Does university prestige lead to discrimination in the labour market?

Evidence from a labour market field experiment in three countries

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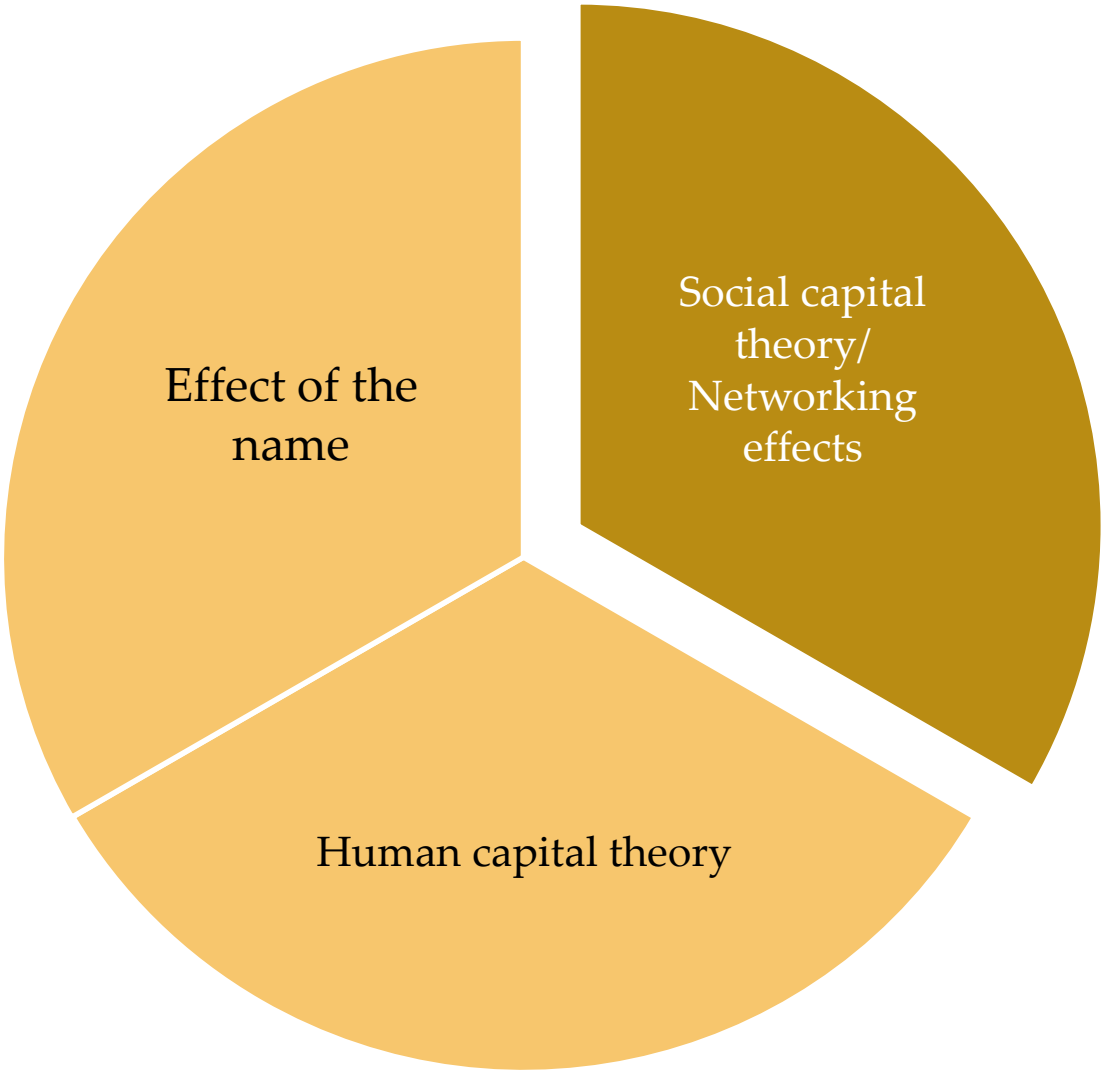
RESEARCH PROBLEM

- Empirical evidence suggests that **students attending prestigious universities have added monetary and nonmonetary benefits in the labor market** (Black & Smith, 2004; 2006; Brewer, Eide, & Ehrenber, 1999; Long, 2008; 2010; Long, Allison, & Mc.Ginnis, 1979; Monks, 2000; Morley & Aynsley, 2007; Rivera, 2015; Rothwell, Jewell, & Hardie, 2009)

- Evidence also suggests that **females benefit less than males** from attending a prestigious university (Black & Smith, 2004; Long, 2008)

- **Little evidence for a causal link** between attending a prestigious university and added benefits (Dale & Krueger, 2002; 2014)

THEORY & NORMATIVE FRAMEWORK



RESEARCH QUESTIONS

(1) Does university prestige matter in the hiring process?

