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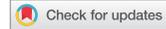
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The impact of the Covid-19 pandemic on ethnic discrimination on the housing market

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ABSTRACT

This explorative study examines the impact of the Covid-19 pandemic on ethnic discrimination. By means of 482 pairwise matched correspondence tests in pre-Covid times and 440 tests in Covid times, we examine discrimination against candidates of Maghrebian and Congolese origin on the housing market of a metropolitan city in Belgium. While the absolute invitation rates decreased for both Maghrebian and Belgian candidates at almost the same pace in Covid times, the relative net rate of discrimination of Maghrebian candidates increased significantly from 20% to 36%. With respect to candidates of Congolese origin, the absolute invitation rate only decreased sharply for Belgian candidates but not for Congolese candidates, with declining relative net rates of discrimination from 17% to 6% as a consequence. This suggests that the effect of Covid-19 on discrimination is different for different ethnic groups.

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KEYWORDS Ethnic discrimination; Covid-19; housing market; field experiments; real estate

1. Introduction

The global Covid-19 pandemic was a dramatic event that took the world by storm. Governments were forced to suddenly impose a lockdown and physical distancing measures in order to control the transmission of this highly contagious disease. Moreover, the pandemic caused a growing stigmatization of Asians and other ethnic groups all over the world (Noel 2020). Still, little is known about the impact of the Covid-19 pandemic on ethnic discrimination.

Recent studies have reported about Covid-19 associated discrimination, perceived by especially Asian groups, in the US (Liu *et al.*

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2020), in Poland (Rzymiski and Nowicki 2020) and in the world in general (He *et al.* 2020). These studies rely, however, on survey data and measure perceptions of discrimination instead of actual discriminatory behaviour. Moreover, because the pandemic was unanticipated and can be considered as a so-called ‘focusing event’ (such as natural disasters and industrial accidents) the impact is hard to study. Social scientists expect that focusing events are powerful to mobilize social groups (Birkland 1998), but it lies in their nature to be unpredictable, which makes it difficult to measure their impact because there are often no baseline data (Borell 2015). As a consequence, we do not know yet whether the Covid-19 associated discrimination reported in studies is really caused by the pandemic or is merely reflecting previous patterns of discrimination.

This study aims to address both caveats from previous research by comparing discriminatory behaviour just before and during the Covid-19 pandemic. We analyse the effect of the pandemic on ethnic discrimination on the housing market in a larger, metropolitan city in Belgium. Discriminatory behaviour by real estate agents is measured by means of the field experimental technique of correspondence tests. Our baseline model are the results from an ongoing study on ethnic discrimination just before the pandemic. We supplement these baseline data with new data on ethnic discrimination collected during the pandemic.

To the best of our knowledge, there are no theories available about the impact of focusing events on ethnic discrimination. Therefore, we try to apply the logic of existing theories of discrimination on the pandemic. We derive hypotheses from the two dominant economic theories to explain discrimination (taste-based and statistical discrimination) and three social-psychological theories (social identity, realistic group conflict and integrated threat theories). Although we build on these theories to make hypotheses, this explorative study cannot explicitly measure the theoretical mechanisms.

Several hypotheses about the impact of the pandemic on ethnic discrimination could be derived from theories. Social identity theory states that people tend to categorize themselves and others in ethnic in- and outgroups, in which within-group differences are minimized and between-group differences are maximized (Tajfel and Turner 1979). Moreover, positive characteristics are associated with ingroup members, while negative characteristics are assigned to outgroup members. This results in favouritism towards the own ethnic group and discrimination against the ethnic outgroup. The Covid-19 pandemic might, however, temporarily blur these existing ethnic boundaries and

instigate a kind of general social identity, by which all inhabitants are 'united under the flag'. According to this reasoning, the pandemic would lead to less ethnic discrimination (hypothesis 1).

However, several theories would predict more instead of less ethnic discrimination in Covid times. The economic theory of statistical discrimination argues that real estate agents use the average (statistical) characteristics of ethnic groups to make decisions (e.g. concerning income levels or family size), especially when detailed information about individuals is lacking or costly to acquire (Arrow 1971; Phelps 1972). This mechanism of statistical discrimination plays more when there is more demand for housing which makes discrimination cheaper, or when it becomes more costly to invite a candidate for a visit. As far as the lockdown and physical distancing measures of the pandemic caused one or both of these factors, Covid-19 would result in more statistical discrimination. Moreover, in the context of Covid-19, real estate agents have also no information about whether a rental candidate is contagious or not. Therefore, they could rely on (their perception of) the average contagiousness of ethnic groups to decide which candidate to invite for a visit and which not. Because in the Belgian media ethnic minorities were often portrayed as having a higher likelihood to be infected with Covid-19 (although there are no official statistics in Belgium yet about the Covid-19 prevalence per ethnic group), this could result in more statistical discrimination too.

