



WIDER Working Paper 2023/15

The impact of affirmative action in India and the United States

A systematic literature review

Simone Schotte,^{1,2} Tharcisio Leone,¹ and Rachel Gisselquist¹

January 2023

Abstract: This paper provides a systematic review of quantitative literature investigating the success of affirmative action (AA) policies in addressing socio-economic inequalities between ethnic groups in education and employment. We focus on two of the most influential national experiences: caste-based AA in India and race-based AA in the United States. We find that AA has been successful in extending the opportunities available to target groups in both countries, with the Indian reservation policy showing stronger effects on the representation of minorities than non-quota measures in the US. Evidence on the impact of AA on the performance and actual achievements of target groups is more diverse. This is primarily due to mixed findings regarding the prevalence of academic mismatch among students admitted via AA, which has been investigated primarily in the US context. Evidence on the spillover effects of AA to non-target groups is scarce but points to negative replacement effects among over-represented groups.

Key words: affirmative action, systematic review, inequalities, India, United States

JEL classification: I38, J15

Acknowledgements: This paper was prepared within the ‘Affirmative action around the world’ workstream under the UNU-WIDER project ‘Addressing group-based inequalities’. The authors are indebted to Melissa Samarin, who conducted the literature search for this study, and Satu Kuitunen, who provided excellent research assistance.

Supplementary material: lists of studies available as online appendix [here](https://www.wider.unu.edu/publication/impact-affirmative-action-india-and-united-states) (https://www.wider.unu.edu/publication/impact-affirmative-action-india-and-united-states)

¹ UNU-WIDER, Helsinki; ² Finnish Overseas Consultants Ltd, Helsinki, corresponding author: simone.schotte@finnoc.fi

This study has been prepared within the UNU-WIDER project [Addressing group-based inequalities](#).

Copyright © UNU-WIDER 2023

UNU-WIDER employs a fair use policy for reasonable reproduction of UNU-WIDER copyrighted content—such as the reproduction of a table or a figure, and/or text not exceeding 400 words—with due acknowledgement of the original source, without requiring explicit permission from the copyright holder.

Information and requests: publications@wider.unu.edu

ISSN 1798-7237 ISBN 978-92-9267-323-9

<https://doi.org/10.35188/UNU-WIDER/2023/323-9>

Typescript prepared by Merl Fluin.

United Nations University World Institute for Development Economics Research provides economic analysis and policy advice with the aim of promoting sustainable and equitable development. The Institute began operations in 1985 in Helsinki, Finland, as the first research and training centre of the United Nations University. Today it is a unique blend of think tank, research institute, and UN agency—providing a range of services from policy advice to governments as well as freely available original research.

The Institute is funded through income from an endowment fund with additional contributions to its work programme from Finland and Sweden, as well as earmarked contributions for specific projects from a variety of donors.

Katajanokanlaituri 6 B, 00160 Helsinki, Finland

The views expressed in this paper are those of the author(s), and do not necessarily reflect the views of the Institute or the United Nations University, nor the programme/project donors.

1 Introduction

The need to address inequality has become an important element of public debate all over the world and forms an integral goal of the 2030 Agenda for Sustainable Development. While most common indicators of inequality, such as the Gini index, focus on vertical inequalities between individuals or households, horizontal inequalities (HIs) between ethnic groups present an important source of social resentment with major implications for peace, economic development, and social cohesion (Canelas and Gisselquist 2018).

HIs occur between groups that are culturally defined or socially constructed, based on characteristics such as race, caste, or religion. For the most part, people are born into these groups, and—due to historically determined factors not within their control—group membership can severely constrain the set of socio-economic opportunities available to them. Thus, HIs are not the result of individual choices or efforts, and they therefore have important implications for sentiments of social justice and stability (Stewart 2000). Nonetheless, the literature has offered relatively little guidance about what policies are best suited to address HIs—and under what circumstances (see *inter alia* Gulzar et al. 2020; Jorda and Alonso Alonso 2020; Ravallion 2020).

For the purpose of this paper, we focus on affirmative action (AA) as one policy choice to address HIs. Specifically, we are interested in the impact of AA policies adopted to address socio-economic inequalities between ethnically defined groups in the areas of employment and education. These are controversially discussed in the literature and in public debate (Chowdhury et al. 2020; Crosby et al. 2006; Holzer and Neumark 2000; Murrell and Jones 1996). In an attempt to make up for the consequences of historical marginalization, discrimination, or oppression, AA policies reallocate resources and opportunities—such as government jobs, public contracts, business loans, or admission to higher education—towards designated groups, in order to increase their proportion in the labour force, entrepreneurial class, or student population (Sabbagh 2011). Where slots are limited, this will lead to replacement effects among non-target groups, which presents the main point of contention in the public debate surrounding AA. According to Fryer and Loury (2005), for example, there are strong beliefs that preferential policies end up constraining the opportunities available to individual members of formerly over-represented groups and thereby constitute a form of reverse discrimination. This not only may damage the outcomes of these individuals but can also have a cost for society overall, if the beneficiaries of AA happen to perform worse than the non-beneficiaries whom they are replacing.

