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Emigrating to discrimination: The case of the Indian community in the UK
Information Technology Industry

Marcelo Santos

Mestrado em,
Políticas de Desenvolvimento de Recursos Humanos

Orientador(a):
Professora Doutora Fátima Suleman, Professora Catedrática,
ISCTE – Instituto Universitário de Lisboa

Setembro, 2023

Economia Política

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It was intended to have a fantastic quote that people normally find searching -
"Inspirational quotes to my Master Thesis"

Acknowledgements

So much to say, but I struggle to find the words that can express the feelings I am experiencing. From the beginning of my degree, this project was an ideal daydream, but little did I know it would turn into a nightmare for a few months. However, the magic remains in the fact that sometimes our cages are solely mental, and we should not let them go unused, just like our potential. The lesson I have learned, not only completing this dissertation but throughout my academic journey, is that we will always know more in the future than we know now. For this reason, we must take second, third, and even hundredth chances, balancing on breaking branches until we find the ones strong enough to support us.

I must express my heartfelt gratitude to all my teachers. Special thanks go to Fátima Suleman, who eased the creation of the dissertation in the best viable way. I remember how worried you were at the beginning of this about my work, and I hope we share happiness with what was achieved. I could not also have done it without your expertise, availability, honesty, and empathy. Also, a huge thanks to Rebeca that was amazing on helping me creating and reviewing the résumés.

However, theoretical knowledge is not what matters in life. I would like to take the opportunity to express my gratitude to all the those who have taught me how to live and how to become a better person. Most importantly, I want to thank those who have been a significant presence in my life, such as Miguel, my boyfriend, has been an immense source of support and inspiration; Carolina my best friend, who has always been there for me, no matter what; Margarida Sousa, who taught me how to have fun and took her only five days to get me drunk for the first time; Guilherme Costa, who inspires me to learn and is always there for me, even when I do what I do best – ghost people; finally, my sister and nephews, Magda, Lourenço, and Duarte, who always save me from myself.

Resumo

Durante anos, diversos estudos documentaram a discriminação étnica enfrentada por minorias no processo de recrutamento, porém essas análises diversas vezes limitaram-se a posições generalistas e não especializadas. Atualmente, uma dinâmica complexa nasce como irmã da escassez de profissionais de TI e forças contraditórias parecem estar em jogo. Uma primeira força é a socialização, onde pessoas são programadas para discriminar e a força económica representada pela necessidade de força de trabalho especializada, independentemente das suas características étnicas.

Através de um estudo de currículos, utilizando a população indiana no Reino Unido, este estudo procura perceber se existem diferenças na probabilidade de um britânico e um indivíduo com características indianas – considerando que nome, nacionalidade e histórico de países de trabalho e educação são das principais variáveis que explicam os candidatos serem convidados para entrevistas iniciais, ou não.

Com uma amostra de 99 candidaturas, das quais 19 são tipicamente britânicas e 80 de com marcadores simbólicos da étnia indiana. A análise descritiva mostra que os britânicos apresentam uma taxa de sucesso de 63%, enquanto aqueles com características indianas exibem uma taxa de sucesso de apenas 40%. Adicionalmente, na amostra analisada, 32% das candidaturas da comunidade indiana em processo de recrutamento sem declaração de não discriminação foram bem-sucedidas, em comparação com os 48% daqueles que se candidataram a funções que possuíam tal declaração. Na execução da regressão logística foi também concluído que as variáveis local de experiência e de estudos são as que tem mais influência neste fenómeno.

Palavras-chave: Discriminação étnica; Recrutamento; Tecnologias de informação; Shortskill; Reino-Unido; India

Abstract

For years, several studies highlighted the ethnic discrimination faced by minorities in the recruitment process. However, these studies often focused on generalized positions rather than specialized roles. Presently, a complex dynamic emerges due to the shortage of IT professionals, where opposing forces seem to be playing. At first, the force of socialization, where social actors tend to be prepared to discriminate, and then the economic force, represented by the necessity of specialized workforce no matter their ethnicity.

Through a résumé study using the Indian population in the UK, this study aims to understand whether differences exist in the likelihood of a British and an Indian social marked candidates - considering name, nationality, and the country's history of work and education are among the main variables that helps explain the reason to be invited for early interviews, or not.

With a sample of 99 applicants, 19 were purely British and 80 from social actors with Indian symbolic markers in their résumé. The descriptive analysis shows that British applicants have a success rate of 63%, while the Indian applicant's success rate is only 40%. Furthermore, within the analyzed sample, 32% of Indian applicants to job openings without non-discriminatory statements were successful, compared to the 48% success rate of the Indian applicants on organizations where such statements were present. In the making of the logistic regression, was also found that among the studies variables the country's history of work and education were the ones that better explain the phenomenon.

Key Words: Ethnic Discrimination; Recruitment; Information Technology; Short skill; United Kingdom; India

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Introduction

Globalization has given opportunities for social actors to choose where they want to live and work. Many social actors from undeveloped and third-world countries are drawn to developed Western countries in search of better living, working, and salary conditions. However, this process is not easy or successful, specifically for ethnic minority groups since these groups often face discriminatory attitudes towards them.

In one hand, in the realm of the contemporary work landscape, where diversity is advocated as an essential value, diverse studies show the persistence of ethnic discrimination models a shadow over the opportunities available to various ethnic applicants. For example, in the United Kingdom, Di Stasio and Heat (2019) points out that the Indian community members tend to receive only 19% of positive callbacks to a first interview when their experience is well suited to the job vacancy.

In the other hand, the Information Technology (IT) industry, marked by a rapid growth, innovation and global integration became a focus for skilled professionals looking for new and groundbreaking pathways. Nowadays, the Indian social actors working and applying to the IT industry jobs is bigger than ever. In general terms, throughout the globe the IT industry is raising, expecting to reach ninety-five million jobs opening in 2026 (World Economic Forum, 2020), and in the United Kingdom (UK) is an 83 billion industry with 1.150 million job openings only in 2021. In addition, it is also one of the industries with a significant shortage of workers with the required skills and education to meet their demands (McKinsey & Company, 2019).

Ethnic discrimination in the labour market is not only an individual problem for immigrants but also a social and economic matter for organizations and states and this dissertation endeavours to illuminate the complex interplay between two opposing forces that profoundly influence the experiences of the Indian IT professionals in the UK labour market. First, human socialization, driven by biases and stereotypes, perpetuating ethnic discrimination, and creating barriers to unbiased employment opportunities. Second, the industry's significant shortage of specialized skills demands a diverse talent pool, potentially serving as a counterforce to discriminatory attitudes.

For this, we used as our object the dynamics and situation of the Indian community in the UK, and the goal of this research is to contribute to the discussion of the ethnic discrimination in the recruitment process. Do we guide our study addressing the following key questions, shedding light on the dynamics of ethnic discrimination within the context of the UK IT industry (1) Is there any difference regarding the probability of an Indian social actor received a positive callback when compared to a native applicant? (2) Is there any difference regarding the probability of an Indian social actor received a positive callback higher than when applying to

organizations without the non-discriminatory statement? (3) If yes, what are the variables that better explain the discriminatory attitudes in the recruitment process?

Our objectives with this study are to help the investigation regarding ethnic discriminatory attitudes in the recruitment process. However, taking a step further and starting to address specialized industries and with a skill shortage, like the IT industry. It is important for us to better understand the phenomenon and to find if organizations still discriminate even with the difficulties when it comes to finding specialized and skilled workforce in areas that have a huge economic impact in a country's economy, showing that is not only problematic to the discriminated individual, but for organizations and states and countries.

To address these, this study employs first a comprehensive methodology that contains both theoretical and empirical research. The investigation commences with an in-depth review of appropriate literature concerning ethnic discrimination and its manifestations. Subsequently, an examination of the chosen methodology is conducted, culminating in a meticulously résumé methodology. The resultant data from the résumé study is then anonymized and stored within a secure database.

The primary analytical techniques used, after a descriptive analysis to probe the dataset is first a Z-test and then a multiple logistic regression analysis. This method enables us to compare percentages between both groups and explore the predictive relationship between the studied variables and the likelihood of a résumé being selected for a first interview, being highly effective when we want to know and predict a probability. The dependent variable in this analysis is whether a résumé receives a callback for an initial interview. The predictors incorporate factors like the candidate's name, nationality and the geographic locations of their professional experience and education.

The dissertation is structured as follows: in the first chapter, an extensive literature review was conducted, divided into three phases. The initial phase is the conceptualization, followed by an analysis of discrimination studies. Afterwards, the focus is shifted towards analysing the IT industry, followed by an examination of the United Kingdom. This segment encompasses an analysis of discrimination studies within the UK.

Moving forward, the second chapter delves into the Theory framework used in the research as the introduction for the two existent forces – the socialization and the economic forces. Then, the third chapter explores the selected research methodology used for data acquirement and analysis. It ended on the subsequent statistical analysis and the model that be employed. Subsequently, the findings are discussed, retaining a comprehensive comparison with existing theories and the results obtained. In the concluding chapter, conclusive insights derived from the study are outlined. Additionally, the strengths and limitations of the research are addressed, accompanied by reflections on crucial considerations for future studies

CHAPTER 1

Literature Review

1.1. Ethnic discrimination

Globalization has given opportunities for social actors to choose where they want to live and work. Many social actors from undeveloped countries are drawn to developed countries looking for superior living, working and salary conditions. One of the main externalities of this movements is that in today's globalized and democratic world populations are increasingly diverse in terms of race, ethnicity, gender, sexual orientation, religion, age and more (Pager and Shepherd, 2009, OECD, 2020a, OECD 2020b).

This diversity leads to the advent of ethnic minority groups that often face disadvantages in the labor market, experiencing complications in finding employment, having higher unemployment rates compared to native residents with similar education levels and skills. However, ethnic discrimination in the labor market is not only an individual problem for immigrants but also a social and economic problem for organizations and states. For example, research shows that properly integrated and managed diversity in organizations can lead to enlarged profitability for organizations, while lack of diversity tends to be associated with below-average performance and increased risk of business failure (Pager, 2016; OECD, 2020; McKinsey & Company, 2019).

So, diversity affects a lot of diverse aspects of society, including demographics, politics and the workforce of a country. This also means that managing diversity poses one of the principal main challenges of the XXI century for the government, organizations and more specifically to this dissertation, to the human resources management, as discriminatory attitudes towards minority groups tend to occur (Pager and Shepherd, 2009; OECD, 2020a).

Regarding organizations and human resources management there are opposing perceptions on diverse workforce, both in the literature and organizations. Some studies argue that diverse teams are tough to manage and can lead to conflicts, deploying in decreasing of engagement and satisfaction, higher employee turnover rates and increasing of recruitment and development costs. Conversely, others contend that diversity fosters innovation and provides a competitive advantage (Shen, 2009, Pager, 2016). Since the study engage on ethnic discrimination it is important to first analyze what it is ethnic discrimination and the studies developed regarding the phenomenon.

1.1.1. Discrimination and ethnic discrimination - conceptualization

To study ethnic discrimination in the recruitment process efficiently, it is critical to first define ethnic discrimination and distinguish it from other related phenomena. This is a crucial step to

take because, first, it is our main concept. Secondly, discrimination has evolved over time, and although it has been studied by various disciplines, including sociology, psychology, economics, and anthropology it remains difficult to define and study. Mainly because discriminatory attitudes are no longer as obvious and direct as they used to be during the pre-civil rights era and are now more subtle (Pager & Shepherd, 2009; Adamovic, 2020, 2022).

According to Pager & Shepherd (2009) and McKay & Avery (2016), discrimination should be distinguished from other ideologies like as racism, sexism, or even homophobia. While these ideologies represent belief systems, discrimination refers to the actual execution of these ideologies through actions, attitudes, and behaviors, normally targeting minority groups. Discrimination can manifest in many forms, including verbal or physical harassment, exclusion from opportunities, resources and differential treatment despite being subject to the same rules and processes. So, from now on we addressed ethnic discrimination as discriminatory attitudes since we are study discriminatory attitudes on the recruitment process, one specific type of discriminatory attitudes, and not discrimination per se.

