**What explains the differential treatment of renters based on ethnicity?**

**New evidence from Sydney**

**Abstract**

This paper conducts the first contextual analysis of ethnic-based discrimination in an Australian rental housing market: metropolitan Sydney. Logistic regression is employed to investigate how the likelihood of five behaviors by rental agents that may favor Anglo home seekers varies according to characteristics of the agent, home seeker, dwelling and neighborhood. We find that several forms of discrimination favoring Anglos are consistently more likely in neighborhoods characterized by lower crime rates and shares of renter households, regardless of the ethnicity of the agent. Other patterns are consistent with the hypothesis that, in general in the Sydney rental market, agents regardless of ethnicity are motivated to discriminate by statistical discrimination. Our result that profit, not prejudice, drives discrimination implies that it will prove resilient to unfettered housing market forces and changes in societal ethnic tolerance, but instead must be addressed through enhanced civil rights enforcement strategies.

**Background**

The growing breadth of evidence for ethnicity-based[[1]](#endnote-1) housing discrimination suggests it is a significant factor in Western societies that attract migrants. Studies in Spain, Italy, Norway, Britain and the U.S. demonstrate systematic differences in the way renters of different ethnicities are treated by agents (Bosch, Carnero and Farre 2010; Carlsson and Erickson 2014; Baldini and Federici 2011; Ahmed and Hammarstedt 2008; Andersson, Jakobsson, and Kotsadam 2012; Turner et al. 2013). Until this point, there has been little systematic research on how the issue affects ethnic minorities in Australian cities. Recent evidence from Sydney suggests that members of two ethnic minorities – Indians and Muslim Middle Easterners – may be systematically disadvantaged in rental housing searches (authors forthcoming). A paired tester study conducted in late 2013 highlighted several statistically significant and meaningful differences in the experience of testers of different ethnicities.[[2]](#endnote-2) Anglo renters were more likely than minority renters to be offered an individual appointment to inspect a property, to discuss their housing needs with an agent and to be told about other available housing, to be given additional information about the application process, and to be contacted by the agent after an inspection (MacDonald et al. 2016).

Thus, though we know that ethnicity-based housing discrimination remains widespread, we know far less about the circumstances in which it is most likely. What factors underpin this evidence of differential treatment? Do they reflect the real estate agent’s own ethnic background? Are minorities more likely to be treated differently in some sorts of neighborhoods (for example, in more- compared to less-desirable neighborhoods), or when inspecting some sorts of dwellings (for example, an apartment compared to a house)? What roles do gender, age, or assigned family and occupation status, play in mediating the treatment of renters of different ethnicities? How do these dimensions of difference interact with each other to increase the likelihood that prospective renters will be treated differently based on their ethnicity? This paper investigates these questions based on the paired tester study explained in more detail below.

Answering these questions is vital for two interrelated reasons. First, uncovering the context in which discrimination occurs can provide clues as to why it occurs, i.e., one might be able to make logical inferences about agent motivations to discriminate by observing when they do so and when they do not (Yinger 1995, 1998; Galster 1987, 1990b; Ondrich, Ross and Yinger 2001, 2003; Zhou 2005; Zhou, Ondrich and Yinger 2005). Second, a better understanding of why discrimination occurs and when it is most likely to be perpetrated is essential in improving public policy efforts to eradicate it. We amplify both rationales below.

The remainder of this section briefly outlines the key characteristics of the Sydney rental housing market that establish vital context for the discrimination we observed. The following section reviews recent international theoretical and empirical research on rental housing discrimination, focusing on studies that have explored the circumstances under which discrimination is more likely. Next, we explain the study we conducted in late 2013, and summarize the key results. Section 4 explains the methodology we use here to investigate the contextual variables associated with the likelihood of differential treatment, and presents the results of a series of logit models. In Section 5 we discuss these results and draw inferences about what they reveal about potential agent motivations for discrimination. Finally, we offer conclusions about the conditions under which differential treatment appears to be more likely in the Sydney rental housing market and explain the significance of our findings for guiding efforts to enhance fair housing enforcement efforts.

**The Sydney Housing Market**

Sydney is Australia’s most expensive housing market; Australia ranks fourth among OECD countries in the ratio of housing prices to income (<http://www.oecd.org/eco/outlook/focusonhouseprices.htm>). Renters make up just under a third (32.1%) of all households in the metropolitan area, but a much larger proportion in the inner city. Sydney is the primary gateway for new immigrants to Australia, and decades of immigration have resulted in a population made up of more than 240 language groups. Forty percent of metropolitan residents were born overseas, and one quarter speak a language other than English at home (as of 2011). Recent analyses have found clear evidence that both Muslim and Indian Australians face substantial levels of prejudice in Australia (Dunn et al. 2011; Singh 2011; Dunn et al. 2009).

While Sydney has not shown similar patterns of ethnic segregation to those in most US and many European cities, economic segregation is deeply entrenched (Forrest, Poulsen and Johnston 2003; Baum 2008). Both ethnic precincts and areas of ethnic residential concentration are found in Sydney, but even in areas of concentration, it is ethnic layering that occurs, rather than segregation, with no one particular ethnic group dominating a given area (Forrest et al. 2003). Turner (2008) argues that it is the middle ring suburbs of Sydney that have the greatest ethnic diversity, with the gentrifying inner suburbs and newer outer suburbs becoming increasingly Anglo. There are distinct pockets of primarily suburban disadvantage on the fringes of the metropolitan area (Hulse et al. 2014). Overall, vacancy rates in Sydney in the third quarter of 2013 averaged 1.7% (SQM Research 2015), indicating a very tight housing market in which discriminatory behavior may be encouraged by the fact that agents do not forgo profit if they choose to disadvantage some prospective renters.

In sum, Sydney offers an enticing metropolitan area in which to investigate the contextual aspects of ethnically based differential treatment in the rental housing market. The two ethnic minority groups we study here report experiencing substantial levels of prejudice in daily social interactions. In most areas rents are extremely high and markets are tight. There is substantial international immigration. Spatial patterns of ethnic and socioeconomic segregation are clear and intensifying. Though individual properties and the neighborhoods in which they are located are generally of good quality by international standards, there remain substantial spatial disparities. All this combines in Sydney to create a rich set of residential contexts that vary in multiple dimensions; it is this variation that provides power to our analysis of contextual discrimination.

**Theory and evidence on the motives for and contextual nature of housing discrimination**

Three theories have been put forward to explain agent discrimination against ethnic minorities in the housing market: personal prejudice, customer prejudice and statistical discrimination (see the review in Oh and Yinger 2015). It is important to note at the outset that these four perspectives differ in their predictions about whether and how dimensions of context—agent, home seeker, dwelling and neighborhood—will affect the likelihood of discriminatory treatment being observed. The *personal prejudice* theory posits that discrimination is a result of ethnic prejudices (i.e., personal animus) held by individual real estate agents or landlords, which discourage them from renting or selling properties to members of particular minority groups or otherwise associate with them interpersonally, even in professional situations (Becker 1957). This is also referred to as ‘taste-based’ discrimination (e.g., Carlsson and Ericksson 2014; Hanson and Hawley 2014). This motivation is seen as contrary to economic rationality, as the benefit of acting upon one’s prejudices is offset by the cost of foregone profits (sales commissions, rents) incurred by failing to consummate a relationship with an otherwise qualified minority prospect (Becker 1957). The typical discriminatory acts associated with this motivation would be exclusion, misinformation and/or discourtesies. That is, prejudiced (presumably Anglo) agents would be most likely observed to not appear for a scheduled appointment with a minority home seeker, incorrectly inform said home seeker that no dwellings were available, offer few encouragements and behave rudely in an effort to minimize interpersonal contact time. These sorts of behaviors would not likely vary by dwelling type or neighborhood context and would be practiced exclusively by Anglo agents. They may be tempered or intensified by characteristics of the minority housing seeker, however. Minorities of higher socioeconomic status may, for instance, be less likely to generate the same aversive responses by Anglo agents; the contrary would be predicted if the minority home seekers were young, single and/or males, who stereotypically may be seen by Anglos as more threatening (Zhou et al. 2005).