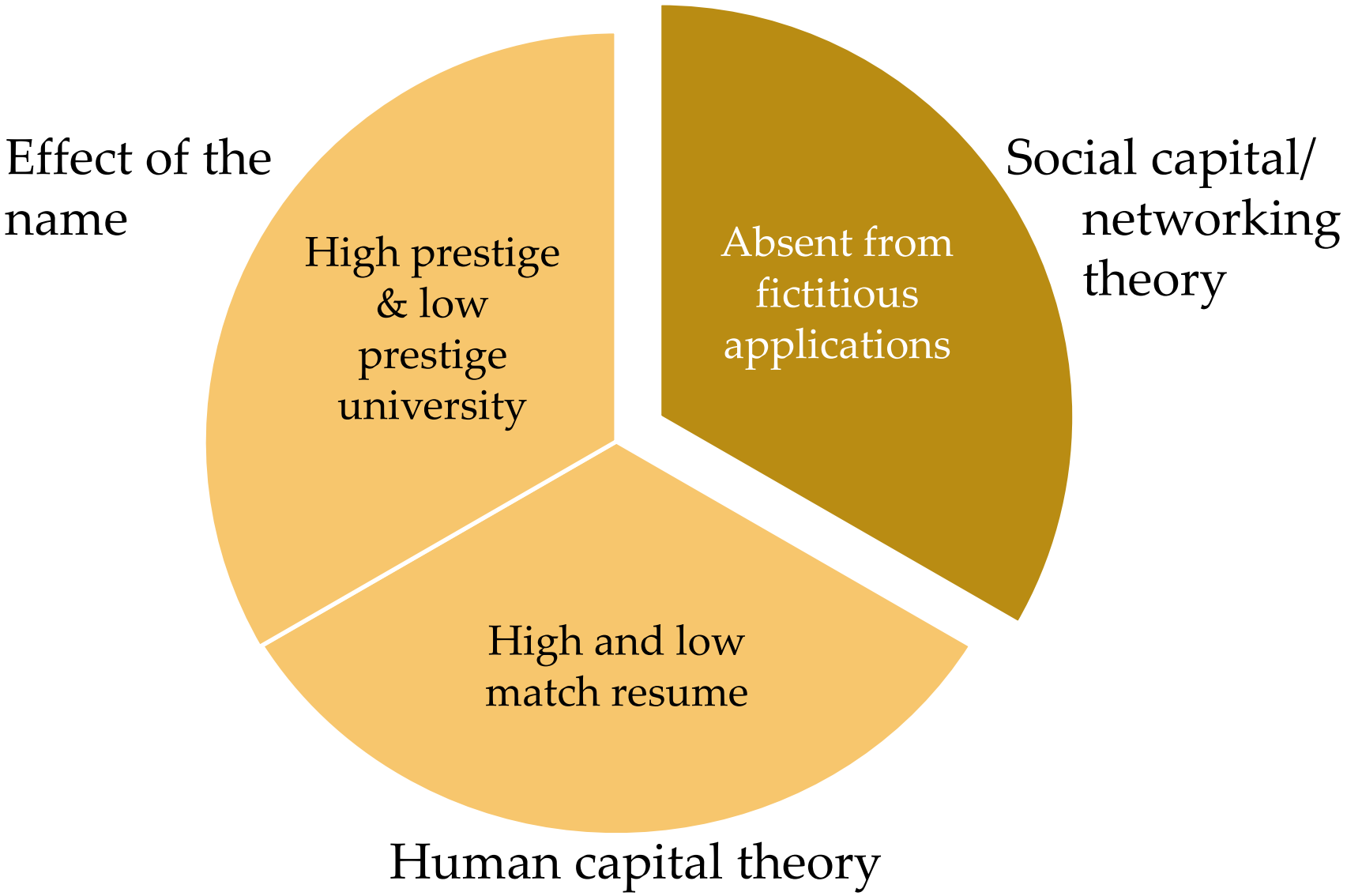
(2) Does prestige matter above relevant skills in the hiring process?

(3) Do the effects of university prestige in the hiring process vary by sex?

METHOD

- Field experiment of the labor market (Bertrand & Mullainathan, 2004; Daniel, 1968; Riach & Rich, 2002)
- 2,400 fictitious applications submitted
  - 800 in each of the following countries:
    - Australia
    - United Kingdom
    - United States
  - 1200 in each of the following skills intensive sectors:
    - Information and Communication Technology (IT)
    - Accounting
  - Applications belong to domestic students within each country

THEORY & RESEARCH DESIGN



HIGH PRESTIGE UNIVERSITY

Academic Ranking of World Universities	Times Higher Education World University Rankings	QS World University Rankings
2011	2010-2011	2012-2013
2012	2011-2012	2013-2014
2013	2012-2013	2014-2015
2014	2013-2014	2015-2016
2015	2014-2015	2016-2017
2016	2015-2016	-
-	2016-2017	-

- Consistently ranked in the first 100 universities globally
- Excluded most prestigious institutions (often do not provide applied majors)
- Crosschecked with national rankings
  - > 40 *US World News and World Report National University Ranking*
  - Among *Group of Eight* in Australia
  - Top 20 of the 2017 University League Tables, compiled by *The Complete University Guide*

LOW PRESTIGE UNIVERSITY

- Ranked at least once in one of the ranking iterations on the previous slide
- Crosschecked with national rankings

  - **US:** Subtracted all universities that appear in the *US World News and World Report National University Ranking* of 2017 (313 institutions)

  - **UK:** Subtracted all universities listed in the *Best Universities* in the UK THE ranking (91 institutions)

  - **Australia:** 34/43 institutions ranked globally. Choose institutions that were ranked internationally > 400

HIGH AND LOW PRESTIGE

City and Country	High prestige	Low prestige
NYC, US	• Columbia University • New York University	• Adelphi University • Pace University • St. John's University
Pittsburgh, US	• Carnegie Mellon University	• Duquesne University
Edinburgh , UK	• University of Edinburgh	• Edinburgh Napier University
London, UK	• Imperial College London • University College London	• London South Bank University • University of Roehampton • University of Westminster
Canberra, Australia	• Australian National University	• University of Canberra
Melbourne, Australia	• University of Melbourne	• La Trobe University • RMIT University • Swinburne University of Technology • Victoria University