It is also important to note that despite international human rights laws prohibiting discriminatory attitudes and it is illegal in numerous countries, it remains a reality in various forms and settings, significantly impacting the social actors who experience it. This includes limited access to employment opportunities (Pager & Shepherd, 2009; McKay & Avery, 2016). Therefore, discriminatory attitudes, as defined by the authors, involves the unequal treatment of minority groups or social actors based on many criteria, even when subjected to the same rules and procedures (McKay & Avery, 2016; Adamovic, 2020; Adamovic, 2022).

While discriminatory attitudes can manifest in varied ways, influenced by personal and group symbolic markers, the study focuses exclusively on ethnic discriminatory attitudes in employment. To comprehend ethnic discriminatory attitudes, it is necessary to first define ethnicity, a fundamental aspect missing from the overall and general definition. To address this, it is key to set apart ethnicity and race. These terms are often used interchangeably and can be challenging to distinguish (Brubaker, 2009).

In one hand, race is a socially constructed category with a biological foundation, normally determined by a social actor genetic constitution that influences their physical appearance and categorizes them into specific social groups with collective symbolic markers related to physical traits. On the other hand, ethnicity is also a socially constructed category defined by a social actor cultural background, language, customs and nationality (Brubaker, 2009).

Consequently, ethnic discriminatory attitudes refer to the unequal treatment of social actors or groups based on their nationality, language, religion, customs and heritage, when subjected to the same rules and procedures (Pager & Shepherd, 2009). When focusing on this specific type of discriminatory attitudes in the employment context, more specific in the

recruitment stage of the recruitment process and adapting our model to catch it, the study aims to explore the unequal treatment of social actors based on their ethnic background, this is a minority group.

1.1.2. Recruitment and selection - conceptualization

In the context of labor discriminatory attitudes, and since we are directing our attention specially on the ethnic discriminatory attitudes that tends to occur in the recruitment process, it is essential to clarify what is the recruitment and selection process, particularly focusing on the recruitment phase.

Although recruitment and selection are commonly viewed as a single process, even in some academic literature, for the purpose of studying ethnic discriminatory attitudes in this dissertation, it is necessary to separate these two stages. However first it is also important to define them together to identify after their divergences. According to Blommaert, Coenders, and Tubergen (2014) and Adamovic (2020), recruitment and selection incorporate a series of activities and steps undertaken by organizations to attract, identify and hire a qualified applicant. This process is crucial for organizations to ensure that they acquire the right talent to fulfill their goals.

Recruitment involves the process of attracting and identifying potential applicants for a job vacancy. This stage involves tasks as posting job advertisements, conducting candidate searches and reviewing résumés. The objective of recruitment to establish a pool of applicants who meets the job requirements identified in the job description and if is aligned with the organization's culture. Then, selection involves the assessment and evaluation of applicants obtained during the recruitment process to determine their suitability. It also includes interviews and, if applied, background and reference checks. The goal of selection is to choose the most qualified candidate from the pool of applicants obtained in the recruitment process (Adamovic, 2020).

But before moving to the theory framework and methodology regarding ethnic discrimination in the recruitment process is important to review how the problem of ethnic discriminatory attitudes in the recruitment processes has been studied in the academia for the last years. It will be our chapter to review of real studies and will address an exploration of some research methods that have been used in empirical studies when investigating this topic in order to also guide and help our analysis.

1.1.3. Ethnic discrimination studies

Empirical ethnical discriminatory attitudes studies have normally as main objective measure or deconstruct the ethnic discrimination phenomena to better understand it. The first ever

recruitment studies found in our review started to appear in the beginning of the 70's, and the oldest found in our literature review was from 1971 study, by Becker, which used data from the 1960's census to assess the statistic relationship between education and income between the different race social actors. The main results of the study were that workers from the minority groups, constituted with Black social actors, tend to receive less 60-70% of what white workers were earning.

When first discriminatory attitudes in the recruitment process was studied non-experimental and laboratory studies were the most common. This type of studies on the ethnic discrimination field has as objective to study it in its normal setting, without manipulating any variables. Regarding the study of discriminatory attitudes in the recruitment process non-experimental tends to be more useful as it allows researchers to examine real-world data and conclude about how discriminatory attitudes strikes in the recruitment process, without the studied being biased with social desirability (Coffman, Exley and Niederle, 2018; Adamovic, 2020, 2022).

In this type of studies researchers normally use a diverse selection of methods to collect data, like surveys, observation, interviews and data analysis of secondary fonts. Yet, the data collected tends to be subjective and most of the time not representative of the population since the goal is to normally gain an extensive understanding rather to appoint generalizations regarding ethnic discriminatory attitudes. Instead, the data is applied to create hypotheses or models about the ethnic discriminatory attitudes, which then can and should be tested in future field research (Creswell and Creswell, 2018).

One type of non-experimental studies to deconstruct the ethnic discriminatory attitudes in the recruitment process is, for example, is the field studies. In field studies researchers collect data from real job openings and all the recruitment process. For example, researchers can analyze job postings, résumés and notes from the interview to conclude if there is any indication of discriminatory attitudes based on characteristics (Coffman, Exley and Niederle, 2018; Adamovic, 2020). Another type are the observational studies, where researchers have as goal to observe and normally record social actors' behavior in their natural setting without interfering. For example, they might observe interviews to check if interviewers ask different questions or respond differently to the applicants based on characteristics that might trigger discriminatory attitudes (Coffman, Exley and Niederle, 2018).

Other possibility regarding non-experimental studies is the possibility of surveying the hiring managers with diverse résumés and asking them their decision and reason for it in order to then analyze their decisions and motivations. However, these studies have many weaknesses, especially regarding social cognitive desirability bias - the capacity of the hiring managers have to adapt their decisions when under observation. Besides, it is challenging find

a variable that could explain the differences in human capital between groups (Coffman, Exley and Niederle, 2018; Adamovic, 2022).

To overcome these issues and execute better studies, the academy has embraced new methods with the objective to analyze what is underlying discriminatory attitudes in the recruitment process. Exploratory studies are a form of research to explore and study social problems in a more open and flexible way. The main goal of exploratory studies is to enhance the understanding of a phenomenon, rather than to test specific assumptions or theories with quantitative, qualitative, or even mixed methods.

One example is the résumé studies (Coffman, Exley and Niederle, 2018; Adamovic, 2020). Although there is no guarantee on the first résumé studies, according to Coffman, Exley and Niederle (2018) and Adamovic (2020), they started to be used in the beginning of 2000. The oldest reviewed was published in 2004 and was conducted by Marianne Bertrand and Sendhil Mullainathan. This research was focused on ethnic discriminatory attitudes towards black-sounding names in the recruitment process in the United States and was found that black-sounding name social actors tend to have 50% less chances of receiving a positive callback when compared do the white dominant group.

Regarding the experimental studies done in the last 15 years, mainly between 2005 and 2020, Lippens, Vermeiren, and Baer (2023) conducted a quasi-exhaustive meta-analysis of quantitative studies on hiring discriminatory attitudes. The analysis took into consideration almost every discriminatory attitude's study in the recruitment process regarding race, ethnicity, gender, age, religion, disability, sexual orientation, physical appearance, wealth and military service and affiliation. The meta-analysis on recruitment discriminatory attitudes studies concludes that, among all types of discriminatory attitudes studies analyzed, the social actors belonging to racial or ethnic minority groups were more likely to face discriminatory attitudes in recruitment processes.

Despite the specific race or ethnicity analyzed, on average there was a 29.9% lower probability that a social actor belonging to an ethnic minority group would be called for an early interview when compared to a dominant social actor. Those findings that the authors were able to aggregate in a meta-analysis demonstrate not only the presence of discriminatory behavior in recruitment processes overall but that ethnic discriminatory attitudes are the most prevalent (Lippens, Vermeiren, and Baer, 2023).

Asian, Arabs, Maghrebi, and Middle Eastern ethnic minorities social actors tend to face the highest degree of unfavorable treatment under the same processes and rules in the recruitment processes. These groups, when compared to the dominant group have an only, on average, less 41% probability of not being called for a first interview. Between these ethnicities' samples, the maximum and minimum probabilities of not being called for a first

interview were found to be 44% and 36% less, respectively. Other ethnic groups that face substantial barriers to entry into recruitment and selection processes include social actors from Southeast and East Asia, with an average of 37% less probability and social actors of West Asia with an average probability of 33% less (Lippens, Vermeiren, and Baer, 2023).

South Asia and India social actors also face huge challenges, with 23% maximum and 37% minimum less probability of being called for an interview, depending on the analyzed geography. African, African American, and Black social actors also face significant challenges, with probabilities ranging from 27% to 36% less probability of being called for an interview when compared to the dominant group. These findings highlight the continued prevalence of discriminatory attitudes against ethnic minorities in recruitment processes (Lippens, Vermeiren, & Baer, 2023).

Yet, it is critical to have caution when analyzing these statistics on ethnic discriminatory attitudes in recruitment processes. First, the accuracy of the information may lack contextual information and it is also important and critical to review the individual studies since diverse variables, as we saw in the last chapter, may impact the discriminatory attitudes to ethnic minorities in recruitment processes. For instance, in the Lippens, Vermeiren, and Baer (2023), while some studies have shown that Caribbean, Hispanic and Latin American social actors face a 9% less average probability of being called for an interview, different studies have reported 5% more chances of being called for a first interview. These values may be attributed to less differences between the dominant and the immigrant group in terms of cultural context of the countries where the study took place and quotas to diversity.

Nevertheless, it is vital to approach the analysis and review of these study results with caution, as discriminatory attitudes are not exclusively dependent on social actors but are also influenced by greater macro-level variables such as a country's development, history, legislation, educational level, professional experience, last experiences with immigration, and so on. The results of these studies must be interpreted within the broader societal context in which they were conducted. In the dissertation we took into consideration a specific industry - the IT industry (Adamovic, 2020, 2022; Lippens, Vermeiren, & Baer, 2023).

In the following chapter, we did a revision on the global IT industry, with a special focus in the UK economy and the IT industry contribution to it. The analysis explores the implication of IT related profiles when it comes to driving economic expansion and address the constant challenges of skill shortage between the IT workforce.

1.2. Information technology industry and skill shortage

However these studies presented above are general studies, it becomes important to start focusing on the industry that we are studying regarding the ethnic discriminatory attitudes in the recruitment process.

The IT industry is one of the fastest growing and dynamic economic industries, with modern technologies continually being developed and embraced. As a result, the demand for IT professionals with the necessary skills to develop and maintain these technologies is high and continues to expand. In a report for the European Commission, Vazquez (2019) argues that high specialized technologies in the IT industry are and will continue to be a considerable supply of job openings. Supporting this claim, the World Economic Forum's report *The Future of Jobs* (2020) estimates that the IT industry will experience a growth rate of around 5.7% until 2025, producing approximately ninety-five million new job openings.

Conversely, it is also anticipated that the industry will meet a major shortage of skilled professionals – *Annex A*. The skill shortage in the IT industry is a complex theme, with various causes contributing to it. One of the major causes is the quick pace in terms of technological change. This means that modern technologies are continually being created and it is challenging for the workforce to keep up with the skills needed to use them. One more factor is the lack of proper training procedures that provide the required set of skills. While there are a handful of IT training programs available, according to the World Economic Forum (2020), they might not be aligned with the industry requirements or not be accessible to all. Additionally, the competition for skilled workers is intense, with many organizations competing for that limited pool of workforce.

According to CompTIA's (2023) report about the state of the tech workforce in the UK, the most common job roles in the industry are IT Supporters, Network Engineers, Software Developers and Data Scientists. Additionally there are 1,978,041 IT workers in the UK, and the number was expected to increase by over 1.5% in 2022. Between 2016 and 2021, the job roles that saw the major increase on newest job openings were Software Developers, which experienced around 5.8% increase.