A second theory that is used to explain discriminatory treatment also relates to prejudice, but in this case the driver is ethnic prejudice held by the likely customers whom agents serve, such as current or potential tenants in a landlord’s apartment building or potential home sellers in a neighborhood predominantly occupied by the same group as the agent who might solicit the services of that agent. In the *customer prejudice* theory, the motive for discrimination is largely financial, with agents catering to perceived or real racial prejudices held by their customer base in order to protect their economic interests (Yinger 1995). For example, Anglo agents may fear loss of reputation (and hence, commissions) if they introduced minority homebuyers into a predominantly Anglo-occupied neighborhood, and landlords of a majority Anglo-occupied apartment building may fear a loss of such tenants by introducing a minority one. Minority agents may be motivated in a comparable way if they were to perceive strong prejudices from their clientele directed against Anglos. However, given that this prospect is less likely than the reverse, we would expect that customer prejudice would primarily provide motivation for Anglo agents. Discriminatory behaviors predicted by this theory would include steering, exclusion and misinformation directed at minorities seeking occupancy of majority-Anglo buildings or neighborhoods. Inasmuch as agents expect their Anglo clientele’s ethnic prejudices to be intensified when other individual characteristics are present, discrimination against minorities should be more likely when they are younger, single, males of lower socioeconomic status. Finally, the customer prejudice theory would predict no variation in the incidence of discrimination for different types of dwellings.

A third potential explanation is *statistical discrimination* (Phelps 1972). This theory states that agents discriminate in order to enhance the efficiency of the rental or sales process, by pursuing customers they judge to be most likely to yield a most-profitable transaction, based on the statistical averages that they have formally or informally calculated based on prior experience with members of different ethnic groups (Yinger 1998). Like the customer-prejudice explanation, economic drivers are key here too, with statistical discrimination providing a heuristic procedure for sound business practices. Unlike the prior two theories, however, it is unclear whether statistically motivated discrimination is likely to be practiced only by Anglo agents. It is plausible that all agents, regardless of their ethnicity, may be motivated to discriminate similarly if they have had statistically similar experiences with customers in the past. To the extent that they have not, similar contextual circumstances will yield different discriminatory behaviors depending on agent ethnicity. Similarly, it is impossible *a priori* to predict how statistically based discrimination will be related to variations in home seekers’ gender or age, though it is plausible to expect that higher socioeconomic status and coupled minorities will be less likely to face discrimination because such households have been “easier to work with in completing a transaction” in the past, likely have greater wealth reserves, and are more likely to have more stable income in the future. There should be no variation in the incidence of discriminatory acts predicted by this theory across different physical types of rental dwellings, but one would predict more discrimination when a more expensive unit is involved if agents believe that the longer-term financial capability and stability of the minority tester is inferior (even with current income identical to the Anglo tester’s). Within the frame of this theory, agents are likely to steer or differentially encourage customers to distinctive types of neighborhoods with their expected preferred mix of amenities, thereby maximizing their expected bid for the property (and hence the speed of culminated transaction and size of commission or rent premium). One aspect of neighborhood context that should matter from the perspective of statistical discrimination theory is ethnic composition. Agents would not show Anglos dwellings in racially mixed or predominantly minority-occupied neighborhoods if past experience has taught them that Anglos were unwilling to reside there and hence steering would be a rational vehicle to avoid wasting their own and their customer’s time. Moreover, if agents believe that Anglos have systematically stronger preferences for certain amenities (like good schools) and aversions to certain disamenities (like crime), they will differentially encourage and steer clients based on these contextual variations, if the statistical discrimination theory holds.

*Evidence*

The international empirical evidence related to the contextuality of housing discrimination is thin outside of the U.S., yet offers several consistent findings. Unfortunately, these findings prove ambiguous in regards to pinpointing a single, dominant motivation for discrimination. We organize our review according to the various dimensions of context—agent, home seeker, dwelling and neighborhood—that potentially will affect the likelihood of discriminatory treatment.

Agent characteristics have often been shown to be predictive of their likelihood of discriminating. The foremost predictive characteristic has unsurprisingly proven to be ethnicity. Virtually all studies based on various U.S. paired testing assessments have concluded that minority agents were less likely to discriminate over many dimensions of the transaction than white agents (e.g., Yinger 1995, 1998; Roychoudhury and Goodman 1992; Zhou, Ondrich and Yinger 20005; Zhou 2005); Ondrich, Stricker and Yinger (1998, 1999) proves the only exception. Older and male agents also have been observed from U.S. evidence to have a higher propensity to discriminate (e.g., Yinger 1995; Choi, Ondrich and Yinger 2005; Roychoudhury and Goodman 1992).

The evidence about the importance of home seekers’ non-ethnic characteristics in predicting discriminatory treatment is less consistent. Roychoudhury and Goodman (1992) found in their Detroit, MI paired tests that black home seekers were more likely to face unfavorable treatment if they were: married, with children, lower income, and poorly educated. Page (1995) also found lower-income blacks more likely to face discrimination, but Ondrich, Ross and Yinger found the opposite (2003). Analysis of 2000 national U.S. paired testing data did not reveal these relationships, however, for black or Hispanics (Zhou 2005; Zhou, Ondrich and Yinger 2005). Fischer and Massey (2004) found that blacks who spoke vernacular black English were more likely to be discriminated against based on paired phone testing in Philadelphia.

Dwelling characteristics proved important predictors of discriminatory behaviors in only a few studies. Ondrich et al. (2003) found using data from the 1989 U.S. HUD discrimination study that agents made more efforts and provided more assistance for Anglo (compared to black) customers when more expensive homes were involved. In an experiment examining discrimination against Albanians in the Greek housing market, Drydakis (2011) analogously found discrimination was more likely in higher-status rental properties.

As for neighborhood context, several U.S.-based and a few non-U.S.-based studies have identified variations in discrimination according to the geographic location of the advertised dwelling that was the basis of the paired test. The most consistent result involved the racial-ethnic composition of the neighborhood. Using data from the 1989 U.S. HUD discrimination study, Ondrich, Ross and Yinger (2003) found that blacks were more likely to be favorably treated when examining properties in racially mixed neighborhoods, whereas the opposite occurred when their white counterparts examined properties in predominantly white-occupied places. This finding was buttressed by Galster and Godfrey (2005), who identified rampant steering patterns in the U.S. HUD 2000 discrimination survey, whereby whites were provided gratuitous information by agents that encouraged them to finalize home sales when they searched in higher-valued, majority white-occupied neighborhoods.