In this paper, we take stock of the evidence on the extent to which ethnic AA policies have successfully extended the opportunities and outcomes of target groups, and the documented spillover effects on non-target groups. For this purpose, we provide a systematic review of the quantitative literature on the two most-analysed national experiences of such policies: the AA policies in the United States and the ‘reservation’ policies in India (hereafter we refer to both these policies as AA) (Schotte et al. 2023). In the two countries, race and caste respectively are associated with systems of structural disadvantage, and AA measures have been adopted in response to demands from historically marginalized ethnic groups—initially with strong public support (Weisskopf 2004). Over time these measures have been repeatedly contested, including a number of high-level court cases pursued by members of non-target groups claiming unfair preferences and reverse discrimination. However, the legal responses to these contestations have differed substantially between the two countries. In India, the Constitution affirmatively enshrines ‘special provisions’ in employment and education for members of historically disfavoured castes, and amendments to the original text have entrenched and expanded the practice as an explicit exception to the equality principle. Contrariwise, in the US, race-based AA policies have been

increasingly softened or abolished entirely at state level, based on the constitutionally guaranteed individual right to equal treatment and non-discrimination.

In this paper, we present a detailed discussion of the origins and evolution of the legal frameworks governing AA policies in the areas of education and employment in India and the US, and we provide an overview of the relevant literature assessing the effects of these policies. For this purpose, we have systematically screened more than 3,900 studies and created a database containing the information from 89 studies (24 for India and 65 for the US) meeting our inclusion criteria. The findings from this review are intended to provide guidance to researchers and policy makers interested in policies to address HIs in the context of the two studied countries and beyond.

Our analysis provides evidence on three major areas of contestation concerning AA.

First, we investigate the success of AA policies in reaching their most immediate objective: to enhance the opportunities available to designated groups and increase their representation in areas directly targeted by the policy. We call these first-order effects. Here we specifically focus on enrolments in higher education and access to jobs. Our review shows clear support for the role of AA in expanding the representation of target groups in education and employment. Especially for India, the studies reviewed provide evidence that the reservation policy has been efficient in this regard. For the US, we find a higher diversity in the results, which we attribute to the different policy set-up (which bans quotas), but the findings are still predominantly positive. In comparing these experiences, we consider *inter alia* the effects of systems of ‘strong’ (reservation in India) versus ‘soft’ (non-discrimination in the US) preferences.

Second, we assess the effects of AA on the performance and achievements of target groups that result from increased access. We call these second-order effects. Here we specifically look at evidence of three aspects that relate to some of the most common criticisms concerning AA: (1) the impact of AA on the academic performance and returns to education of target groups; (2) the impact of AA on the quality of work performance and earnings differentials between target and non-target groups; (3) the social-psychological consequences related to AA. Here our review provides a higher diversity in the results, which primarily relates to the mixed evidence on the academic performance of AA students in the US context, while we find no evidence of differences in work performance between beneficiaries and non-beneficiaries. Heatedly debated particularly in the US context is the ‘mismatch hypothesis’, which stipulates that the preferential admission of underqualified minority students to highly competitive colleges via AA ultimately harms their education prospects, since they are not academically prepared to succeed at these elite higher-education institutions (see *inter alia* Alon and Tienda 2005; Ayres and Brooks 2004). Evidence on the social-psychological consequences of AA is also mixed. On the one hand, negative stereotypes expose beneficiaries to social stigma. On the other hand, evidence from India suggests that the opportunities created via AA can foster aspirations and upwards mobility among marginalized groups, and evidence from the US points to general benefits from increased diversity.

Third, we assess the implications of AA for other groups in society. As indicated above, much of the public debate surrounding AA concerns the impact of AA on individuals who may in consequence be constrained in their opportunities. Despite the importance of these side effects in public debate, our review concludes that this aspect is often neglected in the literature. However, the limited available evidence is consistent with the existence of replacement effects.