In the UK, the IT industry has an economic impact of around £82.6 billion and allocating up to 6.3% of the British workforce. As one of the fastest-growing areas globally and in the UK, it demonstrates no signs of slowing down. In terms of job openings, despite the go-slow during the pandemic, there has been a huge expansion since the second quarter of 2022, with approximately 400,000 job postings – *Annex B*. In 2021, there were in total 1,146,758 IT job openings, yet it is important to consider that job postings do not mean necessarily literal hires. However, this trend emphasizes the increasing demand for a specialized IT workforce (CompTIA's, 2023).

The UK has a significant shortage of workers with the required skills and education to meet the demands of the IT industry fast development. This is a problem that is expected to become one of the worlds and UK's major problems in the arising decades, as employment demand continues to rise while the talent pool remains short and limited (McKinsey & Company, 2019).

To address this problem, the OECD (2019) and the European Commission (2019) propose three workable solutions to commutate the IT skill shortage problem: first, implementing skill requalification plans focusing on IT skills to increase the available workforce, prioritizing education and promote digital skills in the educational curriculum. Second, to promote specialized immigration and develop policies that facilitate the access of skilled workers into the labor market.

Taking into consideration what was previously discussed, the United Kingdom emerges as a prime candidate for investigating dynamics within the IT industry due to its industry presence, number of annual job openings for IT professionals and potential for growth. However, what remains uncertain is if the UK is also a suitable country for examining diversity since that to achieve that goal UK needs to also be a diverse country.

1.3. The United Kingdom

The US labor market's diversity has historically made it an ideal study object to study ethnic discriminatory attitudes, but recent declines in immigration have shifted the focus to the EU28 labor market. Immigration trends in the EU28 show consistent growth ¹ (Dorn & Zweimuller, 2021) – *Figure 1*. Particularly, Eastern European nations have experienced negative migration balances, while countries like Germany (23.2%), the UK (21.9%), and Italy (19.3%) have higher immigration rates (Fundação Francisco Manuel dos Santos, 2021; Statista, 2022). However, immigrant numbers do not directly indicate ethnic diversity, as Western nations often share parallel cultural backgrounds. To better understand this, it is essential to consider the distribution of immigrant percentages and their origins within these countries.

Migratory balance - European Union 28

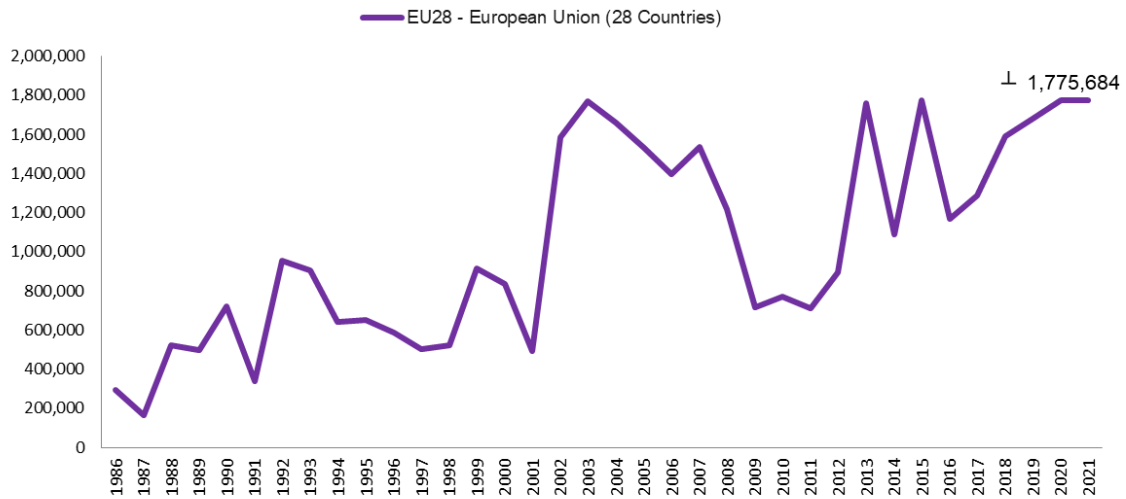


Figure 1 – Migratory balance in the UE – European Union 28 (Fundação Francisco Manuel dos Santos, 2022)

Germany, the UK, and Italy stand out with the largest immigrant populations in the EU28. However, Germany's immigrants are predominantly from other EU28 countries, including Romanians (25%), Poles (12.8%) and Bulgarians (9.5%) (Statistisches Bundesamt, 2022). In contrast, the UK has a more diverse immigrant composition, with significant representation of Indian (10%), Polish (8%), and Pakistan (5%) communities – Figure 2 (Fundação Francisco Manuel dos Santos, 2021; Office for National Statistics, 2022). This diversity is important in the context of studies highlighting discriminatory attitudes in recruitment processes, for example, previous research in countries with dominant white ethnicities has shown that applicants with non-native names face lower callback rates in job applications.

British and Non-British Population

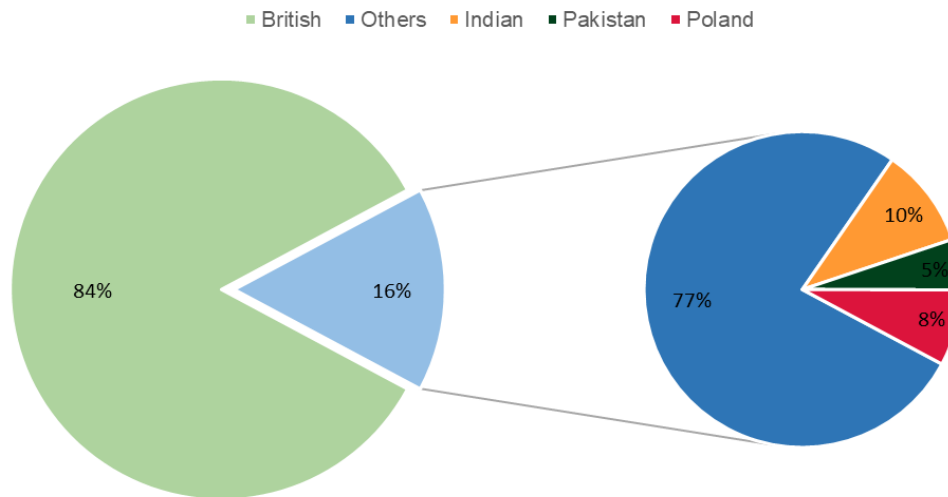


Figure 2 – Proportion of native and immigrant population in the UK (Office for National Statistics, 2022)

Despite the UK's exit from the European Union (EU), the study's focus is on recruitment discriminatory attitudes. The UK's demographics, especially the story of Indian immigration, make it an ideal setting for investigating this issue. Furthermore, the UK presents a superior percentage of university-educated overseas population when compared to Germany (39% versus 20%, respectively) – Annex C - which highlights the point made before regarding the significance of education in a technologically industry. This is especially relevant to the study's focus on the IT industry, where skilled and educated workers are short and in demand (Dorn & Zweimuller, 2021).

Demographics evidence shows also that the UK is a suitable country to research discriminatory attitudes in the recruitment process - not like other European countries that have higher immigration rates but are mostly ethnically homogeneous. Even though the UK may not have the higher ratio of immigrants, it has a more diverse population. This is mainly due to the UK's migration policy in the early 1950s, which, according to Dorn and Zweimuller (2021), had little limitations and encouraged workers from India and Pakistan to relocate in order to fill the post-war labor shortage (Somerville & Dhudwar, SD).

Additionally, the UK's labor market is completely open not just to European citizens, but to all citizens. This contrasts with almost every other European country, including Germany and Italy that tend to limit the entrance of EU foreigners into their labor market. Yet, when we consider the gross numbers and not percentages, the UK has the second highest resident immigrant population in the old EU28 (Somerville & Dhudwar, SD; Dorn & Zweimuller, 2021).

Over the years, there has been an evolution in the UK's population, with a significant increase in the foreign-born population. For example, in 2005 the foreign-born population accounted for approximately 10% of the total population. The percentage consistently increased over time, reaching 16% in 2021 (Office for National Statistics, 2022). The diversity level aligned with the education rates, the UK provides a useful context to study discriminatory attitudes in recruitment processes, particularly in the IT industry that demands specialized and highly skilled workers.

Based on an analysis of the non-British population in the UK, it can be concluded that the Indian community is the most prominent foreign nationality currently and over the years. Although between 2015 and 2017, the Polish nationality had a higher immigration rate, as Poland shares a more parallel culture to the UK it is not the best case to study. As of July 2021, 16% of the British population were foreigners, with 10% of those being Indian, which is equivalent to 1.4% of the total UK population, with more than 900,000 social actors according to the Office for National Statistics (2022).

Also, the Indian community in the UK provides a great case study for this research since they are one of the minority groups with the highest education levels. In 2008 they had 18.1% of educated population in the UK and in 2015 49.5%, as reported by the UK's Equality and Human Rights Commission (2021). This is particularly considerable for the IT workforce, being the one that we are studying and which requires an extremely skilled and specialized workforce (CompTIA's, 2023).

1.4. Ethnic discrimination studies in the United Kingdom

In 2013 Tariq Modood, in the Journal of Sociology, based on an audit study that was conducted by the National Center of Social Research did a résumé study where it was tested if there were discriminatory attitudes towards applicants with Muslim-sounding names in the UK. This 2013's research uncovered that those applications when compared with Anglo-Saxonic British names had an average positive callback rate of 60%, whereas the ones with the Muslim-sounding names had a positive callback rate of 4%.

The main conclusion of this study was that the discriminatory attitudes in the recruitment process towards Muslims is a considerable problem in the UK and that this discriminatory attitude is likely to be rooted in negative stereotypes and prejudices about Muslims social actors. Additionally, the study argues that this type of discriminatory attitudes is harmful and unjustified as it inhibits capable and qualified social actors from accessing employment opportunities, contributing to social and economic inequality. As final notes, Tariq (2013) recommends that extra efforts are needed to address discriminatory attitudes against ethnic minorities on the access to jobs. This includes raising awareness of the issue among

employers, supporting and training to employers and employees to help workers from the dominant group to overcome those biases.

In 2017, 4 years after the Tariq's study, the Social Mobility Commission in the UK, with McKnight, reviewed more than fifty academic articles and reports to understand the impact of ethnicity discrimination on the recruitment and selection process. One of the main conclusions was that applicants with white-sounding names were 74% more likely to receive a positive callback than those with an ethnic-sounding name. This suggests that employers are probably biased against social actors and applicants who come from minority communities, not even considering their experience, skills and qualifications.

Other study was the one from the Migration Observatory led by Di Stasio and Heat (2019). This study points that ethnic minorities from India, China, Japan, Pakistan, eastern Europe, Russia and Nigeria tend to have, on average, less 14% of the callbacks to a first interview. In the case of the Indian community in the UK, they tend to receive 19% of callbacks to an interview when their experience is well suited to the job vacancy. Overall, we are being guided to understand that those discriminatory attitudes towards minorities in the recruitment and selection process still is a significant problem in the UK.

This review, when faced with the IT industry situation in the UK means that there are two forces that helps us understanding ethnic discrimination. First what we called as the *socialization force*, represented by the diverse studies analyzed and that shows the existence of discriminatory attitudes in the recruitment processes. The second force is what we called the *economic force* that represents the new force to consider when we consider the IT industry as our main center of analysis. This force is created mainly due to the urgency that the organizations have regarding a skilled workforce that addresses their and the market needs. Unfortunately, no studies were found that addresses this kind of industry.

Before delving into the particulars of the methodology it is crucial to establish the theoretical framework that guided our dissertation. In the realm of analyzing ethnic discriminatory attitudes within the recruitment processes a large number of theories served as the compass for diverse studies. However to our compass we need review the most important ones to better understand ethnic discriminatory attitudes.

