reduction offered and 7 day deadline)
- **Experimental conditions:** Build on the information used in the informative condition
 - 1. Cooperative tonality:** leniently framing offer as a solution
 - 2. Omission-to-commission (specific):** *“If you do not pay your open claim within the next 7 days, we will treat it as your active choice against the reduction offer”* (we specifically refer to the offered reduction in this message)
 - 3. Omission-to-commission (general):** *“If you do not pay your open claim within the next 7 days, we will treat it as your active choice against currently settling your debt”* (we refer to the general willingness to settle the debt)
- **Dependent variable: Reaction** (includes: visit to the payment page, any inbound communication, taking an instalment plan, making a promise to pay the debt, any direct payment, partial or full payment)
- **Covariates:** Gender, Age, Debt size

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Omission bias in the debt collection setting

- Framing the lack of payment as a commission rather than an omission

Wording used to **eliminate omission as an excuse for noncompliance**:

"So far we have treated your lack of payment as an oversight. If you do not pay your open claim, we will treat it as **your active choice** not to pay your bill"

Omission
Commission

Methodology

Procedure

1. Participants were randomly assigned to the different experimental groups. Depending on the group, the content of the outbound messages differed.
2. All participants were offered a reduction of the outstanding debt of 20% in the outbound message.
3. Outbound messages were sent via email to the participants.
4. Participants' reactions to the messages were tracked up to 7 days after messages were sent.

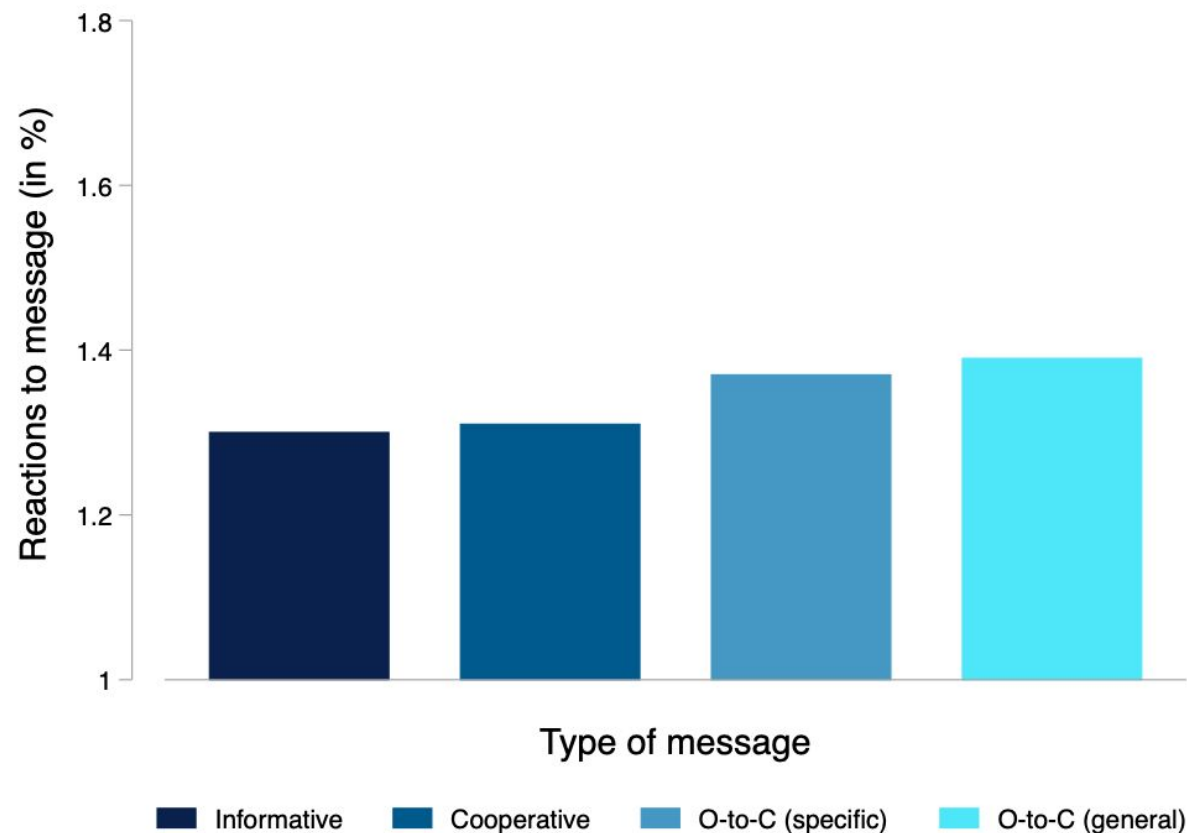
Summary statistics:

