Class Discrimination? Evidence From a Racially Homogeneous Labour Market

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By exploiting country demographics, we validate concerns, in audit studies of racial discrimination, that names assigned to identify race may also proxy for socioeconomic status. We find evidence of class discrimination from a predominantly black country, Jamaica. Applicants with high income sounding names are at least twice as likely to receive a call back from employers – variations are dependent on applicant qualifications. We also find some evidence that employers prefer applicants from high income neighbourhoods. Under the assumption of no outright racial discrimination, we isolate the effects of discrimination and find that class discrimination is as important as race.

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I.

Research shows that discrimination in various forms permeates labour market economies across the world (Petit, 2007; Thorat, 2008; Drydakis, 2009; Kuhn and Kailing, 2013). Many labour market discrimination studies tend to focus on race and ethnicity as the factors engendering unfair treatment in the employment process (Jowell and Prescott-Clarke, 1970; Bertrand and Mullainathan, 2004; Oreopoulos, 2011; McGinnity et al., 2009; Kaas and Manger, 2012; Nunley et al., 2014; also see the survey by Bertrand and Duflo, 2016). Focusing on blacks versus whites, Bertrand and Mullainathan (2004) and Nunley et al. (2014) for

example, present evidence of racial discrimination, where blacks received fewer call backs than whites.

At the forefront of these and other studies lies the issue of discrimination by race. However, Fryer and Levitt (2004) emphasize a strong association between low socioeconomic status and black names. It therefore remains a possibility that individuals with black sounding names are also associated with a lower social class. While Bertrand and Mullainathan (2004) try to test for this potentially severe confounding effect in a small sub-sample, labour market correspondence studies have thus far been unsuccessful in addressing it directly. This raises the question of whether Bertrand and Mullainathan (2004) and those building on their work (including Oreopoulos, 2011; Kaas and Manger, 2012; Nunley et al., 2014) actually measure racial discrimination or discrimination by class.

We propose a solution to this question by studying the labour market of Jamaica, a relatively racially homogenous country, to disentangle discrimination by race and class.

Jamaica is arguably a good case study since it is a predominantly black country (91% based on 2001 Jamaican population census; Minnesota Population Center, 2015 [1]), where labour market outcomes are not driven by outright racial discrimination. However, there exists a layer of discrimination that features cases of unequal treatment based on gender (Roberts, 2010; Hotchkiss and Moore, 1996) and – to a lesser extent - complexion (Jamaica Gleaner, 2011). Although the history of Jamaica's labour market discrimination is rooted in its colonial experience with race, class distinctions have developed based on income, education, social identities, and behaviours (Altink, 2015; Austin-Broos, 1994;

[1] The data Jamaican census data is conducted by the Statistical Institute of Jamaica.

and Broom 1954). This is idea a familiar anecdote narrative among some who have seen themselves as being discriminated against are residents of poor inner city communities (Jamaica Gleaner, 2010). The latter has been at the forefront of the public discourse where people question whether employers treat job applicants differently based on their home address.

This sentiment of job applicants being treated unequally on the basis of their home address is even captured in a popular 2007 song, *Wrong Address*, by Jamaican recording artiste Etana. She paints a picture of the issues that someone living in a volatile location [2] would have to deal with when looking for employment. The lyrics [3] of this song still rest on the minds of many who successfully finish their schooling but have the "wrong address" on their job applications. This perception of discrimination in the Jamaican labour market serves as an appropriate driver to explore whether any unfair treatment exists in the initial stage of the employment process and if any such treatment is related to social class.

Aligned with the work of Bertrand and Mullainathan (2004), which studies the employability of white versus African-American names, we conduct a field experiment where we send out resumes to clerical, administrative, customer service and sales jobs that are advertised in local newspapers and on local websites. To capture social class, we use address and name as indicators of

[2] These are areas that are generally characterised by unstable social behaviour.

[3] 'Tried to get a job today but…when [they] see the application [they] say…. if this is really where you reside…please step outside…been through school, passed every test…graduated above the rest….and yet the society still looks down…. they do this, why? We don't want no trouble, no day…cause lady where you come from….people die there every day' – http://www.allmusic.com/song/wrong-address-mt0031377565/lyrics.

socioeconomic status. Using address as a proxy for class mirrors the sentiments expressed in the local media by job applicants. As a result, we separate high income addresses from low income addresses by linking the former with more affluent communities and the latter with those from the inner city using secondary data on well-known areas (Jamaica Gleaner, 2009). In the case of name, we use the applicants' first names as a class identifying factor since some types of names, unique or distinctive, are more likely to be associated with low income backgrounds, less likely to obtain professional jobs, and are perceived to be less successful, moral and cheerful (Willis et al, 1982; Levine and Willis, 1994). Further, we are able to define names as high income sounding or low income sounding based on primary data collection through a 'name' survey while utilizing neutral last names, only using those not commonly associated with any particular social class. Thus, the resumes are adjusted to fit fictitious name and address profiles that are tied to the different social classes, an issue also studied in India by Thorat and Attewell (2007).

To add further dimensions to our study, we create both high quality and low quality resumes to see how the quality of resumes affects call back rates. Typically, a high quality resume has more years of experience, greater academic achievements and features leadership roles in extracurricular activities. Thus, a high quality applicant is well-rounded in comparison to an applicant with a low quality resume. We also explore call back rates based on gender. We email four high quality and four low quality resumes for each job advertisement over a six month period keeping phone lines open until three months after we send out the last set of applications. In total, we send out 1080 resumes in response to 135 job advertisements.