Fisher and Massey (2004) found that phone-based discrimination against black apartment seekers in Philadelphia, PA was less likely if the dwelling was in a neighborhood of predominantly black residents but rose in likelihood as distance from such neighborhoods increased. Roychoudhury and Goodman’s (1992) Detroit, MI study also revealed that several forms of discrimination against blacks were inversely related to the percentage of black residents in the neighborhood in question. These results were replicated in the United Kingdom (Carlsson and Ericksson 2013) and Spain (Bosch, Carnero and Farre 2011). In his analysis of discrimination complaints in Cleveland, OH, Galster similarly found that whites were more likely to be favored in majority-white neighborhoods, but discrimination complaints were also prevalent in unstable neighborhoods in the midst of racial transition (also observed by Page 1995). Likewise, Hanson and Hawley (2014) found that discrimination against blacks as measured by internet paired tests (as opposed to in-person paired testing used by most U.S. studies) was more likely to occur in racially mixed neighborhoods, though the stability of such contexts was not measured. The only U.S.-based study not observing a relationship between discrimination and neighborhood racial composition was by Ewens, Tomlin, and Wang (2014).

As for non-racial aspects of neighborhoods, Galster’s (1990b) analysis of paired tests in Memphis, TN found that agents provided more favorable assistance and encouraging information to white home seekers when properties where located in superior school districts. Choi, Ondrich and Yinger (2003), Zhou, Ondrich and Yinger (2005) and Hanson and Hawley (2014) found that blacks experienced elevated rates of discrimination in American neighborhoods with higher median incomes and rents. Finally, Ondrich, Ross and Yinger (2001) found that discrimination decreased as the distance between the house for sale and the agent’s office increased. Though this review reveals a considerable number of consistent findings in the empirical literature, it implicitly points to its primary ambiguity: identifying the primary driver of discrimination. The contextual patterns revealed in the discrimination data neither rule out nor definitively support any single theory. This is true even for studies that use the same method for measuring discrimination and are conducted within the same nation during roughly the same time.

Virtually all of the existing U.S.-based research using the in-person paired testing method has concluded that discrimination has multiple, overlapping causes and there is no consensus on which of the foregoing theories is more dominant; cf. Yinger (1995, 1998); Galster (1990b); Page (1995); Ondrich, Stricker and Yinger (1998, 1999); Zhou (2005); Zhou, Ondrich and Yinger (2005); Choi, Ondrich and Yinger (2005) and Oh and Yinger (2015). Similar ambiguity arises from the studies involving online field experiments measuring differential responses to email inquiries about housing from people with racially identifiable names. Hanson and Hawley’s (2014) and Ewens, Tomlin, and Wang’s (2014) analyses of inquiries from blacks and whites in the United States came to opposite conclusions, the former offering support for the customer prejudice theory and the latter for the statistical discrimination theory. In contrast, in a comparable Swedish experiment, Carlsson and Ericksson (2014) concluded that their results could be equally well explained by both the personal prejudice and statistical discrimination theories. Taken together, it is possible that the findings are indicating that all of the aforementioned theories constitute important drivers of discrimination, which may play a more or less powerful role in different contexts.[[3]](#endnote-3)

*Our contribution*

In this study we contribute to this international scholarly discussion about the contextual nature and underlying motivations for ethnic-based housing discrimination by providing an original analysis of the first evidence of such discrimination ever produced from Australia, in particular the Sydney rental market. Our first aim is to assess whether the variation in discriminatory incidence across agents, home seekers, dwellings, and neighborhoods in Sydney is similar to that previously observed in U.S. and Western European markets. Our second aim is to deduce the degree to which any contextual variations revealed are consistent or inconsistent with the three theories of discrimination presented previously.

**Data and methods**

*Overview of approach*

We begin with a bivariate analysis of a unique dataset described below (stage 1). Next, we summarise a variety of correlated neighborhood attributes using Principle Components Analysis, and include the resulting factors (along with variables capturing key aspects of agent, dwelling, and tester characteristics) in a series of logistic regression analyses aimed at identifying the contextual factors associated with five key discriminatory behaviours (stage 2). A second series of models includes interaction variables capturing the effect of the ethnicity of the agent on other explanatory variables (stage 3).

*Paired testing in Sydney*

The analysis draws on a unique dataset, the results of a paired-tester study conducted in the Sydney metropolitan region over 15 weeks from August to November 2013. Testers were organized into pairs (Anglo-Muslim Middle Eastern, and Anglo-Indian), matched by gender and age, and assigned a sample of properties each week. Critics of paired tester studies have argued that the underlying attributes of testers may have a significant effect on their treatment, particularly in employment searches (Heckman 1998; Heckman and Siegelman 1993). On several significant attributes, the testers in this study had underlying similarities. They were highly educated; all were either engaged in tertiary education while participating in the study (N=6) or had previously completed post-secondary education (N=24). They differed in their ‘real’ family status; some had children and partners, while others were either single or part of a childless couple (they were assigned a family status appropriate to the property they were viewing). Testers ranged in age from the early twenties to the late thirties. This age distribution is an appropriate reflection of the profile of ‘typical’ renters in Sydney (Haylen 2014), although we recognize older renters (who we exclude from this study) may have quite different experiences in the rental market.

Rental properties were identified weekly using a large online property database with wide coverage of the Greater Sydney Metropolitan area. Properties were selected using a regionally stratified random sample of properties available on the database, and randomly assigned to tester pairs. The sample was limited to properties represented and managed by a real estate agent and excluded those advertised very locally (e.g. on noticeboards or through local newspapers). While these informal rental markets are worthy of study, we chose to focus on the formal private rental market for the first paired testing research conducted in Sydney.

The experimental procedure involved two phases. For each property they were allocated, testers were also allocated appropriate and equivalent occupational and family characteristics. The first phase involved each tester calling the real estate agent advertising the property to attempt to set up an in-person inspection. During this telephone contact testers were required to communicate their ethnically identifiable name to the agent. The second phase involved each tester attending the rental property inspection, either at an individual appointment or, more commonly, at an advertised open house. The highly competitive nature of the Sydney rental market means that many rental property inspections take place at an advertised time, during which all interested parties attend. Both phases were scripted to approximate equivalent behavior by each tester. They visited the property separately and had no contact with each other. Testers were required to independently complete a detailed questionnaire immediately after they completed each phase (phone call and the in-person inspection). Testers did not submit applications to rent the property, as providing false names and bank details on these rental applications would have been illegal.

This procedure led to 537 tests being completed to phase 1 (phone call) and 369 tests completed to phase 2 (in-person inspection). For those tests that only reached the end of phase 1, these properties had already been rented prior to the inspection date, or (in ten cases) at least one tester was unable to attend the inspection.

 *Descriptive portrait of differential treatment in Sydney rental market*

Stage 1 involved a bivariate analysis of the dataset. We used paired sample t-tests to investigate whether differences in the proportions of minority or Anglo testers favored were likely to be the result of random variation, or of systematic differences in treatment. We found a number of statistically significant differences, as Table 1 shows. Results are summarized in three categories: tests in which the minority tester was favored (e.g. was offered an individual appointment) but not the Anglo partner, tests in which both were treated equivalently, and tests in which the Anglo but not the minority partner was favored. The net index of discrimination (the difference between percent Anglo-favored and minority-favored) is shown in the final column.

