

# Soft Skills, Competition and Hiring Discrimination

Christian Valencia<sup>1</sup>, Sarah Janzen<sup>1</sup>, Yashodhan Ghorpade<sup>2</sup> and  
Amanina Abdur Rahman<sup>2</sup>

<sup>1</sup>University of Illinois at Urbana-Champaign

<sup>2</sup>The World Bank

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## Motivation

Firms decide who to hire and what skills are demanded

1. Hiring based on worker's productivity is efficient. However, there is evidence of discrimination in labor markets (Bertrand and Duflo, 2017; Neumark, 2018)
2. Increasing demand for soft skills in the labor market (Heckman and Kautz, 2012; Weidmann and Deming, 2021)
3. Market competition should drive an efficient allocation of workers to positions

## This paper

We conduct a correspondence study in Malaysia, a context with previously documented hiring discrimination, to answer the following research questions:

1. Is there ethnic and gender discrimination in the labor market?
2. Are soft skills demanded by firms?
3. Does competition affect hiring decisions?

## Contribution to the literature

1. Documentation of ethnic discrimination: (Lee and Khalid (2016), Galarza and Yamada (2014), Bartoš et al. (2016), Kaas and Manger (2012))
2. Documentation of gender discrimination: (Petit (2007), Kuhn and Shen (2013), Kline et al. (2022), Alaref et al. (2020))
3. Mechanisms and heterogeneity in discrimination: (Kline et al. (2022), Bartoš et al. (2016), Kaas and Manger (2012), Hangartner et al. (2021), Lahey and Oxley (2018))
4. Soft skills for the labor market: Paul et al. (2021), Heller and Kessler (2022))

## Context: Malaysia

- ▶ Multiple ethnicities: Bumiputera 69% (mostly Malay), Chinese 23%, Indians 7%, others 1%
  - ▶ Lee and Khalid (2016) find that Malay are 18 p.p. less likely to receive callbacks for interviews than Chinese
- ▶ Gender gaps in labor force participation (25 p.p.) and earnings (Women earn between 70% and 83% of men earnings)

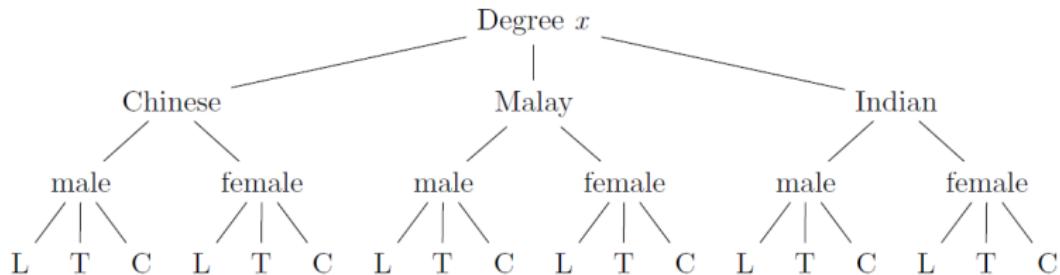
## Job search and classification

- ▶ From May to July 2023 we web scrapped all the jobs posted in one of the largest job platforms in Malaysia
- ▶ We filtered entry-level jobs in the following fields of specialization:
  1. Accounting
  2. Business Administration
  3. Software Engineering
  4. Mechanical Engineering
  5. Electrical Engineering
- ▶ We dropped from the sample any company for which an application was submitted previously

## Profile creation

We created 90 different profiles. For each of our 5 fields of specialization 'x', we have 6 profiles per ethnicity, we split those in 2 genders and then in 3 soft skills: Leadership (L), Teamwork (T) and a Control (C)

Figure 1: Description of profiles for a given degree



## Correspondence Experiment

- ▶ We use company location and size to conduct a **stratified randomization** that assigns one of the fictitious profiles to each job ad varying the following characteristics:
  1. Ethnicity (Chinese, Indian, Malay)
  2. Gender (F,M)
  3. Soft skill (Leadership, Teamwork, None)
- ▶ Our final sample is  $N = 2,995$
- ▶ We observe different stages of the hiring process: Rejections, Profile visits, Contact and Interview offers
- ▶ We have information of all the job ads posted and we observe the number of applicants for all ads we applied for

