Disclosing Invisible Attributes Leads to Discrimination*

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January 30, 2026

*Earlier versions of this paper were presented at the 81st Annual Midwest Political Science Association Conference (Chicago, April 4–7, 2024) and in the Japanese Politics Online Seminar (October 10, 2024). This paper is based on Kai's independent research and honors thesis projects at Dartmouth College. We appreciate useful comments from Michael Herron, Jean Hong, Alex Kostov, Kazuko Suzuki, Phillip Lipscy, and Elsa Voytas. The authors declare no competing interests.

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Abstract

Despite extensive research on discrimination, little is known about how disclosing invisible attributes, such as religion, socio-economic class, and sexual orientation, affects others' discriminatory attitudes. This study examines the case of *Zainichi* Koreans in Japan, descendants of Korean migrants who remained in Japan after World War II under special permanent residency status. *Zainichi* Koreans face a dilemma: whether to disclose their ethnic identity by using a Korean name (*honmyō*) or attempt to conceal it with a Japanese pseudonym (*tsūmei*). Using two conjoint experiments with hypothetical job applicants, we find strong discriminatory attitudes against *Zainichi* Koreans based solely on their names. However, these biases are significantly reduced among individuals with frequent social contact with *Zainichi* Koreans. Our findings underscore the need to further move beyond visible attributes in research on discrimination and social contact. More broadly, this study provides a framework for examining bias against invisible identities in diverse global contexts.

Keywords: discrimination, Japan, *Zainichi*, contact theory, conjoint analysis
Word Count: 9,118

1 Introduction

The disclosure of "invisible" attributes—the attributes not immediately recognizable based on appearances, such as religion, socio-economic class, sexual orientation, and certain types of disabilities and health conditions—has garnered increasing attention across many spheres of society (e.g., Clair, Beatty and Maclean, 2005, Ragins, Singh and Cornwell, 2007, Santuzzi et al., 2014).[1] In various selection processes, including voters choosing candidates, universities evaluating applicants, and companies hiring job seekers, revealing such attributes can expose individuals to discrimination. As a result, many individuals conceal their identities to protect themselves from bias and prejudice.[2] These societal pressures and latent forms of discrimination, which compel individuals to remain silent or prevent them from openly claiming essential aspects of their identities, raise normative concerns about equity and personal autonomy.

Understanding how these less visible aspects of identity shape decisions and outcomes is essential for fostering equity and inclusion in diverse societal contexts. Nevertheless, research on discrimination rooted in *invisible* attributes remains relatively limited compared to the extensive literature on discrimination based on *visible* attributes, such as race, gender, age, and other types of disabilities. This gap in the literature is primarily due to several methodological challenges.

First, by definition, invisible identities leave no observable traces in conventional datasets. As a result, researchers cannot directly examine how the disclosure or concealment of such identities affects evaluations or outcomes. Moreover, standard field experiments, such as audit studies (e.g., Bertrand and Mullainathan, 2004, Farber, Silverman and von Wachter, 2016, Gaddis, 2018), offer limited ecological validity in this context, since invisible attributes are rarely, if ever, recorded in real-world settings. Other field experiments rely on salient visual or symbolic cues (e.g., religious attire or phenotypical differences) to signal identity (Choi, Poertner and Sambanis, 2019, 2023), but such designs make it difficult to isolate the effects of concealment. While suppressing a visible cue, such as refraining from wearing religious clothing, can represent a form of passing, research on invisible identities requires cases where individuals cannot be externally distinguished from those without the identity

in question.

Second, conducting interviews presents additional difficulties because researchers cannot readily find interviewees who conceal their invisible attributes. Inevitably, interviews are limited to those who choose to reveal these attributes, creating a classic selection bias problem. While researchers may find individuals with stigmatized identities in some cases, eliciting honest opinions remains an immense challenge.

Finally, several existing studies use surveys to gather evidence of discrimination against candidates with invisible identities in political contexts (e.g., Loewen and Rheault, 2021, Magni and Reynolds, 2022, Reher, 2025). However, these studies often rely on making invisible identities visible, limiting their ability to identify the effects of attempting to conceal an identity on discrimination. For instance, Reher (2025) presents respondents with hypothetical political candidates who are paralyzed, deaf, or blind. These disabilities are outwardly visible and unlikely to be effectively concealed. Other studies focus on attributes that can more easily be concealed (Loewen and Rheault, 2021, Magni and Reynolds, 2022). However, in these studies, respondents are often explicitly provided with information on candidates' identities, such as sexual orientation, disability, religion, and health conditions (e.g., HIV). While these identities may be likely to be disclosed in political candidate selection processes, they are not available in many real-life contexts, suggesting the need for research that more closely examines the effects of concealing and disclosing invisible identities.

We address these challenges by focusing on a unique case that enables causal inference about the effects of disclosing invisible attributes in selection processes: the case of *Zainichi* Koreans in Japan. These are ethnic Koreans whose ancestors migrated to Japan during colonial rule over Korea and were granted "special permanent resident" status after the Second World War (Lie, 2008). Due to their long-standing history in Japan, *Zainichi* Koreans are typically indistinguishable from the ethnic Japanese population, rendering their ethnic identities invisible. However, when applying for employment, housing, or other opportunities, they often face the dilemma of whether to disclose their ethnic identity by using a Korean name (*honmyō*) or to conceal it as Japanese by adopting a Japanese alias (*tsūmei*). For the most part, these names are the only way to identify an individual's *Zainichi* Korean identity, making the decision about which name to use important to the everyday experiences of

Zainichi Koreans.

The need for *Zainichi* Koreans to actively *choose* whether to conceal or reveal their ethnicity distinguishes their experience from that of other outgroups studied in the context of discrimination. While individuals in some groups may voluntarily disclose an otherwise invisible identity, *Zainichi* Koreans must use one of the aforementioned names in their everyday lives, making concealment a conscious and unavoidable decision.

Using two conjoint survey experiments (Study 1 and Study 2) on hypothetical hiring processes, we examine the case of *Zainichi* Koreans to determine whether they face discrimination solely based on the names they choose to use. Conjoint analysis offers several advantages for our inquiry. First, it helps mitigate social desirability bias, which respondents may exhibit when answering questions on discrimination (Horiuchi, Markovich and Yamamoto, 2022). Second, it allows researchers to present hypothetical scenarios that remain "true-to-life," thereby enhancing the external validity of the results.

Study 1, based on a national sample of Japanese respondents, finds that *Zainichi* Koreans, on average, face discrimination solely due to their names. However, subgroup analysis reveals that respondents in regions with higher *Zainichi* Korean populations exhibit weaker discriminatory preferences. Building on these findings, Study 2 focuses on Japanese citizens in the Kansai region, where *Zainichi* Koreans are most concentrated, and includes various measures of intergroup social contact. The results show that discriminatory attitudes against *Zainichi* Korean applicants are attenuated by the amount of contact respondents have with *Zainichi* Koreans.

Our contributions are twofold. First, we provide clear, externally valid evidence of discriminatory attitudes based on the invisible attributes of *Zainichi* Koreans, who have long been subject to discrimination in Japan (e.g., Chatani, 2023, Grimaldi, 2022, Kim, 2011*a*, Lie, 2008, Nammo, 2022). Second, this research provides empirical evidence supporting Allport's (1954) contact hypothesis, which posits that intergroup contact under certain conditions can reduce prejudice. This finding offers a silver lining, suggesting that fostering meaningful group interactions can help mitigate discriminatory attitudes. These findings highlight the importance of social science research extending beyond visible traits to examine the intricate dynamics of hidden identities. Discrimination based on invisible attributes is a widespread

global issue that cuts across borders and social groups, requiring a persistent and multidimensional approach. Therefore, we underscore the importance of extending this research beyond the case of *Zainichi* Koreans in Japan. We also discuss the broader implications of these findings, emphasizing their relevance to policy and practice in areas such as hiring, education, and community building.

2 Historical Background

In 1910, Japan annexed Korea, initiating a period of colonial rule during which Koreans became imperial subjects. This period also marked the first wave of mass migration from Korea to the Japanese archipelago, driven primarily by economic push-and-pull factors (Lie, 2009, Weiner, 2013). Japan's rapid industrialization during World War I heightened the demand for cheap labor, often under harsh working conditions, leading to increased Korean migration to Japan. This included cases of forced migration through labor conscription (Kashani, 2006). Migration flows intensified throughout the early twentieth century as wartime demands led Japan to coerce Koreans into relocating for labor (Tsutsui, 2018).

After its defeat in World War II, Japan relinquished its claims to imperial territories, including the Korean Peninsula. While many Koreans were repatriated, economic and logistical challenges compelled some to remain in Japan and establish roots (Ryang and Lie, 2009). Their descendants are known as *Zainichi* Koreans.

Between 1945 and 1952, colonial subjects in Japan who did not repatriate, such as Koreans and Taiwanese, were systematically stripped of their rights through a series of policies. They lost rights such as voting and access to social welfare, and ultimately their Japanese citizenship (Dunlop, 2011). In a sweeping reclassification, all former colonial subjects residing in Japan were officially deemed "foreigners."

To this day, most *Zainichi* Koreans—the descendants of Koreans who remained in Japan after the war—do not hold Japanese citizenship. Instead, they are designated individuals with "special permanent residency status," established by the Japanese government in 1991. This status is granted to individuals who lost their Japanese nationality under the Treaty of Peace with Japan and to their descendants (Japan, 1991). Although they are protected

from deportation except in extreme cases, they remain barred from certain rights, such as the right to vote and eligibility for public service positions (Lie, 2008). Additionally, the lingering effects of discriminatory policies often hinder *Zainichi* Koreans' access to welfare programs, including the national pension, national healthcare, and public housing (Tsutsui, 2018).

Despite the presence of *Zainichi* Koreans and other minority groups, such as the *Ainu* and *Burakumin*, these groups are largely overlooked in discussions of Japan's national identity (Howell, 1994, Shimahara, 1984, Siddle, 2012). Modern conceptions of the Japanese nation-state emphasize a singular culture, people, and identity. This ideology has been reinforced by controversial statements from Japanese government officials, who described Japan as "homogeneous" or having "one race" in several incidents (Burgess, 1986, Yamaguchi, 2020). Scholars such as Tai (2004) argue that this "ideology of monoethnicity" discourages *Zainichi* Koreans from openly expressing their ethnic identity. Instead, they are implicitly pressured to assimilate and blend in with the majority ethnic Japanese population.

Indeed, the modern generation of *Zainichi* Koreans is largely assimilated into Japanese society. Comprising primarily second and third-generation individuals, they speak Japanese fluently and are well-versed in Japanese culture and social norms. According to Shin (2010), over 90% of *Zainichi* Koreans neither speak Korean nor have visited Korea. They are also distinct from a group of Koreans who immigrated to Japan in the late 20th century, often referred to as "newcomers" (Nozaki, Inokuchi and Kim, 2006).

While some Korean students receive ethnic education at *Chōsen Gakkō*, schools for Korean communities, most *Zainichi* Korean children attend Japanese schools. This choice is often driven by fears of hate and violence, as well as the prohibitive costs of attending ethnic schools (Okamura and Saito, 2022). Additionally, many *Zainichi* adults marry ethnically Japanese individuals as part of efforts to assimilate (Ryang and Lie, 2009, p. 10). As a result, most people are unable to distinguish *Zainichi* Koreans from ethnic Japanese citizens, rendering their Korean ethnicity invisible.

3 Hypotheses

Although this invisibility offers *Zainichi* Koreans some degree of protection, anecdotal evidence indicates that their identity remains stigmatized, leaving them vulnerable to various forms of discrimination. Throughout their history in Japan, *Zainichi* Koreans have endured prejudice that manifests in both overt incidents and subtle microaggressions.

In this section, we provide the background information that informs our hypotheses. Specifically, we explore the nature of discrimination against *Zainichi* Koreans, the dynamics of discrimination tied to invisible identities, and the potentially mitigating effects of intergroup social contact.

3.1 Discrimination against *Zainichi* Koreans

Hate speech and hate crimes against *Zainichi* Koreans provide stark examples of anti-*Zainichi* bias in Japan. The country has a long history of violence and expressions of hate directed at Koreans. Notably, in 1923, Koreans in Japan were scapegoated for fires resulting from the Great Kanto Earthquake and falsely accused of various crimes, leading to the massacre of thousands of Koreans across Japan (Ryang, 2003). Incidents have continued in the 20th century, including physical assault of *Zainichi* Korean students, arson in Korean ethnic enclaves, graffiti inciting violence, and online hate speech. (Asahi Shinbun, 2022, Chatani, 2023, Nammo, 2022, Ryang and Lie, 2009, Sato, 2022).

Furthermore, far-right nationalist groups, such as the *Zaitokukai* (Citizen's Association Against *Zainichi* Privilege) and *Shuken Kaifuku o Mezasu Kai* (Group That Seeks Recovery of Sovereignty), have gained prominence in recent years, spreading hateful messages and intimidating *Zainichi* Korean residents through street demonstrations, online platforms, and social media (Robillard-Martel and Laurent, 2019, Sakamoto, 2011). In one notable incident, *Zaitokukai* supporters staged a protest outside a Korean elementary school in Kyoto, which the district court later ruled constituted "racial discrimination" (Fackler, 2013).

While some scholars suggest that overt and visible instances of anti-Zainichi hate and discrimination have gradually decreased (Kim, 2011*a*), others argue that many *Zainichi* Koreans continue to report experiencing subtle forms of economic and social discrimination,

including biases in hiring, promotions, marriage, and interpersonal relationships (Ryang and Lie, 2009). In particular, *Zainichi* Koreans continue to face disparities in the labor market, including higher unemployment rates, lower representation in professional occupations, and a greater concentration in blue-collar jobs, reflecting persistent socio-economic inequalities between Japanese citizens and *Zainichi* Koreans (Kim, 2011*b*).

The Japanese government has also been criticized for policy practices deemed discriminatory toward *Zainichi* Koreans. *Zainichi* Koreans' official status as "special permanent residents" has excluded them from voting in Japanese elections, running for public office, and holding public service positions in many prefectures (Dunlop, 2011). Until 1972, ethnic Koreans were entirely barred from public sector employment (Lie, 2009, p. 17).

Another prominent example of the government's discriminatory practices against *Zainichi* Koreans is their treatment of Korean schools supported by the *Chongryōn*, an organization affiliated with North Korea. In 2003, families and teachers from *Chōsen Gakko* (Korean ethnic schools) protested a policy requiring their students to take an additional preliminary test, beyond the regular entrance exam, to qualify for admission to national universities (Arita, 2003). In 2013, the Japanese Ministry of Education, Culture, Sports, Science and Technology excluded these schools from a tuition waiver program to extend free compulsory education through high school (Okamura and Saito, 2022).

Despite these cases, proving the existence of discrimination against *Zainichi* Koreans remains challenging, particularly when relying on observational data. In Kim's (2011*a*), a qualitative study on *Zainichi* Korean experiences of discrimination, one interviewee highlighted the difficulty of attributing employment inequalities to discriminatory practices:

> "I think Japanese companies may hire a Japanese candidate if they need to hire only one out of two candidates who have similar qualifications, except that one is Japanese and the other is Korean. But in this case[,] it's impossible to tell the existence of discrimination because no obvious evidence is available... Nobody knows the real reason why the Korean candidate was not hired. It's very difficult to tell whether the decision was made on the basis of qualification or of discrimination" (p. 296).

The sentiment expressed in this quote underscores the inherent challenge of using observational data to identify discrimination based on invisible attributes, such as Korean ethnic identity. This limitation highlights how our experimental research helps bridge this gap by employing a conjoint design to isolate discrimination rooted in ethnic identity while holding other relevant attributes constant between two hypothetical candidates.

