# Resume Audit Study on the Impact of Pronoun use on Resumes

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#### Abstract

Resume Audit Studies (RAS) are one of the only ways to document the existence of discrimination within hiring practices through callback rates. In this paper, I will attempt to run a RAS to look into the use of pronouns on resumes. The first branch of results will investigate whether including pronouns on your resume will decrease the rate by which an employer requests more information. Building on this, the second branch will investigate whether the state and current LGBT+ laws protect these individuals. After this, the final addition will examine the effects of different industries by their census gender makeup.

#### 1 Introduction

Discrimination against LGBT+ individuals in the workplace has occurred for an extended period of time, even before the implementation of laws that restrict the mentioning of these individuals in schools in states such as Florida. It occurs simultaneously as the rising population of individuals realizes and accepts their sexuality, much like the change in the population of left-handed individuals in the early to mid-1900s. The result of both of these is that research into these individuals, the discrimination against them, and their possible identifiers is becoming more critical. I aim with this paper to look into one of the possible identifiers of an LGBT+ person, which would be the usage of pronouns. Even though pronoun usage does not directly point to the individual being under the Trans-Umbrella<sup>1</sup>. It could lead employers to believe that individuals who place their pronouns on their resume would more likely be one of these individuals. As a result, this would allow the employer to possibly discriminate against the individual based on the existence of their pronouns. In this paper, I set out to test whether individuals who use these pronouns are discriminated against based on whether a resume contains the individual's pronouns. The main research question is, how does the existence and content of a person's pronouns affect the rate by which a company asks for more information or requests an interview compared to someone who omits their pronouns?

This is answered using a type of experiment referred to as a Resume Audit Study (RAS). A RAS is an experiment in which two approximately identical resumes are sent out to one job listing with one primary difference between the two to see the effect of just that one difference on the odds of being contacted again. Using this method gives us a unique method to view precisely how pronouns affect the likelihood of being contacted by an employer without the effect of other determinants specific to different individuals. This lets us isolate the effect of the existence of pronouns without worrying about other individuals and resume-specific

<sup>&</sup>lt;sup>1</sup>The Trans-Umbrella is a term referring to all individuals with a gender identity which is different from their assigned gender at birth. This includes transgender individuals, along with individuals who identify with identities such as gender-queer, gender-fluid, and non-binary.

characteristics.

As previously mentioned, the overarching goal of this project is to study whether the existence of pronouns on a resume will affect the rate at which employers will call prospective employees back for an interview for this position. The specific goals of the experiment can be broken down into three categories: whether the application contained pronouns (and whether the type of pronoun set matters), the impact of which state the applications are sent, and whether the industry impacts the callback rate.

The first category relates to the different sets of pronouns used in this analysis. The most commonly known pronoun sets are He/Him, She/Her, and They/Them. Generally, individuals will use their preferred name on their resume, so the individual's names should be similarly identifiable for pronouns like He/Him and She/Her. As a result, for He/Him pronouns, a random masculine-sounding name will be produced, such as Gregory, while She/Her pronouns will use a feminine name, such as Emily. This is not the case for They/Them pronouns. These names include categories of masculine, feminine, and androgynous (such as Taylor). This gives us five pronoun categories, She/Her with a feminine name, He/Him with a masculine name, They/Them with a feminine name, They/Them with a masculine name, and They/Them with an androgynous name. The pronoun category will be randomly selected from these five. A name will be generated from a bucket of the most common white (to remove possible racial bias) baby names of each type for each resume. From this, I can attempt to make a couple of analyses. The first is the primary basis of this paper, which is whether, overall, the presence of pronouns affects the chances your resume is called back. After this, we can section off individual groups, such as whether the callback rate for the gender-neutral pronouns is lower than their non-pronouned twin. We can also attempt to differentiate if the perceived gender of your name led to different results for gender-neutral individuals.