Table 1

Several of these differences are unlikely alone to represent meaningful differences in access to housing; for example, initiating a discussion or giving a tester a business card may not substantially affect access to housing. But offering an individual appointment to inspect the dwelling, discussing a tester’s housing needs and telling them about other available housing, providing further information about the application process (such as the deadline for submitting the application), and contacting a tester to follow up after an inspection, all represent meaningful differences in treatment that may affect the likelihood of finding a suitable property. The net differential (Anglo-favored minus minority-favored tests) on some of these important measures ranges from more than twice to more than four times more likely that Anglos would be treated more favorably. It is these five behaviors potentially involving differential treatment that will be the focus of our investigation.

*Contextual variations in discrimination: Data and Measures*

Stage 2 involved exploring in more detail the circumstances under which differential treatment is more likely. To do this, we constructed independent variables that captured key aspects of the tests. Consistent with the theories presented above, there are four contextual dimensions of interest that relate to characteristics of: (1) home seekers (testers in this case); (2) the advertised dwelling forming the basis of the test; (3) the neighborhood in which the dwelling is located; and (4) rental agent ethnicity. We operationalize below multiple characteristics of these four dimensions.

Characteristics of testers and the properties being tested were recorded by our test coordinator as our study progressed, and then transcribed into a unified dataset. The neighborhood demographic and socio-economic data were obtained from the 2011 Australian Census of Population and Housing, and are summarized by postcode.[[4]](#endnote-4) Property crime and burglary rates were obtained from the New South Wales BOSCAR database (http://www.bocsar.nsw.gov.au/), and indicators of school quality using test scores for reading and numeracy were obtained under an agreement from the NAPLAN database (<http://www.nap.edu.au/results-and-reports/test-results.html>). All non-dichotomous variables were normalized.

Ideally, the numerous characteristics of testers/home seekers, dwellings and neighborhoods would be orthogonal to each other so that all could be operationalized as distinct variables in a multivariate analysis. Unfortunately, this did not prove the case. In preliminary explorations we determined that there were serious issues of multicollinearity among several clusters of neighborhood variables. It was therefore appropriate to collapse the neighborhood variables into a more parsimonious set of dimensions using Principal Component Analysis (PCA). Varimax rotation was employed so that the resulting factors were easier to interpret.

Key dwelling and tester attributes make up the second set of variables. We included a dummy indicating the dwelling was an apartment (rather than a house or attached unit), and a ratio of the test property rent to median neighborhood rent, to capture its relative cost in the community. Tester variables included age, gender, and the family status and occupation[[5]](#endnote-5) assigned to testers (based on the size and cost of the dwelling).

Finally, our information on agent ethnicity is drawn from tester responses to the survey on the inspection process.[[6]](#endnote-6) Of the agents that testers encountered at inspections, more than two thirds (68.4%) were identified by the testers as “Anglo.” A further 24% were identified as “Asian” while only 1.7% were identified as of Indian origin, and 2.7% as of Middle Eastern origin. Thus, very few non-Anglo agents belonged to the minority ethnic groups in our study. It is worth noting the very low proportions of agents with ethnic backgrounds similar to the minority testers – much lower than the proportions of the metropolitan population who identify as members of these two ethnic groups.[[7]](#endnote-7)

 *Specification of multivariate models*

We construct a series of binary logit models to investigate the contextual variation of differential treatment related to five meaningful dimensions of housing access; whether the agent: (1) on the phone offered the tester an individual appointment to inspect the dwelling; (2) at the inspection, discussed the tester’s housing needs; (3) told the tester of other housing; (4) provided the tester with additional information about completing the application form; and (5) contacted the tester after the inspection. Three neighborhood factors (shown in Table 2) were included in the models as the independent variables, along with the dwelling and tester variables, and a variable flagging Anglo agents. The models allow us to investigate the predictors (in all contextual categories above) of the likelihood that a test would have one of two outcomes: the Anglo tester was favored, or they were not favored (i.e., either both testers were treated equally or, in rare cases, the minority tester was favored).[[8]](#endnote-8)

The logit models estimate the likelihood that a one standard deviation change (or 0-1 change in the case of dummy variables) in the independent variables will result in the Anglo tester being favored on a particular behavior (each of the five behaviors listed above is the dependent variable in one equation).

In stage three of the analysis, we investigate the degree to which the relationships between our contextual predictors and five differential treatment outcomes may vary by the ethnicity of agent. In this set of models we employ interaction terms that multiply each independent variable by a dummy indicating an Anglo agent test. That is, we add to the aforementioned logit model nine variables that take on the value of the given variable only when an Anglo agent is being tested and zero otherwise. If a coefficient of such an interaction terms proves statistically significant it would indicate that the Anglo and non-Anglo agents’ likelihood of treating the Anglo tester more favorably on the given outcome differs as this given contextual variable varies. In cases where both the coefficients of the main and the corresponding interaction terms are statistically significant, the relationship for non-Anglo agents is shown by the coefficient of the main factor, and that for Anglo agents is shown by the sum of the coefficients of the main and interaction terms.[[9]](#endnote-9)

*Results*

From the PCA analysis of neighborhood attributes, three factors emerged with eigen values greater than 1, shown in Table 2. Factor 1 represents tests in neighborhoods with higher percentages of residents who were: non-Anglo (especially Indians), younger, not employed, more likely to live in relatively crowded interior conditions (with more persons per bedroom), and more likely to commute by transit. We label this factor: ‘Higher Minority, Non- Employment Neighborhood.’ Factor 2 represents tests in higher median income neighborhoods that also were associated with higher rents, higher quality schools, and higher employment rates (‘Higher Income, Rent, School Quality Neighborhood.’ Factor 3 represents tests in neighborhoods with higher percentages of renters and higher crime rates (‘Higher Crime, Renter Neighborhood’).[[10]](#endnote-10) These factors, alongside other key attributes, are included in the logit models described here.

Table 2

Table 3 summarizes the results of five logit models estimated on the full sample of tests, one for each behavior where potential Anglo-favoritism might be revealed. In overview, four of the five Anglo-favoring behaviors were successfully predicted by the model variables as whole, compared to the constant alone, indicating that indeed contextual factors matter for the incidence of discrimination in Sydney’s rental market. We found that several aspects of context related to tester, dwelling, and neighborhood predicted variations in the likelihood that agents in general would discriminate in favor of the Anglo tester.

Table 3

The most robust result related to the consistent predictive power of one dimension of the paired test’s neighborhood context. The safety and tenure composition of the neighborhood in which the test property was located significantly reduced the likelihood that Anglo testers would be favored on two outcomes. For every one standard deviation increase in the score on the ‘Higher crime, Renter’ neighborhood factor, the odds of Anglo testers being favored were lower by (1) 51% via the agent discussing their housing needs and (2) 34% via the agent offering additional housing options..

The gender, couple status, occupational status and age of the tester each significantly affected the likelihood that the Anglo tester would be favored on one outcome, when measured across all agents. The odds that Anglos had the agent discuss their housing needs with them were 221% higher when they were females. The odds that Anglos were told of more additional dwellings for rent were 68% less when testers were coupled and 63% less when testers were of higher occupational status. Tester age exhibited inconsistent relationships, depending on outcome.