Specifically, we test the following hypothesis:

Hypothesis 1a: *When respondents are asked to compare a Japanese applicant and a* Zainichi *Korean applicant (with a Korean name), they will choose the Japanese applicant for the job, controlling for other relevant attributes.*

3.2 *Zainichi* Koreans' Attempts to Conceal Their Ethnicity

Due to shared phenotypic characteristics and a multi-generational presence in Japan, *Zainichi* Koreans are virtually indistinguishable from Japanese people regarding appearance, language, and culture. This makes their minority status effectively "invisible." As a result, many *Zainichi* Koreans can engage in ethnic "passing," a practice in which they conceal their Korean heritage and blend in with the Japanese majority (Lie, 2008, p. 18-19).

The phenomenon of passing is not specific to *Zainichi* Koreans. It has been observed across various marginalized communities, including those discriminated against based on race, ethnicity, and sexual orientation. Members of these groups often engage in a "performance" by concealing aspects of their identity to be perceived as part of a majority or minority group (DeJordy, 2008, Leary, 1999). For instance, since the era of Jim Crow and continuing into the present day, Black and white biracial Americans have been noted to accentuate or downplay certain features of their appearance or cultural expressions to pass as either Black—to avoid stigmatization within their communities—or white, to evade discrimination. Similarly, gay and transgender individuals may choose to pass as straight or cisgender for comparable reasons (Kennedy, 2001, Khanna and Johnson, 2010).

It is critical to emphasize that passing or revealing is each person's deliberative *choice* after carefully weighing social contexts and potential consequences. As Clair, Beatty and Maclean (2005) note, invisible identities are "out of sight but not out of mind" because

individuals with such identities must continuously navigate how to present, or not present, stigmatized aspects of themselves.

The situation is similar for *Zainichi* Koreans. For most Japanese, it is almost impossible to tell whether an individual is a *Zainichi* Korean unless they know the individual uses a Korean name. However, because they can blend into Japanese society through visual, cultural, and social characteristics, many *Zainichi* Koreans adopt unofficial Japanese names called *tsūmei*, derived from the Chinese characters in their Korean names. External environments also significantly influenced how *Zainichi* Koreans have represented their names. During Japanese imperialism, the wartime policy enforced household registration laws that required Koreans to adopt Japanese names instead of their ethnic Korean ones, the process known as *sōshi kaimei* (Chapman, 2007). For *Zainichi* Koreans, choosing between *tsūmei* or an ethnically Korean name, known as *honmyō*, is profoundly personal and fraught with implications for their ethnic, national, and self-identity. Research highlights the profound connection between names and self-identity, deciding between a *tsūmei* and a *honmyō* a source of internal conflict for many *Zainichi* Koreans. Qualitative studies by Aoki (2012) and Fukuoka and Tsujiyama (2011) reveal diverse perspectives on this issue. Some *Zainichi* Koreans feel disconnected from their Korean ancestry and express greater comfort using a *tsūmei*. Others view using a Korean ethnic name as an empowering act of resistance against assimilation. In this way, asserting a visible marginalized identity, such as ethnicity, can carry significant political implications.

Notably, while these Japanese pseudonyms can help *Zainichi* Koreans conceal their ethnic identity, some Japanese people may still infer—albeit imperfectly—one's Korean ethnicity even if that person uses a *tsūmei*, as these names often contain hints toward Korean origin. For example, the *tsūmei* "Kaneda" includes the character "Kane," which is read as the common surname "Kim" in Korean.

While it is not clear how often this is the case, several cases exemplify the imperfect nature of Japanese people's ability to identify *Zainichi* Koreans, as well as Japanese people's discrimination against *Zainichi* Koreans solely based on their names. In 1970, a Japanese district court ruled that Hitachi, a multinational conglomerate, had discriminated against a *Zainichi* Korean applicant by rescinding his job offer upon discovering he had applied using

a Japanese name rather than his Korean name (Kim, 2011*a*, Tsutsui, 2018). Similarly, in 2005, the Japanese Supreme Court ruled that a *Zainichi* Korean woman was ineligible to take the exam required to become a public health center supervisor due to her nationality (Onishi, 2005). She had chosen not to adopt a Japanese *tsūmei* (alias) and identified herself by her Korean name. These cases underscore how ethnicity-based discrimination—*entirely tied to names*—continues to shape hiring practices in Japan.

Nevertheless, with the growing recognition of diversity, equity, and inclusion (DEI) in Japanese society (Newsweek's Common Ground Brand Studio, 2024, Okubo, 2023), *Zainichi* Koreans have been increasingly encouraged by instructors, acquaintances, and employers to use their ethnic names rather than conceal their identity (Aoki, 2012, Fukuoka and Tsujiyama, 2011, p. 95). For instance, in 1998, the Osaka Board of Education introduced a policy encouraging Korean students to adopt Korean names to strengthen their ethnic identity (Minorities at Risk Project, 2004). Some ethnic organizations have also launched "real-name" movements urging *Zainichi* Koreans to abandon *tsūmei* in favor of their *honmyō* (Lie, 2008, p. 111). Furthermore, national initiatives such as the 2016 Japan Revitalization Program explicitly promoted the participation of diverse groups, including women, persons with disabilities, and, notably for the present research, foreign workers (Ministry of Foreign Affairs of Japan, 2017). As Japanese companies increasingly emphasize workplace diversity (Takenaka, 2025), minority groups such as *Zainichi* Koreans may now face new incentives to disclose their ethnicity. These developments underscore the need to examine whether disclosing an ethnic name still exposes individuals to discrimination. Specifically, we test the following hypothesis:

Hypothesis 1b: *When respondents compare a Japanese applicant with a* Zainichi *Korean applicant using a Japanese name (tsūmei), they will prefer the Japanese applicant for the job, controlling for other relevant attributes.*

However, the penalty for using an ethnic Korean name is expected to be greater than that for using a Japanese name because Japanese respondents are less likely to identify *Zainichi* Korean applicants as "*Zainichi*" when they use a *tsūmei* compared. Thus, we also test the following hypothesis:

Hypothesis 2: *Respondents are more likely to choose a Japanese applicant for a job when comparing a Japanese applicant to a* Zainichi *Korean applicant with a Korean name than when comparing a Japanese applicant to a* Zainichi *Korean applicant with a Japanese name (tsūmei).*

To summarize Hypotheses 1a, 1b, and 2: we anticipate that Japanese candidates will be preferred over *Zainichi* Korean candidates, regardless of what name the *Zainichi* candidate uses. Furthermore, we hypothesize that this preference for the Japanese applicant will be greater if the *Zainichi* applicant uses a Korean name rather than a Japanese pseudonym (*honmyō*). In other words, as shown in Figure 1, ordered from highest to lowest, respondents' preferences will be: Japanese candidates, Zainichi candidates using a Japanese name (*tsūmei*), and *Zainichi* candidates using a Korean name (*honmyō*).

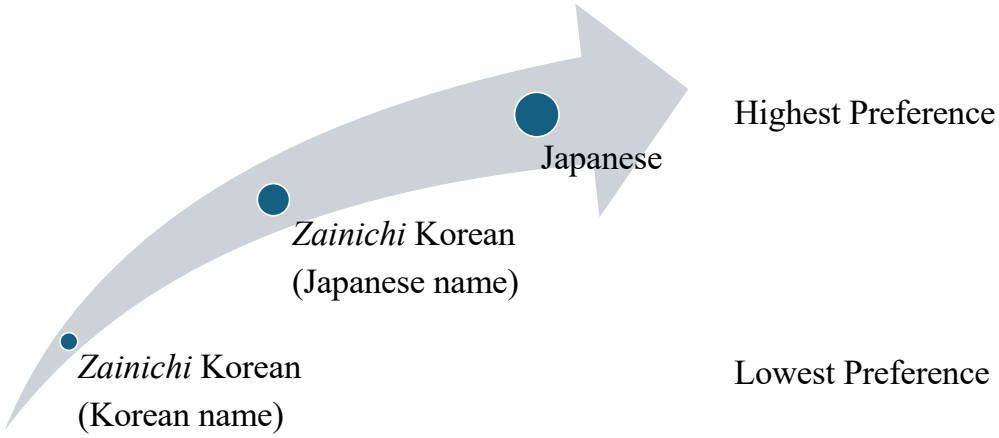

Figure 1: Expected preference order for hypothetical Japanese and *Zainichi* Korean applicants.

3.3 Effects conditional on intergroup contact

The intergroup contact hypothesisposits that intergroup social contact can reduce prejudice between groups. Extensive scholarship has sought to clarify the mechanisms through which intergroup contact reduces prejudice. For a more detailed review of the literature, see Section A of the Supplementary Materials. In a meta-analysis of the literature on intergroup contact theory, Pettigrew and Tropp (2008) provide evidence that several factors mediate the rela-

tionship between intergroup contact and prejudice, including the cultivation of empathy and the facilitation of intergroup learning. Dovidio, Gaertner and Kawakami (2003) argue that empathy not only fosters more positive perceptions of others but also promotes altruistic support for them. Similarly, Pettigrew (1998) suggests that intergroup learning enhances cultural understanding, encourages the recognition of outgroup members as individuals, and mitigates negative stereotypes.

Another key mechanism by which intergroup contact reduces prejudice is alleviating intergroup anxiety or perceptions of outgroups as threats. Intergroup anxiety has been strongly associated with negative attitudes toward outgroups, including discriminatory behavior (Stephan, 2014). However, Stephan and Stephan (1985) observe that such anxiety is often prevalent among individuals who have not yet interacted with outgroup members. Research indicates that those who do engage in intergroup interactions exhibit reduced anxiety. For instance, Horiuchi and Ono (2023) demonstrate that in Japan, individuals with greater social contact with foreigners are less likely to be influenced by media frames portraying foreign refugees as threats.

Building on these existing studies, which broadly support the validity of intergroup contact theory, we propose the following hypotheses about conditional effects.

Hypothesis 3a: *Respondents with low social contact are more likely to prefer a Japanese applicant over a* Zainichi *Korean applicant with a Korean name.*

Hypothesis 3b: *Respondents with low social contact are more likely to prefer a Japanese applicant over a* Zainichi *Korean applicant with a Japanese name.*

In other words, we assume that the effects outlined in Hypotheses 1a and 1b vary across respondents' levels of social contact. Note that these conditional effects cannot be interpreted as *causal* because social contact is not randomly assigned. For a discussion of the "causal sequence problem" in the context of social contact, see Section A of Supplementary Materials.

Moreover, we expect the attenuating effect of using *tsūmei* instead of *honmyō* to be weaker among respondents with frequent social contact with *Zainichi* Koreans. We anticipate that this may arise from several factors. Individuals with greater exposure to *Zainichi* Koreans may be more adept at recognizing *tsūmei*, leading them to evaluate *Zainichi* applicants

similarly regardless of whether they use a Korean name or a pseudonym. Alternatively, those with more frequent contact may hold fewer discriminatory attitudes toward *Zainichi* Koreans in general, resulting in uniformly positive evaluations of all applicants in our experiment. The combination of these two factors leads us to posit the following:

Hypothesis 3c: *The difference in the likelihood of preferring a Japanese applicant over a* Zainichi *Korean applicant with a Korean name, compared to a* Zainichi *Korean applicant with a Japanese name, is greater among respondents with low social contact.*

4 Research Design

We conducted two survey experiments on the PureSpectrum platform to test our hypotheses. Before data collection, we obtained IRB exemption approval from our institutions and pre-registered our hypotheses and research designs on the Open Science Framework (OSF). Preregistrations are available online at https://osf.io/z2uht/?view_only=0c696307be9a40c697edd41c5c8f2448 and https://osf.io/zhuqe/?view_only=81b397a210524cc3b1cb56f191d30684. We adhered to the American Political Science Association's Principles and Guidance for Human Subjects Research. We compensated respondents USD 2.00 for both Studies 1 and 2. The median completion time was 9 minutes for Study 1 and 7 minutes for Study 2. A complete replication package, including all computer scripts and anonymized data, are available online at https://doi.org/10.7910/DVN/59MTHA.

To assess potentially hidden discriminatory attitudes among respondents, we employed two conjoint experiments in which respondents compared hypothetical job applicants varying across several attributes. As both studies focused on examining discriminatory attitudes of Japanese citizens toward *Zainichi* Koreans, non-citizens were excluded via a screener question at the beginning of the surveys.

Data for Study 1 were collected from May 16 to May 17, 2023, while data for Study 2 were gathered from February 14 to February 23, 2024. Each survey yielded approximately 1,000 valid responses. Study 2 required oversampling respondents with greater social contact with *Zainichi* Koreans. To achieve this, the survey distribution for Study 2 targeted the Kansai (or Kinki) region of Japan, which includes prefectures with the highest concentrations of

Koreans in the country. An additional screener question excluded respondents outside the Kansai region from participating in the survey.

4.1 Conjoint Design

Social desirability bias (SDB) is particularly pronounced in survey research on discrimination, where respondents may be reluctant to disclose behaviors or attitudes deemed socially unacceptable—such as racism, xenophobia, antisemitism, or other forms of discrimination—when they are aware of the topic's socially sensitive nature (Krumpal, 2013, Tourangeau and Yan, 2007). Given the sensitive nature of discrimination against *Zainichi* Koreans, the risk that SDB will affect survey responses is substantial.

To address this challenge, we utilize a conjoint design, which minimizes the influence of SDB (Horiuchi, Markovich and Yamamoto, 2022). Specifically, respondents completed two sets of fully randomized conjoint tasks evaluating hypothetical job applicants with multiple attributes. In this question format, respondents cannot straightforwardly identify the socially sensitive attribute being tested, enabling them to rationalize their responses based on other varying attributes.

Numerous cases have highlighted discrimination against *Zainichi* Korean applicants in both the private and public sectors. Therefore, we asked each respondent to complete two sets of eight tasks, with the order of these sets randomized. The first set described an open position on a private company's research and development team, while the second focused on a public elementary school teaching position. These roles were selected to represent private- and public-sector jobs, as the average Japanese citizen is likely familiar with their content and responsibilities. Examining respondents' preferences across these two settings also allows us to deepen our investigation into the nature of discrimination.In numerous applications of conjoint analysis in political science, respondents compare and assess hypothetical candidates or politicians (e.g., for applications in the context of Japanese politics, see: Horiuchi, Smith and Yamamoto, 2018, 2020, Ono and Yamada, 2020). However, because *Zainichi* Koreans are not eligible to represent Japanese voters (i.e., citizens), such an experiment would be out of context.

Table 1: Attributes, Levels, and Weights

Attribute	Level	Weight
Name	Japanese for Japanese	60%
	Korean for Zainichi	20%
	Japanese for Zainichi	20%
Gender	Man	50%
	Woman	50%
Education	The University of Tokyo	25%
	Waseda University	25%
	Nihon University	25%
	Chiba University	25%
Experience	3 Years	33%
	5 Years	33%
	7 Years	33%
Preliminary Screening Results	Excellent	50%
	Particularly Excellent	50%

Note: Names also telegraph the gender of the hypothetical applicants. Respondents were not explicitly told the gender of the applicant.

Respondents evaluated eight pairs of hypothetical applicants described by names (signaling ethnicity) and several other job-relevant attributes in each set. Names were selected to suggest Japanese or *Zainichi* Korean ethnicity. Prior research has demonstrated the effectiveness of using names to signal race or ethnicity in studies of discrimination, as they allow researchers to examine bias without explicitly highlighting race (e.g., Gaddis, 2015, Kugelmass, 2016, Neumark, 2012). Although some scholars have raised concerns about the potential confounding effect of socioeconomic status when using names as signals (Landgrave and Weller, 2022), empirical evidence suggests carefully selected names primarily influence decisions based on inferred race or ethnicity (Butler and Homola, 2017, Crabtree and Chykina, 2018, Gaddis, 2015).

In this study, ten names were used. Six were common Japanese names, signaling Japanese ethnicity. Two were common Korean names, signaling Korean ethnicity. The remaining two were Japanese names adapted from Korean names, signaling Korean ethnicity with a Japanese pseudonym. Names were evenly distributed across male and female categories within each ethnic group, allowing respondents to infer gender. All names were assigned equal weight, as detailed in Table 1.

To ensure a realistic context, respondents were informed that all applicants had passed the initial screening and interviews and had entered the final hiring phase. This positioning emphasized that all candidates were strong contenders, thereby isolating the effect of ethnically coded names. In addition to an applicant's name and preliminary screening results, we included attributes most commonly described as "qualifications" in actual job descriptions: education and experience.