CHAPTER 2

Theory framework

In addition to defining the central concepts of this study and analyzing how ethnic discrimination has been studied in the academia for the last years, acquisition an understanding of the various theories that are behind the ethnic discrimination studies is process. First is important to scrutinize what are the theories employed when studying ethnic discrimination. These frameworks illuminate the lenses through which we observe and interpret the dynamics playing in this game that affects the social actors, organizations, states and its' economy. By identifying and selecting the theories that were used in past studies but are more align with our dissertation objectives and context, we set the stage for a more focused discussion. So, the chapter serves as the foundation upon which our analysis rests.

Particularly, in this study we are adopting a social psychological perspective and exploring theories commonly applied in ethnic discrimination research, such as social identity theory and ethnic competition theory, which embrace and illustrate our first force – *Socialization*. However, it is important to adapt our framework to the studies context since we are studying the IT industry, a specialized and innovative one, where no studies regarding ethnic discriminatory attitudes in the recruitment process have been found in our literature analysis, and as we defend there is another force that need representativeness in the study - the *economic force* - represented by the value-in-diversity theory.

2.1. Socialization force

2.1.1. Social identity theory

The social identity theory was first tested and developed by Henri Tajfel and John Turner. This theory explores how social actors' sense of identity is shaped by considering a group membership. It is proposed that social actors categorize others and themselves into standard social groups in terms of many criteria like nationality, ethnicity, religion, and gender. These idealistic created groups are an integral part of the social actor self-concept and shape their sense of belonging. With this, was concluded that social actors tend to have a positive emotional attachment to their in-group and may exhibit bias and preference toward members of their own group (Hogg, 2016).

In the context of ethnic discriminatory attitudes in the recruitment process, the social identity theory suggests that actors may discriminate against members of the outside ethnic groups to boost their own social identity and preserve a positive sense of self-esteem. For example, in the recruitment process it is usually demonstrated when recruiters or hiring managers exclude out-group members of the opportunity of having first interviews, even when

they have the same set of skills as an in-group member that were called to interviews (Adamovic, 2020, 2022).

This groups categorization tends to lead to the establishment of stereotypes and development of biases. Conceptualizing, stereotypes tend to be defined in the academia as a generalization of the features and imaginable behaviours of group members, and they tend to influence the perceptions of those with different ethnic backgrounds during the recruitment process (Hogg, 2016). However, is not a linear theory. Is now known that other variables like the parent's contact with other ethnicity, the quality of those contacts tend to help in the redefinition of the image that social actors create of out-group social actors.

2.1.2. Ethnic competition theory

The ethnic Competition theory is also a social psychologic first concede by John Rex. It is suggested that when groups perceive a threat from other groups, also having the concept of group like the social identity theory, discriminatory attitudes between different groups social actors can occur. This suggests that when groups are in competition for the same resources - in the case of this dissertation case the resource are jobs - they might perceive other groups as a member to defeat and eliminate from the competition, developing negative and discriminatory attitudes towards them (Adamovic, 2020).

Other variable that is important to take into consideration when using the ethnic competition theory as a framework is the academic level of the social actor. For example, according to Lippens, Vermeiren & Baert (2023) in the Netherlands the proportion of non-Western minority students is higher in the technical education when compared to universities. Consequently, students in higher vocational education may tend to experience more economic competition compared to their university pairs. Given this, university students are anticipated to exhibit less negative interethnic attitudes and behaviours towards ethnic minorities social actors. In addition, it has been supported by a series of empirical studies that have shown that perceptions of competition between different groups tend to lead to discriminatory attitudes against out groups.

2.2. Economic force

2.2.1. Value-in-diversity theory

However, in a specialized sector, the Socialization force is not the only force playing. Against it we have the economic force embodied by the value-in-diversity theory. Although the Value-in-diversity theory was also created by a social psychologist, this one is less focused on the discriminatory attitude's origin and the social actor's process of socialization, but more focused

on diversity benefits to an organization. So, this is also called the diversity management theory (Adamovic, 2020).

The value-in-diversity theory is fixated in the pressure that economy and the market create and points that diverse organizations tend to perform better than homogeneous organizations. The theory suggests that diversity bring unique perspectives and skills to help creativity, problem-solving and decision-making. Also, organizations can benefit from diversity increasing the access to different markets, customers, and the ability to attract and retain a bigger poll of talent. In the recruitment process context, the value-in-diversity theory advocates that organizations seek diverse applicants, like social actors from different ethnicities, helping on having a competitive advantage in today's globalized business environment (Adamovic, 2020).

This shows that nowadays there are two opposing forces that should be examined when studying discriminatory attitudes in the labour market, especially when the context is a short skilled and highly competitive market. First, as we saw, the socialization force – represented by the social identity and competition theories. This force argues that social actors tend to discriminate and show partiality towards social actors belonging to their group while disadvantaging the ones belonging to the other ethnic group. The perspective, when applied to the recruitment process suggests that social actors tend exhibit biases to others who share parallel characteristics, while displaying discriminatory attitudes to those who are unlike (McKinsey & Company, 2019; Adamovic, 2020).

On the other hand, the economic force – represented by the value-in-diversity theory - argues that organizations are recognizing the worth of diversity. Organizations, especially in specialized industries are facing skill shortage, like IT, are now actively seeking out diverse teams and applicants with different backgrounds, including ethnic diversity. This shift in perspective is mainly driven by the understanding that diverse teams bring a range of perspectives, ideas and problem-solving approaches leading to enhanced creativity and economic performance (McKinsey & Company, 2019; Adamovic, 2020).

It is important to acknowledge and reconcile these opposing forces in the study of discriminatory attitudes in the labour market. While socialization forces may predispose social actors to discriminate, do organizations have the power to counteract these biases by promoting diversity and inclusion? If they do, they can create a more equitable and inclusive workplace that values the unique strengths and perspectives that social actors from diverse ethnicities can bring to the table. But if they do not, ethnic discriminatory attitudes studies in the recruitment process of IT job vacancies will for certainly still find discriminatory attitudes.

By considering these different perspectives on this work, we can gain a deeper and better understanding of the complexities of intergroup relations. In addition, it is important to use

those insights as a lens to build hypotheses to our empirically test regarding ethnic minority discriminatory attitudes in the recruitment process – *figure 3*.

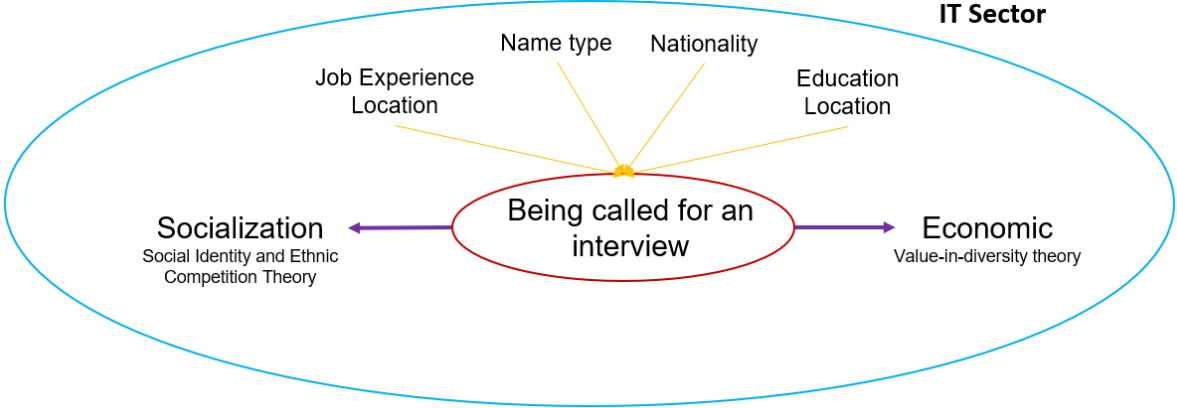


Figure 3 – Ethnic discrimination in the IT industry

So, in this dissertation we aim to understand how the socialization and the economic forces work, answering the following questions: (1) Is there any difference regarding the probability of an Indian social actor received a positive callback when compared to a native applicant? (2) Is there any difference regarding the probability of an Indian social actor received a positive callback higher than when applying to organizations without the non-discriminatory statement, when compared to the dominant group? (3) If yes, what are the variables that better explain the discriminatory attitudes in the recruitment process?

The first question helps us understanding if there is any difference regarding the Indian and the British community probability of being called for a first interview, existing ay cognitive bias in the recruitment process that does not help the Indian social actors, and if the organizations are wasting a pool of talent just because of their nondominant ethnicity. This means, as we mentioned before, that in the IT industry there are two opposite forces playing. Does the socialization force still win in the IT industry recruitment processes even with the lack of specialized social actors to take those jobs? The second question helps us assess if organizations with non-discriminatory statements tend to show no difference when compared to organizations with no non-discriminatory statement.

In the forthcoming chapter, we get on a detailed exposition of the method used to pursuit of answers to our research questions. This methodological exploration was carefully designed to be precise in order to help have a better and more informed methodological approach. The chapter will unravel the tools and the analytical techniques chosen to collect and analyse data that helps us on understand discriminatory attitudes within the recruitment process.

CHAPTER 3

Empirical study – methods

The selected method for our study is the résumé study method, a choice that stems from its increasing prominence in academic research, as highlighted earlier. According to Coffman, Exley and Niederle (2018), Adamovic (2020) and Lippens, Vermeiren & Baert (2023), this type of approach is increasingly being used in economics, sociology and social psychology when doing organizational studies about discrimination in the recruitment process.

While in between 2002 and 2005 we had around two and five résumé studies per year, in 2019 we had a peak of more than thirty-five résumés' studies in a year. This type of research has been growing because researchers are aware of the benefits of these studies and the internet has been a greater help when it comes to avoiding the main difficulties of studying discriminatory attitudes in the recruitment process. By sending anonymized résumé and applying statistical rigorous analysis, we aim to unveil the underlying forces shaping the recruitment process outcomes.

3.1. Résumé studies: strengths and weaknesses

The résumé study is a kind of precise experimental type of study that offers more layers to measure ethnic discriminatory attitudes in the recruitment processes, allowing researchers to study their variables of interest while controlling other variables normally presented in the job description that make the applicant viable and skilled enough to execute the job advertised in the job vacancy.

Following Adamovic (2020, 2022), a résumé study is a method that is more adequate and mostly used to study ethnic discriminatory attitudes in the recruitment process. In this dissertation we will study if there are ethnic discriminatory attitudes towards UKs Indian applicants that are applying to IT job openings. In a résumé study focused on ethnic discriminatory attitudes the normal procedure is the researchers construct a set of fictional résumés that tend to be almost completely identical in every way except for the characteristics that the different theory frameworks point as variables associated with ethnic discriminatory attitudes. Then researchers send these résumés in an application to the certain job vacancy and record which applicants receive callbacks or job interviews considering the worked variables. In this study the selected variables are Name, Nationality, geographic locations of their Professional Experience and Education.

It is important to understand that the strengths of résumé studies are, if well applied and if the results tend to, supplying objective evidence of hiring discriminatory attitudes in the recruitment process and can identify the extent and disposition of those. Because the résumés are similar in all ways except for the set of variables being studied, if any differences in the

callback from the organization between résumés, that difference can only be attributed as discriminatory attitudes due to ethnic variables being the only difference.

In addition, once the recruiters or the hiring managers - depending on who is reviewing the résumés – are acting in a natural and day to day way, the social desirability bias will tend to zero. A problem that researchers face when using non-experimental methods like surveys and interviews. Another advantage that résumé studies have is the fact that researchers can easily control the variables that they want to use as dependent and independent/predictors in each sent résumé, also giving to the study a real-world practical relevance (Adamovic, 2020; Adamovic, 2022).