Also the realistic group conflict theory takes the competition between ethnic groups into account. This social-psychological theory states that competition for access to limited resources leads to conflict between ethnic groups (Sherif 1966; LeVine and Campbell 1972). Other ethnic groups are considered as outgroups, with who one has to compete for scarce resources. This theory has later been expanded to include the mere perception of conflict instead of real conflict (Esses *et al.* 1998). The lockdown during the Covid-19 pandemic in Belgium might have increased the competition for descent housing in Belgium, or at least the perception of this competition. Following realistic group conflict theory, the predominantly white real estate agents in Belgium might have responded to this increased (perceived) competition on the rental market by discriminating more against ethnic minorities.

In addition, the integrated threat theory of prejudice of Stephan and his colleagues (1998) adds three types of threat to realistic threat: symbolic threat, intergroup anxiety and negative stereotypes. Especially these later two types might have played a role during the Covid-19

pandemic. People could feel anxious in interactions between ethnic groups because they are concerned about negative outcomes. When negative stereotypes about ethnic outgroups embody threats to the ethnic ingroup, these stereotypes might serve as expectations about the behaviour of these outgroups and induce ethnic discrimination. In line with this theory, Noel (2020) found that the Covid-19 pandemic came along with more negative stereotyping of ethnic minorities. These stereotypes might have increased intergroup anxiety with more ethnic discrimination on the housing market, because realtors dislike encountering ethnic minority rental candidates out of fear of contamination. In sum, both increased competition, realistic threat, intergroup anxiety and negative stereotypes could have led to more discrimination against ethnic minorities in Covid times (hypothesis 2).

The economic theory of taste-based discrimination would, however, state that the pandemic has little impact on ethnic discrimination. According to this theory, real estate agents or their customers have certain ethnic preferences ('tastes' or 'animus') concerning the kind of renters they want to let to, leading to discrimination against ethnic minorities (Becker 1971). If we assume that these ethnic tastes are not changed by the pandemic, taste-based discrimination would stay unchanged during Covid-19.

Furthermore, it is also possible that the first and second hypotheses are simultaneously at work and neutralize each other's effect with no change in ethnic discrimination during the pandemic too. Therefore, our third hypothesis is that ethnic discrimination remains the same during the Covid-19 pandemic (hypothesis 3).

Finally, it might be that the impact of the pandemic is different for different ethnic groups (hypothesis 4). According to this hypothesis, the unifying effect of the pandemic would lead to less discrimination against one ethnic group, while the realistic threat, intergroup anxiety and negative stereotypes would lead to more discrimination against another ethnic group.

2. Data and methodology

Ethnic discrimination was measured through the field experimental technique of correspondence tests. In correspondence tests on the housing market, two candidates apply for rental advertisements and ask whether they could visit the dwelling. Both candidates are as similar as possible and only differ with respect to their ethnic origin. Afterwards,

the reactions of real estate agents to both candidates are compared. When the minority group is significantly worse treated, this is considered as evidence for ethnic discrimination. Correspondence tests are already used for decades to examine discrimination on the housing market (Auspurg *et al.* 2019; Flage 2018; Quillian *et al.* 2020) and are considered as the ‘golden standard’ to measure discriminatory behaviour (Health and Di Stasio 2019).

For this study, we used data on ethnic discrimination on the rental housing market of a larger, metropolitan city in Belgium. Before the outbreak of the Covid-19 pandemic, we were collecting data in this city from October 2019 until the 18th of March 2020. We call this period of data collection the ‘pre-Covid times’. On the 18th of March, we were abruptly forced to stop our data collection because of the government measures against the pandemic. The Belgian government ordered a so-called lockdown, in which all non-essential shops were closed and non-essential physical encounters outside the family were forbidden. As a consequence, visits of rental dwellings by candidates were not allowed too. Two months later, the government cut down on a few measures and visits were again allowed from Monday the 18th of May and onwards. Therefore, we started to collect data again by sending requests for visits from Thursday the 15th of May until the beginning of June 2020. This period of data collection can be considered as ‘Covid times’.