Three pre-tests were conducted to refine the attributes and levels. All attribute levels (except names) were assigned equal weight with no cross-attribute constraints. To address potential measurement error biases, we follow the methods detailed in Clayton et al. (2023), which include repeating the first pair of each conjoint task to assess intra-respondent reliability.

4.2 Measuring intergroup social contact

One key variable in the present study is respondents' intergroup social contact with *Zainichi* Koreans. Many prior experiments on intergroup contact theory measure social contact with outgroups through survey questions that ask respondents to quantify their interactions. Respondents are typically asked to estimate the proportion of their friends, neighbors, relatives, or coworkers who belong to the outgroup (e.g., Brown et al., 2007, Hewstone et al., 2006, Jackman and Crane, 1986, Savelkoul et al., 2010, Schlueter and Scheepers, 2010).

In our study, we measure respondents' contact with *Zainichi* Koreans using methods adapted from Clayton, Ferwerda and Horiuchi (2021), Hewstone et al. (2006), and Yuker and Hurley (1987). These studies employ five-point Likert-scale items to assess intergroup social contact. We adopt four items to measure respondents' self-reported contact with *Zainichi* Koreans. Each item is a statement, rated on a five-point Likert scale: "strongly agree," "agree," "neither agree nor disagree," "disagree," and "strongly disagree." Half of the items were forward-coded, with agreement corresponding to higher values (5), and the other half were reverse-coded, with agreement corresponding to lower values (1). To refine these survey items, we conducted a pre-test survey in the United States, examining intergroup social contact with Jewish Americans. We analyzed the responses using Item Response

Theory (IRT); further details are provided in Section B of the Supplementary Materials.

Respondents answered these questions only after completing the conjoint tasks to avoid priming them to think about ethnicity while evaluating candidates. Because this study examines how subtle cues—specifically different types of names—influence preferences, priming respondents to consider ethnicity, especially *Zainichi* Korean ethnicity, could artificially amplify observed discrimination. Furthermore, a key component of this study is whether respondents can recognize Korean ethnicity from *tsūmei*. If they were primed to think about ethnicity, they might scrutinize names more carefully and identify *tsūmei* they would otherwise overlook. Although responses to these questions after the conjoint tasks could, in principle, be influenced by the tasks themselves, we do not anticipate that such effects are substantial. Ethnicity was never explicitly mentioned in the conjoint tasks, making it unlikely that the tasks meaningfully affected responses to the intergroup contact questions.

For analysis, we calculated an aggregate contact score for each respondent by averaging their scores across all items. Respondents were then grouped into terciles: "high," "medium," and "low" contact—based on their aggregate scores, enabling comparison of results across these groups.

4.3 Further exploratory analysis

Our survey includes additional questions designed to examine whether respondents hold discriminatory attitudes toward *Zainichi* Koreans and to identify variables influencing their choice between a Japanese and a *Zainichi* Korean candidate. First, after implementing a simple attention check to screen out inattentive respondents, we measured respondents' nationalism using questions adapted from the GESIS Leibniz Institute for the Social Sciences (2013) surveys on national identity. Nationalist groups, such as the *Zaitokukai*, often disseminate discriminatory rhetoric targeting *Zainichi* Koreans, thereby contributing significantly to anti-foreigner, anti-immigrant, and other exclusionary attitudes. This context has amplified concerns about the recent rise of Japanese nationalist ideologies. These nationalism-related questions were placed at the beginning of the survey, before a series of demographic and key attitudinal questions, to minimize their potential impact on respondents' engagement with

the conjoint tasks.

Questions directly related to discrimination or *Zainichi* Koreans were asked after respondents concluded the conjoint tasks to limit their awareness of the measured variable and the possible influence of SDB on their responses. We also asked an open-ended question and encouraged respondents to freely express their thoughts on *Zainichi* Koreans.

Finally, we adapted a five-point *Zainichi* Korean Resentment Scale based on the racial resentment scale originally proposed by Kinder and Sanders (1997). This scale has been widely used in studies of racial resentment in the United States (e.g., Abramowitz and McCoy, 2019, Agadjanian et al., 2023, Feldman and Huddy, 2005). While overt discrimination against *Zainichi* Koreans, such as violence or hate speech, is not common among the broader Japanese population, covert forms of discrimination persist. These subtle expressions of bias align with the concept of modern discrimination, often referred to as racial resentment, as documented in studies by Kim (2011*a*) and Aoki (2012).

4.4 Quantities of interest

In each conjoint task, respondents made a forced binary choice. Specifically, they were asked: "Suppose that the following two applicants have made it to the final selection round. Which applicant do you think should be hired? Even if you are not entirely sure, please choose the one you believe should be hired if you had to decide."

Unlike most applications of conjoint analysis, we treat each choice as the unit of analysis. To test Hypotheses 1a and 1b, we compute the "choice-level" marginal means of selecting a Japanese applicant over a Korean applicant, regardless of whether the Korean applicant uses a Japanese or Korean name. More commonly used "profile-level" marginal means for all attribute levels from Study 1 and Study 2 are presented in Figures C.1 and C.2, respectively, in Section C of the Supplementary Materials. To test Hypothesis 2, we calculate the choice-level Average Marginal Component Effect (AMCE) by taking the difference between these two choice-level marginal means. In both estimations, we address measurement error using the method proposed by Clayton et al. (2023).

We apply the same procedure to test Hypotheses 3a, 3b, and 3c, as well as to conduct

exploratory analyses across different respondent subgroups. For these subgroup analyses, we categorize respondents into two or three groups based on various questions in our study.

It is important to note that heterogeneity in respondents' ability to recognize applicants' ethnic background from their names does not bias our estimates. Because name type is randomized within respondents, differences in sensitivity to Korean versus Japanese names affect only the *variance* of the estimator, not its expectation. In other words, such heterogeneity introduces random noise rather than systematic bias. Our quantities of interest average across all combinations of other attributes (except applicant names) and across all respondents, ensuring that the estimated effects represent the average impact of name type on candidate evaluation.

5 Results

This section presents the results of testing our pre-registered hypotheses. Additionally, we discuss insights gained from further exploratory analyses.

5.1 Zainichi Korean vs. Japanese

The top portion of Figure 2 illustrates the marginal means of selecting an applicant with a Japanese name across two different match-up types in Study 1. The horizontal bars indicate the 95% confidence intervals. Results from Study 2 align with those of Study 1. The estimates from Study 2, as well as combined data from Studies 1 and 2, are presented in Figures C.3 and C.4, respectively, in Section C of the Supplementary Materials.

In the first scenario, respondents were presented with a hypothetical choice between one applicant with a typical Japanese name (used among Japanese citizens) and another with an ethnic Korean name, *honmyō* (their real names). The figure shows that the marginal mean of selecting the Japanese applicant in this match-up was 0.62. This indicates that respondents preferred the Japanese applicant in approximately 62% of cases, supporting Hypothesis 1a.

The second scenario involved respondents choosing between a Japanese applicant with a typical Japanese name and a Korean applicant using a Japanese pseudonym, or *tsūmei*. Here,

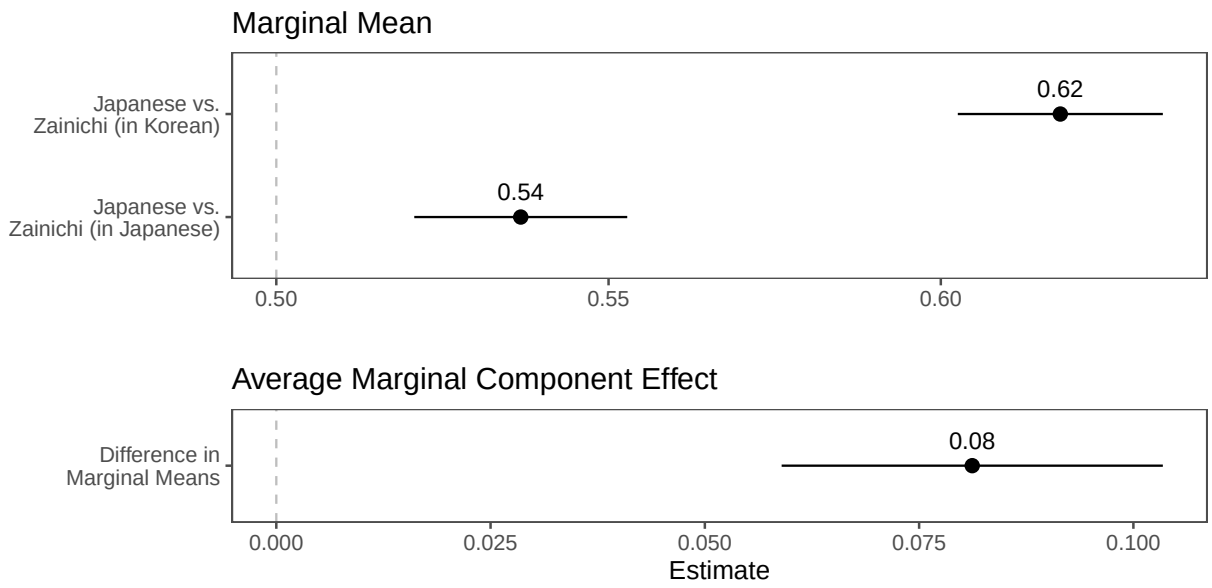

Figure 2: Marginal means of Japanese applicant names compared to *Zainichi* names and average marginal component effect of Korean names (Study 1).

the marginal mean for selecting the Japanese applicant was approximately 0.54, showing that respondents preferred the Japanese applicant in 54% of cases. These findings support Hypothesis 1b.

Overall, the results from this study provide consistent support for both Hypotheses 1a and 1b. Respondents consistently preferred Japanese applicants over *Zainichi* applicants, regardless of whether the latter used *tsūmei* or *honmyō*

5.2 Korean name vs. Japanese name

The bottom portion of Figure 2 displays the difference in marginal means between the two types of match-ups discussed above. This difference corresponds to the choice-level AMCE for applicants using an ethnic Korean name, compared to using a Japanese pseudonym as the baseline.

The AMCE for using a Korean name is 0.08, indicating that *Zainichi* Korean applicants using an ethnic Korean name rather than a Japanese pseudonym are associated with an 8-percentage-point decrease in the likelihood of being selected, relative to an applicant with an ethnically Japanese name. While respondents are more likely to select the Japanese-named

applicant in both scenarios, the preference for the Japanese applicant is stronger when the *Zainichi* Korean applicant uses a Korean name than when they use a Japanese *tsūmei*.

These findings suggest that discrimination against *Zainichi* Koreans is less pronounced when they adopt a Japanese pseudonym compared to when they use their ethnic Korean name. Results from Study 2 corroborate these findings and provide consistent support for Hypothesis 2.

5.3 Private sector job vs. public sector job

As shown in Figure C.5 in the Section C of the Supplementary Materials, we find no significant differences in results across experiment types. Respondents consistently favor Japanese applicants over *Zainichi* applicants, regardless of whether the position is at a private company or a public school. One might expect, given the differing nature and responsibilities of these hypothetical positions, that the preference against *Zainichi* applicants would be stronger for the public school position than for the private-sector position. For example, specific stereotypes or discriminatory perceptions of *Zainichi* Koreans may lead individuals to oppose the idea of *Zainichi* Koreans interacting with and influencing schoolchildren, as compared to the less personal, research-oriented responsibilities associated with the private company position.

Contrary to this expectation, the effect sizes remain consistent across both job contexts. This pattern suggests that inferred Korean ethnicity does not trigger job-specific fears or discriminatory beliefs. Rather, it appears to evoke a generalized negative sentiment, leading Japanese respondents to disfavor applicants with Korean names or *tsūmei*, regardless of the position.

5.4 Effects conditional on intergroup contact

Figure 3 presents the marginal means and AMCEs (in Study 2) broken down by respondents' aggregate intergroup contact scores. Respondents are categorized into low, medium, and high contact groups. Across all groups and match-up types, marginal means for Japanese applicant names exceeded 0.5, reinforcing evidence of discriminatory preferences against

Zainichi Koreans.

Significant differences emerge when comparing respondents based on their levels of contact with *Zainichi* Koreans. Among high-contact respondents, the marginal mean for selecting a Japanese applicant over a *Zainichi* applicant with a Korean name was approximately 0.53, indicating only a slight preference for Japanese candidates. Notably, this deviation from the neutral benchmark of 0.50 is statistically insignificant, as the 95% confidence interval includes 0.50. In contrast, the preference among high-contact respondents is substantially smaller than that of medium-contact respondents (0.62) and low-contact respondents (0.64), providing support for Hypothesis 3a.

Similarly, we find support for Hypothesis 3b. Respondents with low social contact are

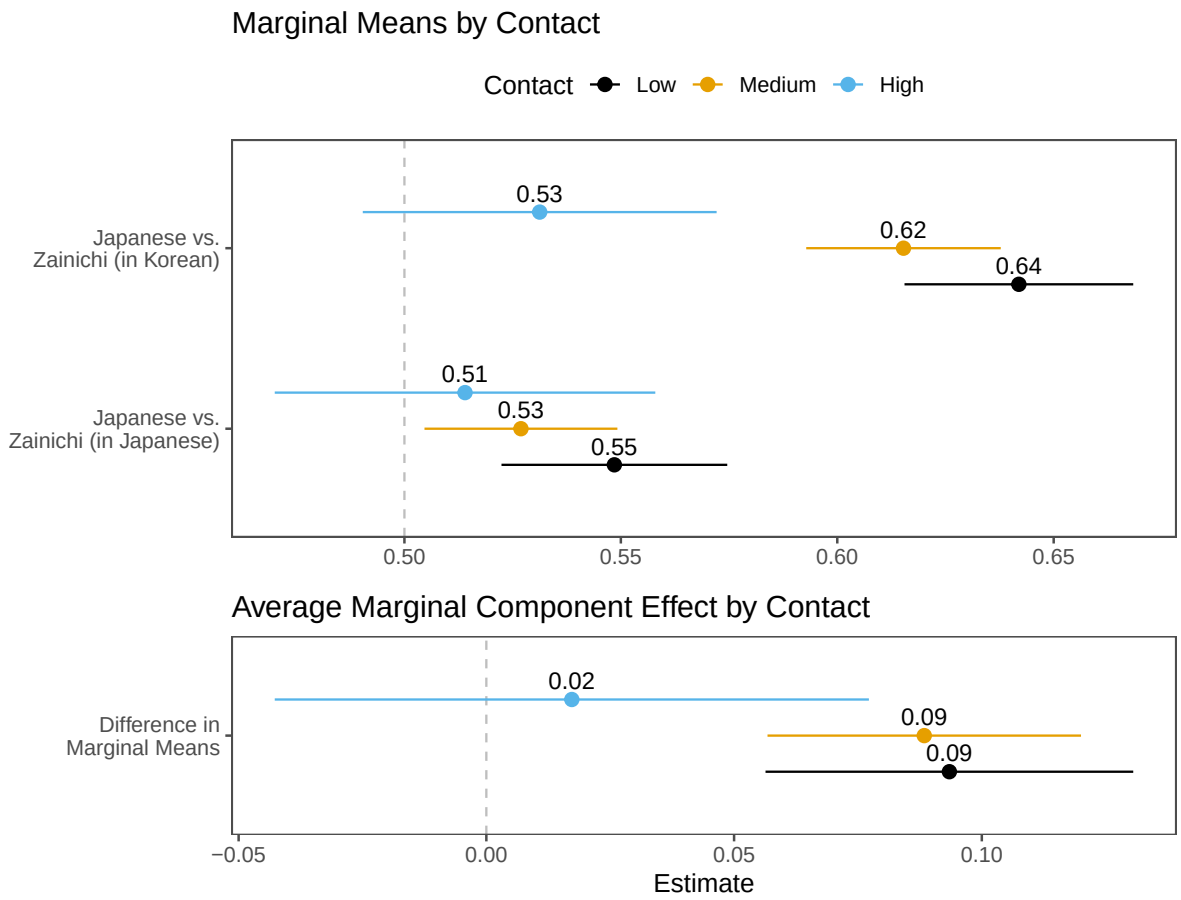

Figure 3: Marginal means of Japanese applicant names Compared to *Zainichi* names and AMCE of Korean names disaggregated by respondents' social contact with *Zainichi* Koreans (Study 2).

more likely to prefer a Japanese applicant over a *Zainichi* Korean applicant using *tsūmei*. While differences in marginal means between high-, medium-, and low-contact groups are smaller, high-contact respondents still exhibited slightly lower preferences for Japanese candidates than medium- and low-contact individuals.