Operationalizing human capital theory

High match accounting	Low match accounting
Bachelor of Science in Business *Concentration in Accounting*	**Bachelor of Arts in Biology** *Major in Biology; Minor in Business Studies*
Relevant coursework: Taxation: Individual and Business Income; Auditing; International Reporting and Analysis; Forensic Accounting and Financial Statement Fraud	**Relevant coursework:** Calculus; Bio-Statistics; Information Technology in Business and Society; Principles of Financial Accounting
(Name of company) Accounting Assistant Intern • Manage accounts payable, prepare journal entries, set up and maintain accounts, process payments, and prepare reports for management • Manage monthly bank reconciliation of approximately $100,000 • Assist in the preparation of State and Federal taxes, for individuals, businesses, and small-sized corporations utilizing forms 1040, 1041, 1120, 1120S, 1065 • Advise 20+ international clients on wide set of tax matters and resolved matters in a quick and effective manner	**Self-employed Mathematics and Biology Tutor** • Specialize as an individual tutor by simplifying math and biology concepts while coaching high school students to think critically and to solve problems • Improve students' performance on SAT by 10% • Prepare daily lesson plans for activities • Help struggling students improve their critical thinking and problem-solving skills • Cultivate a fun and interesting learning environment which encourages questions and discussions

DANIEL SMITH

Email: smith.daniel.jack@gmail.com, Telephone: 347 809 5513

CAREER OBJECTIVE

College student nearing completion seeking to leverage exceptional IT skills and academic knowledge to gain entry-level software development position at your firm. Dedicated, competent, and detail-oriented individual with excellent communication skills and the capacity to go beyond what is expected to achieve company goals.

EDUCATIONAL BACKGROUND

(Name of University) **(City)**
Bachelor of Science in Information Systems Management *Class of 2018*

- GPA 3.56
- **Relevant Coursework:** Introduction to Cloud Computing; HTML Programming; Javascript Programming; Design and Programming for the Web; Database Administration; Information Security Management

Specialized certifications

- ***CompTia A+*** *May 2017*
- ***ITIL (v3)*** *September 2017*

PROFESSIONAL EXPERIENCE

(Name of Company) **(City)**
Software Engineering Intern ***January 2017 – Present***

- Design and develop automated trading software for backtesting historical trading data in Java platform
- Organize and facilitate Agile and Scrum meetings, which includes Sprint Planning, Daily Scrums or Standups, Sprint Check-In, Sprint Review and Retrospective
- Develop, analyze, and present results through workshops to all levels of management on topics ranging from employee selection to employee wellness
- Give recurring presentations on work progress to 10+ colleagues and supervisors

(Name of Company) **(City)**
Software Engineering Intern ***May 2016 - August 2016***

- Performed entry level programming, debugging, development and GUI design of Windows Applications via Windows Visual Studio Development Environment
- Architected and designed enterprise applications for policies, claims, general ledger, and agency administration using test-driven development in Ruby on Rails, JQuery, HTML, and CSS
- Created C#.Net Windows Forms application to begin converting the Open Source text to SQL friendly input to get data into a SQL database on a centralized server
- Conducted in person and virtual company tours for prospective clients

SOFTWARE AND PROGRAMMING SKILLS

- Windows, Linux, iOS, .Net, Ruby on Rails, Agile, Oracle, Visual Studio, Microsoft Office, Scrum
- C#, Java, C++, JQuery, Javascript, CSS, HTML, SQL

Matthew Jones

jones.matthew.mail@gmail.com // 347 809 6760

Career Objective

Current student nearing completion with extensive teaching and customer service experience seeking entry-level job in the accounting industry. Team player with excellent critical thinking skills and the ability to identify alternative solutions to problems.

Education

(Name of University) **(City)**
Bachelor of Science in Biology **2018**
Major in Biology; Minor in Digital Forensics *GPA: 3.5*

- **Courses:** Calculus, Biological Applications; Bio-Statistics; Introduction to Information Security; Fundamental of Accounting

Professional Experience

Self-employed **(City)**
Mathematics and Biology Tutor **2016 – Present**

- Specialize as an individual tutor by simplifying math and biology concepts while coaching high school students to think critically and to solve problems
- Improve students' performance on SAT by 10%
- Prepare daily lesson plans for activities
- Help struggling students improve their critical thinking and problem-solving skills
- Cultivate a fun and interesting learning environment which encourages questions and discussions

(Name of Company) **(City)**
Customer Service Officer **2015 – 2016**

- Promoted business development and increased customer loyalty by 6% through demonstrating excellent follow-through with customers and management throughout all phases of the insurance claims process
- Named customer service officer of the month two times
- Processed payments up to $50,000 and updated systems of record to ensure that account maintenance is current and accurate
- Prepared reports, Power Point presentations, and Excel spreadsheets weekly and monthly for executive management for concise and easy resolution
- Contributed to teams made up of web designers, programmers, and customer service representatives

Software skills

- R, SageMath, MathLab, MEGA, CAINE, MS Office

LIMITATIONS

- Findings cannot be generalized beyond the first stage of the recruitment process
- Findings cannot be generalized to other sectors of the labor market
- Results may not apply to the effect of most prestigious institutions
- Does not account for the prestige or desirability of the company
- Not a double-blind experimental design

DATA ANALYSIS: LOGISTIC REGRESSIONS

Independent variables	Dependent variable
• Match of application • University prestige • University prestige x Match of application	Callbacks
• Sex (Model 1)	
• Sector of the labor market (Model 2)	
• US v Australia & US v UK (Model 3)	
• UK v Australia & UK v US (Model 4)	