However, we do not live in a dreamworld and there are also weaknesses towards résumé studies. For example, it may not reflect all complexity of the recruitment process, which can have factors that are not incorporated in the résumé, such as social connections or referrals that can happen inside organization. Another limitation of résumé studies is that they may not be capable of fully capturing the traces of discriminatory attitudes, such as microaggressions. Likewise, résumé studies only capture the initial stages of all recruitment and selection process, and discriminatory attitudes may take place in later stages of the process, more specifically in the selection stage during the interview or in the job offer (Adamovic, 2020; Adamovic, 2022).

In addition, the major limitation normally pointed to résumé studies is the workload needed to execute. This is because it is needed to create or adapt résumés for every application, tending in consideration the fact that they need to be similar regarding the control variables that normally are the hard skills needed to execute a job mentioned in the job description. This is the main reason résumés studies only tend to be executed on unspecialized and uneducated positions that do not need major variable control (Adamovic, 2020, 2022). In this study we are addressing the IT industry and specialized position, to address that fact we had two persons developing résumés and cross checking to see incongruences and for each set of job titles we reused, guaranteeing that we did not repeat any organization.

Additionally, all the other variables need to be considerably played with to be sure that we are only catching the discriminatory attitudes that we want to capture in our model – the ethnic discriminatory attitudes (Adamovic, 2020, 2022).

3.1.1. Ethics on résumé studies

Another important topic on résumé studies, especially after the popularity that this method has been an object of is the ethics. Although informed consent is crucial and participants should be fully informed about the study's purpose and that they are being tested for ethnic

discriminatory attitudes, résumés studies are a non-invasive method that does not require deception or manipulation of participants (Adamovic, 2020).

Last, according to Adamovic (2020) and Hunkenschroer and Lütge (2022) another important ethical issue to be aware of is the possibility of doing harm to the organization and the employer. Résumé studies have the potential to cause harm to employers who may unknowingly take part in the study and be accused of discriminatory hiring practices, and the time spent to analyze the résumé. Taking that into consideration and in order to avoid that all the data is confidential and only two persons have access to all information. After the delivery of this study, the nominalized data will be deleted in all folders and SharePoint where it may exist. This way, confidentiality is kept, and the collected data will be protected guaranteeing confidentiality. In addition, studies shows that it takes around six seconds for a recruiter to analyze a CV (Adamovic, 2020).

However, it is also worth noticing that major institution like International Labor Organization (ILO) already did these kinds of studies and the findings were published in top-tier journals like American Economic Review (Adamovic, 2020).

3.2. Data collection

In our research, we used a résumé study to collect all the data that supports our method and answers to our main research questions, gaining deeper comprehension of ethnic discriminatory attitudes in the recruitment process. In this subsection of the method chapter, it will be found how we use the résumé study to investigate ethnic discriminatory attitudes in the recruitment of Indian social actors in IT positions in the United Kingdom in terms of job openings, résumés, and data analysis.

3.3. Job openings

For our dissertation method we have the job application as our main and unique unit of analysis. However, we are sending different résumés to the same job application to check what can count as valid - all the job openings that received, at least, one positive response among the résumés that were sent for the same job application. This is because without any positive feedback, we cannot analyse whether ethnic discriminatory attitudes occurred among the fictitious applicants.

Therefore, if job openings where we did not receive any response were considered we could not be certain whether the absence of response is due to ethnic discriminatory attitudes, the high volume of applications received or bad résumés. Furthermore, including job openings lacking feedback without any comparison term may also skew the conclusions.

Firstly, it is important to note that we sent applications between December 2022 and May 2023. Furthermore, all the job openings that we considered were within the IT field, specifically IT developer positions that had the higher increase of job vacancies in the UK. These developer positions could be divided into three areas of focus: backend developers, frontend developers, and data.

Backend developers are experts in using technologies like .NET, node.js, and APIs. Frontend developers are more focused on the functionality and design of the software and tend to use JavaScript technologies like React.js, Angular.js, Vue.js, and HTML. Data-related job openings are usually associated with data analysts, data engineers, and business intelligence developers, who tend to be proficient in technologies such as SQL, SAS, Python, Power BI, Tableau, and Qlik Sense.

To narrow down our analysis and have sufficient variables to experiment with, we specifically targeted associate positions that require between two and six years of experience. This is important because, on the one hand, if we focus on junior positions, we may not have enough professional experience to play with the Job Experience Location variable, for example. On the other hand, if we choose senior positions, it would be exceedingly difficult and laborious to create a good enough résumé to receive a callback, having a higher margin of error. Additionally, we only searched job openings from online recruitment platforms used in the UK, such as Indeed, Monster Jobs and LinkedIn.

3.4. Data model and analysis

After the collection of all the data we stored it in a secure excel file that followed the variables categorization seen before and has been carefully prepared to be read by R. We then followed Adamovic (2020), Lipperns, Vermeiren & Baert (2023), Ross and Willson (2017) on using the Z-test and the multiple logistic regression to analyse the data in order to achieve our main two objectives – check if there is difference in the probability of an Indian marked social actor and a British of being called for a first interview and if there is difference on the probability of an Indian applicant being called for the same interview comparing job openings with an without non-discriminatory statement.

The focus of the first part of the analysis – Z-test - is regarding our first research question - analyse differences between the probability of the control British and the Indian group on receiving positive callbacks, that we may encounter in our descriptive analysis, are statistically significant and if we are able to infer that to the population. Then, the study will focus on the possible creation of a simple predictive model in order to understand the relation between the variables in study and what are the ones that helps us explaining better ethnic discriminatory attitudes in recruitment processes variance the most.

3.4.1. Inference analysis

3.4.1.1. Z-Test

In order to compare if there is any difference between the average callbacks of social actors that are from the control group - completely British applicants - and the social actors with Indian symbolic markers we executed a student's Z-test for proportions. Then, to answer the second question, regarding the difference between the probability of receiving a positive callback in applications to job vacancies with and without discriminatory statement, we also applied a Z-test, but only to the applicants with at least with Indian symbolic marker. We only checked those applicants to analyze if there is any difference in the probability that they have to receive between an organization that have a non-discriminatory statement is significantly different compared to organizations that do not have a non-discriminatory statement.

$$Z=(p^1-p^2)/SE \quad (1)$$

Where,

- a) p^1 and p^2 are the sample proportions of the two groups.
- b) SE is the standard error of the difference in proportions.

So, our hypothesis is the following,

- H_0 : there is no significant difference between the probability of being called back for an interview in both groups.
- H_a : there is a significant difference between the probability of being called back for an interview in both groups.

3.4.2. Predictive analysis

3.4.2.1. Logistic regression

First, we need to understand that a logistic is a statistical analysis method mainly used to predict probabilities, like the logistic regression. However, the logistic regression is often used to calculate the probability of a categorical outcome based on a set of predictor variables. The logistic regression formula is,

$$\log(1-p) = \beta_0 + \beta_1 \cdot X \quad (2)$$

Where,

- a) p stands for the probability of the dependent variable
- b) X_1, X_2, \dots, X_n are the independent variables/predictors.
- c) $\beta_0, \beta_1, \beta_2$ are the regression coefficients.

Then, to conduct a logistic regression analysis accurately and reliably, several prerequisites and considerations must be met – *table 1*.

Logistic Regression Assumptions	
Sufficiently large dataset	Insufficient observations
Binary Dependent Variable	Relevant Independent Variables
Independence of Observations	Ensure that the data sample is representative of the population we wish to generalize to
Well-Defined Variables	Absence of Severe Multicollinearity
Absence of Extreme Outliers	Adequacy of Residual Distribution

Table 1 – Logistic regression assumptions (Ross and Wilson, 2017)

3.4.3. Dependent, predictors and control variables

According from the various insights of Adamovic (2020, 2022) and other studies, we must use precaution when creating résumés for our research. Firstly, it is crucial to find the variables that we intend to examine in our statistical analysis, this being a Z-test and a regression analysis, and the variables that need to be model controlled. As a result, we standardized a set of rules for each résumé and job vacancy to choose. This approach ensures that all applicants own an equal level of proficiency in the skills that are requirement, enabling the fictitious applicants to successfully navigate the recruitment process. Additionally, this approach cultivates consistency throughout the résumés and helps us avoiding one of the principal problems of the résumé studies, it is creation and control of all the non-study variables.

However, before going to analyse how we built the variables in order to helps us achieve our goal and answering the research questions, we need to firstly define our predictors and control variables. Adamovic (2020, 2022) explains that the differences between résumés are contingent upon the type of discriminatory attitudes being studied. In our dissertation, which centres on ethnic discriminatory attitudes we used predictor variables with a social and cultural dimension, referred by Brubaker (2009) that implicitly expose ethnic minority symbolic markers that could create discriminatory attitudes towards the minority ethnic group, in this case, the Indian applicants – *table 2*.

Type	Variable	Category
Dependent	Being called for an interview	(0) No
		(1) Yes
Predictors	Name Type	(0) British
		(1) British First Name, Indian Surname
		(2) Fully Indian Name
	Nationality	(0) British
		(1) Indian
	Job Experience Location	(0) Exclusively UK Experience
		(1) Initial India, Subsequent UK experience
		(2) Exclusively Indian Experience
	Education Location	(0) Exclusively UK Education
		(1) Bachelor's India, Master's UK
		(2) Exclusively India Education

Table 2 – Model and variables categorization

In every single job application chosen, we are going to send three fictitious résumés, guaranteeing that one of them is our control group, the normal with British applicant without any Indian Symbolic Marker. The control group is the one where the discriminatory attitudes theoretically tend to zero. This means, the one that the discriminatory attitudes theories above expect to be the preferred applicant under the same conditions. In this case is the type of applicant with a full British name, British nationality, and full work experience and education in the UK.

It is worth noting, on the variable sex, that we only sent male applicants' résumés. We made this decision because our model was specifically designed to analyse and comprehend the phenomenon of ethnic discriminatory attitudes. As such, we aimed to avoid capturing gender discriminatory attitudes in the model, which falls beyond the scope of this study. If we were to send résumés from applicants of different biological sexes, we would capture this kind of discriminatory attitudes (Adamovic, 2020; Lippens, Vermeiren & Baert, 2023).

As explained in the earlier section, controlling variables is crucial to ensure standardization and similarity among applicants, facilitating the comparison of their résumés. In this study, the hard and soft skills required by the hiring organizations for the successful execution of the job served as control variables as advised per Adamovic (2021). For instance, for backend developers, the control variable are backend technologies, for frontend developers the control variable are frontend technologies, and for data professionals the control variable are programming languages specialized in data analysis. It is worth noting that certain technologies may be transversal across distinct positions.

The purpose of this analysis is to identify which variables are more influential in explaining the phenomenon of ethnic discriminatory attitudes in the recruitment process. For this we measured the variance of each variable, this is the ability of explanation of the phenomenon, of our tested variables and determine which have the least and most explanation capacity for the discriminatory attitudes in the recruitment processes toward the Indian community in the UK.

Empirical study – results

4.1. Descriptive analysis

4.1.1. Sample

In this initial phase of the result analysis, we focused on the descriptive analysis of our results and the sample description. Following the establishment of forty-two email accounts, including fifteen fictitious British social actors, eleven British first names and Indian surnames, and sixteen accounts categorized as Indian social actors, and using some as candidate profiles, we collected a total of ninety-nine viable applications for analysis. Through candidates' profile accurate creation, we ensure a solid and diverse sample size, enabling us to root into the difficulties of ethnic discriminatory attitudes and its potential manifestations. In addition, fifty-five applications were sent to job vacancies without discriminatory attitudes statement and forty-four to job vacancies with it.

The variable Name Type, a total of thirty-four control entries were obtained, with thirty-five entries standing for social actors with a British first name and an Indian surname and thirty entries for social actors possessing a fully Indian name. Regarding Nationality, the dataset encompasses forty-nine entries of social actors with British nationality and fifty entries of social actors with Indian nationality. Further investigation into Job Experience Location revealed thirty-nine entries for social actors with all their work experience in the UK, thirty entries for those with their first experience in India followed by subsequent experience in the UK, and another thirty entries for those with exclusively Indian work experience. Lastly, concerning Education Location, the data comprises thirty-seven control social actors with their entire education in the UK, thirty-two entries with an Indian bachelor's degree and a succeeding master's in the UK, and an additional 30 entries with a complete educational journey in India – *table 3*.