The results also support hypothesis 3c. The lower portion of Figure 3 shows AMCEs disaggregated by aggregate contact scores. Medium- and low-contact respondents have similar AMCEs of approximately 0.09, significantly different from zero. By contrast, high-contact respondents exhibit a lower AMCE of about 0.02, which is statistically indistinguishable from 0.

We acknowledge that our measure of social contact—based on the aggregate intergroup contact score—is correlated with other respondent attributes. Because the observed heterogeneity in marginal means and AMCEs by social contact may reflect differences associated with these other attributes rather than social contact itself, we conduct an additional robustness test. Following the approach of Clayton, Ferwerda and Horiuchi's (2021), we first estimate a regression model with the IRT score as the dependent variable and respondents' gender (male [baseline] or female), education (with [baseline] or without a university degree), age, age squared, and political orientation (left [baseline], middle of the road, right) as predictors. We then use the residuals from this model as an alternative measure of social contact that is not explained by demographic factors or political orientation. Next, we divide respondents into terciles based on these residuals to form alternative social contact groups. The results of re-estimating the marginal means and AMCEs using this adjusted measure are presented in Figure C.6 in the Supplementary Materials. The findings remain substantively unchanged.

Overall, these results suggest that social contact significantly mitigates discrimination against *Zainichi* applicants, regardless of whether they use *honmyō* or *tsūmei*. The mitigating effect is particularly pronounced when Korean applicants use their ethnic names.

5.5 Further exploratory analysis

A key exploratory finding from this study is the conditional effect of respondents' resentment levels on their likelihood of selecting candidates with Japanese names over *Zainichi* Korean names, whether in Korean or Japanese. Figure 4 presents the results from Study 1 in Figure 2, disaggregated by low-, medium-, and high-resentment terciles based on a 5-point resentment scale derived from responses to the *Zainichi* resentment scale questions.

We find that individuals with high levels of resentment are more likely to disfavor *Zainichi* Korean names, regardless of whether the names are presented in Korean or Japanese. Although low-resentment respondents still favor Japanese names in all matchups, they exhibit the lowest marginal means for selecting Japanese names. These findings suggest a positive

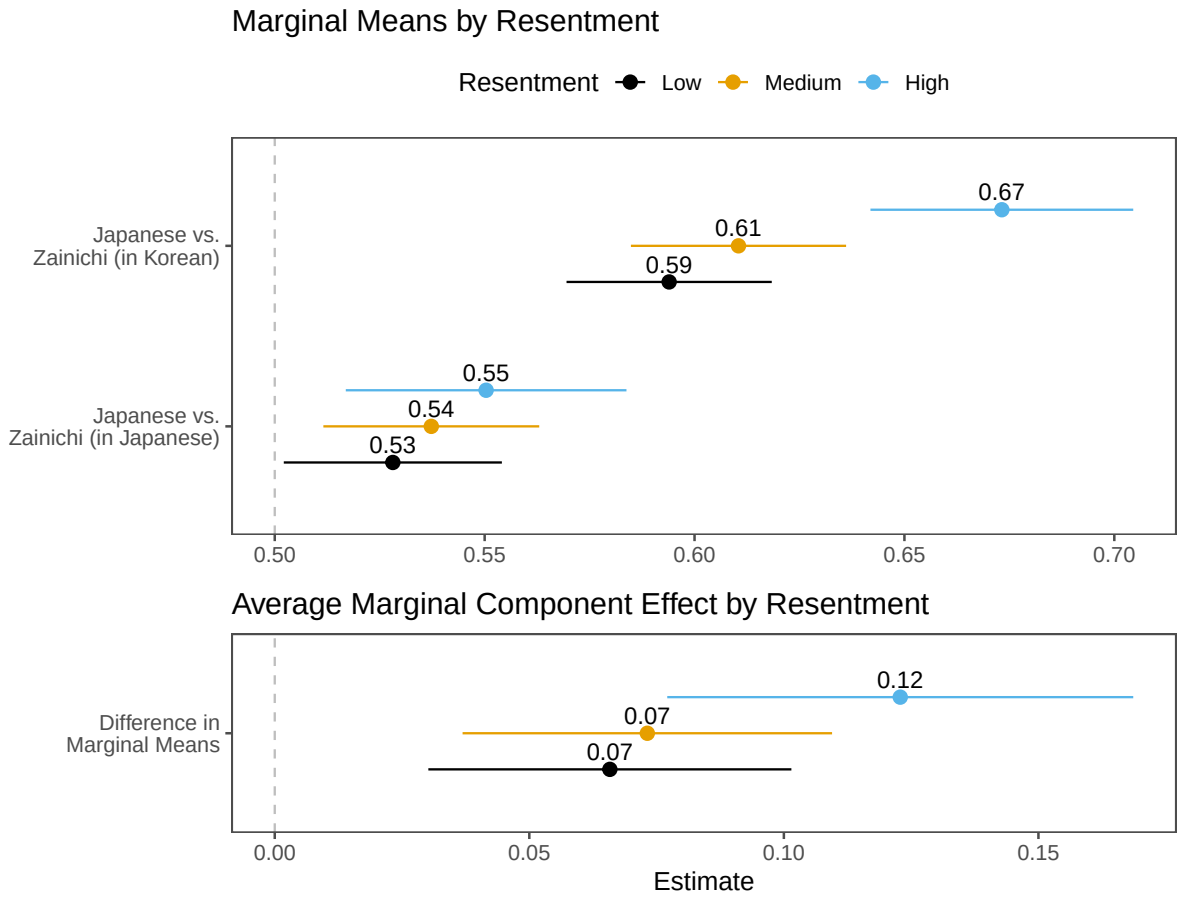

Figure 4: Marginal means of Japanese applicant names compared to *Zainichi* names and AMCE of Korean names disaggregated by resentment (Study 1).

correlation between anti-*Zainichi* resentment and the preference for Japanese-named candidates over *Zainichi*-named candidates, indicating that high resentment amplifies the outward expression of discriminatory attitudes.

This finding is perhaps unsurprising given the nature of resentment against *Zainichi* Koreans. Responses from individuals with high resentment scale scores to the free-response question reveal several prevalent discriminatory beliefs about *Zainichi* Koreans:

1. *Zainichi* Koreans demand and receive undeserved resources and privileges: For example, respondents noted beliefs such as, "...they are taking advantage of the fact that they are in Japan and using it for their own convenience," and, "They are the privileged class who are sucking up taxpayers' money without going back to their country of origin."
2. *Zainichi* Koreans are predisposed to crime and dishonesty: Examples include statements like, "I don't trust them," and, "I don't trust *Zainichi* Koreans at all from a human point of view because I have met with terrible deception in business."
3. *Zainichi* Koreans have loyalties outside of Japan and are anti-Japanese: Respondents expressed beliefs such as, "They have a strong sense of victimization and a strong complex toward Japan. As a result, they tend to be extremely aggressive toward Japan and Japanese people," and, "Most, if not all, are anti-Japanese."

These statements reflect deeply discriminatory views, which may stem from underlying anxiety and fear about the perceived threat that *Zainichi* Koreans pose to ethnic Japanese.

We conduct similar analyses, disaggregating results by respondents, including gender (Figure C.7), age (Figure C.8), education (Figure C.9), political leaning (Figure C.10), and region of residence (Figure C.11). They are all presented in Section C of the Supplementary Materials. When conditioning on age, we find that the youngest group of respondents (18 to 43) is significantly less likely than the two older groups (44 to 56 and 66+) to prefer a Japanese candidate over a *Zainichi* Korean candidate using a Korean name. However, we do not find any other significant differences across respondent demographic groups.

Disaggregation by respondents' mean nationalism score yields mixed results, with the respondents with the highest nationalism scores generally showing a substantively stronger preference against *Zainichi* Korean applicants. Meanwhile, low and medium scorers show

mixed preferences (Figure C.12 in Section C of the Supplementary Materials). Additionally, we analyzed results based on the genders of hypothetical applicants (Figure C.13 in Section C of the Supplementary Materials).

6 Conclusion

The findings of this study confirm that Japanese citizens discriminate against *Zainichi* Koreans based solely on their names. However, this discriminatory tendency weakens when they adopt Japanese pseudonyms, which more effectively (although imperfectly) conceal their ethnic identity. While our data do not allow us to identify the precise mechanism driving this pattern, we suspect that the weaker preference against applicants using *tsūmei* (as compared to Korean applicants using ethnic names) arises because respondents often fail to recognize such names as pseudonyms, interpreting them instead as Japanese. Other explanations may involve additional signals beyond ethnicity. For example, even when respondents recognize *tsūmei* as a *Zainichi* Korean name, the use of a Korean name may signal weaker assimilation, lower willingness to assimilate, or a "newcomer" status. Regardless of the mechanism, our results demonstrate a clear negative effect of revealing an ethnic identity (by using a Korean name) relative to concealing it (by using a pseudonym).[3]

While this finding suggests that passing as Japanese through a *tsūmei* may mitigate some effects of discrimination, it also highlights a disproportionate burden placed on those vulnerable to discrimination, forcing them to navigate prejudice strategically. Although concealing an invisible identity may serve as a tool to circumvent discrimination, the results from our study indicate that even those who choose to do so remain subject to discrimination. These findings underscore the persistent nature of discrimination and the need for stronger institutional and societal reforms.

The results also indicate that discriminatory attitudes are conditional on intergroup contact. Individuals with higher levels of contact exhibit weaker preferences for Japanese applicants and show reduced sensitivity to whether *Zainichi* applicants disclose or conceal their identities. Overall, this finding supports Allport's (1954) contact hypothesis and adds further evidence to the extensive body of research demonstrating that intergroup contact

can mitigate outgroup prejudice. While we do not claim to extend or revise the theory, our results highlight its applicability to contexts involving *invisible identities*, where the salience of group membership depends on voluntary disclosure.

While characteristics often considered to be invisible—such as religion, sexual orientation, mixed-race heritage, and non-apparent disabilities—have received scholarly attention (Di Stasio et al., 2021, Lippens, Vermeiren and Baert, 2023), our research contributes to this literature by examining a distinctive case with unique implications. First, *Zainichi* Koreans are phenotypically, linguistically, and culturally indistinguishable from the ethnic Japanese population, making Korean ethnicity a genuinely invisible attribute. Different invisible attributes, however, may entail distinct social meanings. For instance, whereas religion or sexual orientation have no apparent connection to job performance, disability status may require additional resources or accommodations. Therefore, it is especially valuable to extend existing frameworks to diverse manifestations of invisibility. Second, the decision that many *Zainichi* Koreans must make between using a *honmyō* or a *tsūmei* exemplifies a broader dilemma faced by individuals with invisible attributes—whether to disclose or conceal them. Finally, because names play a crucial role in social interactions where discrimination may occur, the use of ethnic Korean names and Japanese pseudonyms provides an externally valid means for assessing the consequences of revealing or concealing an invisible identity.

Discrimination based on invisible characteristics is pervasive across societies and institutional settings. Our findings underscore the fundamental paradox faced by individuals with such identities: while concealing their identity may reduce exposure to discrimination, it often comes at a significant personal cost, including psychological distress, diminished authenticity, and the reinforcement of systemic inequities (Newheiser and Barreto, 2014, Quinn, Weisz and Lawner, 2017).

This dynamic has profound implications for policy and practice. We find that Japanese citizens do hold discriminatory attitudes toward individuals with inferred Korean ancestry and that these attitudes are attenuated among those with frequent social contact with *Zainichi* Koreans. Government policies and programs addressing discrimination should, therefore, seek to foster opportunities for meaningful intergroup interaction, which may play a crucial role in reducing bias and promoting inclusion.

There are several limitations to the present research, which suggest avenues for future research. First, this study does not establish whether intergroup contact causally reduces prejudice or whether less prejudiced individuals are more likely to engage in contact. Future research should consider real-world settings where social contact is randomly or quasi-randomly assigned (e.g., Enos, 2014).

Second, our conjoint experiment asked regular Japanese citizens to make hypothetical hiring decisions. Because most respondents are unlikely to have direct hiring experience, this limits the extent to which our findings can speak to actual hiring discrimination in Japan. Additionally, alternative approaches with higher external validity, such as audit studies, are unfeasible in Japan because of ethical limitations. However, the scenarios we employ are still useful precisely because they present regular citizens with a familiar and easily interpretable context in which to express preferences. Our aim is not to infer institutional or administrative forms of discrimination but rather to measure social bias among Japanese citizens toward *Zainichi* Koreans. Respondents' limited familiarity with hiring procedures likely prevented them from considering nationality-based administrative constraints, allowing us to isolate attitudinal discrimination based on name cues. Thus, while our results may not directly capture real-world hiring discrimination, the consistent preference against *Zainichi* Korean candidates in these hypothetical scenarios provides clear evidence of pervasive negative attitudes toward individuals with Korean ancestry in Japan.

A potential alternative for advancing research on discrimination against invisible attributes with high external validity is to use geographical data on the concentration of marginalized populations. A recent study on discrimination against *Burakumin*—a historically marginalized social group in Japan, formerly associated with stigmatized occupations and subject to persistent discrimination despite being ethnically indistinguishable from other Japanese citizens—offers a helpful framework (Yamagishi and Sato, 2025).

Finally, our study primarily focuses on *individual-level* discriminatory attitudes toward *Zainichi* Koreans. We do not, however, explore structural dynamics contributing to their socioeconomic inequalities, such as labor market segmentation rooted in post-WWII policies that barred them from jobs (Moon, 2010). Research on discrimination based on individual attributes requires a broader, multi-perspective approach to fully capture its complexities.

Nevertheless, the findings of this study underscore the need for social science research to further move beyond visible attributes and explore the complex dynamics of invisible identities. Discrimination is a pervasive, global phenomenon that transcends borders and social categories, demanding a sustained and multifaceted response. By shedding light on how bias operates against invisible identities and the conditions that may mitigate it, this study contributes to a deeper understanding of prejudice and its persistence in contemporary societies. Moving forward, continued research in this area will be essential for developing more effective policies and interventions to promote equity and inclusion.

Declaration of Funding

We thank financial support from the Kaminsky Family Fund, the Nelson A. Rockefeller Center for Public Policy and the Social Sciences, and the Ethics Institute at Dartmouth College. The financial sponsors played no role in the design, execution, analysis, and interpretation of data or writing of this paper.

Competing Interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this manuscript.

Declaration of AI Usage

We used ChatGPT (OpenAI) solely to improve the flow of arguments and to correct grammatical and spelling errors. The tool was not used to generate, analyze, or interpret data, nor to develop substantive content, ideas, or conclusions. The authors take full responsibility for the accuracy, integrity, and originality of all content presented in this manuscript.

Notes

[1]Whether individuals with an invisible *attribute* consider it to constitute their *identity* is a deeply subjective matter. While we acknowledge this distinction, we use *attribute* and *identity* interchangeably in this study because navigating disclosure often involves fear and anxiety, profoundly shaping individuals' sense of self.

[2]For brevity, we use "conceal" instead of "attempt to conceal," acknowledging that complete concealment is not always possible. As we elaborate later, individuals attempt to conceal their identities, though Japanese citizens may still imperfectly infer their status as *Zainichi* Koreans.

[3]It would be worthwhile to examine whether and how "newcomer" Koreans—those who migrated to Japan after World War II—are perceived or discriminated against differently from "oldcomer" *Zainichi* Koreans. We leave this inquiry for future research.