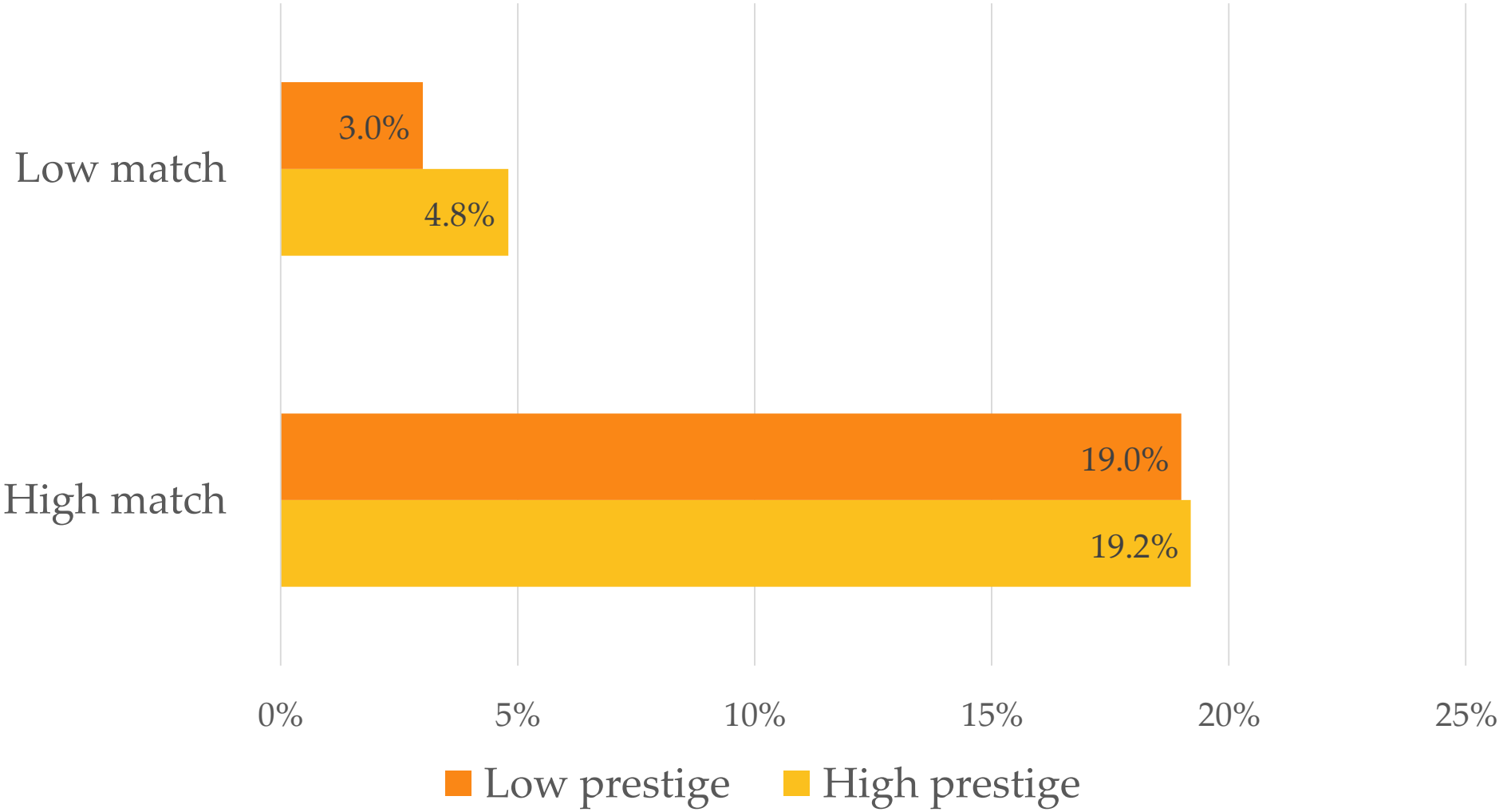
- 11.5% of the applications submitted received a callback (276 out of 2400)

RESULTS

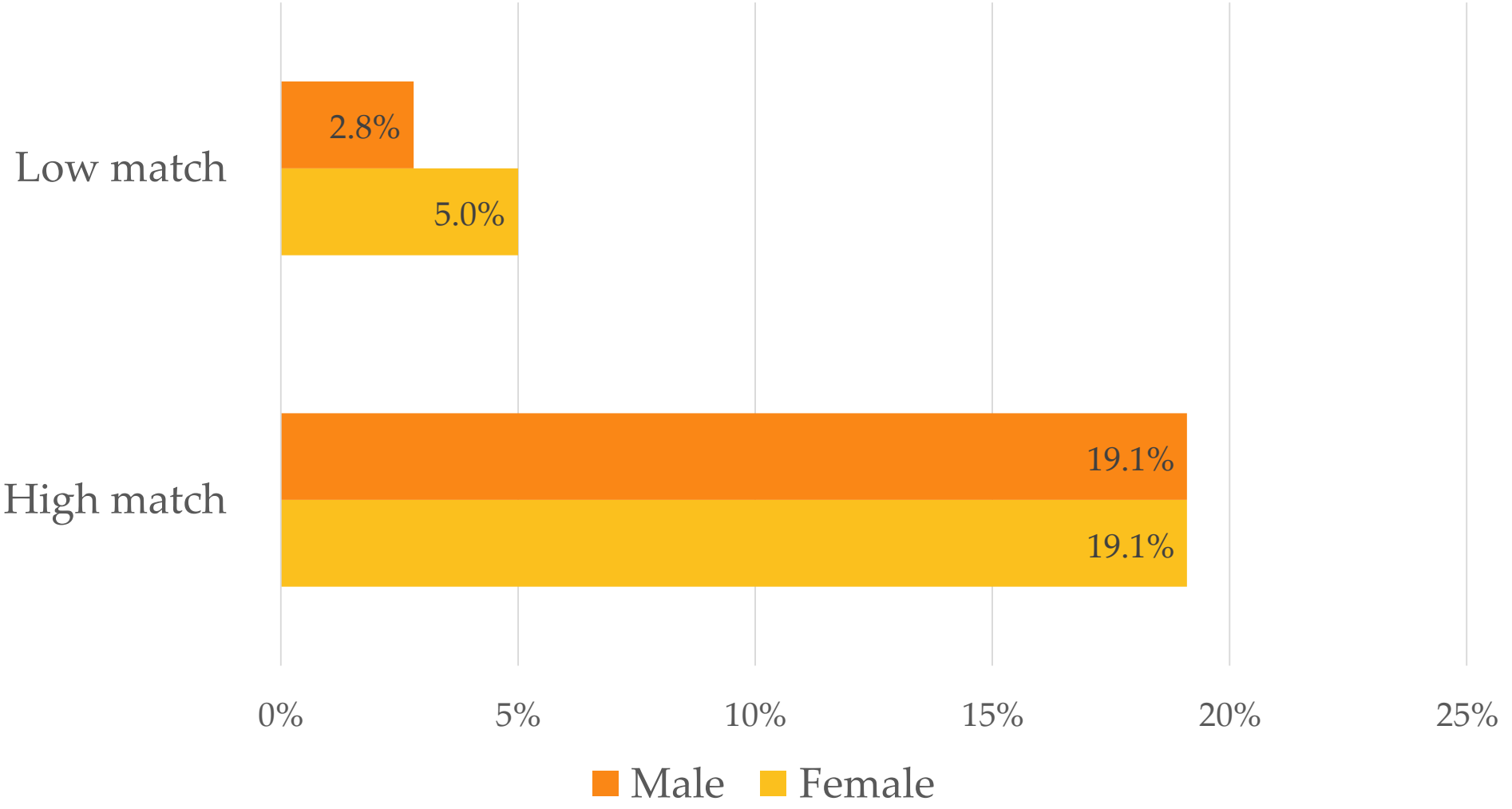
Predicts callbacks ($p < 0.01$)	Does **not** predict callbacks
• **Match of application** • UK v Australia • UK v US	• **University prestige** • **University prestige x Match of application** • **Sex** • Sector of the labor market • US v Australia