The contextual variation associated with dwelling characteristics also proved predictive. When the tested dwelling had a relatively high rent compared to its neighborhood, the odds of the Anglo tester being favored by being given an individual appointment increased by 46%. The odds of being favored by being told of additional rental units increased by 39%. When the tested dwelling was an apartment in a multi-unit building (instead of a semi-detached or detached dwelling), the odds of the Anglo tester receiving more information about the application rose 205%.

Finally, in only one of the five models did the ethnicity of the agent proved statistically significant. Surprisingly, the odds of favoring the Anglo tester by offering an individual appointment for inspection were 54% lower if the agent was Anglo.

Stage 3 of the analysis estimated models that allowed for interactions between the contextual predictors of discrimination and the ethnicity of agent (shown in Table 4). These yielded additional insights. First, several forms of discrimination favoring Anglo home seekers were consistently more likely: (1) when testers are of lower occupational status; (2) seek relatively more expensive dwellings; and (3) search in neighborhoods characterized by lower crime rates and shares of renter households, regardless of the ethnicity of the agent. Second, other patterns of discrimination related to the characteristics of the tester were contingent upon ethnicity of the agent. More specifically, the respective relationships between gender, age, couple status and occupational status, and a particular incidence of discrimination, were, in every case, reversed for Anglo and Minority agents. This reversal of relationship direction was also manifested in the case of apartments being tested instead of semi-detached or detached dwellings.

Table 4

**Discussion**

Our first aim in this paper was to assess whether the variation in discriminatory incidence across agents, home seekers, dwellings, and neighborhoods in Sydney was similar to that previously observed in U.S. and Western European markets. Our second aim was to deduce the degree to which any contextual variations revealed were consistent or inconsistent with the three theories of discrimination presented previously. Our discussion here addresses these two aims from the perspective of our findings and then draws implications for fair housing policy.

*The Contextuality of Discrimination in the Sydney Rental Market*

Our results presented make it clear that the topography of ethnic discrimination in the Sydney rental market is not flat. On the contrary, differences in geographic context and in the circumstances surrounding the home seekers and the dwelling sought jointly contribute to the likelihood that Anglos will receive favorable treatment from agents on one or more behaviors that affect residential opportunities. The effect of variations in characteristics of home seekers and dwelling types were contingent on agent ethnicity, however.

Our most general and robust result was that rental agents in Sydney, regardless of their ethnicity, exhibited the most variation in discriminatory behaviors when the dwellings they were trying to rent were located in neighborhoods classified by differences in safety and tenure. Agents were substantially more likely to favor Anglos in neighborhoods that were more desirable in the sense that they had lower crime rates and higher shares of owner-occupied dwellings. Though no prior studies have investigated the relationship between discrimination and neighborhood crime, some U.S.-based studies have also observed a similar relationship with owner-occupancy rates (Ondrich, Stricker and Yinger 1999; Zhao 2005).

Perhaps our most unexpected finding was not that discriminatory behavioral patterns for Anglo and non-Anglo agents were different (as this has been found in the U.S. by Yinger 1995, 1998; Roychoudhury and Goodman 1992; Zhou, Ondrich and Yinger 2005; Zhou 2005), but rather that they often were diametrically opposite in their responses to identical contexts. To our knowledge, this is a unique observation in the international literature. We think this is likely due to systematic, cross-ethnic differences in agents’ perceptions of the transaction-relevant information associated with the gender, age, couple status and occupational status of home seekers. Such cross-ethnic polarization in the statistical information conveyed by agents’ experiences and stereotypes might easily arise if non-Anglo agents were concentrated in a niche segment of the larger Sydney rental market, typically serving a distinctive, overwhelmingly minority clientele, and Anglo agents primarily interfaced with Anglo customers. Such Balkanization of agents and customers along ethnic lines could well lead to systematic differences among ethnic groups in information, perceptions, and expectations.

*Implications for motivations for housing discrimination*

In the theory section above we took pains to draw out the implications from each of three alternative theories of discriminatory motivations about which aspects of contextual variation would be manifested if the given theory were predominant. To facilitate our discussion, these implications are summarized in Table 5. This table lists in the rows the various measures we employed for contextual variations in agent, tester, tested dwelling and tested neighborhood, and in the first three columns the personal prejudice, customer prejudice and statistical discrimination theories. The body of the table employs symbols denoting if the particular contextual measure would be predicted by the given theory to increase (+) or decrease (-) the likelihood of an agent differentially favoring the Anglo tester, or whether it should have no effect (0) or an uncertain effect (?) on this likelihood. The final columns summarize our multivariate results in Tables 3 and 4, employing the same symbols. Table 5 facilitates a comparison of our empirical findings and the predictions made by the alternative theories to deduce which theory is most and least strongly supported.

Table 5

We begin the discussion of motives by arguing that the evidence from Sydney is inconsistent with both the personal prejudice and customer prejudice theories of discrimination. The personal prejudice theory predicts that only Anglo agents would discriminate against non- Anglo home seekers, and would do so consistently across different geographic and dwelling settings, because they wished to minimize personal contact with them. It also predicts that young, single, lower-status, male minority home seekers would be more threatening to prejudiced Anglo agents and thus would elicit more discriminatory reactions. None of these predictions were manifested. There was no pattern suggesting that Anglo agents were more likely to discriminate across the board; rather, in one outcome they were less likely to do so. For all agents there was a clear variation in the likelihood of discriminating across geography and dwelling characteristics,

The customer prejudice theory is similarly incompatible with our findings. It also (erroneously) predicts that Anglo agents would be the primary discriminators to protect their reputations in the (presumably prejudiced) Anglo community. Furthermore, it predicts that discrimination would be higher in neighborhoods where Anglos make up the predominant share of the population. Yet, our factor measuring the ethnic composition of the neighborhood was never associated with variations in discrimination, either in aggregate or for Anglo agents in particular. The observed variations in discrimination by dwelling characteristics also are not predicted by this theory. Perhaps the customer prejudice theory holds some (untested) explanatory power in Sydney’s home sales market, but it offers little towards understanding its rental market.