The lockdown had a clear impact on the demand for rental dwellings in Belgium. Following McLaren and Shanbhogue (2011) and Wu and Brynjolfsson (2015), google search data can be used to roughly estimate this rental demand. Google provides free data in their Google Trends section about the relative popularity of search terms on Google. Figure 1 shows the relative popularity of the search terms ‘Immoweb’ and ‘Zimmo’ on Google in Belgium during the research period. Immoweb and Zimmo are the largest and most popular websites for buying and renting real estate in Belgium. We assessed the joint search intensity for both websites with Boolean operators. The results are standardized by Google Trends, with the highest popularity during the time period scoring as 100 units. Although far from a perfect indicator for rental demand (see discussion section), the numbers in Figure 1 show a clear relative drop in searching a dwelling on Google in the first week of the lockdown. The standardized, relative search intensity for Immoweb and Zimmo plummeted from 73 to 47 in only one week. However, during the first weeks of April the rental demand started to recover and reached by the 18th of May 2020 levels which are even



Figure 1. The standardized, relative joint search intensity for 'Immoweb' and 'Zimmo' on Google in Belgium.

higher than pre-Covid levels. This level of search intensity remained very high during our data collection in Covid times, which suggests that people not cancelled, but only postponed their demand for rental dwellings.

In addition, the available rental stock was affected by the lockdown too. **Figure 2** shows the relative number of rental advertisements on

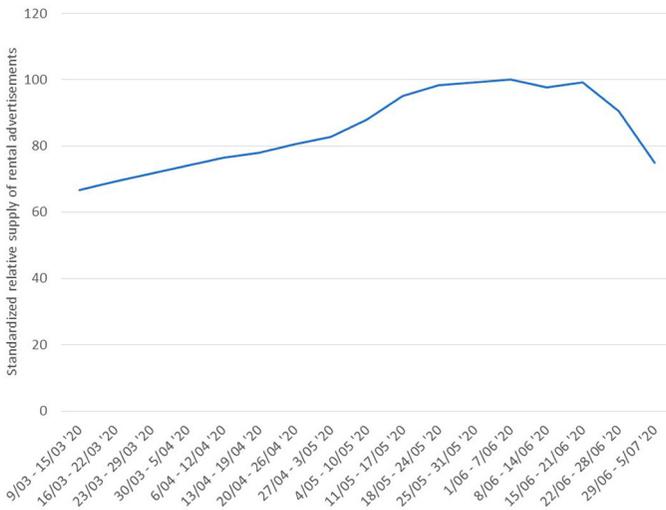


Figure 2. The standardized, relative supply of rental advertisements on Immoweb.

Immoweb in the city under scrutiny from the first week of the lockdown in March until the end of June. Unfortunately, we do not have complete numbers covering the period before the lockdown or for Zimmo. We standardized this indicator against its maximum score. It appears that during the lockdown the available rental stock grew gradually until the first week of June, probably because the rental demand plummeted. Taking the indicators of rental demand and supply together, this means that our data collection in Covid times was on a rental market with both increasing demand and supply. In other words, the realtors had much more work, with probably lower invitation rates in general.

During both periods of data collection, the sampling frame consisted of rental advertisement published on Immoweb and Zimmo. To avoid suspicion among realtors, only one advertisement per week was sampled per real estate agency. In addition, advertisements for very expensive dwellings with a rental price higher than € 2000 per month were excluded from the sampling frame. We follow the pairwise matching procedure, in which two (fictious) candidates apply each time on the same advertisement. The candidates applied through a standard mail message of the rental websites (and not in-person or by phone). These messages were short and in correct Dutch.

We examined discrimination against candidates of Maghrebian and Sub-Sahara Central-African origin. While the Maghrebian community is the largest ethnic minority group (14% of the inhabitants) and has a long migration history in the city under scrutiny, the Sub-Sahara Central-African community is rather small (only 1% of the inhabitants). Previous research has shown that both ethnic minority groups are discriminated against in Belgium (Van der Bracht *et al.* 2015; Verhaeghe *et al.* 2017; Verstraete and Verhaeghe 2020). Unfortunately, we could not examine the discrimination against candidates of Asian origin, because we did not have baseline data for this group. During the field experiments, the first rental candidate was each time of Maghrebian or Congolese descent (test person), while the second candidate was of Belgian descent (control person). Realtors who dislike a particular candidate often inaccurately tell that the property is no longer available. By first sending the test person and afterwards the control person, we were able to assess whether the property was really unavailable. Following previous studies (Carpusor and Loges 2016; Van der Bracht *et al.* 2015), the ethnic origin of the candidates was signalled through their names. After contacting the realtors, their reactions were collected for seven days.