The remainder of this paper is structured as follows. Section 2 introduces the conceptual framework that structures our thinking about the consequences and social desirability of AA. Section 3 presents the origins and evolution of AA policies in India and the US, providing a comparative perspective. Section 4 gives a short overview of the research methodology underlying

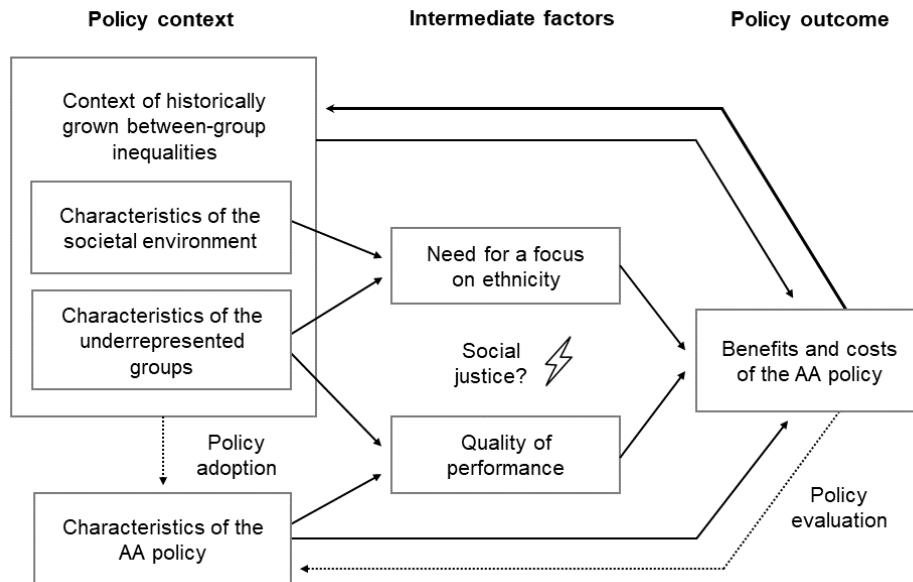
this systematic literature review. The key patterns that emerge from the literature evidence are presented in section 5, and section 6 concludes.

2 Conceptual framework

The conceptual framework that structures our thinking about the consequences and social desirability of AA follows the model proposed by Weisskopf (2004). In the diagrammatic presentation provided in Figure 1, the solid arrows (running from left to right) illustrate the causal chain that runs from the policy context, through a set of intermediate factors, to the policy outcome. Expanding on the original model, the dotted arrows illustrate the policy adoption and evaluation process, and the bold arrow (running from right to left) illustrates the final policy objective.

Weisskopf (2004) highlights the policy context as the primary factor determining the success or failure of an AA policy (illustrated by the boxes on the left-hand side of Figure 1). Two key determinants in this regard are first, the characteristics of the societal environment, shaped by historically grown between-group inequalities, and second, the characteristics of the historically under-represented groups. In addition, the characteristics of the AA policy itself play an important role, for example, via the adoption of hard versus soft measures and the extent of compliance, monitoring, and enforcement. In our framework, we consider the policy design not only as a context factor, but also as the result of a historical and societal process (emerging from the inequality context) that leads to the adoption of the policy.

Figure 1: Conceptual framework



Source: authors' illustration based on Weisskopf (2004).

The context factors influence the policy outcome both directly and indirectly through two intermediate factors (illustrated by the two boxes in the centre of Figure 1). First, policy success and desirability depend on the need for measures that benefit certain demographic groups in society, which—in the context of this paper—are defined in terms of ethnicity. This need for a focus on ethnicity, as opposed to the assessment of individual circumstances, depends on both the societal environment and the characteristics of under-represented groups. For example, on the one hand, we would expect AA policies to be more justifiable and have greater potential to bring

positive societal change in contexts marked by a larger extent of marginalization, stigmatization, and (past) mistreatment experienced by designated ethnic groups. On the other hand, these factors can widen cultural or political cleavages, which fuel societal conflict and may threaten policy success.

Second, policy success and desirability clearly depend on the potential of designated groups to perform well in the positions to which the AA policy grants them preferential access. While proponents of AA policies argue that prospective beneficiaries are mainly constrained in accessing opportunities and will perform just as well as other candidates once given the chance, critics are concerned that prospective beneficiaries will perform poorly as they are not adequately prepared for the positions and would not have qualified for them in the absence of the policy. The quality of performance will depend on the characteristics of the designated groups as well as the policy design—for example, in terms of the magnitude of the preference granted and the provision of additional training or other supplementary measures.

A key concern is that these two intermediate factors can stand in direct conflict. For example, on the one hand, we would expect that the larger the gap in average socio-economic outcomes between designated groups and the rest of the population, the more likely the policy would be to reach those in need of support and to have broader societal backing. On the other hand, the larger the socio-economic disadvantage experienced by designated groups, the bigger the risk that prospective AA beneficiaries might lack the necessary preconditions to perform well in the positions. Striking a balance between these two factors will be important for the perceived social justice of the policy and ultimately for policy success.