The second category/goal of this experiment has to do with the states chosen for this analysis. These states are Texas, Utah, Pennsylvania, and New York. These states are

significant, and each tells us something slightly different. Texas is a "Red" state without protections for LGBT+ individuals in the workplace. Utah is a "Red" state with some protections for LGBT+ individuals in the workplace. Pennsylvania is a "Blue" state without protections for LGBT+ individuals in the workplace. New York is a "Blue" state with protections for LGBT+ individuals in the workplace. This provides us with two differences, one being whether a state's political climate affects the hiring of people who use pronouns on their resumes and whether LGBT+ protections affect the hiring of people with pronouns on their resumes. Differentiating where the effect is coming from and whether the current protections can work, even in "Red" states, is vital for the analysis.

The final category of this analysis looks into the different industries to which I am sending applications. These industries include Managerial Retail, Financial Managers, Food Service Managers, Accountants and Auditors, and Computer Systems Analysts. These industries are essential because, based on the census, they have a nearly 50% female workforce. This lets us look into industries that are close to having equal levels of women and men. This is important for two analyses. The first is whether the proportion of women in the industry affects the hiring rate of individuals with pronouns and what pronouns are more or less impacted by these effects. The second is whether the pronouns matter and whether only the femininity or masculinity of a name matters. Finally, I can test to see if gender-neutral pronouns are more accepted in more evenly split industries.

I can create the results table by taking the information from the assigned/created email address and phone number/voicemail. After this, we want to try and contextualize the results from these categories to see where these effects are significant. From here, I will use these results to determine whether existing protections for LGBT+ individuals protect either LGBT+ individuals in these industries or those who adequately put their pronouns on their resumes. I will also be able to determine whether specific industries may need more stringent protections or audits for these protections. Should this result in inadequate protections, specific possible policy recommendations will be made based on these results.

#### 2 Literature Review

There are two significant groups of literature that this paper looks into combining. The first of which is the evidence of discrimination towards LGBT+ individuals and the impact of any LGBT+ protective workplace laws. The second is the literature on the usage of resume audit studies to access information about discrimination and hiring/call-back processes by employers. The final is the legal protection of these individuals.

Discrimination against LGBT+ individuals in the workplace has been well-known and documented over the last 30 years. The early years of this research used similar data sets as the General Social Survey was one of the only surveys that identified LGBT+ individuals. One of the first papers that look at this using the 1989-1991 data is "The Wage Effects Of Sexual Orientation Discrimination" (Badgett, 1995), which was one of the first papers looking into this subject. They find that gay and bisexual men earn at least 11% less income than their heterosexual counterparts and find no difference statistically for lesbian and bisexual women. This is then expanded using the 1989-1996 data in "The Earnings Effects of Sexual Orientation" (Black et al., 2003), showing gay and bisexual men earn 14-16% less, while lesbian women earned 20-34% higher. This is then expanded once again using that same data with "The Nexus of Sexual Orientation and Gender in the Determination of Earnings" (Blandford, 2003), which, despite using the same data, could show gay and bisexual men earned 30-32% less while lesbian and bisexual women earned 17-23% more. They were able to expand this with further analysis of marital status. The most significant issue with these is that transgender research and information are challenging to find due to the tiny population of individuals who identify this way. One of the first papers to look at these individuals is "Bias in the Workplace: Consistent Evidence of Sexual Orientation and Gender Identity Discrimination 1998-2008" (Badgett et al., 2009), which uses surveys from 1996-2006 to look at reported discrimination towards transgender persons. This showed that over 13% of individuals experienced discrimination by being fired, and at least 13% experienced being denied employment. They also showed that these surveys exhibited a pattern of poverty-level wages and high unemployment rates for these individuals. Since then, the quality of data for LGBT+ individuals has improved, and studies have been coming out more frequently, led mainly by the ability to identify LGBT+ individuals in significant studies such as the American Community Surveys and the National Health Interview Surveys. The recent paper "LGBTQ+ Economics" (Badgett et al., 2021) looks into the specifics of these rates from more modern studies and data. They showed that even though the data was limited, it has repeatedly been found that transgender individuals experienced lower levels of income and employment. A recent paper about the covid-19 impact on LGBT+ individuals, "Employment Loss as a Result of COVID-19: a Nationwide Survey at the Onset of COVID-19 in US LGBTQ+ Populations" (Martino et al., 2021) showed that between 13% and 31% of non-binary people were unemployed due to covid-19. A very recent paper titled "Understanding Labor Market Discrimination Against Transgender People: Evidence from a Double List Experiment and a Survey" (Aksoy et al., 2022) conducted an experiment to look into biased transgender attitudes in hiring. They were able to find that anti-transgender sentiment was significantly under-reported, comfort with a transgender manager and support for non-discrimination protections were over 70%, and support was much higher among women, sexual minorities, and democrats. This could imply that political bias and industries that contain more significant percentages of women could influence the results of this project.