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Supplementary Materials

Disclosing Invisible Attributes Leads to Discrimination

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A More On Social Contact Theory

A.1 Models

Since its inception, the contact hypothesis has inspired numerous models that elucidate the mechanisms by which contact reduces prejudice. The decategorization model (Brewer and Miller, 1984) argues that prejudice reduction occurs when social contact fosters personal connections, dissolving group boundaries. The recategorization model (Gaertner et al., 1989) suggests that contact works by redefining group boundaries, creating a shared, overarching identity. In contrast, Brown and Hewstone's (2005) integrative model underscores the importance of intergroup salience, asserting that contact is most effective when participants are cognizant of group distinctions (Christ and Kauff, 2019). This body of research collectively constitutes what is widely recognized as intergroup contact theory.

A.2 Causal Sequence Problem

Halperin et al. (2012) suggest that the reverse of the contact hypothesis may also hold: reducing anxiety can lead to increased social contact. This reverse causality complicates efforts to understand how contact and anxiety interact, much like the challenge of disentangling the directional relationship between contact and prejudice. Since its inception, scholars of intergroup contact theory have grappled with the issue of causality. Even in his original formulation of the contact hypothesis, Allport (1954) acknowledged the equal plausibility of two scenarios: social contact reducing prejudice or individuals with lower levels of prejudice seeking out more intergroup contact.

This ambiguity—whether social contact leads to reduced prejudice or reduced prejudice fosters more social contact—is referred to by Pettigrew (1998) as the "causal-sequence problem." To address this issue, Pettigrew outlines methodological strategies to better isolate causality in intergroup contact studies. These strategies include examining situations where participants cannot choose whether to engage in social contact with an outgroup and employing longitudinal designs to track individuals' attitudes before and after exposure to intergroup contact.

B Selection of Survey Instruments with Item Response Theory

B.1 Item Response Theory

Although methodology from Item Response Theory (IRT) was not utilized in the final results of the present research, IRT played a crucial role in development of survey instruments intended to measure intergroup social contact.

B.2 Background

Item response theory (IRT) uses mathematical models to attempt to determine how observed outcomes and responses can inform about unobservable traits of individuals (Harvey and Hammer, 1999, Hays, Morales and Reise, 2000). In IRT, individuals are presented with items that they can either endorsed or not endorse. Individuals are assessed based on their ability, or their probability of endorsing an item that is considered to be "correct." In the context of this experiment, respondents' ability is an indication of their amount of intergroup social contact with Zainichi Koreans. High ability is correlated with high contact and vice versa.

The original draft of the survey contained eight Likert-type questions adapted from Clayton, Ferwerda and Horiuchi (2021), Hewstone et al. (2006), and Yuker and Hurley (1987) intended to measure respondents' contact with outgroup members. However, pre-testing through an additional survey prompted revision of the survey instruments.

B.3 Additional Survey Pre-Test

To test the survey instruments related to intergroup contact, we launched a small stand-alone study examining the relationship between Americans' social contact with Jewish individuals and their attitudes toward the Israel-Palestine conflict. This survey included a variety of questions regarding their opinions on the conflict, attitudes toward Muslim Americans, but most importantly to this study, contained the initial eight contact questions which were altered to ask about their contact with Jewish people rather than Zainichi Koreans. All of these questions were forward-coded, with responses of "disagree" correlating to low contact and responses of "agree" correlating to high contact. While the findings of this survey are largely irrelevant to the present research, analyses of the responses to contact questions allowed be to test the validity and efficacy of the items and adjust the survey instruments accordingly, so they could be altered and applied to the main study. This survey was administered in the United States on December 8, 2023 and received ($N = 300$) responses.

This section contains the full wording for the eight questions related to contact used in the additional survey about contact with Jewish people. These questions mirror those initially intended to be used in the main study.

> This question concerns your acquaintances. An acquaintance is someone you keep in touch with or get together with occasionally. Of your acquaintances, how many are Jews/Jewish?

- 0
- 1-2
- 3-5
- 6-9
- 10+

This question concerns your close friends. A friend is one with whom you discuss important subjects, with whom you keep in touch, or who is there for you if you need help. Of your close friends, how many are Jews/Jewish?

- 0
- 1-2
- 3-5
- 6-9
- 10+

Which of the following best describes your neighborhood?

- Very few are Jews/Jewish.
- Some are Jews/Jewish.
- About half are Jews/Jewish.
- Most are Jewish.
- Almost all are Jewish.

Which of the following best describes your place of work?

- Very few are Jews/Jewish.
- Some are Jews/Jewish.
- About half are Jews/Jewish.
- Most are Jewish.
- Almost all are Jewish.

How often do you share a meal with Jews/Jewish people?

- Never
- Rarely
- Sometimes
- Often
- Very often

How often do you have long conversations with Jews/Jewish people?

- Never
- Rarely
- Sometimes
- Often
- Very often

How often do you have pleasant experiences interacting with Jews/Jewish people?

- Never
- Rarely
- Sometimes
- Often
- Very often

How often do you have discussions with Jews/Jewish people about their life or your own life?

- Never
- Rarely
- Sometimes
- Often
- Very often

B.4 Results from Additional Survey

This section only discusses results from the section of the additional survey that addresses contact with Jewish people as it is relevant to the present research. To assess respondents' contact, we used a graded model, as it is suited for dealing with ordered polytomous categories such as the Likert-scale utilized in the present survey. To do so, we used the R package `mirt` to fit survey responses onto a graded response model.

One key result of IRT methods is the Item Characteristic Curve (ICC). Each survey item has its own ICC, and each potential response to a survey item is represented by a different colored curve on the ICC. The x-axis of the ICC represents the latent trait scores of individuals based on the results of the IRT models. The y-axis shows the probability of individuals to respond in a certain way. Figure B.1 shows the ICCs for the additional survey. Each facet of the figure represents one of the eight contact questions. The question labeled "Conversations" shows an expected ICC for an item that effectively measures the latent trait. As can be seen, the probability of giving an answer that represents low contact is highest among respondents who have a low latent trait score for contact. Similarly, the peaks of the

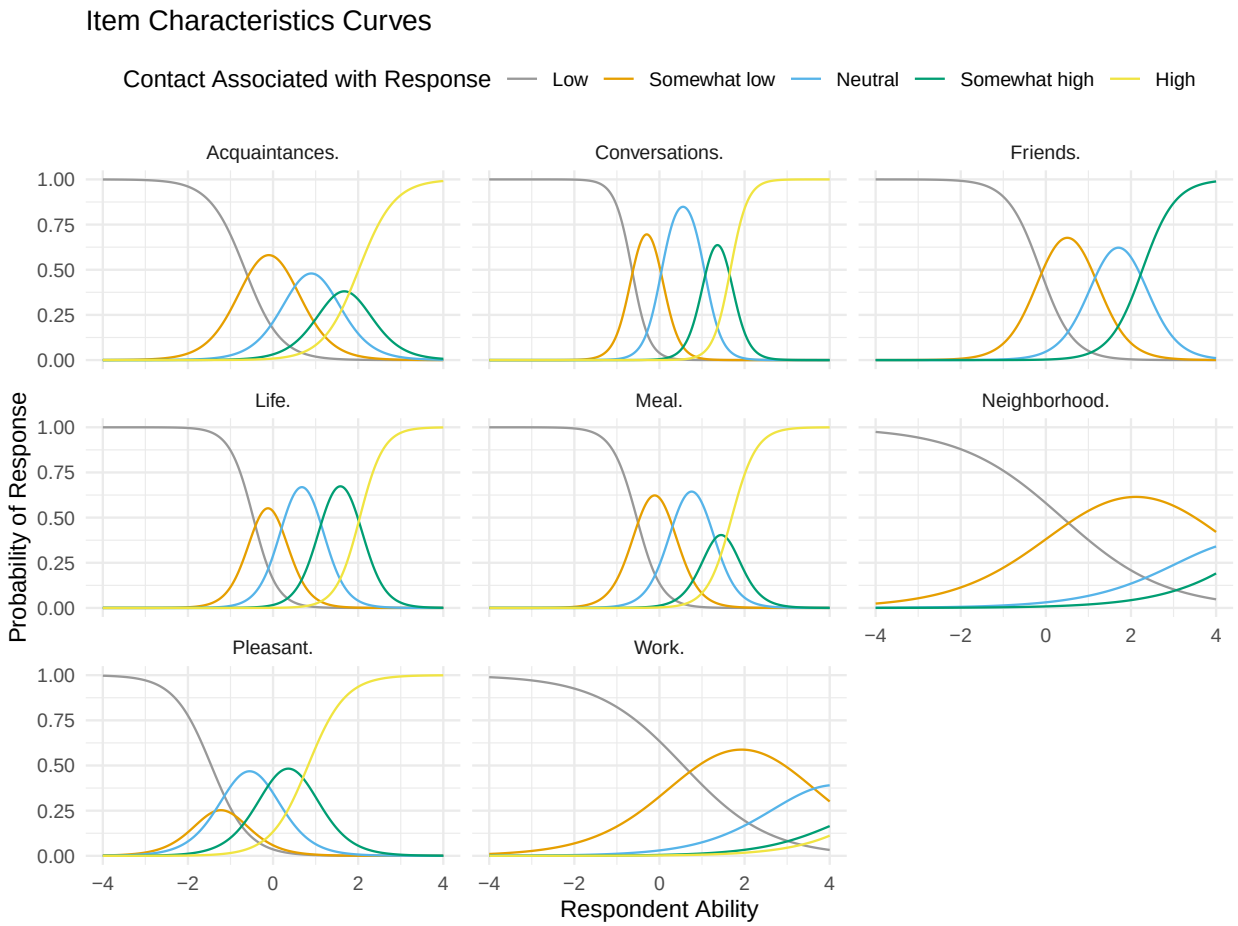

Figure B.1: Item characteristic curves for contact questions from additional study.

curves for each type of response occur at increasing levels of contact scores corresponding to increasing contact associated with the response given. While many of these curves do follow this anticipated pattern, those that did not (e.g., questions labeled "Neighborhood", "Friends", "Work") were omitted from further analysis as they were suggested to be poor indicators of the latent measurement. Notably, these questions asked respondents to quantify their contact with Jews by responding with the number of Jewish friends/acquaintances they had and describing the proportion of coworkers/neighbors who were Jewish. These findings might motivate further research into whether quality or quantity of contact is more important in prejudice reduction. The omitted questions were removed in the main study.

B.5 Results from Primary Study

In the analysis of results from the main study, we used the same IRT analysis to create a latent score for each respondents' contact in addition to the aggregate score. Ultimately, we decided to use the aggregate scores rather than the scores based on IRT, as M2 fit statistics for the responses did not meet the standard thresholds. However, further examination of both

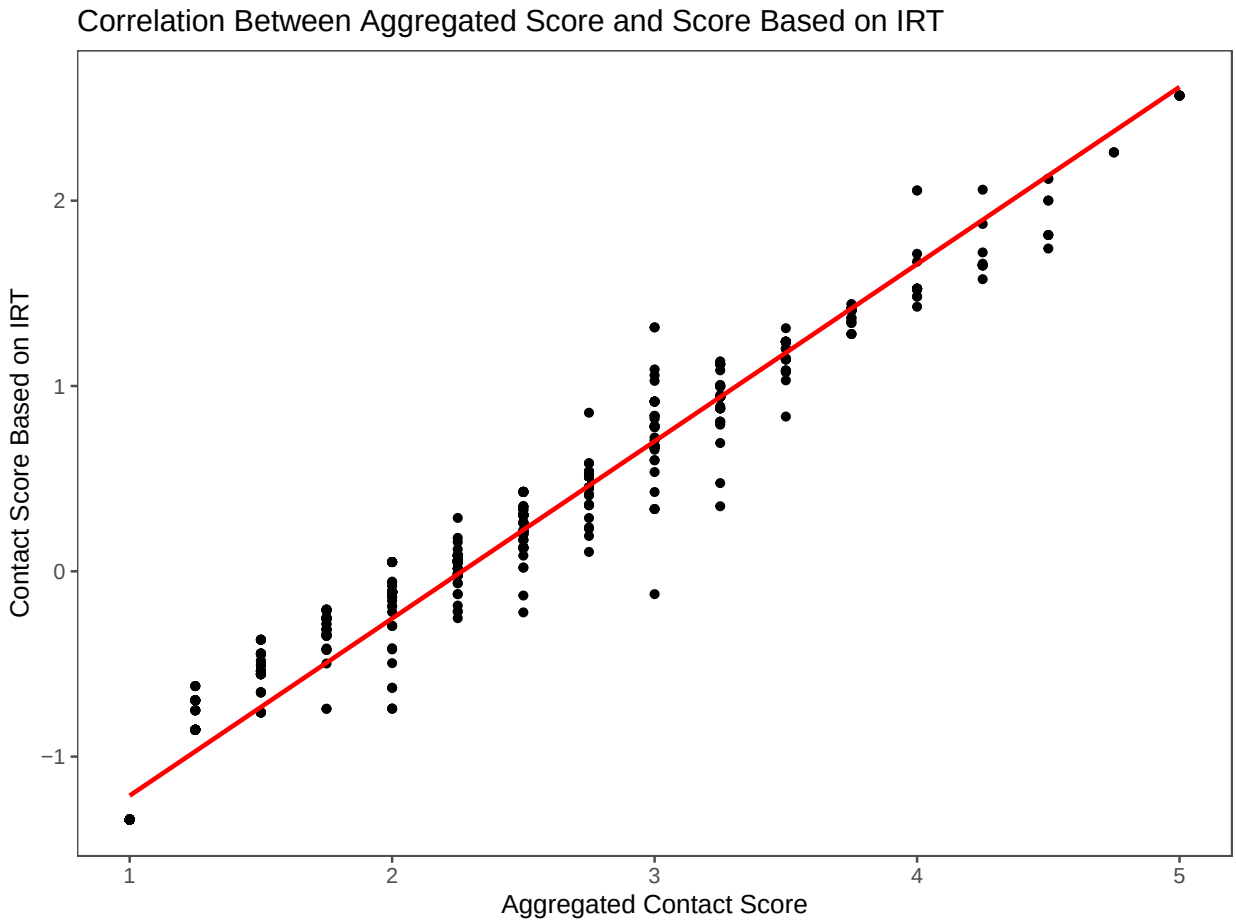

Figure B.2: Linear correlation of aggregate contact score and contact score calculated by IRT

metrics reveal that they were quite similar. Figure B.2 shows the results of a standard OLS regression of the scores based on the IRT model against the aggregate contact scores. These results showed a strong linear correlation with a coefficient of approximately 1, suggesting that the aggregate scores and scores based on IRT were similar in their measurements of the latent trait. The only significant difference was that while the aggregate scores ranged from 1 to 5, the scores based on the IRT model ranged from -2 to 3.

Figure B.3 is almost identical to Figure 3 in the information it displays. However, Figure B.3 uses the scores from the graded IRT model rather than the aggregate score to define the low-, medium-, and high-contact respondent categories. The use of scores based on IRT saw no significant differences in results from using the aggregate scores, further showing the robustness of our results.