The combination of context, policy design, and intermediate factors shapes the policy outcome (illustrated by the box on the right-hand side of Figure 1), which will often include both positive (benefits) and negative (costs) consequences. In our framework, we allow for a feedback effect from the policy outcome to the policy context (the bold arrow running from right to left in the diagram), as AA policies are generally intended to reshape the societal context. Benefits generally derive from the better inclusion of under-represented groups in society and the provision of opportunities to those who have been excluded, which may contribute to political stability and legitimacy, reduced stereotypes, and greater human capital in terms of a more diverse, motivated, and qualified workforce. Among the potential costs are replacement and mismatch effects, leading to reduced overall performance and increased stigmatization of designated groups. While AA is implemented to reduce between-group inequalities, there can be a constellation where an AA policy exacerbates within-group inequality (if it mainly reaches the better-off within the target group) or reinforces between-group tensions (if the preferential treatment of designated groups is perceived as unfair). Policy evaluations (the dotted arrow running from right to left in Figure 1) can help to assess policy success or failure and improve the policy design.

3 Origins and evolution of AA policies in India and the US

This section provides a brief review of the historical origins and evolution of AA policies in education and employment in India and the US, offering a comparative perspective.

3.1 AA policies in India

In India, AA policies have been adopted to address inequalities originating from the caste system that stratifies the Hindu population (accounting for 79.8 per cent of the total population, according to the 2011 census). While caste is not unique to Hinduism, and similar structures exist within

India's sizeable religious minority populations—predominantly Muslims (14.2 per cent), Christians (2.3 per cent), and Sikhs (1.7 per cent)—their consideration in the overall caste structure has been an issue of contention (Ali 2012; Hasan 2022). In addition to the caste system, 8.6 per cent of the population (according to the 2011 census) belong to Indigenous tribal communities.

The caste system in India is estimated to be over 2,500 years old. In ancient times, following Hindu scriptures, the varna system divided society into four and later five 'mutually exclusive, endogamous, hereditary and occupation specific groups' (Deshpande 2005: 1): the Brahmins (priests/scholars/teachers) on top, followed in order by Kshatriyas (rulers/warriors), Vaisyas (merchants/landowners), Sudras (labourers), and Ati-Sudras (people who do 'unclean' work and are outside the fourfold system) at the bottom. The first three groups are upper-caste Hindus, while the last two groups comprise all castes that do menial jobs, with the Ati-Sudras being considered 'outcastes' and 'untouchables'. Over time, the varna system transformed into the substantially more complex jati system. It is estimated that today there are up to 3,000 jatis, many of which are region-specific. The link between jati and varna is not always straightforward, especially in the middle ranks, which comprise the largest share of the Indian population (Deshpande 2005).

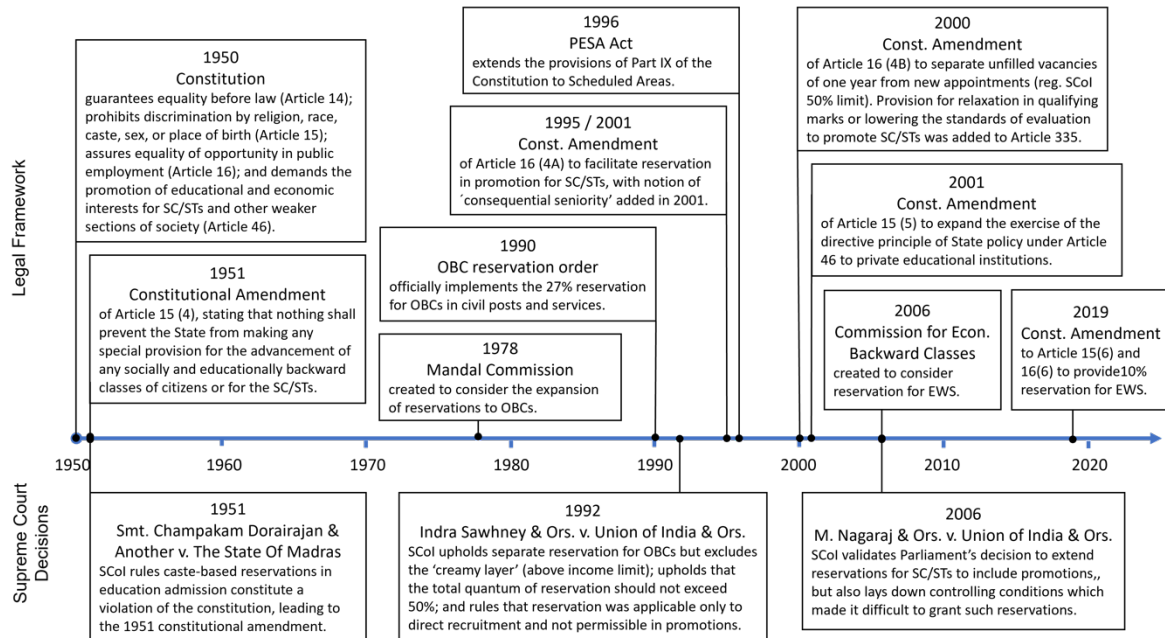
The British colonial regime, which lasted from 1858 until the independence of India and Pakistan in 1947, also shaped caste dynamics (De Zwart 2000). Despite making up only about three per cent of the population, Brahmins dominated high-ranking positions in the civil service and related professions that were open to Indians during colonial rule, while Hindu outcastes (then 'untouchables') and members of India's Indigenous tribal groups were commonly labelled 'depressed classes' (Weisskopf 2004). In response to increasing public pressure from non-Brahmins demanding free and compulsory education as well as reservations in government jobs from the late 1800s and early 1900s onwards, several states started to reserve places in public-service jobs and educational admissions for 'backward communities', which depending on definitions might comprise all non-Brahmins or less extensive groupings (Laskar 2010; Munusamy 2022; Weisskopf 2004). Around this time, the Sanskrit/Marathi term Dalit, meaning 'the oppressed', and the Hindi term Adivasis, meaning 'original inhabitants', were increasingly used by rights activists to refer to 'untouchable' outcastes and tribal communities respectively (Deshpande 2005).