Now we want to see the impact of laws that provide protections for LGBT+ individual and their efficacy. Before sexual orientation laws were prevalent, "Do Gay Rights Laws Matter: An Empirical Assessment" (Rubenstein, 2002) looked into whether state employment nondiscrimination acts (ENDAs) protect these individuals mattered in states that had passed some form of protection by looking at complaints filings. They show that enacted laws are similar to that for other minorities and women and that where there are gay rights laws, there is a per-capita increase in sexual orientation discrimination claims. Another paper that aims to look at how LGBT+ laws impact individuals in different states was "Not All Laws are Created Equal: Legal Differences in State Non-Discrimination Laws and the Impact of

LGBT Employment Protections" (Burn, 2018). When assuming all ENDAs act the same way, the wages of gay and bisexual men increased by 2.7%, while lesbian and bisexual women's wages decreased by 1.7%, and their hours worked decreased by 0.7 hours. They can show that the strength of the laws affects the wages of gay and bisexual men but does not have differential effects for lesbian and bisexual women. For gay and bisexual men, it was found that stronger laws had more significant wage increases and employment increases. It also found that implementing an ENDA in a city caused lesbian and bisexual women to have a 1.7% decrease in employment. Unfortunately, due to the size of transgender and non-binary populations, research in this vein of these populations is limited.

Resume audit studies have been a popular method to look into the discrimination that occurs from an employer reading a resume since "Are Emily and Greg More Employable than Lakisha and Jamal? A Field Experiment on Labor Market Discrimination" (Bertrand and Mullainathan, 2004) was published. Using a four-resume strategy with two high and two low-level resumes and two "black" and two "white" resumes, they found that resumes with "black" names received fewer callbacks from applications than applications with "white" names, and this gap was more substantial with perceived higher level resumes.

Since then, a number of papers have first tried to fill in any existing levels of discrimination not based on race, sex, or sexual orientation. The first paper, "The Value of Post-secondary Credentials in the Labor Market: An Experimental Study" (Deming et al., 2016) shows that degrees from online for-profit colleges have a considerably lower callback rate when compared to a non-selective public institution. The next paper, "College major, internship experience, and employment opportunities: Estimates from a résumé audit" (Nunley et al., 2016), showed that job seekers with internship experience received 14% more callbacks and were more remarkable for non-business majors. It also indicates that a college major does not have an impact on the industry for more than three to four years after graduation. Then, the paper "Determinants of Callbacks to Job Applications: An Audit Study" (Farber et al., 2016) found the duration of the unemployment spell did not affect callback rates, younger

workers had higher rates of callbacks, and that workers who held a lower level temporary job had significantly lower callback rates to a worker who did not hold a job. There is then a paper, "Experimental Research on Labor Market Discrimination" (Neumark, 2018), that attempts to take the data and findings from a multitude of resume audit studies to see how these effects have happened over time and on average. One interesting finding is that despite non-experimental evidence that shows that discrimination against women occurs in the hiring process, they find that in some industries, women are discriminated against, and men are discriminated against in others that replicated sex segregation for jobs. A paper that takes a different direction and idea towards the standard resume audit study is "Understanding Algorithmic Bias in Job Review Systems" (Zhang and Kuhn, 2022). This paper looks at the way websites recommend jobs to people based on the information they submit. By using the difference of gender (male vs. female), they find two important things. The first is that while many jobs recommended to both candidates overlap, jobs that differ and were recommended to women had posted wages of 1.9 percent lower. The second finding was that the type of work and work environments recommended followed patterns of stereotypes towards individuals of those genders.