# Balance for ethnicity

	(1) Chinese	(2) Malay	(3) Indian	(4) Differences (1)-(2)	(5) (1)-(3)
Greater Kuala Lumpur	0.65 (0.48)	0.62 (0.48)	0.62 (0.48)	0.02 (0.02)	0.03 (0.02)
Small Firms	0.44 (0.50)	0.44 (0.50)	0.45 (0.50)	-0.00 (0.02)	-0.01 (0.02)
Salary (USD)	744.54 (253.32)	756.94 (315.34)	765.15 (300.69)	-12.40 (16.15)	-20.61 (15.76)
Days to Process	16.73 (9.34)	16.64 (9.45)	16.85 (9.44)	0.09 (0.46)	-0.12 (0.46)
Pre-scan Questionnaire	0.53 (0.50)	0.56 (0.50)	0.56 (0.50)	-0.02 (0.02)	-0.03 (0.02)
Number of questions	1.83 (2.20)	1.86 (2.24)	1.89 (2.23)	-0.04 (0.10)	-0.07 (0.10)
Business degree	0.50 (0.50)	0.49 (0.50)	0.50 (0.50)	0.00 (0.02)	-0.00 (0.02)
Engineering degree	0.25 (0.44)	0.26 (0.44)	0.27 (0.44)	-0.01 (0.02)	-0.01 (0.02)
Number of job applicants	150.82 (284.81)	141.21 (235.54)	147.22 (211.37)	9.60 (11.71)	3.60 (11.29)
Applicants with more education	7.36 (15.57)	6.56 (12.06)	6.96 (11.01)	0.80 (0.62)	0.40 (0.61)
Applicants with higher exp. salary	67.53 (127.44)	67.73 (131.83)	69.62 (124.44)	-0.19 (5.81)	-2.08 (5.68)
Number of foreign job applicants	6.02 (11.00)	5.57 (13.47)	6.52 (18.21)	0.46 (0.65)	-0.50 (0.78)
Observations	1006	1008	981		

# Balance for gender

	(1) Male	(2) Female	(3) (1)-(2)
Greater Kuala Lumpur	0.63 (0.48)	0.64 (0.48)	0.01 (0.02)
Small Firms	0.45 (0.50)	0.44 (0.50)	-0.02 (0.02)
Salary (USD)	748.22 (293.76)	762.60 (287.83)	14.38 (13.44)
Days to Process	16.82 (9.55)	16.65 (9.26)	-0.17 (0.37)
Pre-scan Questionnaire	0.53 (0.50)	0.57 (0.50)	0.04** (0.02)
Number of questions	1.84 (2.23)	1.89 (2.22)	0.05 (0.08)
Business degree	0.49 (0.50)	0.50 (0.50)	0.00 (0.02)
Engineering degree	0.26 (0.44)	0.26 (0.44)	0.00 (0.02)
Number of job applicants	144.20 (251.38)	148.69 (240.67)	4.50 (9.05)
Applicants with more education	6.64 (12.62)	7.30 (13.47)	0.66 (0.48)
Applicants with higher exp. salary	66.24 (122.53)	70.38 (133.26)	4.14 (4.71)
Number of foreign job applicants	5.94 (15.27)	6.16 (13.84)	0.22 (0.63)
Observations	1508	1487	

# Balance for soft skills

	(1) Leadership	(2) Teamwork	(3) Neither	(4) Differences (1)-(3)	(5) (2)-(3)
Greater Kuala Lumpur	0.63 (0.48)	0.65 (0.48)	0.62 (0.49)	-0.01 (0.02)	-0.03 (0.02)
Small Firms	0.45 (0.50)	0.45 (0.50)	0.43 (0.50)	-0.02 (0.02)	-0.02 (0.02)
Salary (USD)	751.22 (269.54)	763.36 (326.23)	751.99 (274.43)	0.77 (15.33)	-11.37 (17.06)
Days to Process	16.22 (9.51)	17.19 (9.32)	16.79 (9.37)	0.57 (0.46)	-0.40 (0.45)
Pre-scan Questionnaire	0.54 (0.50)	0.55 (0.50)	0.56 (0.50)	0.02 (0.02)	0.01 (0.02)
Number of questions	1.88 (2.25)	1.86 (2.22)	1.85 (2.20)	-0.03 (0.10)	-0.01 (0.10)
Business degree	0.49 (0.50)	0.49 (0.50)	0.50 (0.50)	0.01 (0.02)	0.00 (0.02)
Engineering degree	0.26 (0.44)	0.26 (0.44)	0.25 (0.44)	-0.01 (0.02)	-0.01 (0.02)
Number of job applicants	140.58 (222.81)	152.95 (286.54)	145.64 (223.20)	5.06 (10.06)	-7.32 (11.55)
Applicants with more education	6.68 (11.87)	7.33 (15.64)	6.87 (11.16)	0.18 (0.52)	-0.47 (0.61)
Applicants with higher exp. salary	67.52 (127.89)	69.72 (137.63)	67.58 (117.52)	0.06 (5.54)	-2.13 (5.75)
Number of foreign job applicants	6.91 (18.61)	6.11 (13.64)	5.16 (10.55)	-1.75** (0.81)	-0.95 (0.64)
Observations	993	1004	998		