Looking at the call back rates based on an applicant's characteristics, we find that job applicants with low income sounding names have to send out more than twice

as many resumes as those with high income sounding names to receive a response from the employer. Although we receive more call backs for applicants from high income addresses than those from low income addresses, this gap is not statistically significant. As a result, we cannot conclude that there is address discrimination in terms of the resumes sent out. However, using the call back rates based on employers' preferences, we find the evidence of address discrimination. Thus, in terms of location, a greater percentage of employers prefer applicants from more affluent communities than those who are from the inner city. Therefore, we find little evidence of discrimination based on an applicant's home address. Our results indicate that name is used by employers to determine who receives a call back, which suggests class discrimination on the basis of name. One possible explanation for the lack of strong evidence for class discrimination based on address is offered by Bertrand and Duflo (2016) who suggest that employers may only be associating names with social classes. Once employers see particular names, they quickly decide the social class of the applicant without looking at the address. In essence, it appears that employers are using name as the instrument for social class with little reliance on address. Thus, social class, as evident by name, drives the gap between who receives a call back and who does not.

The minority groups in previous correspondence studies are often less educated, less qualified and of low income levels, and thus could possibly be perceived as being within the lower class. Our results suggest that these studies are to a significant extent picking up a confounding relationship between race and class, where the latter is driving the former. By inherently holding race constant, we show that class itself may be the driving force behind the results in earlier work. This is not to say that racial discrimination does not matter: in fact, the effects of

discrimination may well be larger than previously thought, if people are discriminated against based on both race *and* class.

In our setting, we also find that males have to send out twice as many resumes compared to females to receive a response. While this finding may be attributed to resumes only being sent in response to advertisements for office related support positions, it highlights the relevance of a name in obtaining employment. More surprisingly, high quality applicants receive fewer call backs than applicants with low quality resumes although there is no significant difference in call back rates. However, a striking result is that although resume quality is important in job searches, employers appear to use high income sounding names before examining the quality of resumes. Thus, the chance of receiving a call back is significantly greater for a high income sounding name, especially in the case of low quality resumes. This result stands in contrast to Bertrand and Mullainathan (2004) where white sounding names, which perhaps one can infer to be of high income status, coupled with high quality resumes have the highest chances of receiving a call back.

These contrasting results also highlight important differences between labour markets in large developed racially diverse countries and smaller developing racially homogeneous countries. The preference for low quality resumes with high income sounding names suggest two possible interpretations from the employers' side. First, employers prefer applicants with less qualifications (Holzer and Neumark, 1996), perhaps to avoid paying higher salaries. Second, employers care more about maintaining a social image (Jackson, 2009), thereby choosing high income sounding name applicants with low quality resumes who they deem as suitable for employment in their companies.

Our study contributes to the literature in several ways. First, it serves as a response to the Bertrand and Mullainathan (2004) and similar studies that have been unable to disentangle whether names are associated with socioeconomic status discrimination or race discrimination. We address this issue by conducting a similar experiment in a predominantly black country. Second, we provide novel evidence that social class independent of race has a significant impact on labour market outcomes. Third, we keep the last names on the resumes constant by choosing neutral names, ones that cannot be easily identified with any specific social class. This approach can be applied to study other aspects of discrimination while keeping one dimension constant; for example, by studying discrimination along class in a predominantly Muslim country to isolate religion as a confounding variable. Fourth, although we find little evidence for address being a social class indicator used by employers, it could be an important result for developing countries around the world facing rapid urbanization. Cohen (2006) points out that population growth is likely to be seen in urban areas throughout the developing world with cities being unable to adequately cater to the needs of residents. One such need is adequate housing which is a growing problem due to rural-urban migration, which often results in high rents and in cases where cities expand, it can become difficult to distinguish geographical borders (Aluko, 2010). Thus, high rents can influence individuals who relocate to urban areas to choose reasonably priced housing in the inner city or in close proximity, which may be difficult to distinguish from areas that are not geographically identified as part of inner city communities. This choice can result in them facing possible social class discrimination because of their address (Leonard, 1987).

The remainder of the paper is organized as follows. Section 2 describes the methodology and model used to investigate employment discrimination. Section 3 discusses the results and Section 4 concludes.

II.

We conduct a resume audit study among employers in Kingston, Jamaica, with special emphasis on possible discrimination based on gender and class. Gordon (1949) defines social class as the horizontal stratification of a population. It is used to highlight differences in terms of wealth, income, occupation, status, level of consumption and family background. As previously mentioned, the methods employed by this resume audit study are similar to those used in Bertrand and Mullainathan (2004). However, we use existing first names as indicators of an applicant's class and gender, rather than race. We also indicate class by using the address of the fictitious applicant. Finally, binary dependent variable regression models are used to compare the call back rates based on gender, name and address.

A.

We create a pool of 40 resume and cover letter templates. To narrow the type of resumes and to ensure quality, we create resumes for four types of positions: administrative, clerical, customer service, and sales, where the sales category is further categorized into "highbrow" and "lowbrow" positions based on the academic requirement as advertised. The "highbrow"4 sales positions advertise a tertiary degree as being required, while the "lowbrow" sales positions did not require a tertiary degree. In total, there are five categories of resumes and templates. Beyond standardization, limiting the applications to these categories serves two purposes. Firstly, it allows for the comparison of jobs available to applicants with at least a secondary education and no advanced degrees or certification. This education level represents most of the educated members of the labour force in the Kingston Metropolitan Area (KMA) – 60% based on 2001

[4] Executive sales positions were not considered.