- Applications in the high match condition were 79% more likely to receive a callback than applications in the low match condition
- Models explain 11% of variability in callbacks
- No prestige-based and no sex-based discrimination detected in this study

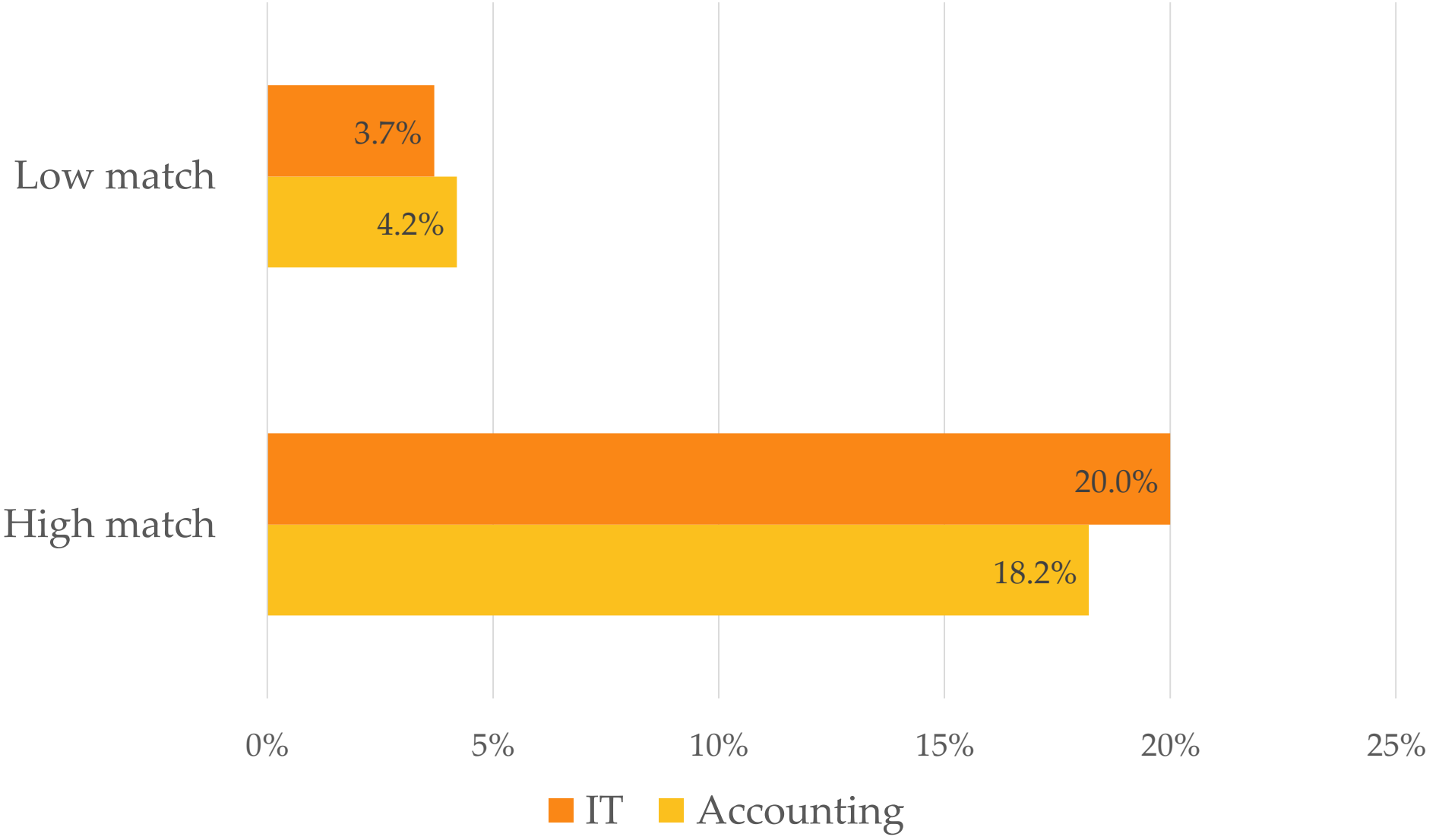
For both low match and high match applications, applications in the high prestige condition received a slighly higher callback rate than applications in the low prestige condition