# Correspondence Experiment: Sample resume

## First Name Last Name

Phone: +60 12

Gender:

Email:

### EXECUTIVE SUMMARY

Fresh Bachelor of Accounting graduate with previous internship experience in PwC Malaysia. Currently pursuing Chartered Financial Analyst (CFA) Level I Certification. Demonstrated ability to contribute to teams.

### TECHNICAL SKILLS

- Microsoft Visual Basic
- QuickBooks
- SQL

### PERSONAL SKILLS

- Teamwork
- Collaboration
- Communication

### EDUCATION

#### Bachelor of Accounting (2022)

University of Malaya  
Kuala Lumpur

### PRE-PROFESSIONAL EXPERIENCE

#### Intern

PwC Malaysia (Jul 2022 – Sep 2022)

*Compile and analyze financial statements. Create a budget aligned with company financial goals. Collaborate as part of a team to prepare relevant internal report.*

#### Barista

Starbucks Malaysia (Oct 2021 – Jul 2022)

*Serve customer with variety of beverages and meals. Greet customers, take orders, and complete customer transactions on the cash register. Work collaboratively with other employees.*

### ACHIEVEMENTS / RESPONSIBILITIES

- Book Club
- Photography Club
- Running
- Baking

### LANGUAGES

English, Bahasa Melayu, Mandarin

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Ethnicity   
Gender   
Soft Skill 

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Ethnicity	<input type="checkbox"/>
Gender	<input type="checkbox"/>
Soft Skill	<input type="checkbox"/>
Degree	<input type="checkbox"/>

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# Empirical Approach

Ethnic discrimination:

$$y_i = \delta_0 + \sum_{j=1}^2 \delta_j E_{ij} + \varepsilon_i \quad (1)$$

Gender discrimination:

$$y_i = \beta_0 + \beta_1 F_i + \varepsilon_i \quad (2)$$

Response to Soft Skills:

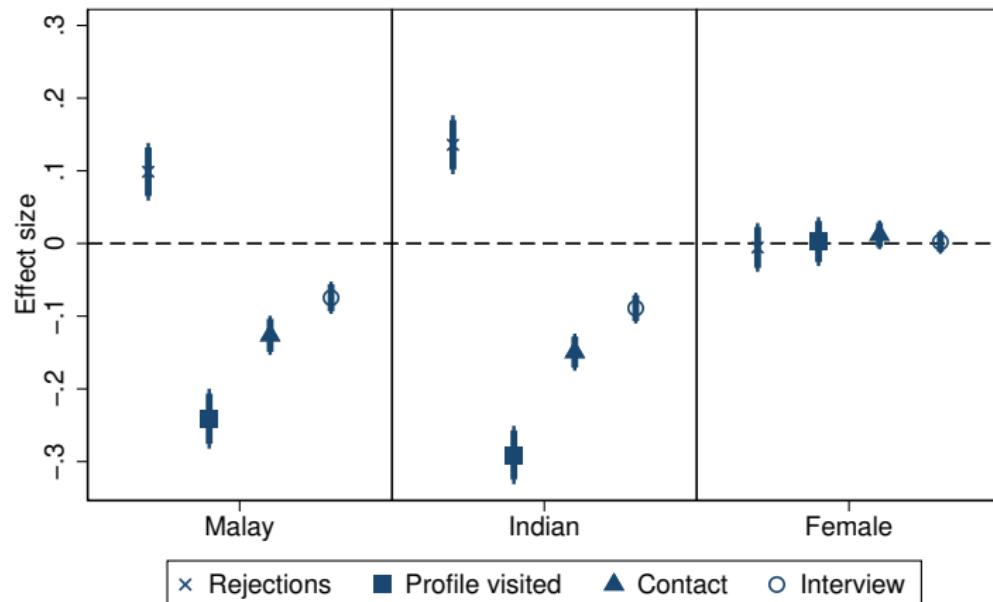
$$y_i = \theta_0 + \sum_{k=1}^2 \theta_k S_{ik} + \varepsilon_i \quad (3)$$