Jamaican population census (Minnesota Population Center, 2015). Secondly, we are able to obtain a larger pool of comparable job applications because these types of positions are commonly available.

For each job category, we create eight resumes and accompanying cover letter templates. Four of the templates are classified as high quality and the other 4 as low quality. Despite the variation in the quality of the resumes, all resumes are designed to meet the minimum requirements for the specified job position. Therefore, even the low quality resumes represent the qualifications of a suitable applicant. The resumes are standardized by the level of composition, years of professional experience, educational attainment, and voluntary/extracurricular activities.

The low quality resumes for the administrative, clerical, customer service, and "lowbrow" sales positions are designed for an applicant who has three to five years of general professional experience, has no more than five examination passes and/or certifications at the secondary or post-secondary level (but without any scholastic distinctions or education at the bachelors level or higher), and holds no leadership roles in extracurricular or service activities. In the case of the "highbrow" sales positions, the educational qualifications for low quality resumes would include an undergraduate degree in a business related field. The associated cover letters for the low quality group of resumes use grammatically correct but plain language, focus on diligence as a key skill, speak to why the applicant wants to work for the company, and simply state previous job experience.

The high quality resumes for the administrative, clerical, customer service, and "lowbrow" sales positions indicate that the applicant has more than five years of professional or relevant experience, has at least eight secondary/post-secondary level certifications or has an undergraduate tertiary degree, and holds a leadership

role in service/extracurricular activities. All the high quality education profiles (including those for "highbrow" sales positions) show scholastic distinctions in the form of first class honours undergraduate degrees and post-secondary exam passes with distinctions. The high quality cover letters for these categories use more sophisticated language than the low quality resumes, focus on both soft and hard skills gained from previous experiences, explain why the applicant is suitable for the company, and indicate how the position fits into the applicant's long term goals.

B.

The perception of socioeconomic status in Kingston is tied to an individual's area of residence. This is commonly observed in the casual use of the terms "uptown" and "downtown." The term "uptown" describes the northern, more affluent areas in Kingston as used in reference to the upper class, while "downtown" is the location of many inner city communities as used in reference to the lower class. Figure 1 in the appendix depicts the location of the two income areas used in this study.

To determine whether the perception of class is an important factor in obtaining a job in Kingston, we create four categories of applicant profiles by varying the type of first names and the types of addresses of the potential applicants. The various profiles are based on a combination of names that are lower or upper class sounding and addresses from inner city or affluent areas. The four profile categories are as follows:

i) *Upper class sounding name with an affluent address,*
ii) *Lower class sounding name with an inner city address,*
iii) *Upper class sounding name with an inner city address,*
iv) *And lower class sounding names with an affluent address.*

"Uptown" street addresses are selected from 11 affluent communities in the parish of St. Andrew: Waterworks, Cherry Gardens, Beverley Hills, Jacks Hill, Mona, Barbican, Millsborough, Paddington Terrace, Long Mountain, Stony Hill and Manor Park. These communities are described as "some of St Andrew's most-desired addresses" and "among some of the preferred addresses of the who's who" (*Jamaica Gleaner*, 2009). We collect 80 street names for high income area addresses for the bank of addresses that we use to build applicant profiles. The street addresses are chosen from the low income communities of Tivoli, Trench Town, August Town, Denham Town, and Mountain View. A total of 52 street names are compiled from these low income communities.[5]

First names are selected from the Electoral Office of Jamaica voters list for Kingston and St. Andrew. The voters list contains the names of 92.6% of the voting age population. A comparison of names from high income versus low income areas reveals that names that do not appear frequently tend to be associated with the low income areas. We initially create a pool of 240 names from the voters list which includes 60 female-sounding and 60 male-sounding from high income areas, and 60 female sounding and 60 male-sounding names from low income areas.

One of the weaknesses of a resume audit study is that it is difficult to deliver visual cues that suggest characteristics of an individual (Pager, 2007). To circumvent this limitation, we conduct a perception survey to determine the perceived sex and class of individuals associated with the selected names. To this end, we randomly survey each of the 240 names 50 times, using members of the

[5] The complete list of street names is provided as a supplement to this paper.

Jamaican public. The survey was conducted in public areas throughout the KMA from July to August 2013. To establish gender, survey participants were asked to identify whether they thought the name belonged to a male or female. To establish class, participants were asked to identify whether they thought the name belonged to someone who lived “uptown” or “downtown.” Names having more than a 70% (>35) respondent agreement on class and gender remain in the name bank. The final name bank contains 24 female upper class sounding names, 26 male upper class sounding names, 18 female lower class sounding names, and 10 male lower class sounding names. The complete name bank is shown in Table 1.

We chose common Jamaican last names such as Brown, Black, Grant, Samuels, Thomas and Walker to complete the fictitious resume identities, which are not associated with any particular social class.

C.

Job vacancies are found using online job sites and newspapers. Applications are only sent in response to administrative, clerical, customer service, and sales positions where employers accepted applications by email. Eight customized applications are sent in response to each vacancy, where four applications are high quality and four are low quality. Customization of applications for each advertisement involves: 1) ensuring that the resumes and cover letters meet the minimum requirements for the job, 2) including contact information and 3) adding specific name and address profiles.

We adjust all resumes and cover letters to ensure the applicants meet the minimum skills and qualifications for the job. For example, if the job requires the respondent be able to drive or speak a second language, then we update the resume and cover letter templates to reflect these skills. Thus, all of the eight

applications are designed to represent candidates that would be suited for the relevant position.

