WORKING PAPER

LOSS AVERSION IN TASTE-BASED EMPLOYEE DISCRIMINATION: EVIDENCE FROM A CHOICE EXPERIMENT

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Loss aversion in taste-based employee discrimination: Evidence from a choice experiment*

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Abstract

Using a choice experiment, we test whether taste-based employee discrimination against ethnic minorities is susceptible to loss aversion. In line with empirical evidence from previous research, our results indicate that introducing a hypothetical wage penalty for discriminatory choice behaviour lowers discrimination and that higher penalties have a greater effect. Most notably, we find that the propensity to discriminate is significantly lower when this penalty is loss-framed rather than gain-framed. From a policy perspective, it could therefore be more effective to financially penalise taste-based discriminators than to incentivise them not to discriminate.

Keywords: taste-based discrimination; employee discrimination; loss aversion; ethnicity.

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1. Introduction

Taste-based discrimination is rooted in the idea that individuals are willing to (literally) pay a price to avoid contact with members of the (ethnic) minority group (Becker, 1971). For discriminating employees, this means that they would be willing to forego a percentage of their wage directly proportionate to their experienced distaste to avoid working alongside minority colleagues (Becker, 1971). Hedegaard and Tyran (2018) provide compelling empirical evidence for this proposition using a field experiment. The authors found that employees from Denmark, who had perfect information about the productivity of their potential colleagues, were willing to waive up to eight per cent of their wage to avoid working with a colleague of a different ethnicity. However, this willingness to discriminate diminished as the price of doing so increased.

Insights from the behavioural economics literature suggest that representing a wage differential in terms of losses would have a greater (negative) effect on the willingness of employees to discriminate against minority colleagues, i.e. loss aversion, than when this difference is phrased in terms of gains (i.e. loss aversion; Kahneman et al., 1991; Novemsky & Kahneman, 2005). Based on this concept, one could thus expect that majority employees would be less inclined to accept a wage decrease to be able to collaborate with majority colleagues than they would be willing to increase their wage to work alongside minority colleagues (Kahneman et al., 1991). However, this hypothesis has yet to be explored.

If taste-based discriminators are loss averse, this could have particular policy implications. More specifically, these discriminators would then be more susceptible to losing money when engaging in discriminatory behaviour than gaining money by not discriminating. Therefore, when the choice is merely to penalise or reward, it could be more effective to impose financial sanctions to counteract discriminatory practices motivated by distaste than to subsidise or incentivise inclusion directly.

We construct a choice experiment in which we assess the effect of loss aversion on taste-based employee discrimination against ethnic minorities. Our hypotheses are as follows. First, based on empirical evidence presented in Lippens, Baert, Ghekiere, Verhaeghe and Derous (2020), we hypothesise that, on average, participants will prefer to work alongside ethnic majority colleagues vis-à-vis ethnic minority colleagues, ceteris paribus

(H1).[1] Second, in line with findings from Hedegaard and Tyran (2018), we expect that introducing a wage differential that penalises discriminatory choice behaviour will decrease the level of displayed discrimination (H2) and that higher (penalising) wage differentials will lead to more significant declines in discrimination (H3). Third, we anticipate that the propensity to discriminate will be lower when the wage differential is framed in terms of losses versus gains (H4).

2. Method

We report on the results of a scenario-based choice experiment conducted via the online survey platform Qualtrics, which took place within the framework of a broader research initiative on ethnic labour market discrimination in the fall of 2020. In total, 413 students taking classes in economics and psychology at Ghent University in Flanders, Belgium, completed the choice experiment—391 observations were retained in our analyses (cfr. infra). The majority of the participants were born in Belgium (N = 371, 94.88%), were female (N = 283, 72.38%) and had not yet attained a bachelor's degree (N = 305, 78.01%). The average age of the participants was 20.19 years (SD = 3.47). To incentivise the students to participate, they were either granted two credits for research participation or instructed that participation would give them an advantage in answering exam questions about the research results.