Several papers over time have looked into the specific effects on LGBT+ people through resumes. One of the earliest papers was a resume audit study that attempted to study one of these groups, "Sexual Orientation Discrimination in Hiring" (Weichselbaumer, 2003). This paper was conducted in Austria. It used a resume audit study to compare masculine and feminine women to their lesbian counterparts using masculine and feminine resume organization and hobbies, managerial activity in a gay organization, and a picture. Another paper titled "Antecedents and Potential Moderators of the Relationship Between Attitudes and Hiring Discrimination on the Basis of Sexual Orientation" (Horvath and Ryan, 2003) took a different approach by instead asking individuals to rate a large number of resumes of gay and lesbian applicants. While lesbian individuals had higher-rated resumes than their heterosexual counterparts, the opposite effect was seen when comparing gay men to heterosexual

men. The results for gay men are further examined in "Pride and Prejudice: Employment Discrimination against Openly Gay Men in the United States" (Tilcsik, 2011). This paper looks into openly gay men in the US through a resume audit study by listing work at a gay organization on one resume, while listing work at a left-leaning organization on the other to attempt to identify bias toward openly gay men in seven states. They find that discrimination occurred in some states that were based on whether anti-discrimination laws existed and the attitudes of the area. They also found that jobs that were more stereo-typically male discriminated more significantly. The paper "Discrimination against Queer Women in the U.S. Workforce: A Résumé Audit Study" (Mishel, 2016) looked into the more broad group of queer women who could not be identified as a specific members of the LGBT+ community. This was done in a similar vein using four states to see if discrimination differed based on LGBT+ protections. They found that significant discrimination occurred and that discrimination did not seem to differ based on the protections in place for these individuals.

Two more major, recent papers have been published in the last few years that are very close in vein to this proposal. The first is one of the only resume audit studies which attempted to look into the discrimination against transgender people and was titled "Hiring Discrimination Against Transgender People: Evidence from a Field Experiment" (Granberg et al., 2020). This study was conducted in Sweden with low-skill jobs, where more information is required to apply to a job. In this vein, they used documents that indicated a name change from a name that indicated a switch from male to female or from female to male, whereas the other resume indicated a name change that took the place of similarly gendered names. This takes advantage of the fact that first name changes in Sweden are widespread, so employers are much less likely to act upon the fact that the individual underwent a name change. Even though they found that the rate of callbacks was lower for transgender individuals, they were unable to prove these results statistically. The following major paper, "Systemic Discrimination Among Large U.S. Employers" (Kline et al., 2022), is the first to use and test any form of pronouns on resumes. Doing a massive audit study using

over 83,000 applications, they applied to the top 108 largest U.S. employers, where they sent four pairs of resumes to each opening with 500 unique names. Resumes differed on a large number of random differences, including race (black vs. white), gender of the name, the existence of gender-neutral they/them pronouns, the existence of an LGBT+ organization, and an implied age between 22 and 58. Even more differences were included, along with what degrees the individual had obtained and the work history. They overall find that both pronoun usage, the existence of an LGBT+ organization, and gendered individuals do not have statistical evidence of discrimination. In contrast, "black" names have a 2.1 percentage point lower contact rate. Though this research is essential, there are a few problems to note with this project which my project will contribute towards. The first is the significant amount of variables that are randomized. This could lead to two groups having opposite effects that have different pointing directions of discrimination, such as how the literature generally finds that lesbian women earn more than their heterosexual counterparts, but that could hold the opposite for black lesbian women. Another issue is that only 5% of resumes contained pronouns, 5% had gender-neutral pronouns, and 10% had an LGBT+ organization. The only results they were able to find statistically significant were using differences where 50% of their resumes were randomly assigned, indicating their sample sizes may not have been large enough for their specific industries/experiments. The next issue is that sending eight resumes to a single job opening makes it possible to be detected as running an experiment and could have caused bias in the results if they were found out. The final issue is with which industries they applied to. With the rise of AI, some companies use these systems to sort their resumes for them and call those individuals back. While this may not affect the labor market as a whole, the largest companies in the U.S. are considerably more likely to use these systems to sort through resumes. My research aims to cover places of business where individuals are much more likely to view the resumes and applications individually and are focused on the primary difference of the existence of pronouns on resumes.