Overall number of cases:	26,507 (18,599 after excluding cases with missing values)
Overall reaction rate during campaign:	1.34%
Distribution of gender:	45% = female, 47% = male, 8% = unknown
Average age:	34.4 years (SD = 11.5)
Average debt size:	145 Euros

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Results

How does the message type (tonality) and specifically the Omission-to-Commission (O-to-C) framing affect reaction behavior?



O-to-C (specific): Reframing inaction as active action against the specific reduction offer

O-to-C (general): Reframing inaction as active action against generally settling the debt

Results

H1: Results of a multinomial logistic regression indicate that participants are **more likely to react to messages including the cooperative tonality or the omission-to-commission tonality** compared to messages including the informative tonality. Yet, these differences are not statistically significant.

- Including the omission-to-commission (specific) information instead of an informative message increases the odds of observing a reaction by **13%**; for omission-to-commission (general) it increases the odds by **10%**

Reaction	Odds ratio	z value	p value	95% Confidence interval	
Cooperative	1.12	.65	.517	.80	1.57
Omission-to-commission (specific)	1.13	.70	.486	.81	1.58
Omission-to-commission (general)	1.10	.54	.591	.78	1.54
Gender	1.34	2.75	.006	1.10	1.54
Age	0.99	-0.34	.737	.78	1.54
Debt size	1.02	1.10	.272	.78	1.54
Constant	.01	-17.84	.000	.01	.02
Observations	18,599				

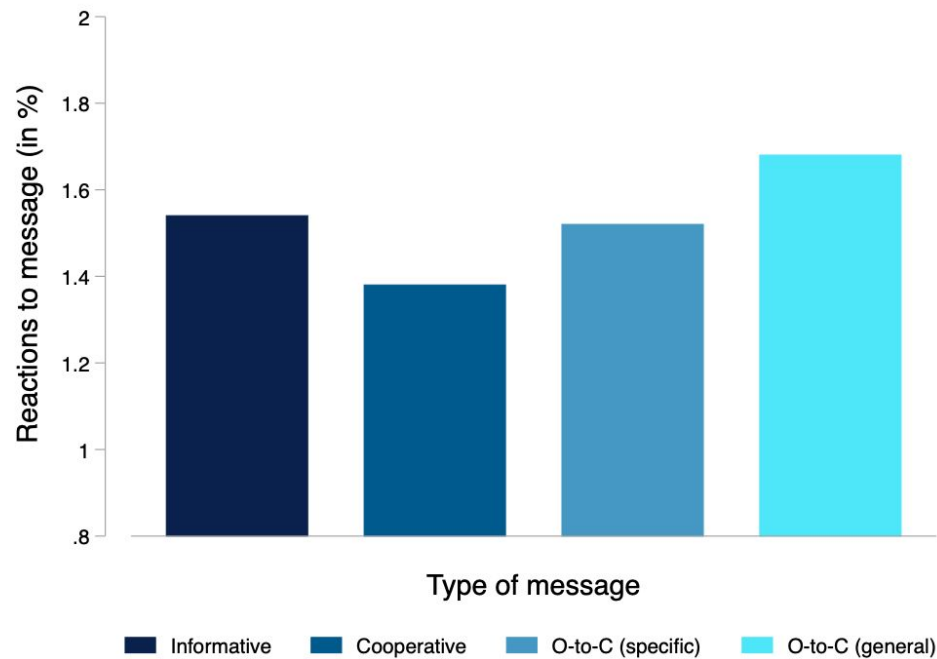
Note: The informative tonality is used as the reference category and thus omitted from the output.