The first national-level reservation policy in political representation was introduced with the Government of India Act of 1935, which reserved seats in the federal and provincial assemblies for depressed classes. The act established the legal terms Scheduled Castes (SCs) and Scheduled Tribes (STs), which referred to the jati and tribal communities listed as designated groups in a schedule appended to the act (Weisskopf 2004). In addition, reservations for SCs/STs in public-service jobs and education admissions were maintained and in some cases expanded at the provincial level, while at the federal level, the only reservations in public services were for religious minorities (Weisskopf 2004: 11).

With India gaining independence in 1947, the issue of providing for the advancement of socially and educationally weaker groups in society—particularly SCs/STs—became an integral part of the drafting of the Indian Constitution, while India's establishment as a secular state implied the discontinuation of reservations for religious minorities (Weisskopf 2004). The Indian Constitution that came into force in 1950 not only guarantees equality before law (Article 14) and prohibits discrimination by religion, race, caste, sex, or place of birth (Article 15) but also assures equality of opportunity in public employment (Article 16) and demands the promotion of educational and economic interests for SCs/STs and other weaker sections of society (Article 46), thereby laying the legal grounds for AA policies. Moreover, Articles 243D and 243T of the Constitution also mandate the reservation of seats for SCs/STs in the House of the People and the State Legislative

Assemblies respectively. While this reservation in political representation is rather uncontroversial, reservations in public employment and educational admissions have been challenged repeatedly (Weisskopf 2004). A timeline of successive changes in the legal framework and landmark rulings by the Supreme Court of India (SCoI) is provided in Figure 2.

Figure 2: Timeline of caste-based AA in education and employment in India



Note: EWS = economically weaker sections.

Source: authors' illustration.

Only a few months after the Constitution was adopted, two Brahmins filed petitions in the High Court of Madras because they had not been accepted into medical or engineering college respectively, despite having qualifying marks (Munusamy 2022). They alleged that these rejections violated fundamental rights under Article 15 (1), which prohibits discrimination by the state on the grounds of religion or caste, and Article 29 (2), which states that 'no citizen shall be denied admission into any educational institution maintained by the State or receiving aid out of State funds on grounds only of religion, race, caste, language or any of them' (Constitute 2016). The High Court of Madras ruled that the reservations in college admissions were a violation of Article 29 (2), and on appeal the SCoI upheld the decision. In response to this ruling, the first Constitutional Amendment of 1951 extended Article 15 with clause (4) as follows: 'Nothing in this article or in clause (2) of Article 29 shall prevent the State from making any special provision for the advancement of any socially and educationally backward classes of citizens or for the Scheduled Classes and the Scheduled Tribes' (Munusamy 2022: 4). With this clarified legal basis, AA policies for SCs/STs were implemented at two levels of government: '(1) by the Union Government in the public educational institutions maintained and funded by the Government of India and in appointments to posts in the departments governed by the Government of India; (2) by the State governments in their respective States in educational institutions maintained and funded by the State Government and in employment to posts in the departments governed by the State' (Munusamy 2022: 4).

In 1978, the Mandal Commission was appointed to address the concerns of Other Backward Classes (OBCs), a collective term used by the Government of India to refer to all groups other than SCs/STs who are educationally or socially disadvantaged. The commission report recommended the extension of reservation policies to OBCs in government services, along with a

series of measures to enhance education. About a decade later, in 1990, the 27 per cent reservation for OBCs in civil posts and services was officially implemented. Compared with the reservation for SCs/STs, this extension was substantially more controversial, sparking protests from middle- and upper-caste Hindus especially in the northern regions (Weisskopf 2004). In her petition against the order, the journalist Indra Sawhney made three main arguments (Singh 1993):

1. The continuous extension of reservations violated the right to equal opportunity.
2. Caste did not represent a reliable indicator of backwardness.
3. The functioning and efficiency of public institutions would be at risk.