The experiment was based on a factorial design with two levels (conditions: gain, loss) and four factors (sub-conditions: EUR 50, EUR 100, EUR 150, EUR 200) and consisted of three parts: the scenario outline, a comprehension check and a choice component (see Supplemental Materials, S1). Table 1 provides a matrix overview of the design. From the scenario, the participants learned that they had recently graduated and had received job offers from three different companies. Company A and B differed in terms of the teams' ethnic composition, while Company B and C differed with respect to the expected net wage. The participants were randomly allocated to the conditions. In the gain condition, the

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[1] Findings from Baert and De Pauw (2014), however, exemplify that is difficult to detect discrimination in a lab environment.

participants would receive a monthly payroll bonus, which did not vary in time and was unaffected by their own or their team's productivity. The latter is critical to rule out second-order statistical discrimination as a potential discrimination mechanism (Neumark, 2012).[2] The loss condition included a monthly recurring commuting cost, which the participant would have to pay out of pocket. To exclude the possible (perceived) side-effects of commuting, it was signalled to the participants that the differences in commuting distance did not imply differences in commuting time. The height of the wage differential in the gain (loss) condition ranged from EUR 50 to EUR 200 relative to the reference wage of EUR 2,150 (EUR 2,350).[3]

<Table 1 about here>

To ensure that the final analysis included only those who fully comprehended the implications of their choices, all participants were presented with a comprehension check, which consisted of two questions about the scenario. Each question required the participants to calculate their potential net gain or loss. Participants who failed to answer both questions correctly were excluded from the analysis. Eventually, 391 valid observations remained (out of 413, 94.67%).

The choice component of the experiment comprised (i) a brief scenario outline, (ii) a tabulated overview of the company attributes and (iii) a series of multiple-choice items on company preferences. The companies were displayed in random order to exclude order effects. The ethnic composition of the team was signalled by displaying four surnames. Three out of four surnames were typical of the Flemish majority (Maghrebi minority) group, and one surname was typical of the Maghrebi minority (Flemish majority) group. Eventually, each participant had to indicate their agreement with the statement 'I would like to work at [company name]' for each company on a five-point Likert scale.

We recognise three limitations concerning our method. First, student participants might not be representative of the workforce at large. Nonetheless, the participants have most likely already co-operated with others in a professional work environment (e.g. a student

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[2] Second-order statistical discrimination constitutes unequal treatment on the basis of group differences in the variance of productivity-related characteristics (Neumark, 2012).

[3] The disparities between the wage differentials should provide sufficient sensitivity to detect differences in effects (see Hedegaard & Tyran, 2018).

job). Second, despite signalling to the participants that the commuting distance did not entail additional commuting time, some participants might implicitly associate an extra burden with this distance. Third, our choice experiment was based on a hypothetical scenario. Therefore, the participants' choices did not entail real (financial) risk. However, previous research has demonstrated that the effect of loss aversion also holds in riskless contexts (Kahneman et al., 1991; Novemsky & Kahneman, 2005).

3. Results

Figure 1 depicts the within-subject differences in company preferences. We derive two measures of discrimination from these preferences: 'taste-based discrimination' and 'penalised taste-based discrimination'.[4] Using a robust, trimmed-means t-test to compare differences in preferences between Company A (Flemish, low wage) and Company B (Maghrebi, low wage), we find no statistically significant evidence for taste-based discrimination ($\Delta_{10\%\text{-trimmed-means}}$ = 0.05, t_{Yuen} = 1.30, p = 0.195).[5] However, socially desirable choice behaviour could lead to an underestimation of the actual discrimination. When we filter out participants with average scores higher than 4 (out of 5) on Strahan and Gerbasi's (1972) 10-item social desirability scale, we indeed find weak, marginally significant evidence for taste-based discrimination ($\Delta_{10\%\text{-trimmed-means}}$ = 0.08, t_{Yuen} = 1.79, p = 0.075). In addition, the 95% confidence interval of the robust standardized difference excludes zero (δ_R^{AKP} = 0.13, $CI_{95\%}$ = [0.02, 0.21]). This is evidence in favour of **H1**. Leaving out participants who were born (or whose (grand)mother was born) in a foreign country does not significantly alter these results.