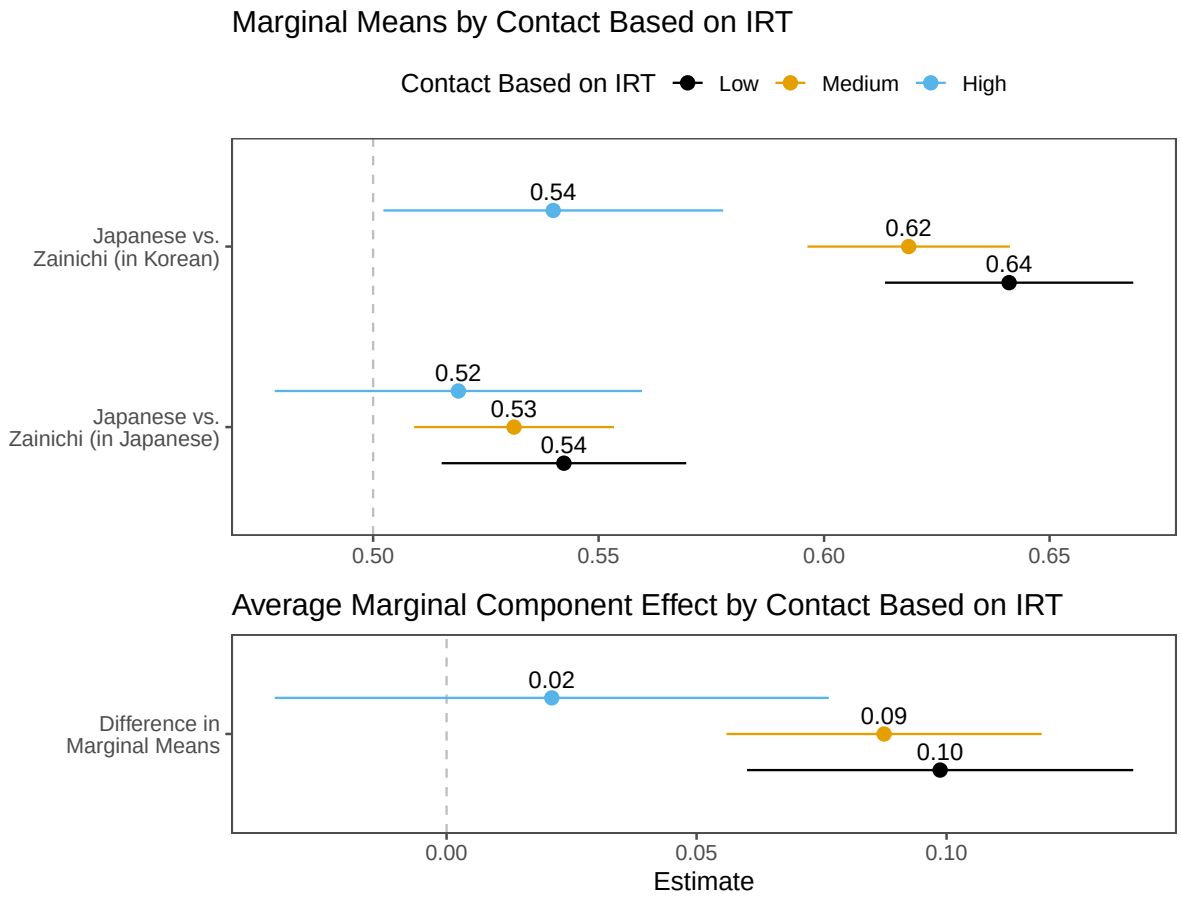

Figure B.3: Marginal means of Japanese applicant names compared to Zainichi names and AMCE of Korean names disaggregated by respondent intergroup social contact measured by IRT (Study 2).

C Other Results

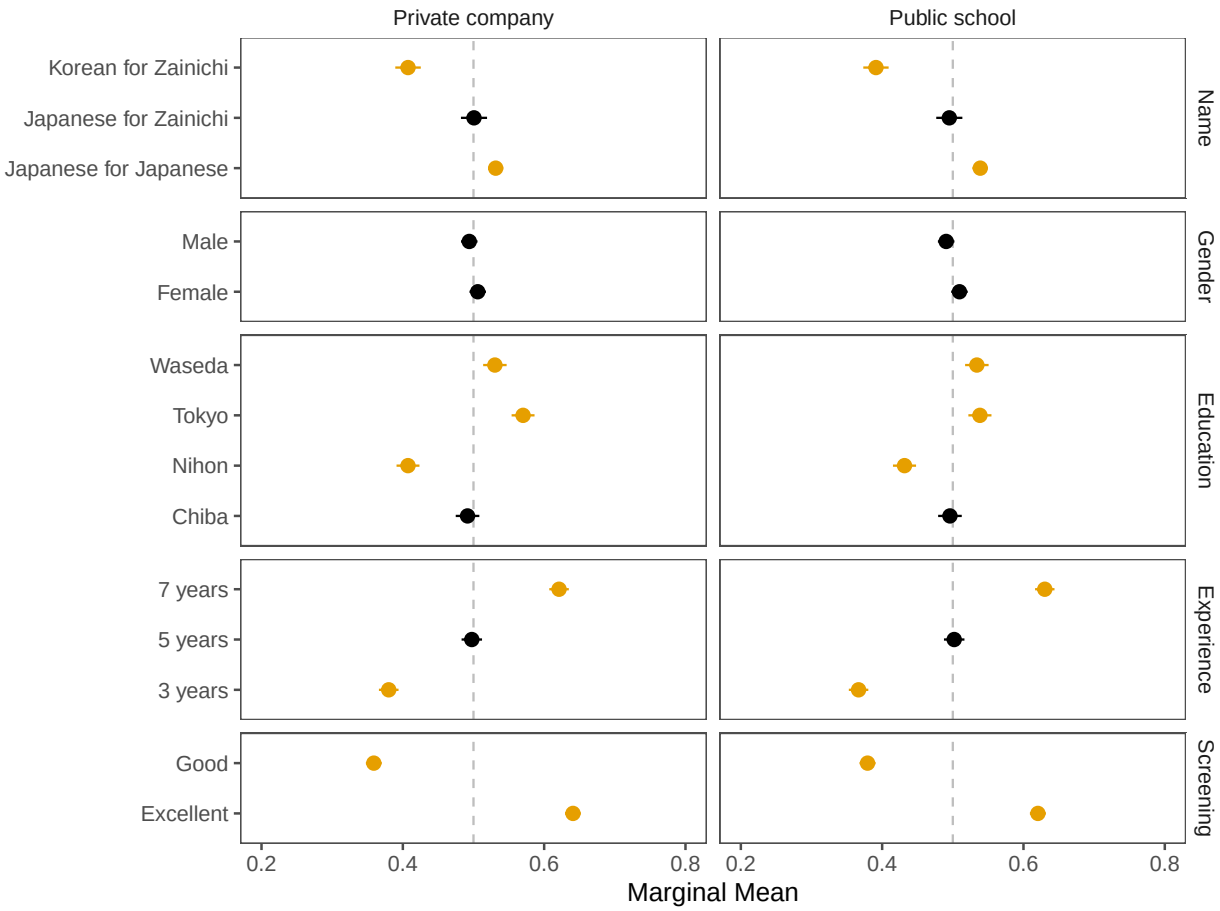

Figure C.1: Marginal means of all attribute levels (Study 1). *Note: The horizontal bars represent 95% confidence intervals. Statistically significant marginal means are shown in gold.*

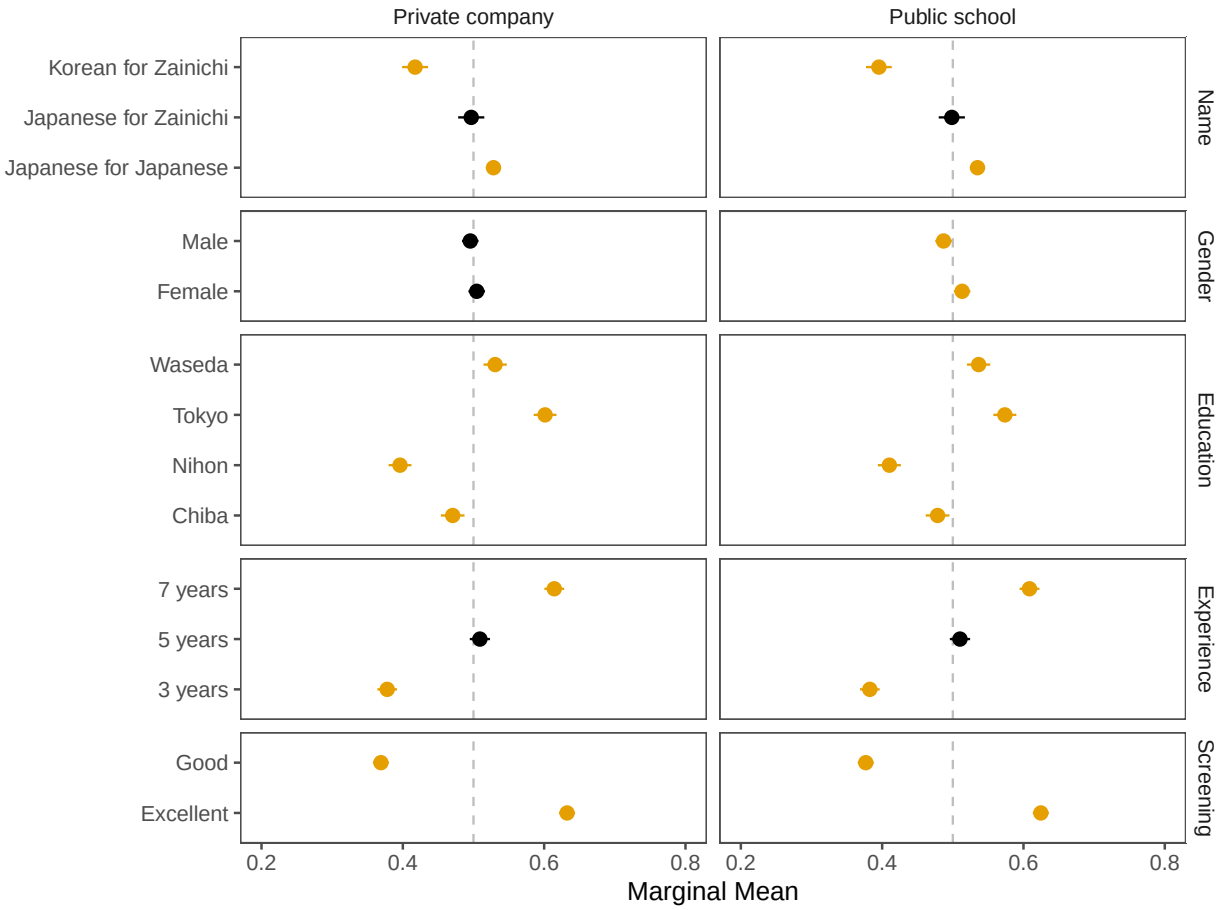

Figure C.2: Marginal means of all attribute levels (Study 2). *Note: The horizontal bars represent 95% confidence intervals. Statistically significant marginal means are shown in gold.*

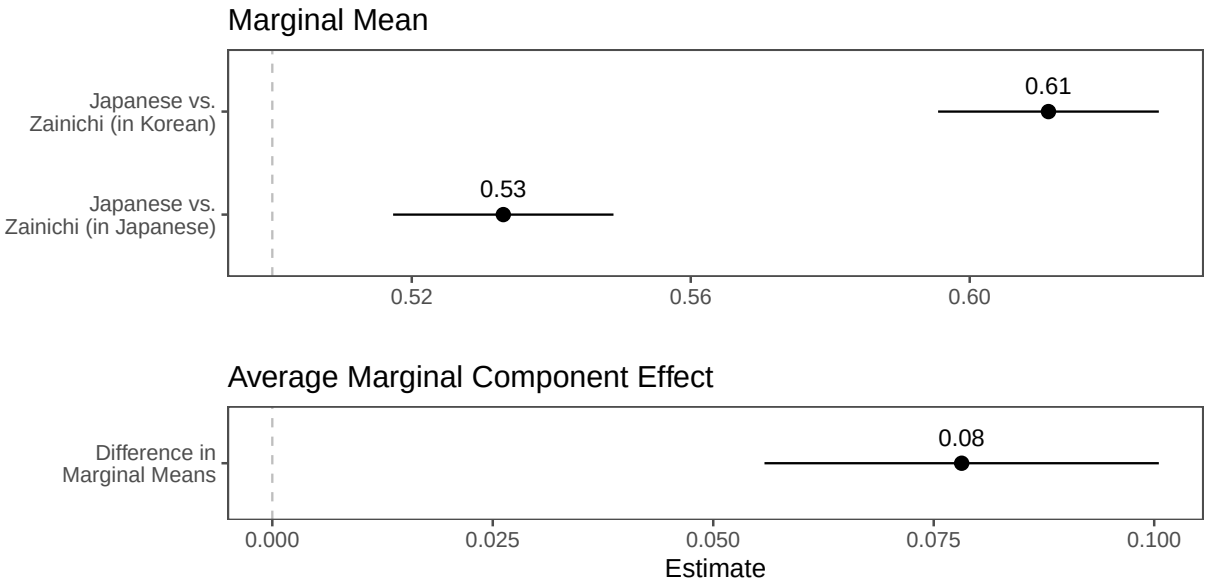

Figure C.3: Marginal means of Japanese applicant names compared to *Zainichi* names and average marginal component effect of Korean names (Study 2).

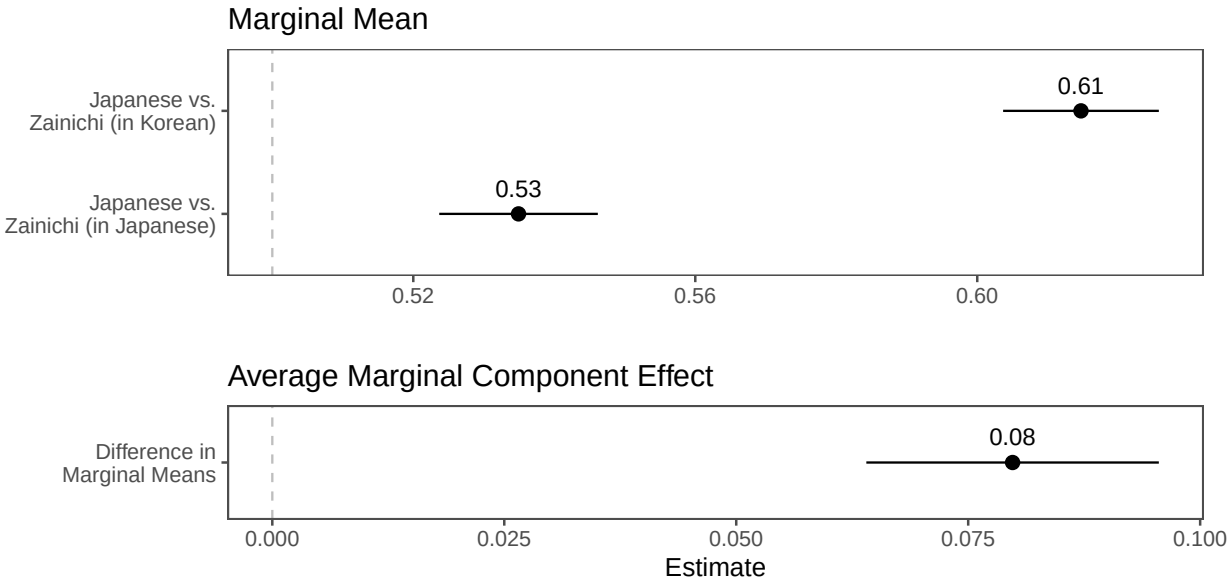

Figure C.4: Marginal means of Japanese applicant names compared to *Zainichi* names and average marginal component effect of Korean names (Studies 1 and 2).