For each vacancy, the four applicant profiles based on names and addresses identified in the previous section are applied to each of the high and low quality applications. Therefore, the eight applications for each job represent individuals with the following perceived class and qualifications:

i) *Upper class sounding name with an affluent address and high quality resume,*
ii) *Lower class sounding name with an inner city address and high quality resume,*
iii) *Upper class sounding name with an inner city address and high quality resume,*
iv) *And lower class sounding names with an affluent address and high quality resume,*
v) *Upper class sounding name with an affluent address and low quality resume,*
vi) *Lower class sounding name with an inner city address and low quality resume,*
vii) *Upper class sounding name with an inner city address and low quality resume,*
viii) *And lower class sounding names with an affluent address and low quality resume.*

A specific phone number and email address combination is assigned to each of the eight aforementioned applicant types so that the contact information remains consistent for each batch of resumes sent in response to each vacancy. For each application, the gender of the applicant is randomly chosen. Then an appropriate

name and street address is randomly chosen from the name and street banks to match the applicant profile.

The process of sending out applications began in May 2014 and continued until November 2014. During this period, we answer 135 job advertisements and send out 1080 applications. Seventy percent (70.1%; n=94) of the vacancies are for sales positions, 17.2% (n=23) for customer service positions, 7.5% (n=10) for administrative positions, and 5.2% (n=8) for clerical positions. We monitor call backs daily by checking for voicemail messages and email replies. We actively collect call back information until February 2015. At the end of this time period we receive a total of 52 call backs, 23 for low income addresses and 29 for high income addresses. We observe 34 call backs for female sounding names and 18 for male sounding names. Seventeen (17) of the call backs are associated with names perceived to be lower class sounding names, while 35 are for the upper class counterparts.

Patterns in the call backs rates were analyzed using equality of proportion tests. These tests are used to assess the existence of any significant difference of call back rates based on name, gender, resume quality and the address. We conduct further analysis to assess whether these characteristics of the applicant impact the chances of receiving a call back. To this end, we use complementary log-log[6] and probit regression models with the call back response as the left hand side variable and the discrimination factors as the right hand side variables. The type of job

[6] The complementary log-log model is used when the probability of an event is either very large or very common. It The estimated coefficients approximates to the log of the log of the reverse odds ratio of the positive outcome. That is the fitted probability of an event is calculated as $\pi(x) = 1 - e^{-e^{(\alpha+\beta X)}}$. This value approximates to the logit model when the probability of the event is small.

position and the required skills were used as controls[7]. The model we use to run the regressions is as follows:

(1) $$Call\ Back_i = \alpha + \beta\ f(X_i) + u_i$$

X_i is a vector of dummy variables representing characteristics of the vacancy and the applicant. Each of the following dummy variables takes on a value of 1 if the applicant meets the characteristic and zero otherwise: *High income address*, *High income sounding name*, *Female* and *High Quality Resume*. It then follows that the reference group in the analysis are male applicants with low income names and addresses and who have lower qualifications.

Additionally, the model uses dummy variables to capture the following job characteristics, taking on the same values previously described. The included categories for the type of position are *Customer Service*, *Clerical*, and *Administrative*, while the required skills for the advertised position are listed captured as *Organization*, *Communication*, and *Computing*. Other relevant qualifications assessed in the model are the requirement for a tertiary degree and *Experience*.

III

The results presented in this section reveal evidence of hiring managers discriminating based on individual characteristics other than qualification. The frequency of call backs indicates a preference for applicants with high income names and addresses and with lower qualifications. However, statistical testing only provides strong, consistent evidence of class discrimination based on name. Gender also appears to be important to employers.

[7] No controls were included for the employers' characteristics because such information was infrequently available from job advertisements.

A.

Observing the distribution of call backs by name shown in Table 2 (appendix), reveals that the call back rate for high income names is 6.5% while it is 3.1% for low income names. This implies that, on average, an applicant with a low income name would have to send out approximately 32 resumes in order to receive a call back whereas an applicant with a high income would only have to send out approximately 15. The results of the test shown in the last column of the table, suggests there is class discrimination on the basis of name.

The results of the equality of portions test also support evidence of discrimination on the basis of name. In Table 3, discrimination is measured by whether the percentage of employers who favour one type of applicant is significantly different from the percentage of employers who favour the other type of applicant. Column 2 in Table 3 shows the number of employers who treat applicants "equally." Equal treatment includes the cases where no applicant received a call back, as well as the cases where equal numbers of each type of person received a call back. Column 3 shows the number of employers who "favoured" one type of person over another. This occurs when they send responses to more applicants of one type than another. The ratio of employers who offered a call back to an applicant with a high income name is more than six times the ratio of the employer who called a low income applicant. The first two rows of Table 3 shows that out of 135 employers, 13 (9.7%) employers favoured applicants with high income names while only 2 (1.5%) employers prefer applicants with low income sounding names. The fraction of employers who favour applicants from high income addresses is significantly different from the fraction of employers who favour applicants from low income addresses.

The overall call back rate of this study is 4.8%, which limits the models we estimate using regression analysis. Nonetheless, like Bertrand and Mullainathan

(2004), Kaas and Manger (2012), Oreopoulos (2011), McGinnity et al. (2009) and Thorat and Atwell (2007)[8], we use regression analysis to assess the relationship between the probability of call backs and individual characteristics. Using the model in Equation 1, we control for variables pertaining to the resume such as resume quality and type of name, as well as characteristics of the advertisement such as skills required or the job category, among others.