Ethnicity and soft skills:

$$y_i = \delta_0 + \sum_{j=1}^2 \delta_j E_{ij} + \sum_{k=1}^2 \theta_k S_{ik} + \sum_{k=1}^2 \sum_{j=1}^2 \nu_{kj} (E_{ij} \times S_{ik}) + \varepsilon_i \quad (4)$$

## Evidence of discrimination

- ▶ Malay and Indian are discriminated against in all hiring outcomes
- ▶ No evidence of gender discrimination



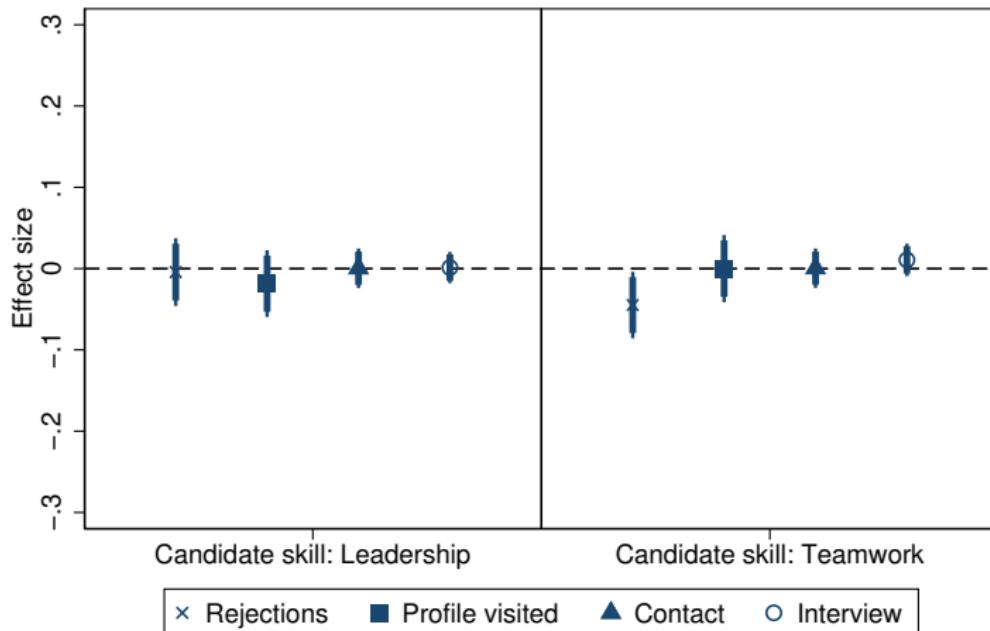
Constants for Malay and Indian outcomes: 0.25, 0.50, 0.17, 0.11