### 3 Method

The primary goal of this paper is to answer the question: How does the existence and content of a person's pronouns affect the rate by which a company asks for more information or requests an interview when compared to someone who omits their pronouns? The most common pronoun sets used include He/Him, She/Her, and They/Them, so this experiment will use and focus on these. With this question in mind, steps must be included to attempt to sidestep any issues or secondary effects and make the work more applicable to real people. First, we need to define a callback in the context of this paper. I want a callback to be defined (similarly to previous literature) as an email or a voicemail left to an application, either asking for a phone interview, an in-person interview, or a request for more information. Responses will be coded as a 1 for callbacks, but the method/type of contact will also be recorded, while a 0 will be recorded if no method is contacted or a denial is received. Denials will also be explicitly recorded. The number of days to receive a callback or denial response will also be recorded.

Another thing to note is that there are a few categories of names that could signal the perceived gender of the individual. In general, names can either be considered masculine, feminine, or androgynous. While we are interested in pronouns in conjunction with the individual's names, we want to be careful not to make unreasonable pairs. For example, most transgender people put their preferred name on their resume as a way to not out themselves. This means that a male transgender individual is very unlikely to have a non-masculine name on their resume. This is different for individuals with non-binary pronouns. Since the non-binary umbrella involves persons who may be willing to keep their names given at birth, have a constantly changing gender identity and use multiple differently gendered names (such as genderfluid), or may have changed their name to a more androgynous name, we cannot restrict these pronouns. This leaves us with five total groupings of perceived genders by name compared to pronouns. We have He/Him with a masculine name, She/Her with a feminine name, They/Them with a feminine

name, and They/Them with an androgynous name. One of the five will be randomly chosen for each job listing and paired with a resume without pronouns and another name with the name perceived gender indication (masculine, feminine, or androgynous). We also want to make sure racial bias does not play a part in this, so we want to use "white" sounding names.

The proposed first names are listed below:

Proposed First	Masculine	Androgynous	Feminine
Names			
He/Him	Jake, Connor,	X	X
	Tanner, Luke,		
	Dustin		
They/Them	Same as above	Taylor, River,	Same as below
		Jessie,	
		Cameron,	
		Dakota	
She/Her	X	X	Molly, Abigail,
			Claire, Emily,
			Katie

The masculine and feminine names have been chosen using three sets of sites. The first is (Name Census, 2023), which was used to find white male/female last names. Next, I found white male/female first names to accompany them. The final two are(FlowingData, 2023) and (The Bump, 2023), which were used to find popular androgynous names. The first names were created using the most common male/female names according to the data provided by these sites. The proposed last names were chosen based on the most common last names, where over 80% of individuals with that last name were white. The last names that have been chosen are Miller, Baker, Murphy, Cook, and Peterson.

Gmails will be created based on the names of the individuals developed, adding two random numbers after their names. A total of 10 emails will be created as there are five subsets of groupings and five non-pronouned matches to these. They will then be linked using the job that was applied to for that response of whether they were the pronouned or non-pronouned resume. A total of 8 phone numbers/voice mails will also be created for the four states that will be used with area codes near their fictional residence.

Two fictional resumes have been created that will be used to apply to a single job listing. The jobs will be located using several websites, including CareerBuilder, Craigslist, Indeed, and ZipRecruiter. Images have a partial bias towards suggestive gender, so images will not be provided, and websites and jobs that ask for these will not be included. Should a website ask for pronouns, the pronouns of both applicants will be left blank for two reasons. First, this paper can examine the impact of having the pronouns listed on the resume. The second is due to the possibility of implementing bias at a stage before a hiring manager looks at a resume. The manager could sort the resume based on the individual's pronouns alone, possibly making the early assumption that someone using pronouns is left-leaning. Any websites that require pronouns for both individuals would not be used either, as this would defeat much of the purpose of this analysis if both individuals' pronouns were known. Some websites use either an easy-apply function or an urgent need option. These should imply that a worker is considerably more likely to receive a callback, so jobs with these types will be recorded. Jobs with titles of confidential (meaning the hiring company is secret) and whether a hiring firm, rather than a specific job, is being applied to will also be specified.