Table 4 reports the results of the regression analysis. Since the dependent variable is binary (call back dummy variable), complementary log-log and probit models are estimated.[9] The results support the findings obtained from comparing the call back rates across the different applicant profiles. The findings of all four models consistently suggest that having a high income name has a positive and significant impact on the call back rate. Therefore, having a high income name increases the probability of receiving a call back by around 3-4%.

B.

Although we find strong evidence of class discrimination by applicant's name, we find only limited evidence that discrimination extends to the applicant's address. Interestingly, the call back rate for applicants with high income addresses is 26% higher than those with low income addresses, but this difference is not statistically significant (Table 2). Also the coefficients on the high income address dummy variables are positive in the regression estimations shown in Table 4, but this relationship between a call back and address shown on the resume is again not significant.

[8] Bertrand and Mullainathan (2004) estimates a probit regression; Kaas and Manger (2012) uses both probit and multinomial logit regressions; Oreopoulos (2011) uses a linear probability model; McGinnity et al. (2009) utilizes logistic regression analysis and Thorat and Atwell (2007) uses a random effects logistics model.

[9] Estimations for the linear probability model is are available upon request as a supplement to this paper.

However, the results of the equal treatment test in Table 3 shows a significant difference in the instances an employer favours one type of address over another. The ratio of employers who favoured high income address over low income addresses is two times that of the ratio of those who prefer low income addresses to high income addresses.

C.

Across all techniques used in this study, we find no significant evidence of preference based on resume quality. Despite the lack of statistical evidence of discrimination on the basis of resume quality, we note that the call back rate for high quality resumes is 4.1% while the call back rate for low quality resumes is higher at 5.6% (Table 2). Additionally, we observe that employers tend to favour low quality resumes over high quality resumes (Table 3). It is important to recall that although all resumes met the minimum advertised requirements, they differed according to the level of writing sophistication, as well as the qualifications presented. Since both types of resumes satisfied the minimum requirements for the job, a potential explanation is that employers may prefer applicants with low quality resumes because they assume that they are willing to accept a lower wage. Another possibility may be that applicants with lower quality resumes are more likely to remain in the advertised position longer. Therefore, a candidate with lower, but satisfactory qualifications may be viewed as a less costly hire.

Looking at the estimation of the models with interaction terms shown in Columns (2) and (4) of Table 4, there is a negative coefficient on the interaction term with high quality resume and high income name. An applicant with both a high quality resume and a high income name will have lower call back rates than an applicant with a low quality resume and/or a low income name. From the estimation of the probit model in Column (4), the significant marginal effect of a high income name and low quality resume is 0.036, while the significant marginal effect of having a

high income name and high quality resume is only 0.004. Having a high quality resume reduces the increased likelihood a high income name applicant receiving a call back from 3.6% to 0.4%. From the complementary lol-log model in Column (2), we see that having a high quality resume with a high income converts the positive relationship to a negative with the chance of receiving a call back. To further this point, the beta coefficient for high income name is 0.2513 and -0.2648 for the high income name and high quality resume interaction term (see Table 5). The negative effect of the interaction term on receiving a call back, is greater than the positive effect of having a high income name.

D.

Although the tests do not reveal evidence of discrimination based on qualifications, there is evidence that employers base their preference on another characteristic determined by the applicant's name, gender. The call back rate for females of 6.3% is significantly differently from the 3.3% call back for male applicants (Table 2). This implies that a male applicant would have to send out, on average, approximately twice as many resumes in order to receive a call back than a female applicant.

The second to last row of Table 3 shows that two employers favoured male applicants. Of the 122 employers who displayed equal treatment in terms of gender, five of them responded to equal numbers of male and female applicants while 117 of them did not send a response to any of the applicants. The percentage of employers that prefer female applicants (8.1%) is significantly different from the percentage of employers that prefer male applicants (1.5%).

Regression analysis also supports a gender bias. The regression coefficients on the female dummy variable is positive, implying that being a female increases the likelihood on the call back rate (Table 4). This relationship however, seems to have a marginal impact, if any, since that variable is significant only at the 10% level in the complementary log-log and the probit that includes the interaction terms.

E.

The analysis shows consistent evidence of discrimination on the basis of name and reasonable evidence of gender discrimination. In fact, we find that females with high income names have a higher probability of receiving a call back than their male counterparts with low income names. This suggests that Jamaican employers discriminate against applicants with names that suggest that they are from the lower class. The discrimination uncovered in favour of women is

probably an indication that employers prefer females for jobs that are in the sales, customer service, clerical, and administrative fields. This result is not surprising and is in fact assumed to some extent in Bertand and Mullainathan (2004). They use both female and male names for sales jobs but used only female names for administrative and clerical positions to increase call back rates.

Finding that employers have a preference based on gender emphasizes the importance of the applicant's name. Still, the standardized beta coefficients estimated from the probit regressions suggest that the class component of name discrimination outweighs the gender component. Table 5 shows that the beta coefficients for the high income name dummy is approximately twice as large the relevant values for the dummy variable for an applicant being female. Distinguishing between the forms of discrimination that occur from the name, highlights the employers' use of names to form assumptions about the class and gender of an applicant. So our results suggest that employers use the first line of the resume, prominently displaying the name of the applicant as a sorting mechanism to root out candidates deemed to be unsuitable. On this merit, it is not necessarily surprising that there is little evidence of discrimination on the basis of address and no evidence preference based on resume quality.