By contrast, the evidence is much more aligned with the predictions of the statistical discrimination theory. We would argue that our findings are consistent with the claim that both Anglo and non-Anglo agents in general are motivated by perceptions of their clients’ differential willingness to pay for amenities, given that they consistently varied their behaviors as the safety and tenure features of the advertised dwelling’s neighborhood varied. If indeed agents expected that Anglos had a stronger willingness to pay for amenities of lower crime and more owner-occupant neighbors, it would make economic sense for all agents to encourage clients differentially in such contexts, as we observed. When an expensive rental dwelling is involved it may be the case that agents generally anticipated that prospective minority renters would be less likely to consummate a lease quickly, continue to make timely rental payments and/or maintain the property to a high standard, and thus they are provided fewer encouragements than their Anglo counterpart, even when they exhibited the same educational and occupational profiles. Furthermore, though perhaps less obviously, we think that the observed, diametrically opposed, inter-ethnic differences in agent responses to tester characteristics is another implicit indicator of statistical discrimination at work. If, as we previously argued, Anglo and minority agents hold contrary, ethnically biased expectations about how observed tester characteristics translate into expected differences in economic outcomes, they will manifest different discriminatory responses when confronted with the same testers. As noted above, the prior literature has produced highly inconsistent conclusions (both considering U.S.-based studies as well as the limited number of international comparisons) about what were the dominant motivations behind housing discrimination, leading some to conclude that different subsets of agents may be motivated differently (Oh and Yinger 2015). By contrast, inferences from our findings from the Sydney rental market point sharply toward statistical discrimination as a common, cross-ethnic motivator. What we also see as important are the emphatic null findings regarding the alternative personal prejudice and customer prejudice motives. To be clear, we are not suggesting an absence of prejudice on the part of all Sydney rental agents and rental dwelling customers. Rather, our evidence clearly suggests that even in a non-prejudiced Australia there would remain economic motives to discriminate on the basis of ethnicity.[[11]](#endnote-11)

*Implications for fair housing policy*

Our deduction that the root motivation for discrimination is rental agents’ rational profit incentives, not agents’ or customers’ irrational prejudices, holds important implications for enforcement of anti-discrimination statutes. In his seminal treatment of the topic, Becker (1957) hypothesized that discrimination motivated solely by agents’ personal animus and a desire to avoid contact with minorities would entail financial sacrifice inasmuch as potentially profitable (minority) clients were being ignored or given short-shrift. In a perfectly competitive market, such profit-sacrificing, discriminating agents would inexorably be driven out of business by (more profitable) non-discriminating ones, argued Becker. On the contrary, if discrimination is viewed as profitable (as we have found here) the market will incentivize it, not discourage it. This establishes a *prima facie* case for intervention of some sort(s) into the operation of housing markets if the society deems it unfair and/or inefficient for discrimination to occur.

Moreover, our conclusion that discrimination is fundamentally profitable in the Sydney rental market holds implications for the efficacy of Australian fair housing policy. To be effective, anti-discrimination enforcement efforts must create a credible deterrent: one where agents perceive that the expected value of marginal costs associated with being tried, convicted and penalized monetarily (such as by fines or loss of license) for discriminating are greater than the expected value of marginal profits earned by discriminating. We believe that current Australian enforcement mechanisms fall short, however, of creating this effective deterrent. To our knowledge all anti-discrimination enforcement mechanisms in Australia are founded upon victims detecting differential treatment, complaining about it formally to the proper authorities, and then having the case adjudicated.[[12]](#endnote-12) Unfortunately, most victims never realize that they may have faced discrimination, because they are unaware how comparable home seekers have been treated and agents’ behaviors usually do not reveal bias explicitly (as we observed in our study and as has been consistently documented in the national U.S. discrimination studies). This means that there is unlikely to be a broadly credible deterrent established unless non-governmental organizations and/or governmental agencies are legally and financially empowered to conduct regularly and at high frequency paired testing that goes beyond responses to *bona fide* complaints (Galster 1990a). Such enhanced enforcement testing would presumably lead to more convictions and larger monetary penalties meted out by courts. When this has (rarely) occurred in the past in the U.S., there is evidence that subsequently the incidence of discriminatory actions was indeed reduced in the market where the enhanced court-imposed penalties were exacted (Ross and Galster 2007).

Results from the current study not only imply that such enhanced fair housing enforcement efforts are warranted in Sydney but they also offer practical guidance about circumstances where enforcement testing is most likely to uncover discriminatory behavior in the rental market. Disproportionately targeting tests on rental vacancies in neighborhoods with lower rates of crime and shares of renter-occupied dwellings are most likely to reveal favoritism toward Anglo home seekers, and thus would enhance the efficacy of presumably constrained civil rights enforcement resources.

**Conclusions**

We have analyzed data from the first systematic investigation of ethnic discrimination in the rental housing market conducted in Australia using paired testing, with the goals of better understanding the contexts in which differential treatment in Sydney was most likely and drawing inferences about what might be motivating such behaviors. We have found that several forms of discrimination favoring Anglos were consistently more likely when relatively more expensive units were involved and when they were located in neighborhoods characterized by lower crime rates and shares of renter households, regardless of the ethnicity of the agent. Other context-varying patterns of discrimination related to the characteristics of the home seeker and dwelling type were contingent upon ethnicity of the agent. These patterns of discrimination were consistent with the hypotheses that, in general in the Sydney rental market, agents regardless of ethnicity practice statistical discrimination. Our results strongly suggested that Sydney rental agents discriminated to secure additional profits, and were not primarily motivated by their own or their customers’ prejudices. This implies that discrimination will prove resilient to unfettered housing market forces or changes in societal ethnic tolerance and instead must be addressed through enhanced anti-discrimination enforcement strategies.

Table 1: Differential treatment in Sydney rental markets, 2013

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  Minority favoured | Neither favoured  | Anglo favoured   | Net Anglo-Minority favoured |
| Agent offered individual appointment | 3.5 | 79.7 | 16.8 | 13.3\*\*\* |
| Agent gave card or brochure | 10.5 | 61.1 | 28.4 | 17.9\*\*\* |
| Agent asked about tester’s housing needs | 3.3 | 83.5 | 13.3 | 10\*\*\* |
| Agent said when unit available | 22.8 | 63.5 | 13.7 | -9.1\*\* |
| Agent told tester of other available housing | 7 | 66.1 | 26.8 | 19.8\*\*\* |
| Agent said all occupants must sign lease | 16.3 | 81.8 | 1.9 | -14.4\*\*\* |
| Agent took tester’s contact details | 13.6 | 80.2 | 6.2 | -7.4\*\* |
| Agent explained application form  | 16.5 | 59.1 | 24.4 | 7.9\* |
| Agent provided further information about application process | 7.9 | 68 | 24.1 | 16.2\*\*\* |
| Agent contacted tester after inspection | 4.3 | 84.8 | 10.8 | 6.5\*\* |
|  |  |  |  |  |
|  |  |  |  |  |

Source: Calculated by the authors based on study data

Notes: \*\*\* = p<.000; \*\* = p< .01; \*=p<.05

Variables are based on responses to survey questions completed by testers after each inspection.

Table 2: Principle Components Analysis of neighborhood attributes

|  |  |  |  |
| --- | --- | --- | --- |
|  | Factor |  |  |
|   | 1 | 2 | 3 |  |
| Median age | -0.732 | 0.151 | -0.469 |  |
| Median rent | -0.008 | 0.816 | 0.039 |  |
| Mean persons per bedroom | 0.883 | -0.134 | 0.245 |  |
| Median household income | -0.400 | 0.788 | -0.122 |  |
| Percent employed | -0.667 | 0.602 | -0.090 |  |
| Percent renters | 0.545 | 0.128 | 0.687 |  |
| Percent commuting by transit | 0.699 | 0.397 | 0.193 |  |
| Property crime rate | 0.027 | 0.023 | 0.974 |  |
| Burglary rate | 0.096 | -0.047 | 0.950 |  |
| Mean reading score (NAPLAN) | 0.002 | 0.658 | -0.069 |  |
| Percent Anglo residents | -0.782 | 0.477 | 0.035 |  |
| Percent Muslim Middle Eastern residents | 0.208 | -0.733 | -0.165 |  |
| Percent Indian | 0.574 | -0.309 | -0.126 |  |
| Eigenvalues | 5.110 | 2.972 | 1.492 |  |
| Cumulative percent variation explained | 28.457 | 52.759 | 73.642 |  |

Source: Calculated by the authors based on study data

Notes: Extraction Method: Principal Component Analysis.