In pre-Covid times, we could complete 248 pairwise matched tests in which Maghrebian candidates were compared with Belgian candidates, and 234 tests in which Congolese candidates were compared with their Belgian counterparts. During the Covid period we performed 220 pairwise matched correspondence tests in which Maghrebian candidates were compared with Belgian candidates and 220 tests in which Congolese candidates were compared with Belgian candidates. In total, we performed 922 pairwise matched correspondence tests on ethnic discrimination.

To analyse the impact of Covid-19 on ethnic discrimination on the housing market, we will compare the discriminatory patterns between pre-Covid and Covid times. Pairwise matched correspondence tests have four possible outcomes: both candidates receive an invitation to visit the property (n_{11}), only the control person of Belgian origin is invited (n_{21}), only the test person of Maghrebian or Congolese origin is invited (n_{12}), or neither are invited (n_{22}). We speak about an invitation when the candidate is explicitly offered an opportunity to visit the property. This includes reactions where the realtor suggests a group viewing or asks the candidate to propose a date or to call the office or the current tenant to make an appointment.

First, we calculate the net rates of discrimination for both ethnic minority groups during both time periods. The net rate of discrimination is calculated by subtracting the number of cases where only the test person is invited (n_{12}) from the cases where only the control person is invited (n_{21}), divided by the number of cases where at least one candidate has been invited ($n_{11} + n_{21} + n_{12}$). The assumptions, here, are that all cases of test person-favouring treatment are due to random factors and that random control person-favouring treatment occurs just as frequently as test person-favouring treatment (for more details, see Ondrich *et al.* 2000; Riach and Rich 2002). In addition, there is some debate about the situation when neither candidate is invited (n_{22}). This outcome can be considered as equal treatment or as non-response (Riach and Rich 2002). The latter approach generates in general higher rates of discrimination than the former. In line with the manual of the International Labour Organization (Bovenkerk 1992), most studies consider this outcome as non-response (Riach and Rich 2002), since there is no information at all about whether there are discriminatory intentions or not. Significance levels of net rates of discrimination are calculated with the McNemar test statistic. The significance of the changes in net rates of discrimination between pre-Covid and Covid times is calculated with the z -statistic for comparing proportions.

In addition, we perform multilevel binary logistic regression analyses on the odds to be invited for a visit of the rental dwelling, in which we examine whether these odds significantly differ between the three ethnic groups and whether there is a significant interaction effect of the time period on these ethnic differences. Because of the matched structure of the data, in which two candidates apply for the same rental advertisement, the assumption of independence of observations is violated (Hox 2002). Moreover, during the research period real estate agencies were also tested multiple times. Therefore, we applied multilevel regression analyses in which observations (level 1) are nested in rental advertisements (level 2), which are nested in real estate agencies (level 3). From the null model, it appears that the variances of rental advertisements (=17.33 with a standard error of 0.278) and real estate agencies (=2183 with a standard error of 0.408) are significant ($p < 0.001$). In these regression analyses, we control for the rental price and the dwelling type of the advertisement. The mean rental price was € 746.87 per month with a standard deviation of € 210.11. With the variable ‘dwelling type’ we distinguished between ‘apartment’ (90.5%) and ‘no apartment’ (9.5%). It appears that the mean monthly rental price was significantly ($p < 0.001$) higher in the pre-Covid sample of advertisements (€ 786.89) compared with the Covid sample (€ 703.02). Also the share of apartments was significantly ($p < 0.05$) different between the pre-Covid sample (89%) and the Covid sample (92% apartments).

3. Results

Table 1 shows the invitation rates and net rates of discrimination in pre-Covid and Covid times. When we first look at the invitation rates, it

Table 1. Invitation rates and net rates of discrimination in pre-Covid and Covid times.