We also found no evidence to suggest that quality was independently significant, but observed that there is a significant interaction between high quality resumes and high income names. The other interaction terms are not significant.[10] Therefore, the call back rates for applicants with high income names or high quality resumes are not impacted by an applicant's address.

[10] The models with gendered interaction terms were estimated, but yielded no significant results. This suggests the gender discrimination is not influenced by other the applicant characteristics identified in this study. These results are available upon request.

F.

To verify the findings previous discussed, we estimated the probit and complementary log-log models using a reduced sample. The estimated models which only uses observations from employees who responded to at least one of the 8 resumes they received are shown in Table 6. The findings are similar to those found in the previous model. Candidates with high income names have a higher probability of receiving a call back while the female dummy variable is significant at the 10% level except in the complementary log-log model with interactions. It follows that address and resume quality have no individual impact on the call back rate. We also continue to see that having a high quality resume reduces the likelihood of receiving a call back for those with high income sounding names. Overall, the size of the coefficients tends to be higher for the reduced sample, but this is expected since the sample only focussed on the firms that sent out any call backs. The larger sample gives a more accurate picture of the true size of the impact.

To summarize the results, we persistently see strong evidence of discrimination against applicants with low income sounding names across all methods of analysis. The results also consistently indicate that female applicants have a higher probability of receiving a call back. Observing gender discrimination reinforces the importance of how applicants' names influence their chance of receiving a call back. There is very weak support for discrimination on the basis of address, as indicated by the results of the test for equal treatments shown in Table 3. Finally, the regression results also imply that having a high quality resume reduces the likelihood that an applicant with a high income name will receive a call back. This suggests that having a high income name only increases the probability of receiving a call back for applicants with low quality resumes.

IV.

We run a correspondence study in a racially homogeneous middle-income country to disentangle the effects of discrimination on the basis of race versus socioeconomic status. Matching applications that display different socioeconomic class indicators are sent in response to advertisements for clerical, customer service, sales and administration vacancies in the Kingston Metropolitan Area of Jamaica. The distinguishing factors we use to identify various applicant characteristics are resume quality, gender, name and address, where the latter two serve as indicators of class.

We find ample evidence that call back rates are higher for applicants with high income sounding names than for low income sounding names, and limited evidence that address plays a large role in influencing employers to respond to job applications. Overall, our results suggest that discrimination by class is a potentially severe confounding variable in previous correspondence studies using race-specific names to analyse race discrimination. Thus, the evidence found in these studies, Bertrand and Mullainathan (2004) being the pioneer work, may to a significant effect be driven by discrimination by class, rather than race. Importantly, this does not imply that existing evidence on racial discrimination is spurious. To the contrary, our results should be interpreted as complementary, in the sense that race and class may exert independent effects on employer decisions. This suggests that previous findings may indeed *underestimate* the discrimination experienced by applicants from a particular race (e.g. blacks) if they are also from a lower class background. We also find that gender plays a role in call back receipts in our sample, where females are more likely than males to be on the employers call back list. Note, however, that although this provides evidence of gender discrimination, social class discrimination is a more important factor in making the call back list. Finally, our findings reveal that employers appear to be

more interested in applicants with high income sounding name and low quality resumes, possibly in an attempt to negotiate lower wages.

While the findings of this study help to quantify the impact of class discrimination in the Jamaican labour market, there are some limitations that should be carefully considered. Firstly, this study only considers the impact of employment discrimination at one stage of the employment process. Secondly, this is a resume study and as such, we must assume that the resume profiles are perceived as expected by the hiring personnel. We cannot be sure that an employer perceives the names in a way that will match the categories specified in our name bank. Although, the name survey should reduce some of this subjectivity, it is worth mentioning as we have little information about the persons reading and selecting the applications. This raises a broader point: comparing information on employers is restricted by the availability of information. Some of the information on the employers is hard to ascertain as not all job advertisements provided the name and contact number for the company. Because of this, we are unable to ascertain whether call back rates are in fact impacted by the address and industry of the hiring company. Future research should look into these important issues.