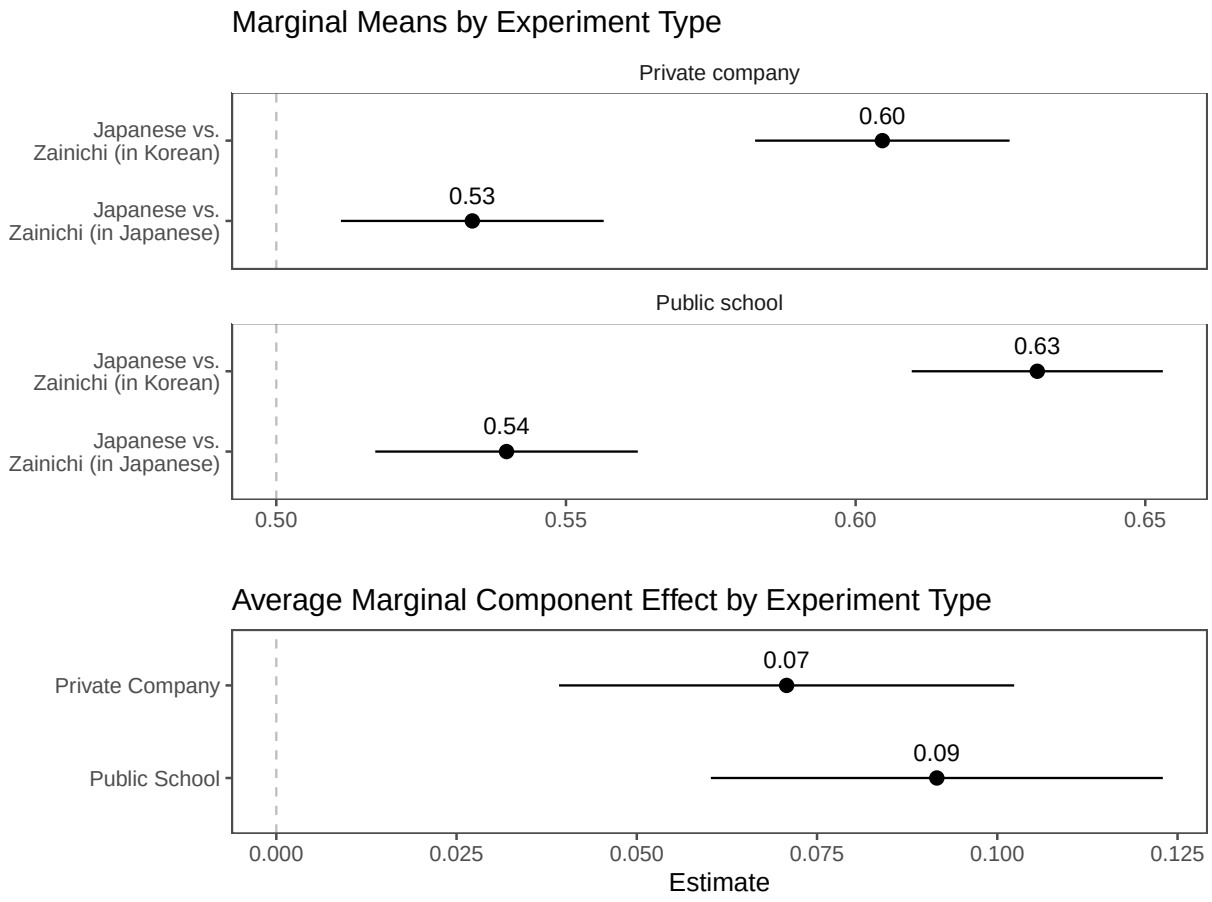

Figure C.5: Marginal means of Japanese applicant names compared to *Zainichi* names and AMCE of Korean names disaggregated by experiment type (Studies 1 and 2).

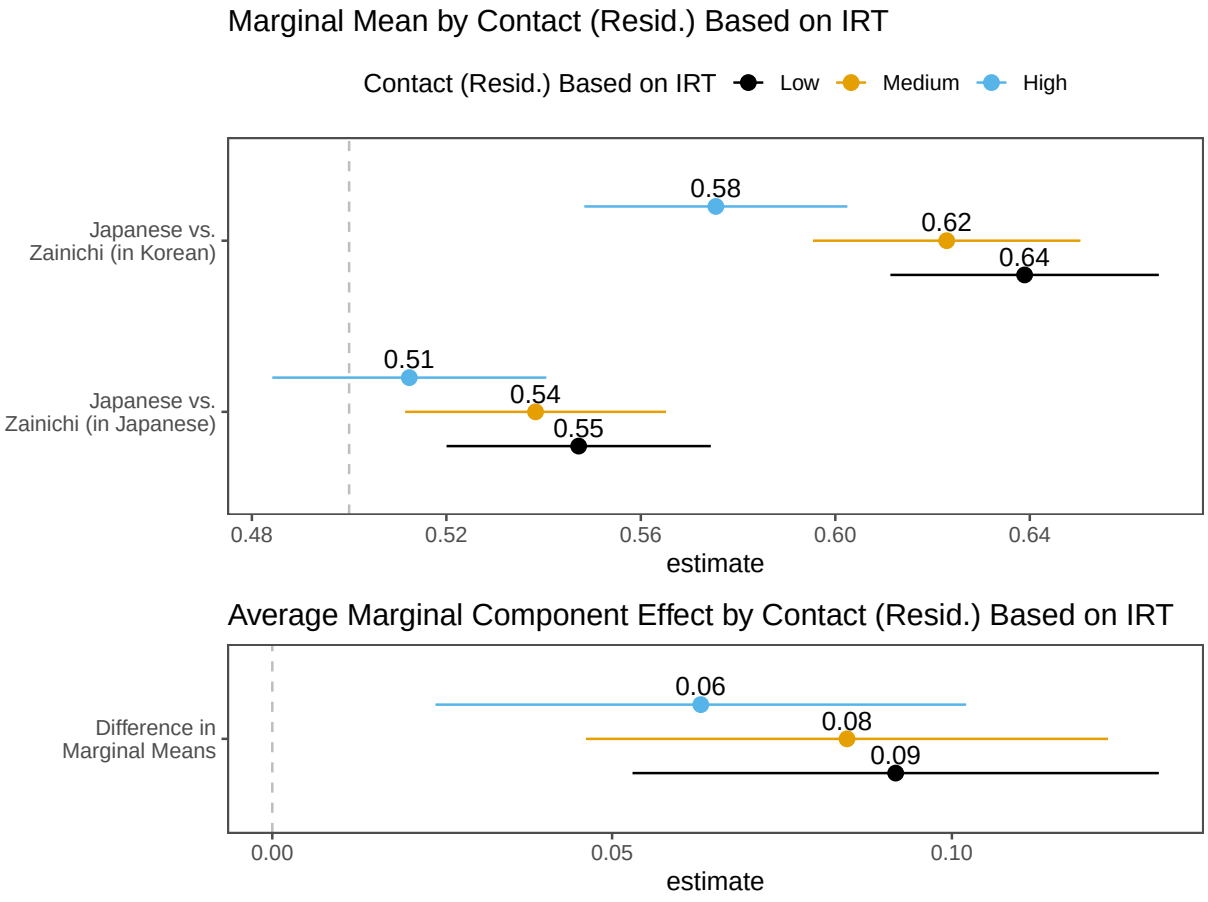

Figure C.6: Marginal means of Japanese applicant names compared to *Zainichi* names and AMCE of Korean names disaggregated by respondent intergroup social contact measured by IRT (Study 2). *Note: For this analysis, we use the residuals from a regression model predicting the IRT score using respondents' demographic attributes and political orientation.*

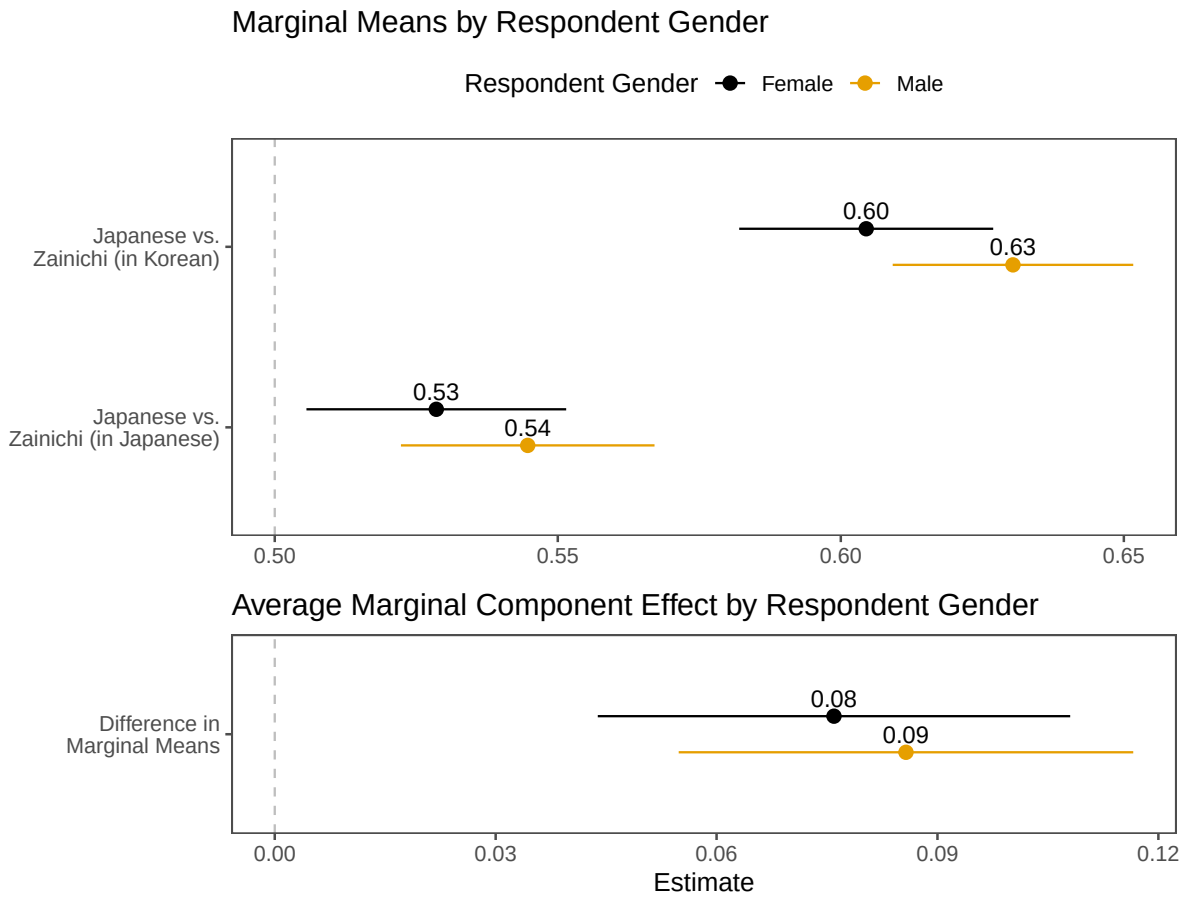

Figure C.7: Marginal means of Japanese applicant names compared to *Zainichi* names and AMCE of Korean names disaggregated by respondent gender (Study 1).

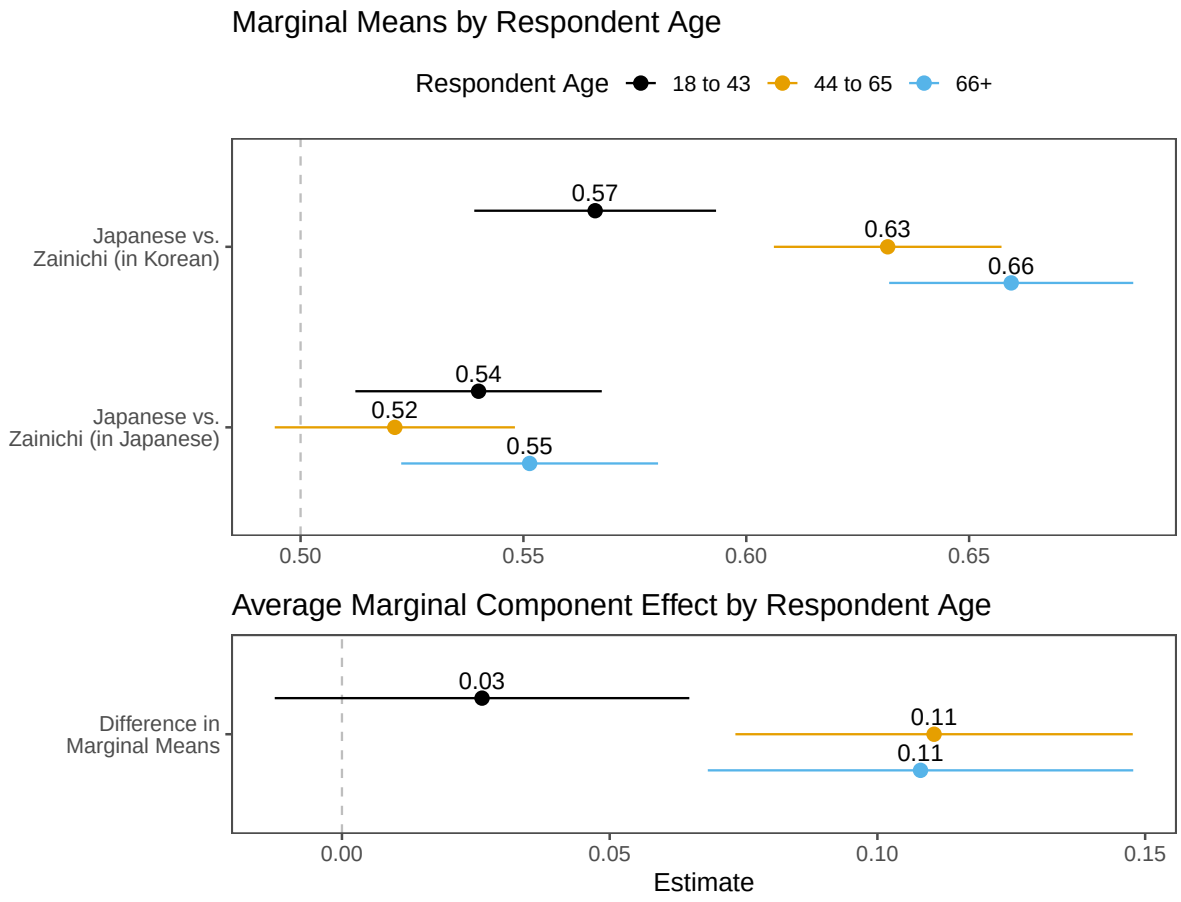

Figure C.8: Marginal means of Japanese applicant names compared to *Zainichi* names and AMCE of Korean names disaggregated by respondent age (Study 1).

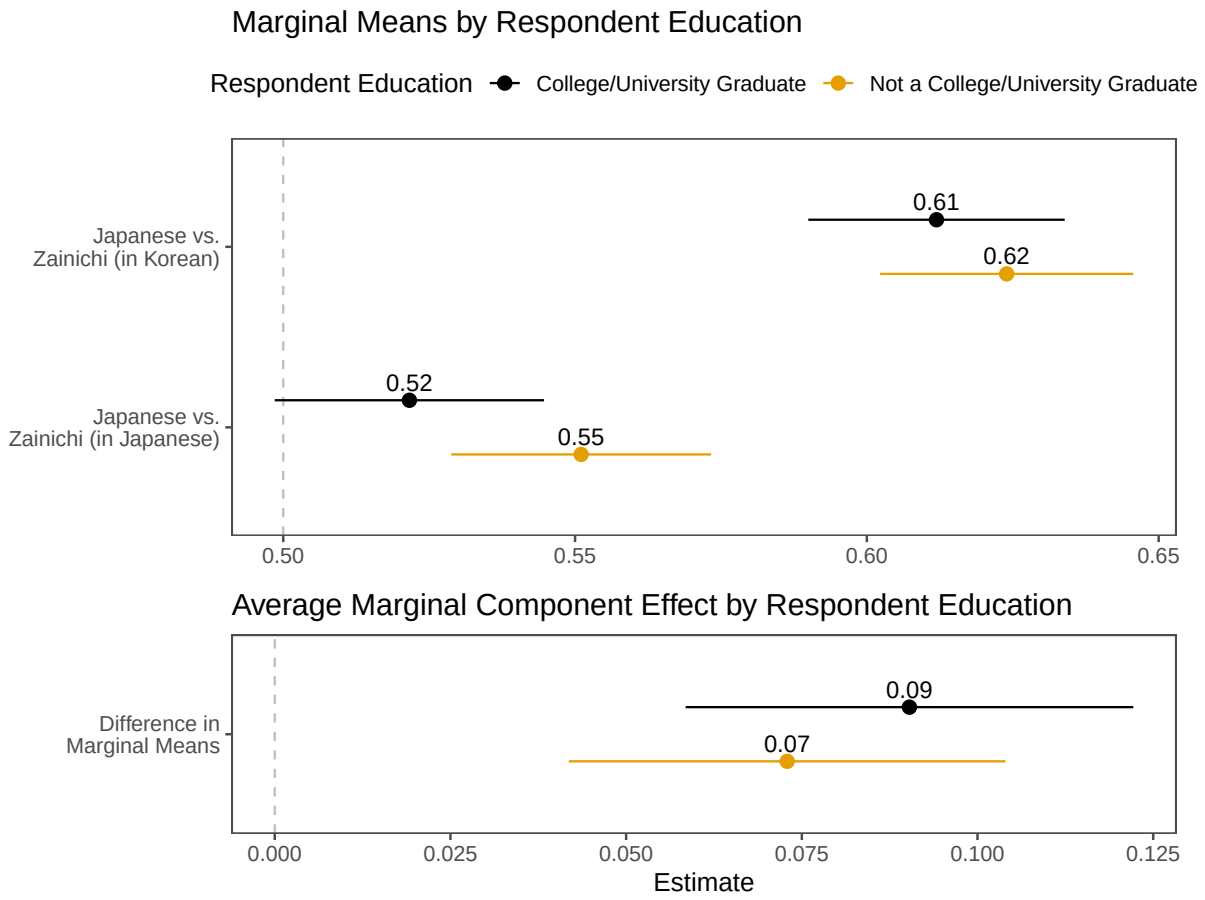

Figure C.9: Marginal means of Japanese applicant names compared to *Zainichi* names and AMCE of Korean names disaggregated by respondent education (Study 1).