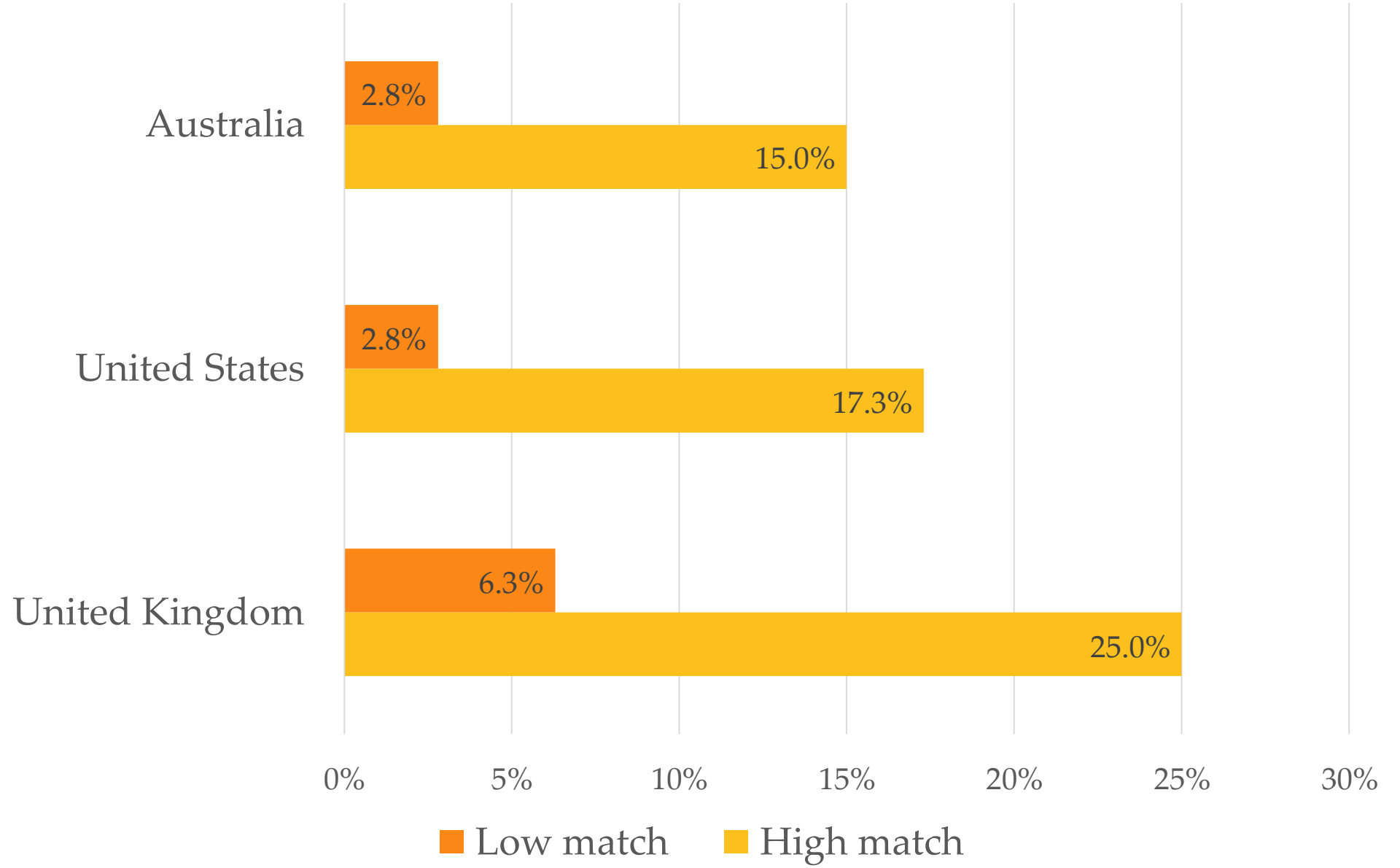
Female in the low match condition received a higher callback rate than males. Callbacks were equal between female and male applications in the high match condition.



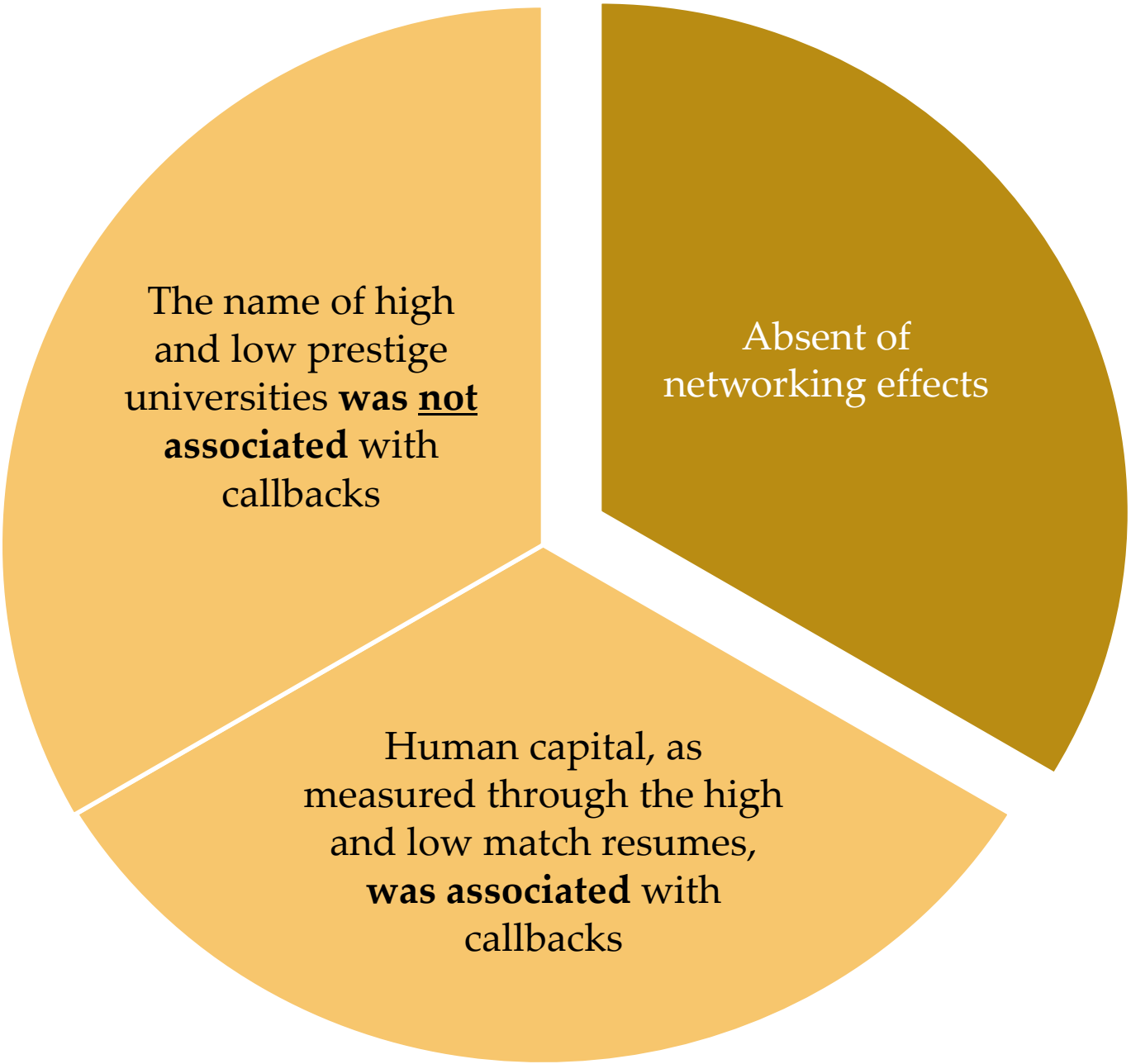
In the low match condition, accounting applications received a higher callback rate than IT applications. The reverse was true in the high match condition.