Specific characteristics and goals are needed for the resumes to make them as applicable as possible to real job-seeking individuals. Therefore, the resumes have been created to look similar to that of individuals who recently graduated with an undergraduate degree. (This is because individuals who are recent graduates with a college-level degree are more likely to use pronouns regularly when introducing themselves.) The location of the undergraduate degree will be that of one of the top two state colleges in that state, according to U.S. News 2022-2023 rankings (U.S. News and World Report, 2022). New York will use the schools of Stony Brook University and Birmingham University. Pennsylvania will use the University of Pittsburgh and Pennsylvania State University. Utah will use the University

of Utah and Utah State University. Texas will use the University of Texas at Austin and Texas A&M University. These schools are of reasonably similar rank between 35 and 105, mostly clustering around the 60s and 70s, besides Utah State University, which is down near 250. However, unfortunately, Utah only has a few universities in its state. Addresses will be created in areas close to these schools implying that the students lived nearby off campus. Both resumes will have experience working as a secretary or treasurer for a liberal club on campus under their job criteria. This is in line with the literature to remove the bias of the individual with pronouns being liberal, and listing it under work experience minimizes the individual being identified as radical.

The applications will be sent to target four specific states. These states include New York, Pennsylvania, Utah, and Texas. These states were chosen for specific reasons relating to LGBT+ laws and political bias. Based on the most recent 2022 senate races and 2020 presidential election, New York and Pennsylvania are considered Blue states that elected a Democratic senator, while Utah and Texas are both Red states that elected a Republican senator. Along these lines, New York and Utah have legal protections for LGBT+ individuals (Utah being the only Red state that does). In contrast, Pennsylvania and Texas do not have explicit legal protections protecting LGBT+ individuals (Movement Advancement Project., 2023). This method is imperfect, as many consider Pennsylvania and Utah more "Purple" states that swing back and forth. Along with this, Pennsylvania's civil rights commission believes and courts generally rule that protections for sexual discrimination also overlap with sexual orientation or gender identity. Another issue is that most job applications posted online in locations for job sites will be in major cities, which tend to lean more democratic. This cannot be helped, and to attempt to look more in-depth towards whether the city matters, the 2022 House of Representatives election results for that city's candidate/district will also be recorded based on the company's listed address. Should the company not list its address, the results of all elections in that city will be averaged into a category of Republican and Democratic vote share. Based on the census definition of urban, any city with over 50,000 people will be considered urban.

Four to five categories of jobs will be applied to in this analysis. These include marketing and sales managers, financial managers, food service managers, accountants and auditors, and computer systems analysts. These categories were chosen because of the general makeup of their positions. According to the census, these jobs have a nearly 50% ratio of women in their workforce (between 40.1% - 61.7%). Since the census only collects sex based on the binary options of male and female, this is the closest we can hope for equal treatment across the different pronoun categories. This also allows us to see how industries may bias these resumes based on their average industry makeup. These also represent industries where an undergraduate degree is recommended for application to the job. The majors of these individuals will be created based on the position they are applying for, such as marketing and sales individuals who will have a marketing degree from their assigned university.

A power test will be conducted in New Jersey to find the percentage of callbacks for each group to obtain a necessary sample size for significance and test using the developed mechanisms. New Jersey was chosen as it is a "Blue" state with LGBT+ protections meaning that the least deviation for all states should exist in a state such as this. Therefore, getting the results of this will help obtain a good minimum number for all states of applications to be sent out. Several jobs will also need to be dropped due to the existence of spam offers. Some jobs, after application, will send an email quickly asking for credit card information or having a suspicious link. Gmail can identify these with the message "Warning: This email contains content that's typically used in spam messages." In previous literature, these observations were dropped and only accounted for about 3% of all jobs. Jobs may also be deleted before time is available to send the second application, so the observations will once again be dropped. This similarly accounts for about 3% of applications.

These specifications should assist me in answering the question of whether the presence of pronouns on resumes affects the rate of callbacks. After the power test, individual items will be tweaked and edited, including the predicted number of resumes to be sent out. Editions

will also be made to the websites that will be used to apply in the case any require more information than the others and the industries that will be applied in case specific industries want more information or require more.

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