<Figure 1 about here>

Conversely, when a wage differential that penalises discriminatory choice behaviour is imposed, we find that participants, on average, prefer Company C (Maghrebi, high wage) over Company A (Flemish, low wage; $\Delta_{10\%\text{-trimmed-means}}$ = 1.23, t_{Yuen} = −17.95, p < 0.001). This

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[4] All figures were created using Patil's (2021) 'ggstatsplot' package for R.

[5] We use robust, 10%-trimmed-means tests to reduce the effects of outliers, while retaining sufficient observations to preserve statistical power.

finding is robust when we control for high social desirability ($\Delta_{10\%\text{-}trimmed\text{-}means}$ = 1.20, t_{Yuen} = −16.57, p < 0.001). Moreover, Figure 2 illustrates that the effect of the discrimination penalty on taste-based discrimination (controlled for high social desirability) persists irrespective of the height of the wage differential. We thus find compelling evidence for **H2**.

<div align="center">**<Figure 2 about here>**</div>

Furthermore, using a trimmed-means F-test, we find empirical evidence in favour of **H3**. Figure 3 illustrates that different penalties result in various levels of penalised taste-based discrimination ($F_{10\%\text{-}trimmed\text{-}means}$ = 5.76, p = 0.001). More specifically, participants who have to hypothetically forego EUR 100 ($\psi_{estimate}$ = 0.53, $p_{Bonferroni\text{-}corrected}$ = 0.038) or EUR 200 ($\psi_{estimate}$ = 0.68, $p_{Bonferroni\text{-}corrected}$ = 0.005) are significantly less inclined to discriminate against Maghrebi minorities than participants who only have to forfeit EUR 50.[6] In contrast, the difference between the EUR 150 and EUR 50 wage differential is not statistically significant ($\psi_{estimate}$ = 0.48, $p_{Bonferroni\text{-}corrected}$ = 0.315).

<div align="center">**<Figure 3 about here>**</div>

Finally, using a trimmed-means t-test to evaluate the between-subject effect of the experimental conditions, we find empirical evidence for **H4**. Figure 4 illustrates that, when the wage differential is framed in terms of a loss, participants show significantly lower levels of penalised taste-based discrimination than when this differential is framed in terms of a gain ($\Delta_{10\%\text{-}trimmed\text{-}means}$ = 0.27, t_{Yuen} = 2.09, p = 0.038). Importantly, we find that the effect of loss aversion on penalised taste-based discrimination persists when sociodemographic characteristics (e.g. migration background) and social desirability are controlled (see Supplementary Materials, S2).

<div align="center">**<Figure 4 about here>**</div>

4. Conclusion

In this study, we reported on a choice experiment to test whether taste-based employee

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[6] The $\psi_{estimate}$ is equal to the $\Delta_{10\%\text{-}trimmed\text{-}means}$ with respect to the pair-wise comparisons.

discrimination is affected by loss aversion. Our results suggested that—controlling for social desirability—participants, on average, expressed a slight preference to work alongside ethnic majority colleagues vis-à-vis ethnic minority colleagues. However, this preference was reversed when a penalty (in the form of a wage differential) for discriminatory choice behaviour was introduced. Moreover, the preference to work alongside ethnic minority colleagues increased as the penalty heightened.

Finally, the propensity to discriminate was significantly lower when the wage differential was framed in terms of losses versus gains. This finding suggests that taste-based discrimination could be better countered by imposing financial sanctions than directly incentivising inclusion. From a policy perspective, this means that fining taste-based discriminators for their unwillingness to collaborate with ethnic minorities is potentially more effective than directly incentivising them not to discriminate.

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Supplemental materials

S1. Scenario outline, comprehension check and choice component per condition in 'Loss aversion in taste-based employee discrimination: Evidence from a choice experiment'. ([PDF](#)).