Variable	Category	Number of Entries
Name Type	British	34
	British First Name, Indian Surname	35
	Fully Indian Name	30
Nationality	British	49
	Indian	50
Job Experience Location	All UK Experience	39
	Initial India, Subsequent UK	30
	Exclusively Indian Experience	30
Education Location	All UK Education	37
	Bachelor's India, Master's UK	32
	Exclusively India Education	30

Table 3 – Variables frequency

A total of ninety-nine viable were obtained, with forty-six being positive callbacks and fifty-five being negative or unanswered. It is important to note that the count of unanswered responses only is counting as viable the cases for the same job there exists at least one positive response to an application. In a detailed analysis, it is observed that the effects of the recruitment process showed differences between the two different groups of applications. This analysis involved two distinct groups: control résumés consisting of nineteen applications total British, and the larger pool of remaining applicants with Indian symbolic marker with eighty submissions.

Looking at the control résumés outcomes, it was retrieved that out of the nineteen British applications, twelve applicants received callbacks for interviews, resulting in a callback rate of 63%. On the other hand, seven applications received no response or a rejection email, indicating a rate of 37%. Shifting the focus to the Indian applications group – the applicants with at least one Indian symbolic marker - was observed that thirty-two applicants obtained one callback for interviews, with a callback rate of 40%. In contrast, forty-eight applications did not have any response or received rejections emails, reflecting a rate of 60% - *Table 4*.

Resumé Group	Total Applications	Call Back Rate	No Response Rejection Rate
British Group	19	63%	37%
Indian Group	80	40%	60%

Table 4 – Applications per type of group and callback rate

When doing a comparative analysis of those figures, a significant gap emerges. The callback rate for the control résumés group was higher at 63%, in contrast to the 40% callback rate of the Indian group (+23pp). Furthermore, the control résumé group experienced a lower rejection rate of 37% compared to the 60% in the applications with at least one Indian symbolic marker group.

In the that we drove out of the ninety-nine responses from different organizations, we analysed the variations depending on if they had a non-discriminatory statement, or not. For organizations that add job vacancies without a discriminatory attitudes statement, out of the fifty-five applications, among those twenty-eight were positive callbacks and twenty-seven were negative or no response. This turns to a positive response rate of around 51% and a negative response rate of around 49%. On the other side, for organizations with a non-discriminatory attitudes statement in their job description, among forty-four applications, seventeen were positive callbacks, while twenty-seven were negative or no callbacks. This is a positive callback rate of approximately 39% and a negative/no callback rate of about 61% -

Table 5.

Company Type	Total Applications	Positive Call Back Rate	Negative/No Call Back Rate
Without Discriminatory Statement	55	51%	49%
With Discriminatory Statement	44	39%	61%

Table 5 – Applications per existence or not of discriminatory statement and callback rate

Among the eighty applications sent by applicants with Indian symbolic markers, the analysis clearly reveals a distinct pattern in organizations with and without a non-discriminatory statement. For organizations lacking a non-discriminatory attitudes statement, out of the thirty-eight applications, twelve applications were positive callbacks, a positive callback rate of 32%. The remaining twenty-six applications led to negative responses or no response, resulting in a negative callback rate of 68%. On the other hand, organizations that included a

discriminatory statement had twenty applications with a positive callback, being a positive callback rate of about 48% and 52% negative – *table 6*.

Company Type	Total Applications	Positive Call Backs	Negative/No Call Backs
Without Discriminatory Statement	38	32%	68%
With Discriminatory Statement	42	48%	52%

Table 6 – Indian applications per existence or not of discriminatory statement and callback rate

4.2. Inference analysis: Z-Test application

4.2.1. British versus Indian applicants

The collected data exposed that among the nineteen British applicants - twelve received callbacks for interviews. Similarly, of the eighty Indian marked applicants – thirty-two got callbacks for interviews. This means, as the literature review highlighted us when analysing last studies, there is a significant difference between British and Indian marked applicants - 63% probabilities of a positive callbacks to British applicants and 40% for Indian marked applicants, but is this significant to our population?

For that, a Z test needs to be employed to compare if the differences in the percentages of applicants receiving callbacks for interviews between the British group and the Indian marked group is statistically significant or not (Ross and Willson, 2017). So, our test hypothesis is:

- H_0 - there is no significant difference in the percentages of positive callback receptions between British and Indian applicants in the population - Economic force.
- H_a - there is a significant difference in the percentages of positive callbacks received between the two groups, in the population – Socialization force.

Additionally, analysing the table there is not enough evidence to reject the null hypothesis at the 0.05 threshold – *table 7* (Ross and Willson, 2017).

Data: c(32, 12) out of c(80, 19)			
X-squared	df	sig.	95 percent confidence interval:
3.3347	1	0.06783]-0.47359032 0.01043243 [

Table 7 - Z-test: British VS. Indian probability of receive a positive callback

4.2.2. Indian applications: with and without non-discriminatory statement

We used the collected in another Z-test to analyze if there is any statistically significant difference between the probability of an applicant, with at least one Indian symbolic marker,

receive a callback from organizations and without a non-discriminatory statement. The group of the job vacancies in organizations that use a non-discriminatory statement is composed by twenty out of forty-two applicants (48%) that received positive callbacks. The group of the organizations without non-discriminatory statement is based of twelve out of thirty-eight applicants that received positive callbacks (32%).

- *H0* - there is no significant difference in the percentages of positive callback between the organizations with and without non-discriminatory statement, in the population.
- *Ha* - there is a significant difference in the percentages of positive callbacks between the organizations with and without non-discriminatory statement, in the population.

Analysing the below table regarding the Z-test regarding the difference between the percentages of an applicant with at least one Indian symbolic marker flagged receive a positive callback between organizations with and without non-discriminatory statement, we are able to conclude that there is insufficient evidence to reject the null hypothesis at the 0.05 threshold – *table 8* (Ross and Willson, 2017).

Data: c(7, 5) out of c(12, 7)			
X-squared	df	sig.	95 percent confidence interval:
0.0060587	1	0.938] -0.6797117 ; 0.4178070 [

Table 8 - Z-Test with and without non-discriminatory statement probability of receive a positive callback

4.3. Predictive analysis - logistic regression

4.3.1. Assumptions

After analysing our dataset in R and guaranteeing that the assumptions required by the logistic regression model to be executed are compliance, we concluded that all assumptions are satisfied. The assumptions include first, the need of our dependent variable being binary, the lack of outliers and the sample normality. The sample normality was verified mainly by the fact that all categories had observed counts above thirty. According to the Central Limit Theorem, when a sample sizes in test exceed thirty per category it is statistically correct to assume that the same sample tends to normality. Also, all the correlations between the variables are below 60% – *Annex D* (Ross and Willson, 2017).

4.3.2. Output

4.3.2.1. Model

After testing our sample regarding the logistic model assumptions to be sure that the created model is compatible with our model and study objectives, the logistic regression applied with all the studied variables captured when creating the résumés and defended as variables that

helps in underlying ethnic discrimination in the recruitment processes, was found that all the variables together was not totally suited to explain our phenomena – *table 9*.

$$\text{Probability of receive a positive callback} = \text{Job Experience} + \text{Education} + \text{NameType} + \text{Nationality}$$

Deviance Residuals:				
Min	1Q	Median	3Q	Max
-1.6094	-0.8724	-0.6035	0.9789	1.9569
Coefficients				
	Estimate	Std. Error	z value	sig
(Intercept)	0.9751	0.4173	2.337	0.0194 *
JobExperience	-0.6149	0.3009	-2.043	0.0410 *
Education	-0.6686	0.315	-2.123	0.0338 *
NameType	-0.3168	0.3214	-0.986	0.3242
Nationality	0.4703	0.5251	0.896	0.3704
Signif. Codes	0 '***'	0.001 '**'	0.01 '*'	0.05 '.' 0.1 ' ' 1

Table 9 – First multiple logistic regression model

Taking that into consideration, in order to identify the best-fitting model, we did a backwards variable selection in R – *Annex E*. After careful analysis of the output, the final model selected by us was also the one advised by the backwards selection reduced model - consisting only of Job Experience and Education Location as the best predictors to the probability of the applicant being called for a first interview – *table 10* (Ross and Willson, 2017).

Deviance Residuals				
Min	1Q	Median	3Q	Max
-1.5809	-0.8977	-0.5944	1.0451	1.9082
Coefficients				
	Estimate	Std. Error	z value	sig
(Intercept)	0.912	0.3674	2.482	0.0130 *
JobExperience	-0.6854	0.2868	-2.39	0.0168 *
Education	-0.5925	0.2886	-2.053	0.0401 *
Signif. Codes	0 '***'	0.001 '**'	0.01 '*'	0.05 '.' 0.1 ' ' 1

Table 10 – Ideal multiple logistic regression model

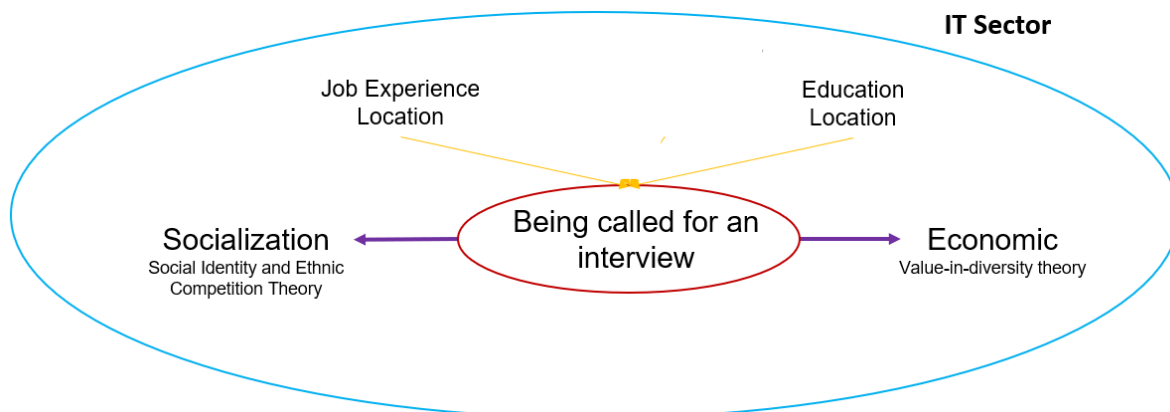


Figure 4 – Ethnic discrimination in the IT industry model

After deciding the best suited model – figure 4 - to our investigation objectives in terms of predictive variables are the best suited to explain the probability of individuals of different ethnicities being called for an interview, it is now important to understand how the selected model is in terms of goodness and statistical significance.

4.3.2.2. Model goodness of fit

- First, we applied the Nagelkerke R-squared that supplies an indication of how well our logistic regression model explains the variability in the probability of being called to and interview. Our model after the backwards process achieved 0.5627. This shows that out of the variation in the callbacks approximately 56.27% can be explained by the Job Experience and Education Location. Statistically, this is a moderate fit and it shows that both predictor variables collectively account for a considerable portion of the variability in the outcome.
- Second, the Hosmer-Lemeshow test that measures how well the outcomes observed match the predicted expected outcomes from our model – table 11.

Hosmer and Lemeshow goodness of fit (GOF) test data: dataset4\$Response, predicted_probabilities		
X-squared	df	sig.
9.8368	5	0.0799

Table 11 - Hosmer and Lemeshow goodness of fit without non-discriminatory statement

In summary, our logistic regression model's goodness indicates that a reasonable part of the probability of receiving a positive callback is captured in the Job Experience and Education Location. In addition, the model's fit is satisfactory. While there might be minor areas for improvement as statistically suggested by the Hosmer-Lemeshow test, the overall fit of our model can be considered reasonable (Ross and Willson, 2017).