In its 1992 decision, the SCoI upheld the separate reservation for OBCs with three limitations. First, an income limit should be imposed as an eligibility criterion to exclude the ‘creamy layer’; second, the total quantum of reservation (including SCs, STC, and OBCs) should not exceed 50 per cent; third, reservation was applicable only to direct recruitment and not to promotions (Munusamy 2022). However, these limitations were partly reversed by subsequent constitutional changes. Specifically, the 1995 amendment to Article 16 (4A) facilitates reservation in promotions for SCs/STs, with the notion of ‘consequential seniority’ added in 2001, and the 2000 amendment to Article 16 (4B) considers unfilled vacancies carried over from one year to the next to be separate from new appointments, so that these are not aggregated with regard to the 50 per cent limit (Constitute 2016). In its 2006 decision, the SCoI upheld parliament’s decision to extend reservations for SCs/STs to include promotions, but it also established controlling conditions that require the state to demonstrate the backwardness and inadequate representation of the class, and to show that the reservations are ‘in the interest of administrative efficiency’ (Constitute 2016).

The 2000 and 2001 constitutional amendments also strengthened the provisions in the area of education. The former extended Article 335 to clarify the right of the state to make provisions in favour of SCs/STs, including measures such as relaxing ‘qualifying marks in any examination or lowering the standards of evaluation’ (Constitute 2016). Moreover, the representation of STs was strengthened via the Panchayat Extension to Scheduled Areas (PESA) Act, adopted in 1996. From 2000, PESA ‘required that all chairperson positions in three tiers of local government councils, as well as at least half the seats on each of those councils’ be reserved for STs in Scheduled Areas (Gulzar et al. 2020: 1231)—which increased STs’ descriptive representation and their share in government jobs.

The latest extension, which entered the Constitution in 2019, enables the state to make special provision for the advancement of any economically weaker sections (EWS) of society (in addition to the groups specified previously). EWS status is determined by family income along with other economic indicators. The reservation in admissions to (private or public) educational institutions and public-sector jobs is capped at 10 per cent of the total seats (Munusamy 2022).

3.2 AA policies in the US

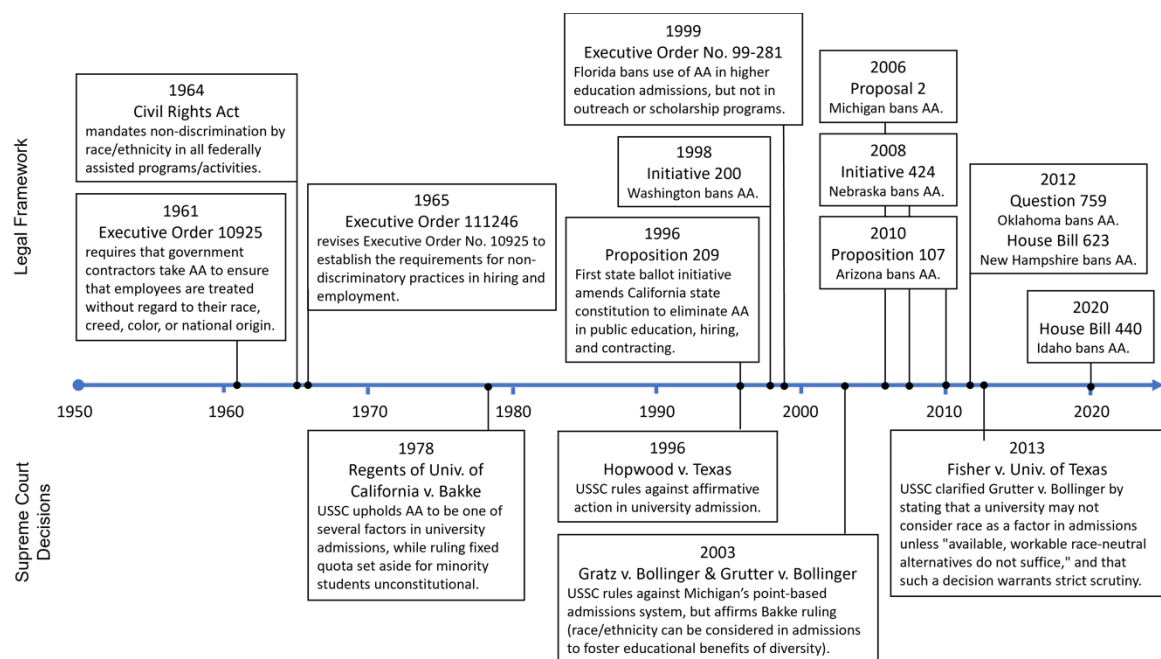
In the US, AA policies have been adopted to address racial inequalities. Groups that have been beneficiaries of these policies make up about 33.8 per cent of the total population (according to the 2021 census), including those identifying as Black or African American (13.6 per cent), Hispanic or Latino (18.9 per cent), and Native or Indian American (1.3 per cent).