	Maghrebian candidates compared with Belgian candidates		Congolese candidates compared with Belgian candidates	
	Pre-Covid times	Covid times	Pre-Covid times	Covid times
Both candidates are invited	69	38	65	48
Only majority candidate is invited	35	28	29	18
Only minority candidate is invited	12	3	11	13
None of the candidates are invited	132	151	129	141
Sample size	248	220	234	220
Invitation rate majority candidate	42%	30%	40%	30%
Invitation rate minority candidate	33%	19%	32%	28%
Net rate of discrimination	20%	36%	17%	6%
McNemar test statistic	11.25***	20.16***	8.10**	0.81

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

appears that the invitation rate for minority candidates are each time lower than these of majority candidates and that the invitation rates are lower in Covid times compared with pre-Covid times. These lower invitation rates reflect the larger time pressure of real estate agents in a context of a rapid rise of both rental demand and supply. The net rate of discrimination of Maghrebian candidates was 20% ($p < 0.001$) in pre-Covid times and this rate increased to 36% ($p < 0.001$) in Covid times. This increase in net rate of discrimination was significant ($p < 0.01$). For Congolese candidates the net rate of discrimination was 17% ($p < 0.01$) in pre-Covid times and this rate declined to 6% (not significant anymore) in Covid times. This decline in net rate of discrimination was significant too ($p < 0.05$). These findings already suggest that the impact of Covid-19 is different for different ethnic groups.

Table 2 presents the findings from multilevel binary, logistic regression analyses on the odds to be invited to view the rental dwelling. From model 1, it is clear that the odds of Maghrebian and Congolese candidates to be invited to visit the rental dwelling is significantly lower than the odds of Belgian candidates (odds ratios of respectively 0.481 and 0.710). From model 2, it appears that the general invitation rates are significantly lower in Covid times than in pre-Covid times (odds ratio of

Table 2. Multilevel, binary logistic regression analyses of the odds to be invited to visit the rental dwelling (n observations: 1844, n rental advertisements: 625, n real estate agencies 259, odds ratios).

	Model 1	Model 2	Model 3	Model 4
<i>Ethnic origin</i>				
Belgian candidate (ref. cat.)				
Maghrebian candidate	0.481***	0.484***	0.588**	0.591*
Congolese candidate	0.710*	0.701*	0.595*	0.590*
<i>Time period</i>				
Pre-covid times (ref. cat.)				
Covid times		0.473***	0.478**	0.477**
<i>Interaction between ethnic origin and time period</i>				
Belgian candidate in covid times (ref. cat.)				
Maghrebian candidate in covid times			0.623	0.619
Congolese candidate in covid times			1.400	1.411
Rental price per month				1.000
<i>Dwelling type</i>				
No apartment (ref. cat.)				
Apartment				1.252
Constant	0.466***	0.608**	0.603**	0.463
Log likelihood	8727.040	8767.590	8783.320	8802.286
Variance rental advertisement (standard error)	1907 (0.296)	1797 (0.284)	1796 (0.284)	1813 (0.287)
Variance real estate agency (standard error)	1506 (0.336)	1540 (0.334)	1558 (0.336)	1560 (0.339)

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; ref. cat. = Reference Category.

0.473). In model 3, we examine whether the level of discrimination is significantly different in Covid times compared with pre-Covid times. This does not seem to be the case in this logistic regression analysis. Although the interaction effect is negative for Maghrebians (odds ratio of 0.623) and positive for Congolese candidates (odds ratio of 1.400), these interaction effects are not significant. When taking the general lower invitation rates in Covid times into account, the ethnic inequalities in the odds to be invited are not significantly larger (in the case of Maghrebians) or smaller (in the case of Congolese) in Covid times compared with pre-Covid times. Further analyses show that the odds ratio of Maghrebians candidates is still significant ($p < 0.001$) in Covid times (odds ratio of 0.306), but that the odds ratio of Congolese candidates is no longer significant (odds ratio of 0.804). These effects remain after taking dwelling characteristics into account in model 4.

In sum, the net rates of discrimination provide evidence for a significant impact of the Covid-19 pandemic on ethnic discrimination, while the multilevel binary logistic regression analyses do not show any significant effect of the pandemic on ethnic discrimination. There could be two explanations for these mixed findings. A first explanation is that the net rate of discrimination only takes the advertisements into account in which at least one candidate is invited ($n = 738$), while the regression analyses cover all the advertisements ($n = 1844$), including those where neither of the candidates is invited for a viewing. In additional analyses (see supplementary data online), we restricted the regression analyses to the data where at least one candidate is invited (in line with the data used to calculate the net rates of discrimination). In these additional analyses, the interaction effect between ethnic origin and time period was, however, not significant too. Therefore, we could disregard the first explanation. A second explanation is that the odds ratio for time period calculates whether the absolute differences between ethnic groups have significantly changed between pre-Covid and Covid times, while the net discrimination rates compares the relative differences between ethnic groups.