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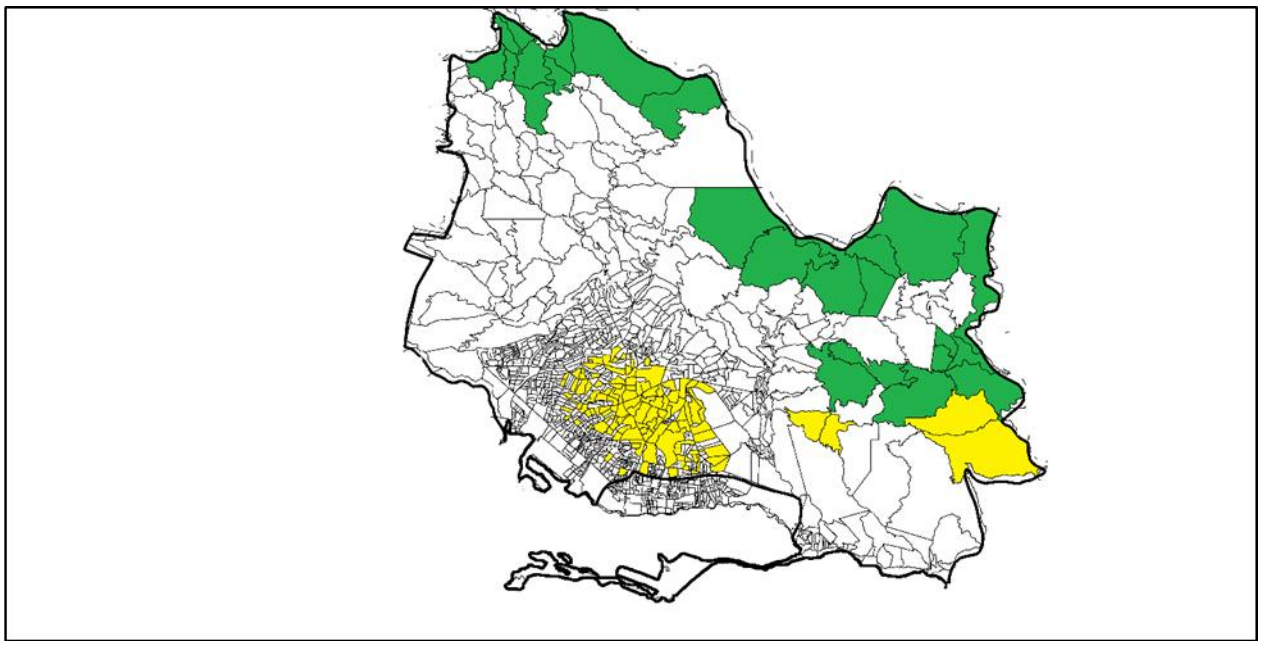
Appendix

Figure 1: Map of the Kingston Metropolitan Area, Jamaica



Notes: (i) The pockets on the map are enumeration districts, the lowest administrative level, in the Kingston Metropolitan Area. (ii) The shaded enumeration districts are those from which addresses for the resumes were used in this study. (iii) The green shaded areas represents some of the affluent communities and the yellow shaded areas, a portion of the inner city communities.

Table 1 Post Survey Name Bank

High Income Sounding		Low Income Sounding	
Female	**Male**	**Female**	**Male**
Abigail	Adam	Andre-Anna	Danavan
Alice	Alexander	Blossel	Dowayne
Anastasia	Brandon	Delphina	Hansom
Brittany	Bruce	Glasme	Kitori
Brooke	Charlton	Iene	Lerch
Caitlin	Colin	Jenneve	Nemroy
Charlotte	Darren	Keeling	Rallen
Chelsea	Hanif	Lovinia	Reginal
Christina	James	Samanthia	Sheckardo
Danielle	Jeremy	Shackeria	Super
Emma	Joseph	Shanoy	
Isabella	Joshua	Shickell	
Jessica	Justin	Sophesia	
Juliet	Kingsley	Soverley	
Kathleen	Mark	Taisha-Gaye	
Lindsay	Martin	Taranio	
Lydia	Marvin	Urcena	
Marissa	Nigel	Zonashia	
Rachel	Oliver		
Rebecca	Ricardo		
Savannah	Richard		
Shari	Ryan		
Vanessa	Sean		
Victoria	Stuart		
	Tristan		
	Vincent		

Notes: (i) These names represent a selection from the Jamaica's voters' metropolitan registration list, which is representative of the Kingston metropolitan area. (ii) Survey participants were asked to categorize the names according to gender and income status. (iii) The outcome of the survey features 44 female names, 59% of which are high income sounding and 36 male names, 72% of which are high income sounding.

Table 2 Call Back Rates by Applicant Characteristics

Category		Call Back Rate	No. of Resumes required to receive 1 call back	P-value
Name	High	6.48	31.76	0.0105
	Low	3.15	15.43	
Address	High	5.37	23.48	0.3938
	Low	4.26	18.62	
Quality	High	4.07	18.00	0.2555
	Low	5.56	25.55	
Gender	Female	6.30	30.00	0.0230
	Male	3.33	15.88	

Notes: For the resumes sent out, the call back rates for (i) high income and low income sounding names are shown in panel 1; (ii) high income and low income addresses are shown in panel 2; (iii) high and low quality resumes are shown in panel 3; (iv) females and males are shown in panel 4. (v) Column 4 shows the minimum number of resumes an individual with the relevant characteristic would need to send out to receive one call back.

Table 3 Frequencies of Preferred Characteristics of Applicants

Category		Equal Treatment(no.)	Favoured (no.)	Percentages	P-value
Name	High Income sounding	120	13	9.63	0.000
	Low Income sounding		2	1.48	
Address	High income sounding	120	10	7.41	0.0227
	Low income sounding		5	3.70	
Quality	High	121	6	4.44	0.466
	Low		8	5.93	
Gender	Male	122	2	8.15	0.000
	Female		11	1.48	

Notes: (i) In this table, the favoured column 4 shows the number of instances in which an employer preferred the characteristics of the applicant based on name, address, quality of resume and gender. (ii) Equal treatment represent cases in which employers preferred neither group of applicants within each category. (iii) Favoured number shows the minimum number of resumes a job applicant would need send out in order to receive one call back.