4.3.2.3. Model significance

- According to Ross and Willson (2017), the log likelihood is a measure that helps us understand how well the model fits the data that was observed. The more negative the log likelihood value is, better it fits. Since the value of approximately -60 obtained for our model is negative, it suggests that our created model is reasonably providing a good fit to the observed input – *table 12*.

Results		
Dependent variable:		
Response		
Job Experience Location	-0.685**	-0.287
Education Location	-0.592**	-0.289
Constant	0.912**	-0.367
Observations	99	
Log Likelihood	-59.808	
Akaike Inf. Crit.	125.616	
Note: *p<0.1; **p<0.05; ***p<0.01		

Table 12 - Log Likelihood

- The AIC is another measure that helps us evaluating the goodness of fit of the model and its complexity. A lower AIC value is preferred, as it indicates a better trade-off between our model fit and complexity. In this dissertation, where we aim to study ethnic discrimination in the recruitment process, the obtained AIC is 125.61, when the first tried model with all the collected variables has an AIC value of 127. This means that, while there is opportunity for improvement, this value also reflects that the created model strikes a balance between fitting our observed data, avoiding overcomplexity of the model – *Annex E* (Ross and Willson, 2017).

4.3.2.4. Confusion matrix

- The confusion matrix, as per Ross and Willson (2017), displays in a tabular form what is the predicted and the actual outcome. This becomes important because it helps us assess the performance of our designed model in terms of true positive, true negative, false positive and false negative predictions – *table 13*.

		Actual	
		Positive	Negative
Predicted	Positive	43	16
	Negative	12	28

Table 13 - Confusion Matrix

Regarding the sensitivity of our model constituted by the applicant's Job Experience and Education Location, the proportion of actual positives correctly predicted by the model is 60.6% - this means the model is capturing around 60.6% of the actual positive cases. Regarding specificity, the actual negatives proportion correctly predicted is 63.6% - indicating that our model is correctly finding 63.6% of the negative cases. In addition, regarding accuracy, the model is correctly predicting 71.7% of the values. This means that our model has, as showed by the confusing matrix, a reasonable to good performance on distribution of true positives and negatives and false positives and false negatives (Ross and Willson, 2017).

4.3.2.5. Coefficients and odds ratios

According to the insights gave by Ross and Willson (2017), the results obtained in this study suggests that both Job Experience and Education Location are two significant predictors of the probability of an applicant receive a callback taking into consideration their Job Experience and Education location. Deep diving in the analysis, the odds ratio for Job Experience Location is 0.50, signifying that for each increase in Job Experience Location in terms of more Indian markers, the odds of a positive callback decrease by approximately 50%. Regarding Education Location, the odds ratio 0.55, meaning that for each unit increase in Education Location, the same as more Indian markers flagged, the odds of the positive callback decrease by approximately 45% - *table 10*.

So, after statistically analysing the data collected with a résumé study in order to helps us achieving our goal of better understand how ethnic discriminatory attitudes work in the IT industry. More specific, how the interplay of the existing two forces – Socialization vs. Economic – works and if even with a skill shortage that the organizations and the labour market is suffering the organization still let the socialization force be stronger than the organization and economy needs, it is time to discuss our results and face them with the literature review done in the second and third chapter of our dissertation.

CHAPTER 5

Result discussion

Although latest studies have mostly showed that discriminatory attitudes are transversal in most of the recruitment processes, no matter the location or the ethnicity at play, as according to Adamovic (2020) we should analyse the results taking into consideration diverse contextual variables. Taking that into account, the main argument of this dissertation is that in the context of the IT industry there are two opposite forces playing.

First, the socialization force represented by the social identity theory, the ethnic competition theory and the studies reviewed that, in generalized and non-qualified position showed that tends to exist discriminatory attitudes towards ethnic minorities in the recruitment process. Second the force that appears when we add IT, specialized position, and skill shortage in the equation – the economic force. So, after all the theoretical literature review and the delving into the landscape of existing research, our method, and the data analysis, it is time to face our theory framework and analysed studies with our results.

Our primary and first inquiry seeks to address a pivotal question to better understand the dynamics of this forces - Is there any difference regarding the probability of an Indian social actor received a positive callback when compared to a native applicant? If we were to focus exclusively non-specialized industry and non-qualified positions, disregarding the second force in the equation, looking at old studies we would tend to observe a persistent trend of the Indian applicants facing discriminatory attitudes in the form of reduced positive callbacks compared to the native British applicants (Lippens, Vermeiren, & Baer, 2023).

In the case of this dissertation, taking into account our descriptive analysis to answer part of our first question, a striking divergence comes to light. British applicants command a 63% positive callback rate, while the Indian counterpart in study that holds at least one ethnically linked variable, had a mere 40% chance of positive callbacks. This discrepancy mirrors the findings of Tariq's (2013) investigation, where British-sounding names received a 60% average callback rate.

Further comparison of the Indian applicant's chances to receive a positive callback on job application on this study with the revised ones, it was revealed a 23% reduced probability of being called compared to British applicants. This value is aligned with the range set up by Lippens, Vermeiren, & Baer (2023), equating to a 23% to 37% disparity. However, our study reveals to be closer to the lower limit of that probability range and which is more than the double of the probability of 19% of an Indian applicant receive a positive callback to a first interview in the UK - vs. 40% in our study – pointed by Di Stasio and Heat (2019).

While prior studies - mostly focused to non-specialized and less educated roles - had less probabilities and higher differences of an ethnic minority receive a positive callback when

compared to the dominant and native group, our results show that on a specialized domain marked by skill shortage, the probability tend to increase and the differences between groups to be less. In addition, when trying to take our analysis to the next step, the Z-test executed to set up the capacity of our model to be extrapolated to the population, the p-value marginally exceeding the conventional significance level of 0.05 – *table 7*. Consequently, while descriptive disproportions are discernible within our model, the data does not strongly indicate a significant difference in callback percentages.

This shows that, although there is descriptive evidence that may show the existence of the socialization force in our study - represented by the 23% less probabilities of an Indian applicant receive a callback - in the IT industry short skilled context the economic force shrinks the differential callback rates between the Indian applicant group and the native one, when comparing studies in non-qualified position with qualified ones. This is also confirmed with the Z-test showing that those descriptive differences do not strongly indicate a significant difference in callback percentages. Then, the next question that we intend to answer was, (2) Is there any difference regarding the probability of an Indian social actor received a positive callback higher when applying to organizations without the non-discriminatory statement?

Starting off with our descriptive analysis, it has revealed differences in the probability of Indian applicants receiving positive callbacks for first interviews among organizations without and with non-discriminatory statement. Among the thirty-eight Indian applicants who applied to job vacancies without non-discriminatory statements, only 32% received positive callbacks. This also aligns with the probability range of disparity (23% to 37%) set up by Lippens, Vermeiren, & Baer (2023). Conversely, for Indian applicants who applied to job vacancies at organizations with discriminatory statements, we found that 48% received positive callbacks. This figure is 16% higher than those who applied to vacancies without discriminatory statements, and 15% lower than the overall probability of British applicants receiving interview calls in this sample – *table 5*.

From this analysis, we can thoughtfully assume that even within an industry facing skill shortages, like the IT industry, discriminatory attitudes persist to some extent, and they are more prominent in organizations without non-discriminatory statement than in the ones with it. Additionally, the dominating force is the socialization in organizations without the non-discriminatory statement, yet, in organizations that included non-discriminatory statements in their job descriptions seems that the economic force is powerful enough to contain the socialization force. However, future studies should further investigate ethnic discriminatory attitudes in a more comprehensively and qualitative way to unravel the underlying reasons behind this phenomenon.

This analysis underscores the impact of Indian symbolic markers on the probability of receiving positive callback, revealing differences contingent on whether organizations have discriminatory statements. Facing this with our literature review we may also analyse in future studies if the group of organizations that have a non-discriminatory statement and the data shows that are more aware to the importance of the skills that the Indian applicants may bring to the organization are more productive and have a better financial status when compared to the ones that don't have a non-discriminatory status and showed lower positive call backs to Indian applicants, like was flagged by McKinsey and Company (2019) and OECD (2020). Consequently, employing more robust and suitable statistical tests becomes imperative to gain deeper insights into the ethnic discriminatory attitudes. This approach would enable us to compare these findings more comprehensively with the existing literature.

Lastly, our final inquiry addresses the question: (3) If differences do exist, what variables are most influential in elucidating the discriminatory attitudes present in the recruitment process? While our earlier analysis did not grant statistically significant data relevant to a broader population, we nonetheless exposed descriptive statistical disparities that merit more exploration.

As accentuated by Lippens, Vermeiren, & Baer (2023) and Adamovic (2020), the logistic regression stands out an optimal and most often employed statistical analysis for interpreting the results of a resumé study. Also, our comprehensive literature review focuses the considerable explanatory potential of the Name Type in explaining the discriminatory attitudes faced by minorities in recruitment processes. This happens because insights suggest that recruiters present a tendency to overlook Asian or African names and not open those résumés to a careful analysis (Adamovic, 2022; Blommaert, L., Coenders, M. & Tubergen, 2014)

However, despite the prominence of the Name Type variable in our literature review, our meticulous analysis underscores that the most fitting multiple regression model for our investigation solely incorporates the Job Experience and Education Location variables. Analysing the output given, we can conclude that, as Social Identity Theory and the Ethnic Competition Theory expect, as higher the ethnic difference the social actors in the relationship have, higher the stigmatization and the probability of discriminatory attitudes takes place.

According to our first model defending that the probability of receiving a call back while wanting to analyse the ethnic discriminatory attitudes phenomenon was given by the Name Type, Nationality, Job Experience Location and Education Location the logistic regression showed differently. In this sample, the only two variable that significantly explain the probability of receiving a positive call back to a first interview were the Job Experience and Education Location. In a more detailed analysis, for the Job Experience location, when it is closer to a full Indian experience, there is a decrease of a positive callback by approximately 49.36%. In terms

of Education, for each increase in the Education location that is closer to a full Indian, there a decrease of a positive callback by approximately 44.70% - *table 10*. This elucidates us for the fact that human capital variables related to social actors' location of work and education have a better importance than the ones related directly to social actors' nationality.

However, we need to be careful when analysing this conclusion because even though we may have a model that was created to study the ethnic discriminatory attitudes in the recruitment process we are not considering most of the variables that can be at game. Here, for example, we are analysing the data considering that the ethnic background of the recruiter or hiring manager that is reviewing the résumé is the most probable one and the dominant one – completely British. But the values of discrimination tend to change as much as similar is the applicant and the résumé analyser ethnicity (Adamovic, 2020).

Additionally, with the execution of this study we were able to understand that although the socialization force is still present in this skill shortage industry, the Indian applicants with skills that are shortage in the market are in a better position of employment possibilities when comparing to the one who do not, feeling the effect of the economic force. This is, analysing studies executed over unspecialized positions and applicants, those applicants tend to be mostly under the socialization force, tending to suffer more discriminatory attitudes, complicating their inclusion.

Although these improvement on the values in those different contexts we still need to understand in future studies if the economic force have a powerful enough influence in the labour market that will guarantee that the organizations and the states are capable enough to face skill shortage in the IT industry in the UK. This is, if these organizations that are already aware that one of the solutions to the IT short skill problem, according to OECD (2019) and the European Commission (2019) is the need to include the specialized immigrants in their workforce – represented in this study by the organizations with non-discriminatory statement – are enough to guarantee the sustainability of an industry that will increase around 5.7% until 2025, has an impact of £82.6 billion in the UK's economy and represents 6.3% of the UK's and workforce (CompTIA's, 2023).