The history of ethnic and racial divisions in the US dates back to its foundation as a nation. When White European settlers arrived on the continent and gained control over the land, Native Americans were subjected to violent dispossession. Subsequently, Black slaves were forcibly brought from Africa as an inexpensive source of labour. While the Declaration of Independence passed in 1776 asserted that ‘all men are created equal’, laws known as ‘slave codes’ defined slaves

as property rather than as people. Among other regulations, they restricted the ability of slaves to buy or sell goods and discouraged their education, except for religious instruction. After the Civil War and the formal abolition of slavery in 1865, laws known as ‘Black codes’ continued to limit the freedom of African Americans and to sustain their availability as cheap labour by forcing them into unbreakable annual contracts. In the southern states, ‘Jim Crow’ laws enforced the de jure segregation of Black and White people in all public facilities from the 1870s onwards, remaining in place for a century.

By the late 1950s and early 1960s, the Civil Rights Movement succeeded in prompting the US federal government to provide rights and opportunities to the African-American population that had long been denied them. Fundamental to the movement’s success was Martin Luther King Jnr’s leadership, following a strategy of civil disobedience and non-violent resistance inspired by Mahatma Gandhi’s struggle for Indian independence (Deshpande 2005). Executive Order 10925, signed by President John F. Kennedy in 1961, was the first important step to address racial discrimination in government employment, including a provision that government contractors must take AA to ensure that employees were treated without regard to their race, creed, colour, or national origin. The subsequent Civil Rights Act, adopted under President Johnson in 1964, is the cornerstone legislation for the emancipation of the African-American population and the adoption of AA policies in the US (Deshpande 2005). It ended the application of Jim Crow laws, strengthened the enforcement of voting rights, and prohibited employment discrimination. In addition, Executive Order 111246, issued in 1965, further established the requirement of non-discriminatory practices in hiring and employment. Figure 3 tracks key legislative changes and landmark rulings of the US Supreme Court (USSC) concerning race-based AA in education and employment in the US.

Figure 3: Timeline of race-based AA in education and employment in the US



Source: authors’ illustration.

In the early 1960s, the term ‘affirmative action’ was used in the US to refer to ‘active outreach efforts made by organizations and enterprises to assure that members of under-represented groups would have the same kind of access to jobs and educational opportunities as their more advantaged fellow citizens—without any regard for their ethnic status’ (Weisskopf 2004: 7). For monitoring purposes, the US Department of Labor began tracking the representation of Black people in public

employment. The resulting pressure to meet target quotas—as argued by Weisskopf (2004)—incentivized public institutions and other entities receiving public funding to apply preferences in selection or admission, favouring Black people. This is when AA became increasingly understood as a form of ‘positive discrimination in favor of under-represented groups’ (Weisskopf 2004: 8), which from the 1970s generally also extended to Hispanics and Native Americans.

As a prominent example, the University of California (UC) Medical School at Davis set aside 16 out of 100 seats for minority students. This practice was challenged by Allan Bakke, a White male who had been rejected twice from admission despite having higher test scores in both years than any of the admitted minority students. Bakke contended, first in the California courts and then in the USSC, that he had been excluded from admission solely on the basis of race. Ultimately, the USSC ruled in 1978 that AA could be used as one among several factors in university admissions, while fixed quota set-asides for minority students were ruled unconstitutional (Oyez 1979). Despite this ruling, strong preferential practices remained in place. For example, historical records show that while UC Berkeley guaranteed admission to all applicants above a certain Academic Index (AI) threshold, a lower threshold was set for African-American, American Indian, Chicano, and Latino applicants (Bleemer 2022). In consequence, between 1994 and 1995, minority applicants with AIs between the two thresholds were 80 percentage points more likely to be admitted to Berkeley than same-AI applicants not belonging to one of these groups (Bleemer 2022).

Preferential policies sparked increasing political controversy, which climaxed in the mid-1990s. In November 1996, a voter referendum in the state of California abolished AA in public education, hiring, and contracting. In consequence, Proposition 209 prohibited UC and other public California institutions from ‘discriminat[ing] against, or grant[ing] preferential treatment to, any individual or group on the basis of race, sex, color, ethnicity, or national origin’ after the autumn 1998 admission cohort (Bleemer 2022: 124). Washington approved a comparable state ballot in 1998; Florida banned the use of AA in higher-education admissions by executive order in 1999 but upheld the consideration of race in outreach or scholarship programmes. AA policies granting preferential treatment in public education, employment, or contracting were subsequently banned in Michigan and Nebraska in the 2000s, Arizona, Oklahoma, and New Hampshire in the 2010s, and Idaho in 2020.