Table 4 Estimation of the Impact of Applicant and Job Characteristics on the Likelihood of Receiving a Call Back

	Dependent Variable: Call Back Dummy			
	Complemetary Log-Log		Probit (Marginal Effects)	
Independent Variables	(1)	(2)	(3)	(4)
High income address	0.334	-0.744	0.009	-0.021
	(0.324)	(0.717)	(0.010)	(0.020)
High income name	0.942	1.107 **	0.032 ***	0.036 **
	(0.335)	(0.565)	(0.011)	(0.018)
Female	0.569 *	0.679 *	0.017	0.019 *
	(0.331)	(0.355)	(0.01)	(0.01)
High quality resume	-0.260	0.164	-0.009	0.006
	(0.301)	(0.636)	(0.009)	(0.018)
(High income name) x (High income address)		0.993		0.038
		(0.761)		(0.035)
(High income name) x (High quality resume)		-1.401 **		-0.032 **
		(0.708)		(0.012)
(High quality resume) x (High income address)		0.974		0.029
		(0.654)		(0.027)
Customer service	1.37 **	1.405 ***	0.087 ***	0.086 ***
	(0.541)	(0.546)	(0.051)	(0.050)
Clerical	0	0.034	-0.002	-0.002
	(0.493)	(0.493) *	(0.016)	(0.014)
Administrative	-1.286 *	-1.288	-0.024 *	-0.023 *
	(0.733)	(0.735)	(0.009)	(0.009)
Organizational Skills	0.733 **	0.728 **	0.027 **	0.025 **
	(0.357)	(0.358)	(0.014)	(0.013)
Communication skills	-0.92 **	-0.933 **	-0.045 **	-0.044 **
	(0.427)	(0.43)	(0.024)	(0.023)
Basic Computing	-0.517	-0.508	-0.020	-0.018
	(0.367)	(0.371)	(0.013)	(0.013)
Degree Required	0.843 ***	0.847 ***	0.029 ***	0.028 ***
	(0.316)	(0.316)	(0.012)	(0.011)
Previous Experience	-0.324	-0.300	-0.011	-0.009
	(0.406)	(0.405)	(0.015)	(0.014)
Constant	Yes	Yes	No	No
P-value	0	0	0	0
Sample size	1080	1080	1080	1080
R-Squared				
Peudo R-squared			0.10	0.12
Pred. P			0.03	0.03

Notes: (i) The dependent variable is a dummy, the likelihood of receiving a call back from an employer. (ii) Table shows odds ratio from the complementary log-log regression and marginal effects from probit regression. (iii) *, **, *** denote significance at the 10%, 5%, and 1% level respectively. (iv) Robust standard errors are in parentheses. (v) The beta coefficients for the dummy variables High income name and Female, and for high quality resume and high income name interaction term estimated from model 3 and 4 are shown in Table 5.

Table 5 Selected Beta Coefficients of Significant Variables from the Probit Models

Dependent Variable: Call Back Dummy		
	Probit	
Independent Variables	(3)	(4)
High income name	0.2109	0.2513
Female	0.1147	0.1378
High income name * High quality resume	…	-0.2648

Notes: (i) The beta coefficients correspond to models (3) and (4) in Table 4. (ii) Beta coefficients are estimated by standardising the dependent and independent variables. These values measure the comparable strength of the independent variable in explaining the chances of receiving a call back. Variables with larger coefficients matter more.

Table 6. Estimation of the Impact of Applicant and Job Characteristics on the Likelihood of Receiving a Call Back Using a Reduced Sample

Dependent Variable: Call Back Dummy				
	Log-Log		Probit	
Independent Variables	(1)	(2)	(3)	(4)
High income address	0.377	-0.725	0.063	-0.111
	(0.320)	(0.734)	(0.063)	(0.122)
High income name	1.089 ***	1.461 ***	0.219 ***	0.291 ***
	(0.328)	(0.562) *	(0.06)	(0.101)
Female	0.592 *	0.650	0.110 *	0.115 *
	(0.328)	(0.346)	(0.061)	(0.063)
High quality resume	-0.324	0.218	-0.065	0.036
	(0.31)	(0.655)	(0.062)	(0.113)
(High income name) x (High income address)		0.886		0.173
		(0.749)		(0.16)
(High income name) x (High quality resume)		-1.719 **		-0.245 **
		(0.734)		(0.072)
(High quality resume) x (High income address)		1.151 *		0.192
		(0.675)		(0.15)
Customer service	0.446	0.499	0.187	0.132
	(0.733)	(0.736)	(0.69)	(0.189)
Clerical	0.810	0.992	0.139	0.125
	(0.943)	(0.934)	(0.206)	(0.202)
Administrative	1.099	1.277	0.290	0.277
	(0.986)	(0.982)	(0.265)	(0.26)
Organizational Skills	0.052	0.050	0.013	0.022
	(0.489)	(0.486)	(0.093)	(0.096)
Communication skills	-0.674	-0.736	-0.170	-0.183 *
	(0.511)	(0.494)	(0.117)	(0.118)
Basic Computing	-0.357	-0.398	-0.071	-0.068
	(0.495)	(0.499)	(0.092)	(0.091)
Degree Required	1.244 ***	1.342 ***	0.266 ***	0.272 ***
	(0.389)	(0.401)	(0.083)	(0.083)
Previous Experience	-0.799	-0.848	-0.158	-0.148
	(0.536)	(0.54)	(0.134)	
Constant	Yes	Yes	No	No
P-value	0	0	0	0
Sample size	184	184	184	184
R-Squared				
Peudo R-squared			0.19	0.15
Pred. P			0.20	0.21

Notes: The selected sample includes any resumes that was sent to employers who selected at least one of the eight resumes. (i) The dependent variable is a dummy, the likelihood of receiving a call

back from an employer. (ii) Table shows odds ratio from the complementary log-log regression and marginal effects from probit regression. (iii) *, **, *** denote significance at the 10%, 5%, and 1% level respectively. (iv) Robust standard errors are in parentheses.