 Rotation Method: Varimax with Kaiser Normalization.

Rotation converged in 6 iterations.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Table 3:  | Logit Model of Agents' Favoritism Toward Anglo Tester |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Behavior Potentially Demonstrating Favoritism toward Anglo Tester |  |  |  |  |  |  |  |  |
|  | Individual appointment |  | Discussed housing need |  | Told of other housing |  | Extra Information on application |  | Contacted after Inspection |
|  | B |   | Exp(B) |   | B |   | Exp(B) |   | B |   | Exp(B) |   | B |   | Exp(B) |   | B |   | Exp(B) |
| Neighbourhood attributes:1  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| younger, low employment, high transit | .065 |  | 1.068 |  | .126 |  | 1.134 |  | -.165 |  | .848 |  | -.150 |  | .861 |  | -.078 |  | .925 |
| high rent and income, good schools | .288 |  | 1.334 |  | -.006 |  | .994 |  | .028 |  | 1.028 |  | .105 |  | 1.111 |  | .015 |  | 1.015 |
| high crime and renters | -.371 |  | .690 |  | -.705 | \*\* | .494 |  | -.412 | \* | .662 |  | -.145 |  | .865 |  | -.130 |  | .878 |
| Test attributes:  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| test property rent / median2 | .379 | \* | 1.461 |  | .249 |  | 1.283 |  | .329 | \* | 1.389 |  | .175 |  | 1.191 |  | .441 |  | 1.554 |
| tester age | -.330 | \* | .719 |  | .531 | \*\* | 1.700 |  | .104 |  | 1.110 |  | -.134 |  | .875 |  | -.234 |  | .792 |
| tester was female | .216 |  | 1.241 |  | 1.165 | \*\* | 3.207 |  | .078 |  | 1.081 |  | .583 |  | 1.791 |  | .086 |  | 1.090 |
| test property was apartment | -.434 |  | .648 |  | .608 |  | 1.836 |  | -.188 |  | .829 |  | 1.116 | \* | 3.051 |  | -.185 |  | .831 |
| tester was high SES occupation3 | -.670 |  | .512 |  | .166 |  | 1.181 |  | -.997 | \* | .369 |  | -.312 |  | .732 |  | -1.074 |  | .342 |
| tester was couple | -.061 |  | .941 |  | -.421 |  | .656 |  | -1.136 | \*\* | .321 |  | .678 |  | 1.970 |  | .733 |  | 2.080 |
| agent was anglo | -.788 | \* | .455 |  | .094 |  | 1.098 |  | .107 |  | 1.113 |  | -.200 |  | .819 |  | .413 |  | 1.511 |
| Constant | -.565 |  | .568 |  | -2.722 | \*\*\* | .066 |  | .457 |  | 1.580 |  | -2.792 | \*\*\* | .061 |  | -2.722 |  | .066 |
|  | chi-square | Sig.  |   | chi-square | Sig.  |   | chi-square | Sig.  |   | chi-square | Sig.  |   | chi-square | Sig. |
|  | 24.743 |  | .006 |  | 32.188 |  | .000 |  | 21.245 |  | .019 |  | 18.237 |  | .051 |  | 14.239 |  | .162 |
| Source: Calculated by the authors based on study dataNotes: \*\*\* = p<.000; \*\* = p< .01; \*=p<.051. Neighborhood attributes based on PCA shown in Table 2
2. Test property weekly rent divided by weekly median rent for the postcode in the third quarter of 2013. This is an indicator of the relative cost of the dwelling compared to others in the location.
3. Dummy variable =1 if tester was assigned a high socio-economic status occupation (pairs of testers were assigned the same status occupations for each test). Occupational status was chosen based on the price of dwelling inspected. High SES occupations included civil engineer, public relations officer, and accountant.
 |  |  |  |  |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Table 4 | Logit Model of Agents' Favoritism Toward Anglo Tester, with interaction terms for agent ethnicity |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Behavior Potentially Demonstrating Favoritism toward Anglo Tester |  |  |  |  |  |  |  |  |  |  |
|  | Individual appointment |  | Discussed housing need |  | Told of other housing |  | Extra Information on application |  | Contact after inspection |
|  | B |   | Exp(B) |   | B |   | Exp(B) |   | B |   | Exp(B) |   | B |   | Exp(B) |   | B |   | Exp(B) |
| Neighborhood attributes:1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| younger, low employment, high transit | -.170 |  | .844 |  | .278 |  | 1.321 |  | -.185 |  | .831 |  | .176 |  | 1.192 |  | -.025 |  | .975 |
| high rent and income, good schools | .599 |  | 1.820 |  | -.554 |  | .575 |  | .480 |  | 1.617 |  | .035 |  | 1.035 |  | -.064 |  | .938 |
| high crime and renters | -.513 |  | .599 |  | -1.179 | \*\* | .308 |  | -.236 |  | .789 |  | -.100 |  | .905 |  | -.140 |  | .870 |
| Test attributes: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| test property rent / median2 | .307 |  | 1.359 |  | -.088 |  | .916 |  | .375 |  | 1.455 |  | .581 |  | 1.788 |  | .896 | \* | 2.450 |
| tester age | -.490 |  | .613 |  | .054 |  | 1.055 |  | .136 |  | 1.146 |  | .561 |  | 1.752 |  | -.356 |  | .700 |
| tester was female | -.078 |  | .925 |  | 1.173 |  | 3.231 |  | -.456 |  | .634 |  | 2.135 | \*\*\* | 8.456 |  | .484 |  | 1.623 |
| test property apartment | .482 |  | 1.619 |  | 1.247 |  | 3.481 |  | -.312 |  | .732 |  | .877 |  | 2.405 |  | .446 |  | 1.562 |
| tester was high SES occupation3 | -1.024 |  | .359 |  | 1.850 | \* | 6.359 |  | -.781 |  | .458 |  | -1.339 |  | .262 |  | .189 |  | 1.208 |
| tester was couple | .130 |  | 1.139 |  | -1.635 |  | .195 |  | -.737 |  | .479 |  | -.432 |  | .649 |  | -.543 |  | .581 |
| Interaction variables:  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Anglo agent x younger, low employment, high transit | .292 |  | 1.339 |  | -.338 |  | .713 |  | .099 |  | 1.104 |  | -.350 |  | .705 |  | -.061 |  | .940 |
| Anglo agent x high rent and income, good schools | -.583 |  | .558 |  | .859 |  | 2.361 |  | -.651 |  | .521 |  | .083 |  | 1.087 |  | -.021 |  | .979 |
| Anglo agent x high crime and renters | .141 |  | 1.151 |  | .525 |  | 1.691 |  | -.234 |  | .792 |  | -.249 |  | .780 |  | -.028 |  | .972 |
| Anglo agent x test property rent / median2 | .173 |  | 1.189 |  | .686 |  | 1.985 |  | -.089 |  | .915 |  | -.296 |  | .744 |  | -1.056 |  | .348 |
| Anglo agent x tester age | .174 |  | 1.191 |  | .615 |  | 1.850 |  | -.056 |  | .945 |  | -.872 | \* | .418 |  | .030 |  | 1.030 |
| Anglo agent x tester was female | .522 |  | 1.685 |  | -.142 |  | .868 |  | .888 |  | 2.431 |  | -2.340 | \*\* | .096 |  | -.626 |  | .535 |
| Anglo agent x test property was apartment | -1.525 | \* | .218 |  | -.962 |  | .382 |  | .063 |  | 1.065 |  | .389 |  | 1.476 |  | -1.252 |  | .286 |
| Anglo agent x tester was high SES occupation3 | .573 |  | 1.774 |  | -2.871 | \* | .057 |  | -.624 |  | .536 |  | 1.020 |  | 2.773 |  | -19.822 |  | .000 |
| Anglo agent x tester was couple | -.098 |  | .907 |  | 2.105 | \* | 8.207 |  | -.285 |  | .752 |  | 1.384 |  | 3.990 |  | 2.408 | \* | 11.116 |
| Constant | -1.096 |  | .334 |  | -2.883 | \*\*\* | .056 |  | .443 |  | 1.558 |  | -2.960 | \*\*\* | .052 |  | -2.785 | \*\* | .062 |
|  | chi-square | Sig.  |   | chi-square | Sig.  |   | chi-square | Sig.  |   | chi-square | Sig.  |   | chi-square | Sig.  |
|  | 31.717 |  | .024 |  | 48.256 |  | .000 |  | 31.915 |  | .023 |  | 35.366 |  | .008 |  | 36.001 |  | .007 |