S2. Supplementary analyses to 'Loss aversion in taste-based employee discrimination: Evidence from a choice experiment'. ([PDF](#)).

Declarations and ethics statement

Ethical approval

This study is part of the interdisciplinary EdisTools project, which is centred around the development of tools to explain and reduce ethnicity-based (labour market) discrimination. Prior ethical approval for this research project was obtained from the ethics committee of the Faculty of Political and Social Sciences at Ghent University. Additional ethical approval for this non-interventional survey study was not required, since—in line with the ethical code of the Faculty of Economics and Business Administration and the Faculty of Psychological and Educational Sciences at Ghent University, where the research took place—ex ante ethical approval of survey research based upon prior and informed consent is not obligatory.

Informed consent from participants

Informed consent was obtained in digital, written form prior to the start of the experiment. The data used in this study were pseudonymised before the analysis.

Data availability

In line with the conditions outlined in the data management plan of the EdisTools project, of which this study is a part, the anonymised data will be made available after a period of five years following the end of the research project. This approach guarantees the research team's possibilities to fully exploit the data for scientific valorisation and to obtain academic

qualifications. Minimal, anonymised data will be unconditionally made available upon request but solely to replicate the study's findings.

Consent to publish

Participants were informed about the general aim of the study. Due to the nature of the experiment, participants could not be a priori informed about the study's exact objective. Consent to use the participants' data for research purposes was obtained prior to the start of the experiment. Participants were extensively debriefed after the study was finalised.

Competing interests

There are no relevant financial or non-financial competing interests.

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Author contributions

LL conceptualised the experimental design, performed the formal analyses and created the tables, figures and supplementary materials. LL and SB both contributed to developing the methods used in the study. SB and ED supervised the data collection process. LL wrote the original draft of the manuscript. All authors revised and edited intermediary versions of the manuscript. All authors read and approved the final manuscript.

Figures and tables

Figure 1. Within-subject measures of (penalised) taste-based discrimination

1a. Taste-based discrimination

$t_{\text{Yuen}}(312) = 1.30, p = 0.195, \widehat{\delta}_R^{\text{AKP}} = 0.11, \text{CI}_{95\%} [-0.01, 0.21], n_{\text{pairs}} = 391$

1b. Taste-based discrimination (controlled for high social desirability)

$t_{\text{Yuen}}(282) = 1.79, p = 0.075, \widehat{\delta}_R^{\text{AKP}} = 0.13, \text{CI}_{95\%} [0.02, 0.21], n_{\text{pairs}} = 353$

1c. Penalised taste-based discrimination

$t_{\text{Yuen}}(312) = -17.95, p = 0e+00, \widehat{\delta}_R^{\text{AKP}} = -0.84, \text{CI}_{95\%} [-1.19, -0.74], n_{\text{pairs}} = 391$

1d. Penalised taste-based discrimination (controlled for high social desirability)

$t_{\text{Yuen}}(282) = -16.57, p = 0e+00, \widehat{\delta}_R^{\text{AKP}} = -0.82, \text{CI}_{95\%} [-1.08, -0.74], n_{\text{pairs}} = 353$

Figure 2. Within-subject differences in penalised taste-based discrimination by wage differential

EUR 50

$t_{\text{Yuen}}(72) = -5.22, p = 1.65\text{e-}06, \widehat{\delta}_R^{AKP} = -0.63, CI_{95\%} [-0.90, -0.38], n_{\text{pairs}} = 91$

$\widehat{\mu}_{\text{trimmed}} = 4.34$

$\widehat{\mu}_{\text{trimmed}} = 3.55$

A: predominantly Flemish, low wage (n = 91)   C: predominantly Maghrebi, high wage (n = 91)
Company: team composition, expected net wage

EUR 100

$t_{\text{Yuen}}(63) = -8.73, p = 1.92\text{e-}12, \widehat{\delta}_R^{AKP} = -1.31, CI_{95\%} [-1.58, -0.74], n_{\text{pairs}} = 78$