No matter what the results of those possible future studies, will always be important for the policymakers to guarantee, as OECD (2019) and the European Commission (2019) advises the reskilling, through professionalized and adequate courses to the market needs, of the population guided to IT skills needed by the industry to fulfil the skill shortage and then policy creation and implementation to help the inclusion of the foreigner population of the UK in the countries workforce. This is even more urgent in an industry like the IT industry due to the skill shortage that is facing now, and it is expected to grow and the impact that the industry has in the overall UK's economy, highlighting the importance of those social actors' skills.

Conclusion

Our dissertation into the land of ethnic recruitment discrimination helps in the ethnic discrimination discussion by uncovering an interplay between two forces existing in the labour market. While prevailing studies in non-skilled roles testify the persistence of discriminatory attitudes, a contemporary landscape reveals a clash of two opposing forces. On one hand, the historical force of socialization that stresses the prevalence of discriminatory practices against ethnic minorities, like the Indian community in the UK, supported by theories like the social identity theory and the ethnic competition theory. On the other, a new paradigm appears, being supported by the value-in-diversity theory, promoting diversity as a strategic asset within organizations, as evidenced, for example, by the proliferation of non-discriminatory statements in job listings mainly in shortage skills industries.

Our primary inquiry aimed to address whether there existed a difference in the probability of Indian applicants receiving positive callbacks compared to their native British counterparts. A review of the broader theoretical and empirical literature highlighted that discriminatory attitudes tend to persist. However, all the founded and revised studies were focused on general and unspecialized industries or positions. Considering this gap in the literature we asked the following questions - (1) Is there any difference regarding the probability of an Indian social actor received a positive callback when compared to a native applicant? (2) Is there any difference regarding the probability of an Indian social actor received a positive callback higher than when applying to organizations without the non-discriminatory statement? (3) If yes, what are the variables that better explain the discriminatory attitudes in the recruitment process?

With data collected through a résumé study, our descriptive analysis revealed disparities in first interview callback rates. While British applicants had a 63% positive response rate, Indian marked applicants, with the same set of skills highlighted in the job description as needed to be successful in the job, faced a 23% reduction of those probabilities – this is, 40% chances. Being this an indicator of the presence of discriminatory attitudes. However, comparing to the revised studies those values still tend to be lower than the one presented in unspecialized positions, showing that the economic force is also pushing back the socialization force that social actors tend to historically show.

Furthermore, we explored the influence of non-discriminatory statements in the probability of an Indian marked applicant be called for a first interview. Our findings suggests that the organizations that incorporates statements tend to witness a 16% higher positive callback rate for Indian applicants when compared to those without such statements. This underscores the impact that the economic force has on those organizations that show a higher probability of being equipped with training and policies to fight the socialization force, also showing a higher probability of being successful when facing the market skill shortage.

In addition, to chase and find the most influential variables supporting ethnic discriminatory attitudes in our model, it was employed a logistic regression model. Our study highlighted the importance of the variables Job Experience and Education Location, among the studied variables. With this, it has become clear that as the proximate Indian influence in these variables increases, the probability of receiving a positive interview callback tends to be lower and lower. However, it is crucial to recognize the limitation of our analysis in not considering other potentially variables, like the hiring manager and recruiter's ethnicity. Also, the results of our inferential testing showed that the differences of the probability of being called for a first interview between the British group and the Indian flagged one were not statistically significant in this sample, and we were not able to extrapolate. This is different to past studies, being this an insight to also acknowledge the impact that the economic force has been taking in the IT short skilled industry.

To fulfil the gap that we have in the academia regarding this topic that needs continuing seeking for knowledge, future investigations need to be executed to better understand ethnic discriminatory attitudes in a better and continually way. First, in this study we are only analysing the discriminatory attitudes that may happen in the recruitment process and the academia should not neglect that there are more stages after the recruitment stage. Second, although the values have indicated an influence of the economic force the impact of this force in the IT industry, this should be further analysed in a more comprehensive way. Other topic that should be further analysed, in a more economical way, is the impact of the discriminatory attitudes in the organization's performance in the market and further impact on the economy.

These studies will help organizations' human resources and policymakers to develop better and more informed policies that are aligned with the organizations, the market and the country's economic needs. So, overall, our dissertation makes a meaningful contribution to the academical discourse, shedding light on factors that are affecting the probability of skilled ethnic minorities applicants receiving positive callbacks. Moreover, these findings help emphasize the non-linear nature of the phenomenon of ethnic discriminatory attitudes and is helpful to organizations to develop training that flag recruiters and hiring managers to the possibility of being biased when analysing résumés dependent on the country where the applicant worked and studied.

However, we were also able to emphasize the existence of skill shortages in the IT industry, different on what happens in unspecialized industries and positions, have a crucial role on shaping organizations, recruiters' and hiring managers acceptance of ethnic minorities that are in the posse of the required IT hard skills for job execution. Always highlighting the context importance and the skills availability or scarcity. This insight enhances the relationship and the relation between the economic imperative of the necessity of infrequent skills in the

market and the existence of discriminatory attitudes in recruitment processes, needing a more comprehensive approach to address discriminatory attitudes in recruitment processes.

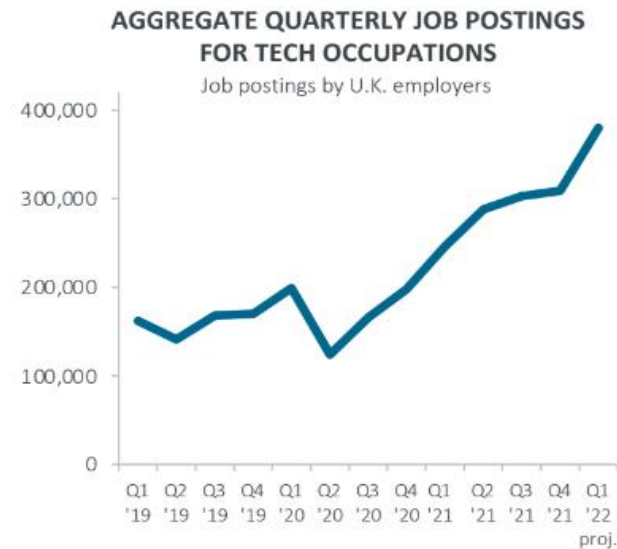
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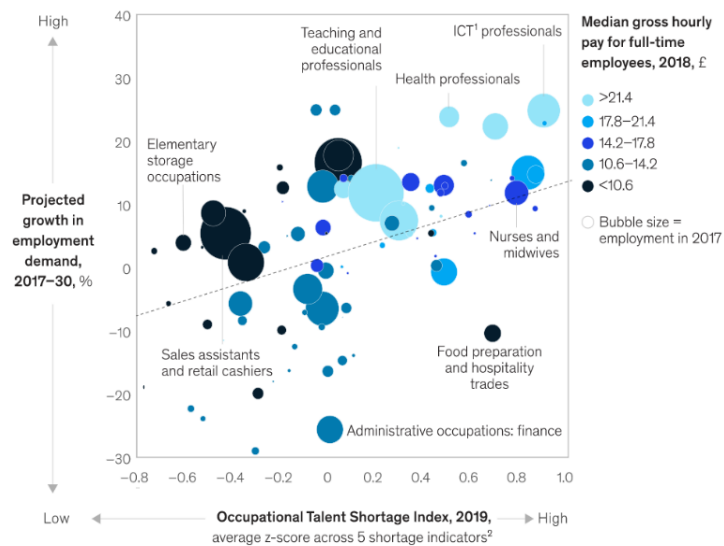
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Annexes

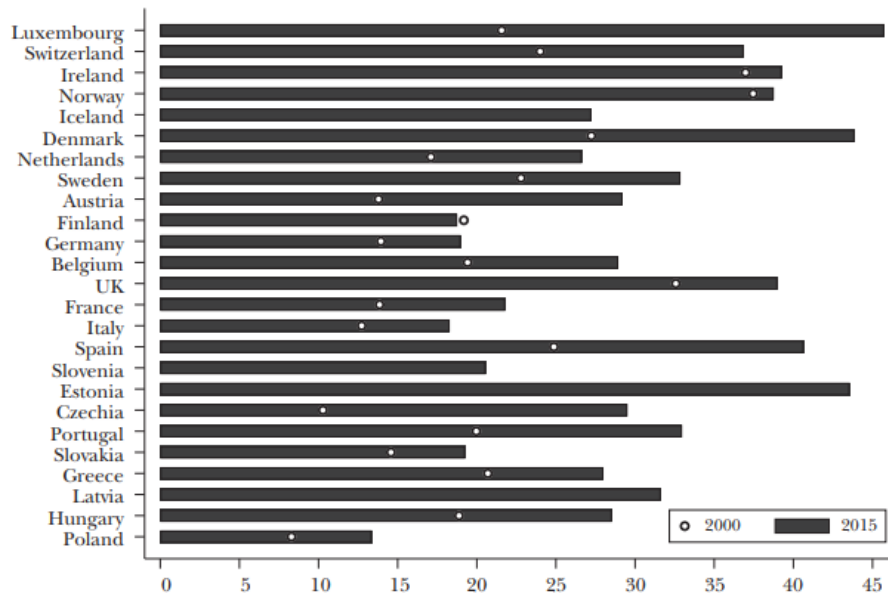
Annex A – Aggregate Quarterly Job Postings for Tech Occupations - CompTIA's (2023).



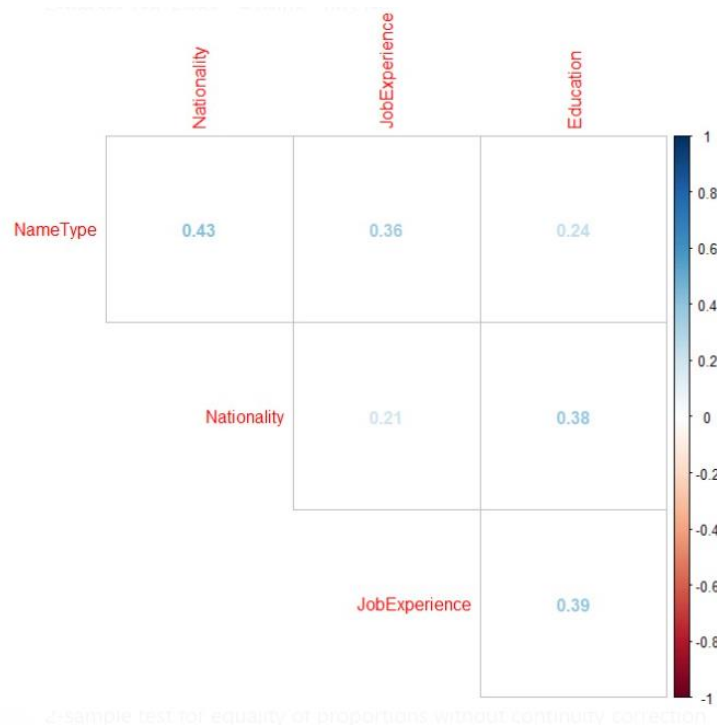
Annex B – Dispersion graph regarding Occupational Talent Shortage and Projected Growth in Employment demand 2017-30 – World Economic Forum (2020).



Annex C – % of the immigrant community that have at least a bachelor's degree – Dorn & Zweimuller (2021).



Annex D – R output – Correlation analysis.



Annex E – R Output - backwards variable selection procedure

step (logistic_model, direction = 'both')

Start: AIC=128.28

Callback = JobExperience + Education + NameType + Nationality

	Df	Deviance	AIC
Nationality	1	119.11	127.11
NameType	1	119.26	127.26
JobExperience	1	122.61	130.61
Education	1	123	131

Step: AIC=127.11

Callback ~ JobExperience + Education + NameType

	Df	Deviance	AIC
NameType	1	119.62	125.62
Education	1	123.05	129.05
JobExperience	1	123.61	129.61

Step: AIC=125.62

Response ~ JobExperience + Education

	Df	Deviance	AIC
Education	1	123.94	127.94
JobExperience	1	125.58	129.58

No index entries found.