Constants for Female outcomes: 0.33, 0.33, 0.08, 0.06

Robust standard errors at the 5% and 10% level

# The role of soft skills

- ▶ On their own soft skills do not seem to affect hiring behavior

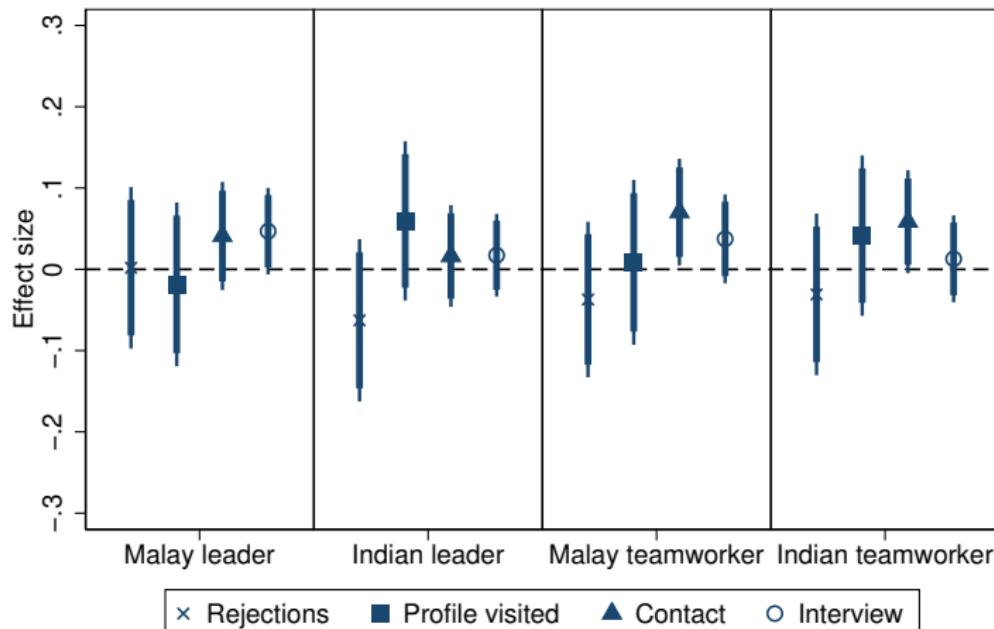


Constants for soft skill outcomes: 0.34, 0.33, 0.08, 0.05

Robust standard errors at the 5% and 10% level

## Combining ethnicity and soft skills

- ▶ No evidence that leadership skills reduce discrimination
- ▶ Some evidence that teamwork skills reduce the contact discrimination gap in 8 p.p.

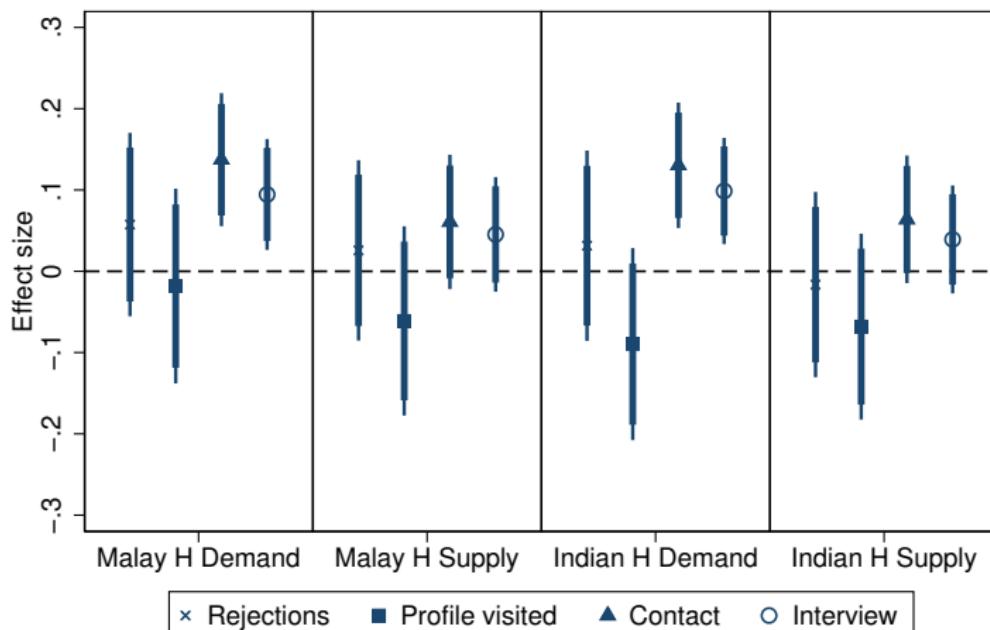


Constants: 0.25, 0.52, 0.20, 0.12

Robust standard errors at the 5% and 10% level

## Competition and ethnic discrimination

- ▶ The discrimination gap narrows in job positions with high demand
- ▶ The number of applicants (supply) do not affect the discrimination gap



Constants: 0.28, 0.53, 0.26, 0.17

Estimated values with 95% and 100% level

## Conclusions:

- ▶ We find evidence of ethnic discrimination in Malaysia. Malay and Indian are discriminated against (compared to Chinese) in all hiring stages we observe
- ▶ We find two elements that attenuate the discrimination gap in the labor market:
  1. Signaling a teamwork soft skill
  2. More competition on the demand side
- ▶ Work in progress: Information of firm shareholders and officers ethnicity and a theoretical discrimination model

# Thank you!

Email me to: [cav5@illinois.edu](mailto:cav5@illinois.edu)

## References

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