$\widehat{\mu}_{\text{trimmed}} = 4.48$

$\widehat{\mu}_{\text{trimmed}} = 3.23$

A: predominantly Flemish, low wage (n = 78)   C: predominantly Maghrebi, high wage (n = 78)
Company: team composition, expected net wage

EUR 150

$t_{\text{Yuen}}(75) = -8.30, p = 3.15\text{e-}12, \widehat{\delta}_R^{AKP} = -0.80, CI_{95\%} [-1.14, -0.55], n_{\text{pairs}} = 94$

$\widehat{\mu}_{\text{trimmed}} = 4.51$

$\widehat{\mu}_{\text{trimmed}} = 3.26$

A: predominantly Flemish, low wage (n = 94)   C: predominantly Maghrebi, high wage (n = 94)
Company: team composition, expected net wage

EUR 200

$t_{\text{Yuen}}(71) = -11.88, p = 0\text{e+}00, \widehat{\delta}_R^{AKP} = -1.15, CI_{95\%} [-1.43, -0.83], n_{\text{pairs}} = 90$

$\widehat{\mu}_{\text{trimmed}} = 4.65$

$\widehat{\mu}_{\text{trimmed}} = 3.18$

A: predominantly Flemish, low wage (n = 90)   C: predominantly Maghrebi, high wage (n = 90)
Company: team composition, expected net wage

Notes. Participants scoring high on social desirability are excluded from the analysis (*Npairs* = 353). The differences are presented in panels, grouped by wage differential.

Figure 3. Between-subject differences in penalised taste-based discrimination by sub-condition

$F_{\text{trimmed-means}}(3,174.97) = 5.76$, $p = 0.001$, $\hat{\xi} = 0.25$, $\text{CI}_{95\%}$ [0.13, 0.36], $n_{\text{obs}} = 391$

$p_{\text{Bonferroni-corrected}} = 0.005$

$p_{\text{Bonferroni-corrected}} = 0.038$

$\hat{\mu}_{\text{trimmed}} = -0.75$

$\hat{\mu}_{\text{trimmed}} = -1.28$

$\hat{\mu}_{\text{trimmed}} = -1.23$

$\hat{\mu}_{\text{trimmed}} = -1.43$

EUR 50 (n = 98) EUR 100 (n = 88) EUR 150 (n = 107) EUR 200 (n = 98)

Sub-condition (wage differential)

Penalised taste-based discrimination

Pairwise test: **Yuen's trimmed means test**; Comparisons shown: **only significant**

Notes. The F-test and pair-wise comparisons are based on 10%-trimmed-means of penalised taste-based discrimination.