Source: Calculated by the authors based on study data

Notes: \*\*\* = p<.000; \*\* = p< .01; \*=p<.05

1. Neighborhood attributes based on PCA shown in Table 2
2. Test property weekly rent divided by weekly median rent for the postcode in the third quarter of 2013. This is an indicator of the relative cost of the dwelling compared to others in the location.
3. Dummy variable =1 if tester was assigned a high socio-economic status occupation (pairs of testers were assigned the same status occupations for each test). Occupational status was chosen based on the price of dwelling inspected. High SES occupations included civil engineer, public relations officer, and accountant.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Table 5 |  |  |  |  |  |  |
| Predicted and Actual Effect of Context on Incidence of Net Favorable Treatment of Anglo Testers |
|  |  |  |  |  |  |  |
|  |  | **Predicted Relationship According to Theory:** | **Observed** |
|  |  | Personal | Customer | Statistical | **Relationship** |
| **Contextual Variation** |  | Prejudice | Prejudice | Discrimination | Aggregate | Anglos |
| Agent |  |  |  |  |  |  |
| Anglo |  | **+** | **+** | **?** | **-**  | **NA** |
|  |  |  |  |  |  |  |
| Tester |  |  |  |  |  |  |
| Higher Status |  | **-** | **-** | **-** | **-** | **-** |
| Female |  | **-** | **-** | **?** | **+** | **-** |
| Older |  | **-** | **-** | **?** | **?** | **-** |
| Coupled |  | **-** | **-** | **-** | **-** | **+** |
|  |  |  |  |  |  |  |
| Dwelling |  |  |  |  |  |  |
| Apartment |  | **0** | **0** | **?** | **+** | **-** |
| More Expensive |  | **0** | **0** | **+** | **+** | **+** |
|  |  |  |  |  |  |  |
| Neighborhood |  |  |  |  |  |  |
| Higher Crime, Renter |  | **0** | **0** | **-** | **-** | **-** |
| Higher Income, Rent,School Quality |  | **0** | **0** | **+** | **0** | **0** |
| Higher Minority,Non-Employment |  | **0** | **-** | **-** | **0** | **0** |
|   |  |  |  |  |  |  |
| Key: +, -, 0 = positive, negative and zero correlation, respectively |  |  |

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Author Biography

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**Endnotes**

1. The Australian census does not report data by race, with the exception of whether people identify as Aboriginal or Torres Strait Islander, or not. We compare three ethnic groups in this study: people of Indian, Muslim Middle Eastern, and Anglo (British) origin. Prospective testers were recruited based (in part) on whether they self-identified as belonging to one of these ethnic groups, and whether the recruitment panel agreed that their appearance fit widely shared perceptions of these ethnic groups. In tests, ethnicity was signalled by the use of an ethnically identifiable name (in some cases, this was an assigned name), used to introduce the tester in phone enquiries and at property inspections. [↑](#endnote-ref-1)
2. We investigate relative differences in the way members of each ethnic minority were treated in a separate paper (authors redacted); while we find some minor differences, the overall patterns and levels of differential treatment are comparable. [↑](#endnote-ref-2)
3. A similar conclusion was reached by Oh and Yinger (2015). [↑](#endnote-ref-3)
4. The average population of postcodes in the Sydney metropolitan area was 11,373 in 2011. [↑](#endnote-ref-4)
5. The family status dummy contrasted tests in which testers identified themselves as couples rather than singles; the occupation status dummy contrasts tests in which the tester was assigned a high socio-economic status occupation (e.g. Civil Engineer, P.R Officer, Accountant) compared to lower status occupations (e,g, computer support technician, telemarketer). [↑](#endnote-ref-5)
6. We recognise this is an imprecise measure, but independent verification of the judgement of the tester pair would have added prohibitive costs. [↑](#endnote-ref-6)
7. Whether this small share of rental agents who matched the ethnicities of our minority testers was due to the idiosyncratic sample of properties we drew or to their general underrepresentation in the agent pool we cannot discern. [↑](#endnote-ref-7)
8. Initially, we began the analysis by constructing multinomial logit models to test three outcomes – Minority favoured, neither favoured, or Anglo favoured. For several measures of differential treatment, the numbers of tests in which the minority tester was favoured were very small, particularly when we employed interaction terms identifying ethnicity of agent. Only one test characteristic—older male testers—proved a significant predictor of (less) minority-favoured treatment compared to equal treatment, and this was for only one outcome: contact after inspection. The results of these multinomial logit models regarding the determinants of Anglo favoured treatment compared to equal treatment are consistent with the logit results we report here, and thus serve as an added robustness check. [↑](#endnote-ref-8)
9. In such cases, exp(B) is calculated for Anglo agents and reported in tables based on this “net” coefficient. [↑](#endnote-ref-9)
10. Further investigation of the neighbourhoods scoring in the highest quartile of this factor showed they were clustered around the cities of Sydney and Parramatta, inner suburbs to the South and West of the City of Sydney, and peripheral suburbs to the West and South-West of the metropolitan area. While some of these neighbourhoods are ethnically diverse, the proportion of Anglo residents overall is not a distinctive feature (as shown by a factor loading of .082). [↑](#endnote-ref-10)
11. This is consistent with conclusions drawn from several U.S. studies (e.g., Galster 1990b; Ondrich et al. 2003; Yinger 1995; Zhao 2005). [↑](#endnote-ref-11)
12. The US system is also based on victim detection and complaints, though it is supplemented by the abilities of the Departments of Justice and Housing and Urban Development to initiate investigations and file complaints even without bona fide victim complaints (Galster 1990a). These powers unfortunately are rarely used currently because of Congressionally imposed budget constraints creating chronically understaffed civil rights divisions of these agencies. [↑](#endnote-ref-12)