This difference between the methods was already visible from the comparison of Maghrebians with Belgian candidates in [Table 1](#). In the context of declining general invitation rates in Covid times, the absolute differences in the invitation rates of Maghrebians and Belgian candidates were almost the same in pre-Covid times ($42\% - 33\% = 9\%$) compared with Covid times ($30\% - 19\% = 11\%$). The relative net rates of discrimination increased, however, from 20% to 36%. Therefore, we tend to follow the second explanation.

4. Conclusion and discussion

This explorative study investigated the impact of the Covid-19 pandemic on ethnic discrimination. To the best of our knowledge, this is the first study that tackles this question with a proper pre-Covid baseline and with robust measures to measure discriminatory behaviour. By means of 922 pairwise matched correspondence tests, we compared discrimination against candidates of Maghrebian and Congolese origin on the housing market of a metropolitan city in Belgium.

The Covid-19 pandemic had a detrimental effect on discrimination against candidates of Maghrebian descent. While the absolute invitation rates decreased for both Maghrebian and Belgian candidates at almost the same pace in Covid times, the relative net rate of discrimination increased significantly from 20% to 36%. These results are in line with the economic theory of statistical discrimination of Arrow (1971) and Phelps (1972) and the integrated threat theory of prejudice of Stephan and his colleagues (1998). In the context of an abrupt increase in both rental demand and supply, real estate agents were under more time pressure and probably more 'selective'. This might have triggered a growing perceived competition between ethnic groups. Together with Covid-19 related stereotypes about the Moroccan community and a fear of contamination, this could explain the increased relative discrimination against Maghrebian candidates.

With respect to candidates of Congolese origin, the pandemic appears to have no or even a beneficial effect. Here the absolute invitation rate only decreased sharply for Belgian candidates but not for Congolese candidates, with declining relative net rates of discrimination from 17% to 6% as a consequence. In Covid times, there was actually no significant difference in invitation rates anymore between Congolese and Belgian candidates. This suggests that the focusing event of the Covid-19 pandemic have blurred the ethnic boundaries between inhabitants of Congolese and Belgian origin.

Our findings suggest that the impact of Covid-19 on ethnic discrimination differs between different ethnic groups. Although more research is needed to examine the differences between the Maghrebian and Congolese groups on the Belgian housing market, we could offer a few potential explanations. In contrast to the Maghrebian group, the Sub-Saharan Central-African community is very small in the city under scrutiny, which could have caused less perceived competition among the predominantly Belgian real estate agents. In addition, realtors could perceive the

threat or average likelihood of being contaminated by Covid-19 as lower during an appointment with Congolese candidates compared with Maghrebian candidates. The Belgian media especially paid attention to the potential higher prevalence of Covid among the Maghrebian and Turkish communities in Belgium.

However, these conclusions have to be considered with caution, because the used methods provided only mixed evidence for the impact of Covid-19 on ethnic discrimination. Moreover, we did not explicitly examine the theoretical mechanisms underlying these changing discrimination patterns. This explorative study only derived hypotheses by building on existing economic and social-psychological theories of discrimination. Further research should dig deeper into the different theoretical mechanisms by interviewing realtors about their Covid-19 related stereotypes about ethnic groups and how they experienced the rental process in Covid times. In addition, research could investigate discrimination against other ethnic minority groups, for example Asian groups, given their stigmatization during the pandemic (Noel 2020). Furthermore, we cannot rule out the possibility that changes in net discrimination rates were driven by seasonal differences between October-March (first time period) and May-June (second time period) instead of the pandemic. Further research could examine this alternative explanation by investigating potential seasonal fluctuations in ethnic discrimination (e.g. by means of a meta-analysis of previous studies). Another limitation is the use of Google trends data to assess the rental demand. Google trends only provides relative rates of search intensity and not absolute rates. It might be that the absolute search intensity remained stable during the pandemic, but the relative intensity decreased because of the lockdown measures with more people at home searching the internet. However, when we look at the Google trends of more stable search terms which could not be affected by the pandemic (such as 'birth' and 'birth registration') we cannot find a similar drop in relative search intensity in Belgium during the lockdown. Finally, we recommend examining ethnic discrimination in other domains than the housing market too. Following the theory of statistical discrimination and the integrated threat theory of prejudice, we expect more discrimination in contexts where competition became fiercer (e.g. in some economic sectors) or where physical encounters is more proximate (e.g. in so-called contact jobs or during shopping).

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