Callback rate in the UK was higher than callback rates in the US and Australia



BACK TO THEORY



HOW PRESTIGE MAY STILL MATTER

- Prestige matters through reverse recruitment (Rivera, 2015).
- Prestige may matter at later stages in the recruitment process.
- The findings of this experiment may have looked different if the very top institutions of the world were used (Gaddis, 2013; Jackson, 2009).
- Prestige may matter in less skill-intensive sectors of the labor market (Gaddis, 2013; Jackson, 2009).
- The use of prestige by employers may be a function of high supply of potential employees and low demand for these employees (e.g. academic labor market; automation).

IMPLICATIONS FOR POLICY AND PRACTICE

- Perhaps, absent of being at the top of academic rankings, university prestige does not have practical implications for the labor market in skill-intensive sectors.

- Students should prioritize teaching quality above institutional prestige when choosing a university.

- Government and higher education institutions should investment in human capital consolidations and support the teaching mission of universities.

CGHE Seminar

The Business of Ranking, Publishing, and Data Analytics

Thursday, 21 Apr 2022 14:00 - 15:00
Zoom webinar, registration required

Ellen Hazelkorn, Technological University Dublin
Leslie Chan, University of Toronto Scarborough
George Chen, Harvard University

Register here

Webinar attendees will receive a 40% off discount code for the book, *Research Handbook on University Rankings. Theory, Methodology, Influence and Impact*

Thank you!