Figure 4. Between-subject differences in penalised taste-based discrimination by condition
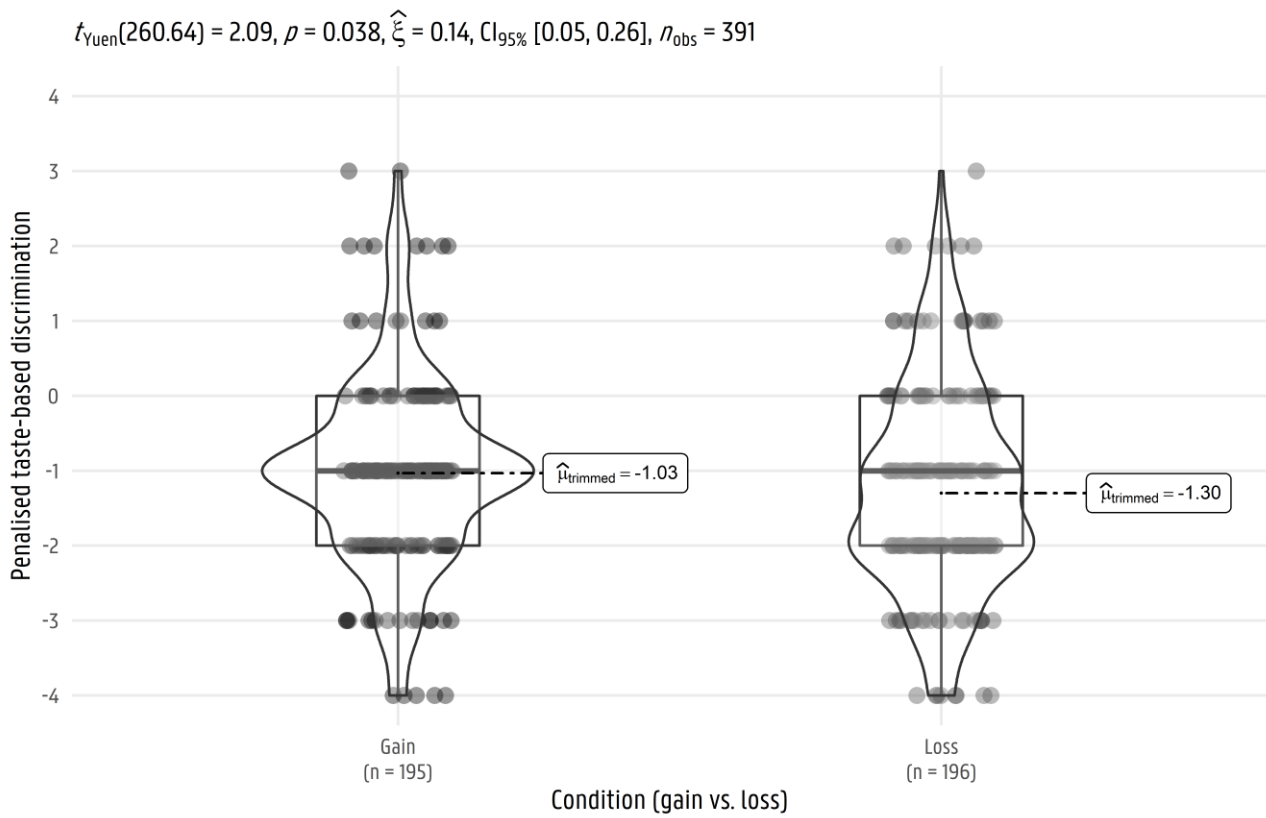
$t_{\text{Yuen}}(260.64) = 2.09$, $p = 0.038$, $\widehat{\xi} = 0.14$, $\text{CI}_{95\%}$ [0.05, 0.26], $n_{\text{obs}} = 391$

$\widehat{\mu}_{\text{trimmed}} = -1.03$

$\widehat{\mu}_{\text{trimmed}} = -1.30$

Penalised taste-based discrimination

Gain
(n = 195)

Loss
(n = 196)

Condition (gain vs. loss)

Table 1. Factorial design (2x4) of the experiment

Level (Condition)	Factor (Sub-condition)	Company A 75% Flemish, low wage			Company B 75% Maghrebi, low wage			Company C 75% Maghrebi, high wage		
		Ref.	ΔWage	E(Wage)	Ref.	ΔWage	E(Wage)	Ref.	ΔWage	E(Wage)
Gain	EUR 50							2,150	+ 50	2,200
	EUR 100							2,150	+ 100	2,250
	EUR 150	2,150	+ 0	2,150	2,150	+ 0	2,150	2,150	+ 150	2,300
	EUR 200							2,150	+ 200	2,350
Loss	EUR 50							2,350	− 150	2,200
	EUR 100							2,350	− 100	2,250
	EUR 150	2,350	− 200	2,150	2,350	− 200	2,150	2,350	− 50	2,300
	EUR 200							2,350	− 0	2,350

Notes. Notations used: Ref. = reference wage, ΔWage = net change in wage vis-à-vis the reference wage, E(Wage) = expected net wage. All values are in EUR. The factors reflect the wage differentials between the lowest and the highest expected net wage across the respective sub-conditions.