H2: No significant interactions between gender, age or debt size and the link between tonality and reactions. We observe a preliminary tendency for gender affecting the link between tonality and reactions (see next slide).

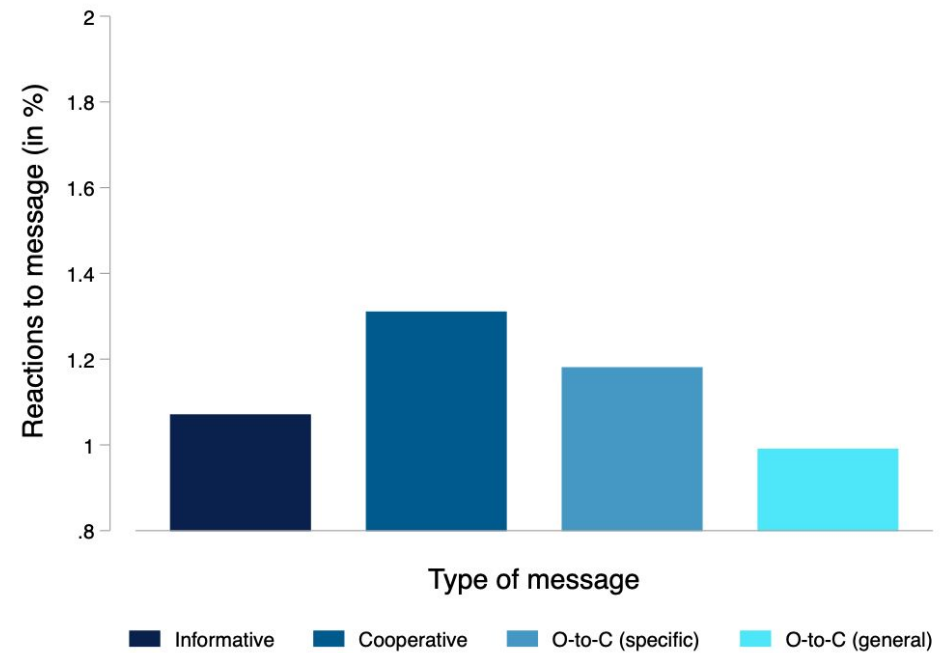
Results

Does the link between message type and reactions differ depending on gender?

Reactions by females



Reactions by males



Results

Preliminary findings:

1. Only **very few** of the “cold cases” **react** to outbound messages.
2. **Females** are **more likely to react** to outbound messages than male participants.
3. We observe **slightly more reactions after** a message including the **omission-to-commission** framing was sent compared to other tonalities. This tendency is slightly stronger for the specific version than for the general version.
4. There is an **indication** that **females react more** strongly to the **omission-to-commission** approach than males.

Next steps

- Cross-target with **omission-to-commission approach** those who received informative or cooperative tonality in the first step
- Collect more data that **compares** the **omission-to-commission approach to other tonalities**
- **Target** consumers **earlier** in the process
- Test **without reduction offer**
- Investigate the link between tonalities (specifically the omission-to-commission approach) and **payment behavior**
- Test in subject line - t.b.d.

References

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We appreciate your input & feedback!

Previous studies on the omission bias

	Study 1	Study 2
Reference	Hallsworth, M., List, J. A., Metcalfe, R. D., & Vlaev, I. (2015). <i>The making of homo honoratus: From omission to commission</i> (No. w21210). National Bureau of Economic Research.	Hernandez, M., Jamison, J., Korczyk, E., Mazar, N., & Sormani, R. (2017). Applying Behavioral Insights to Improve Tax Collection.
Hypothesis	Individuals who receive a message that states that non-compliance will be an act of commission will be more likely to comply ($p < 0.01$)	Compared to the baseline behavioural letter, the omission bias letters will achieve greater repayment rates ($p < 0.01$)
Results	Approval of hypothesis: OB group achieved a 10.9% increase (91.6% treatment effect (SD = 0.32 SD))	Approval of hypothesis: significant improved results for OB letters compared to the baseline behavioral letter (8.37% increase); different versions of the OB letter perform slightly differently
Conclusion	OB-based communication increases likelihood of repayment	OB-based communication increases likelihood of repayment

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