@GeorgianaMihut

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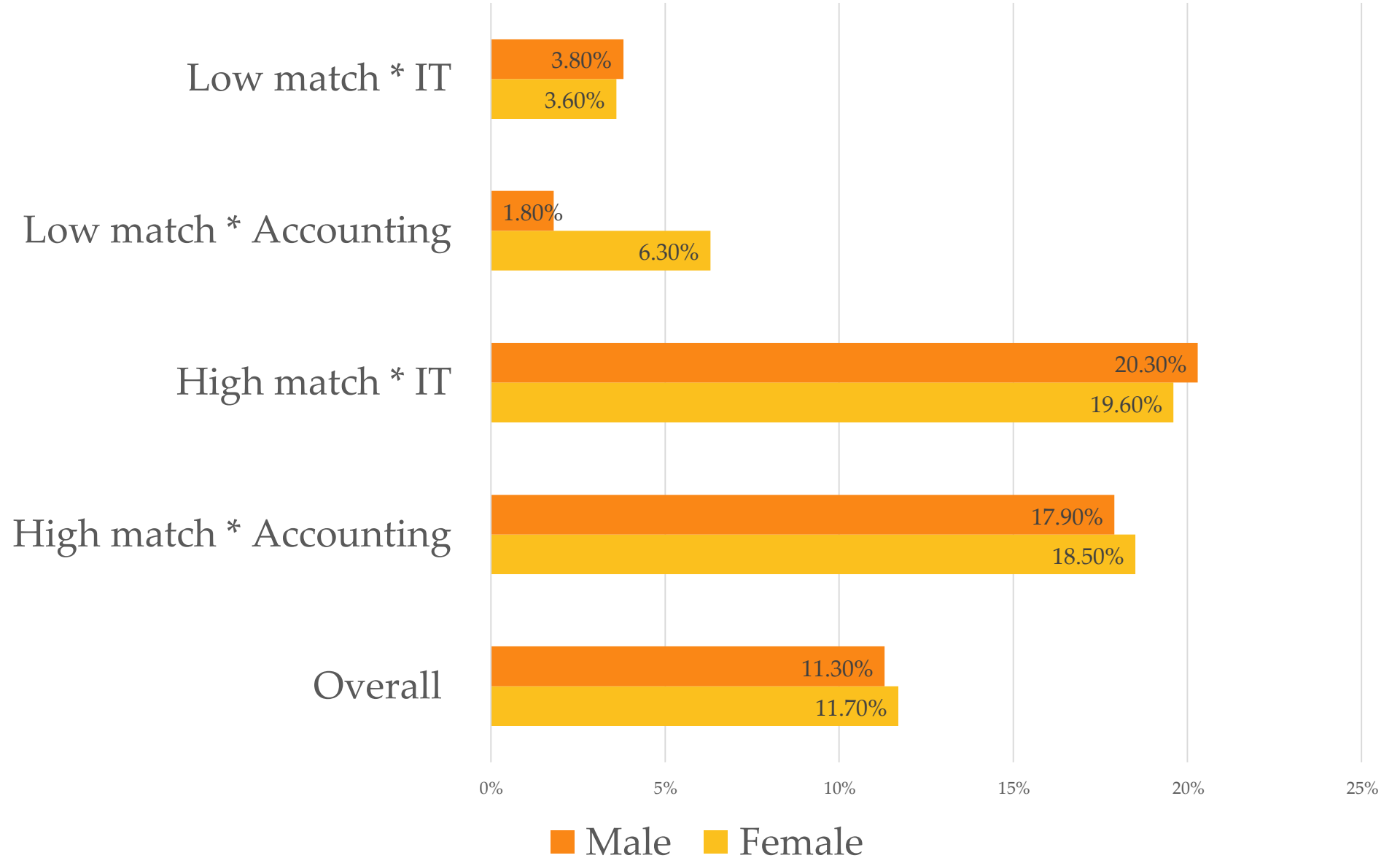
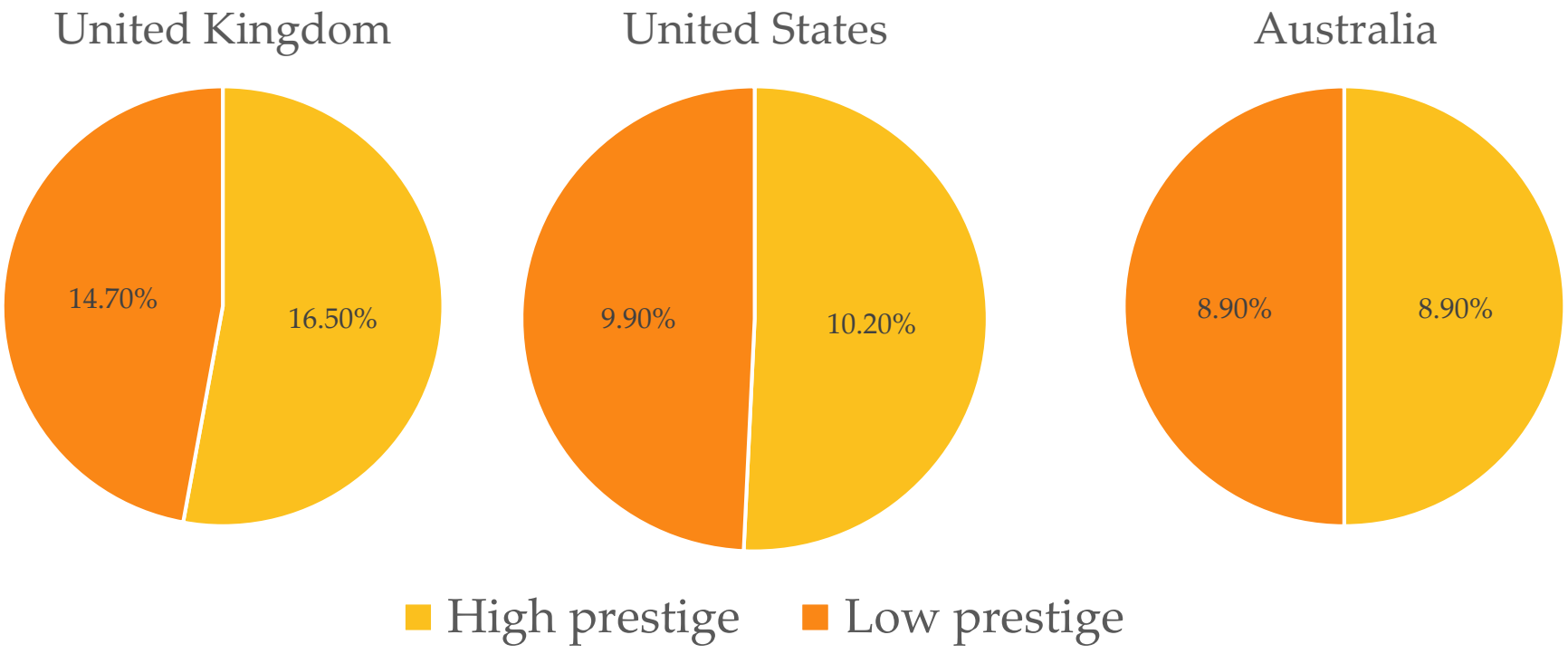
Descriptive differences by sex and sector of the labor market



In the UK and the US, applications in the high prestige condition receive a slightly higher callback rate



LOGISTIC REGRESSIONS TABLE

	Model 1			Model 2			Model 3			Model 4		
	B	SE	Exp(B)	B	SE	Exp(B)	B	SE	Exp(B)	B	SE	Exp(B)
Intercept	-1.489*	.123*	.226*	-1.469*	.125*	.230*	-1.206*	.217*	.299*	-2.280*	.219*	.803*
Match condition	-1.552*	.217*	.212*	-1.545*	.217*	.213*	-1.569*	.218*	.208*	-1.569*	.218*	.208*
Prestige condition	-.018	.147	1.018	-.016	.147	.984	-.006	.148	.994	-.006	.148	.994
Match x Prestige	-.473	.339	.623	-.477	.339	.620	-.558	.340	.572	-.458	.340	.632
Sex	.110	.132	1.116									
Labor market sector				.65	.132	1.915						
USvAustralia							.143	.176	1.153			
USvUK							-.537*	.158*	.584*			
UKvAustralia										.681*	.163*	1.976*
UKvUS										.537*	.158*	1.711*
Deviance	3.567 (3)			2.392 (3)			1.754 (6)			1.754 (6)		