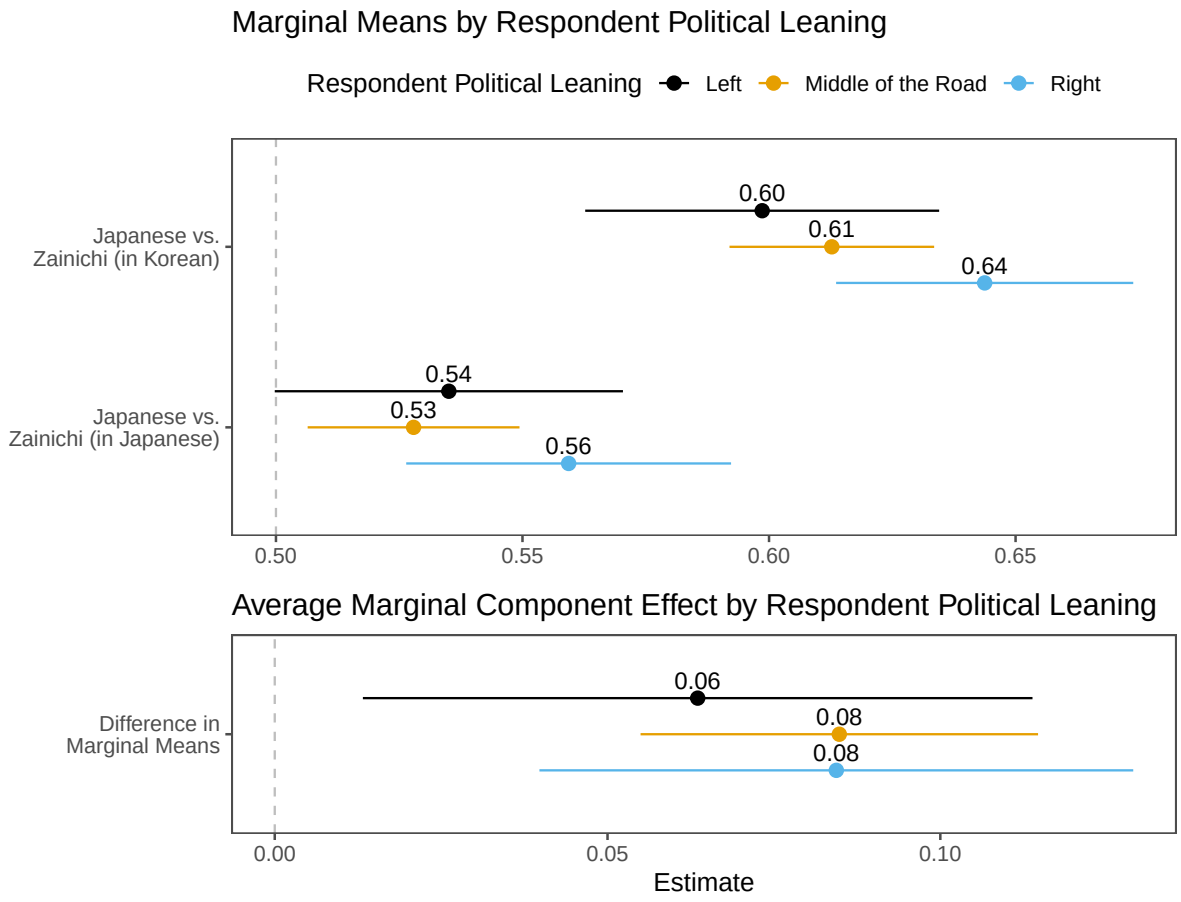

Figure C.10: Marginal means of Japanese applicant names compared to *Zainichi* names and AMCE of Korean names disaggregated by respondent political leanings (Study 1).

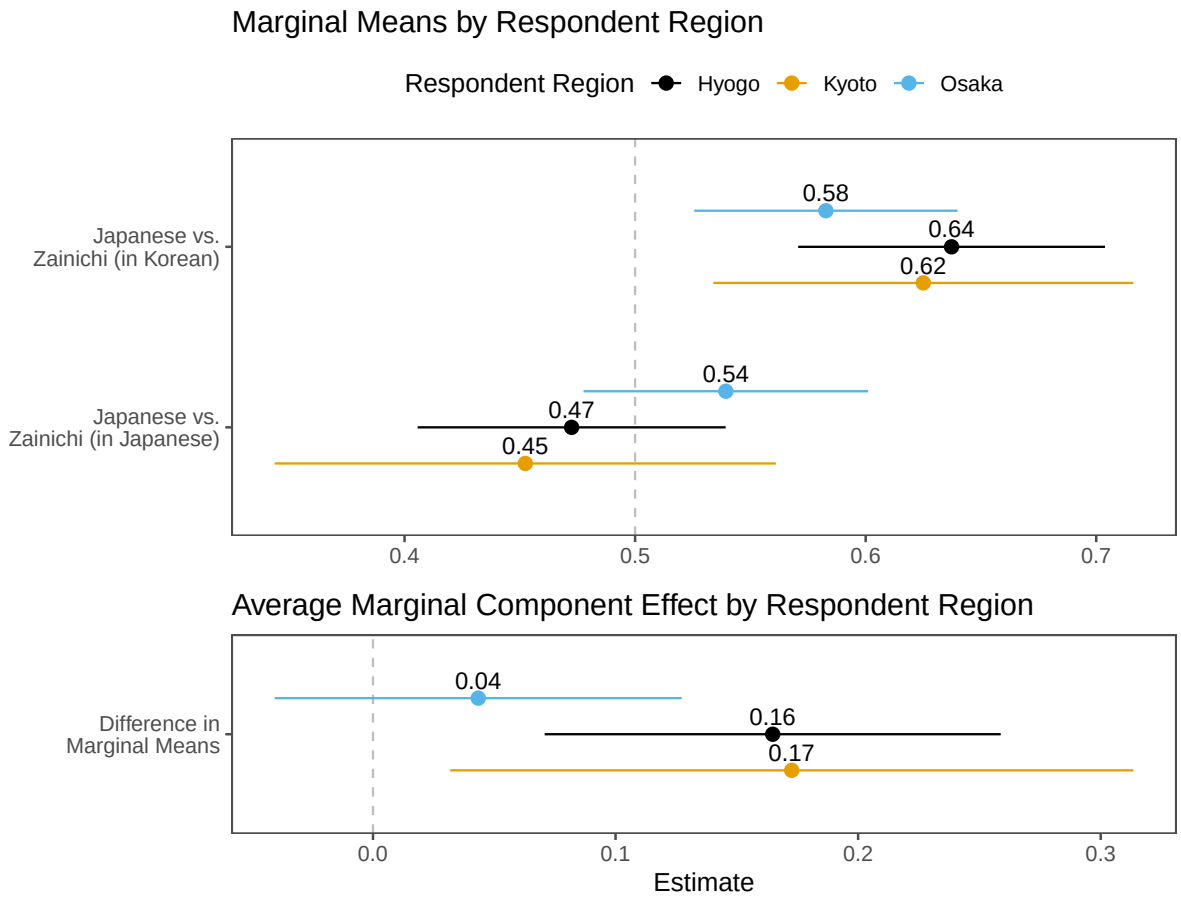

Figure C.11: Marginal means of Japanese applicant names Compared to *Zainichi* names and AMCE of Korean names Disaggregated by respondent region (Study 1).

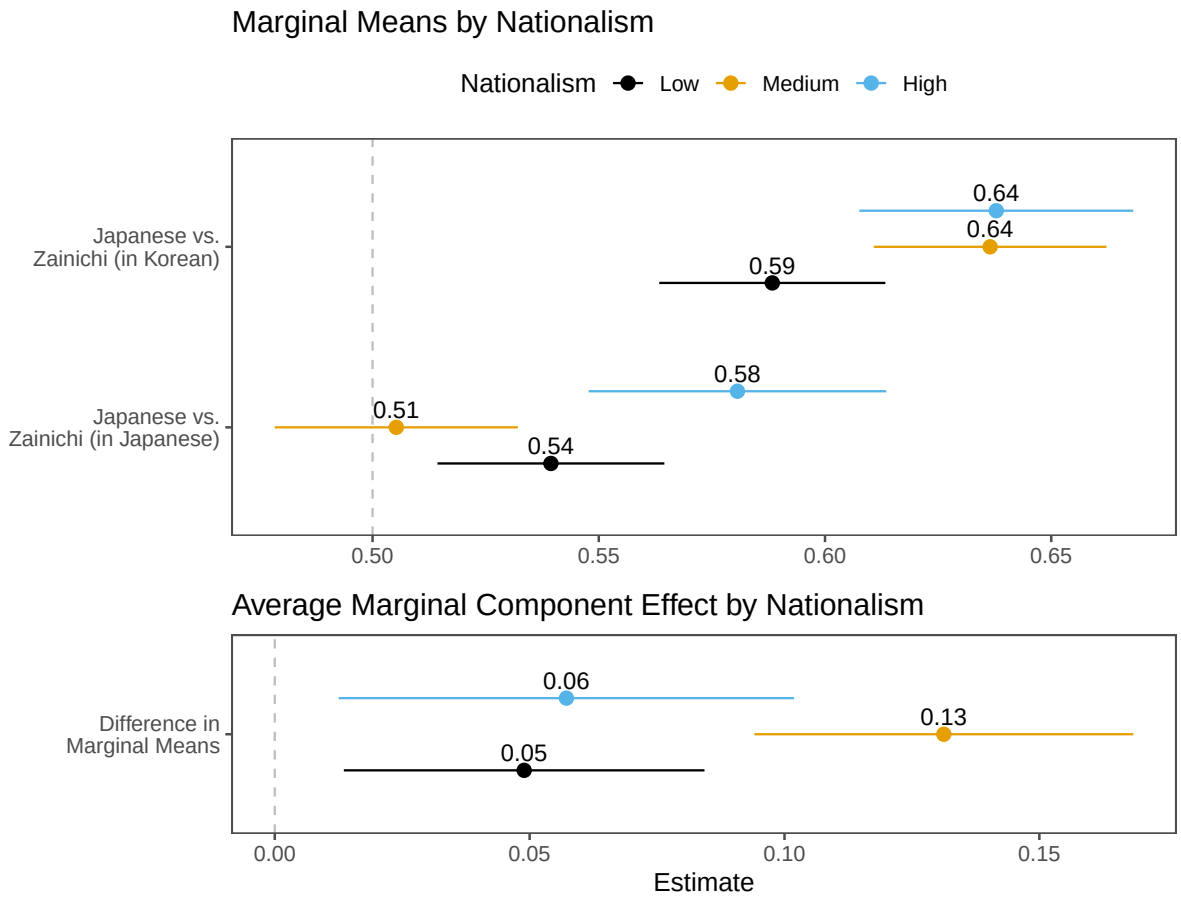

Figure C.12: Marginal means of Japanese applicant names compared to *Zainichi* names and AMCE of Korean names disaggregated by respondents' nationalist ideologies (Study 1).

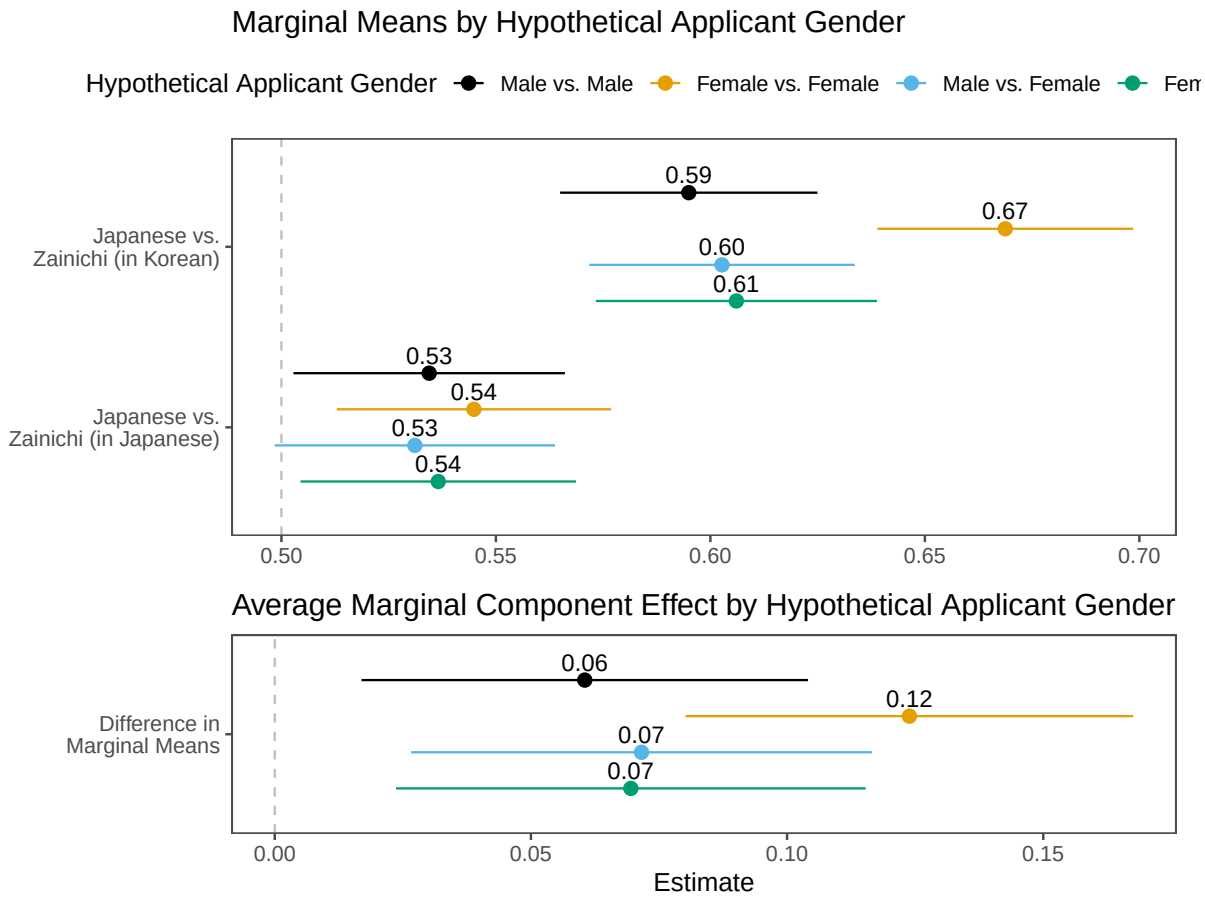

Figure C.13: Marginal means of Japanese applicant names compared to *Zainichi* names and AMCE of Korean names disaggregated by applicant gender matchups (Study 1).

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