Arguing along similar lines to Allan Bakke in the 1970s, Cheryl Hopwood, a White female, together with three White male applicants sued the University of Texas School of Law in 1992 over the use of racial preference in admission decisions. While the District Court ruled in favour of the university, in 1996 the USSC overturned the decision. In explicit reference to the justifications that the university had provided for the use of race in admissions, the court ruled that ‘the University of Texas School of Law may not use race as a factor in deciding which applicants to admit in order to achieve a diverse student body, to combat the perceived effects of a hostile environment at the law school, to alleviate the law school’s poor reputation in the minority community, or to eliminate any present effects of past discrimination by actors other than the law school’ (Justia 1996). In consequence, race-sensitive admissions were suspended at Texas public colleges and universities, with extended effects on universities in other states. However, in 2003 the USSC again overturned the Hopwood v. Texas ruling. In the twin cases Gratz v. Bollinger and Grutter v. Bollinger concerning AA policies at the University of Michigan, the court ruled against Michigan’s admissions system awarding ‘points’ to minority applicants, but it upheld the use of race as an admissions factor to promote racial/ethnic diversity among students at selective higher-education institutions (Weisskopf 2004), in line with the earlier Bakke ruling. The 2013 ruling in the case Fisher v. University of Texas further clarified this decision by stating that a university may not consider race as a factor in admissions unless ‘available, workable race-neutral alternatives do not suffice’, and that any such decision would warrant strict scrutiny (University of North Carolina and Chapel Hill 2022).

3.3 Comparative perspective

AA policies in India and the US share at least three key similarities that warrant comparative analysis. First, caste and race are associated with similar systems of structural disadvantage and discrimination that stratify the Indian and US societies respectively (Deshpande 2005). Second, both states are democracies with long traditions of AA measures in education and employment that were adopted in response to demands from historically marginalized groups—initially with strong public support (Weisskopf 2004). Third, in both India and the US, these measures have been repeatedly contested over time in a number of court cases filed by members of non-marginalized groups claiming unfair preference and reverse discrimination; in both countries, supreme court rulings have curtailed the AA policy scope. However, while in India these ‘decisions have subsequently been nullified through various constitutional amendments designed to support the effective implementation of affirmative action’ (Munusamy 2022: 7), in the US AA policies have been increasingly softened or abolished entirely.

One key reason for this discrepancy can be found in the central principles underlying the adoption of AA in the respective country contexts. In India, AA is explicitly framed as a measure to address the consequences of centuries of structural oppression and segregation experienced by some groups in society, with a focus on extending the social capital of these groups. In contrast, in the US, AA has been framed as a measure to address discrimination experienced by individuals belonging to marginalized groups, with a focus on levelling their access to human capital. In consequence, in India ‘there appears to be a more conscious commitment than in the US to change the basic social structure of the country’ (Cunningham 1999: 22).

This difference is visible in the ways in which AA policies are anchored in national-level legislation. Specifically, in India, the need for special provisions to support historically marginalized groups was integral to the drafting of the Constitution at independence. Subsequent legislative changes prioritized the commitment to remedy the effects of past discrimination over the individual right to equal treatment, thereby providing the legal basis for strong preferential treatment in the form of quotas or (as added later) the explicit adoption of lower qualifying benchmarks for admission. In contrast, in the US, the landmark legislation for the adoption of AA policies was the Civil Rights Act, which warranted the adoption of AA ‘as may be appropriate’, but in its essence it prohibited any form of discrimination based on race or ethnicity as a core principle. Accordingly, subsequent USSC rulings prioritized the individual right to equal treatment and non-discrimination over the commitment to equalize the opportunities available to all groups in society, thereby giving leeway for a diverse set of soft measures but ruling against any strong preferential treatment.

These differences in the societal perception of AA and in the legal framework are important to keep in mind when we are assessing policy impact, and they will be an integral part of our discussion here.

4 Methodology and data description

This study is part of a broader workstream entitled ‘Affirmative action around the world’, which assesses the scope and impact of AA policies targeting ethnic groups, broadly defined. The workstream was conducted between August 2021 and September 2022 and comprised two main outputs: (1) a database containing information about AA policies worldwide (Gisselquist et al. forthcoming); (2) a systematic literature review on the impact of AA policies. The latter identified 194 studies that provided a broad global perspective (Schotte et al. 2023).

In this paper, we focus on the subset of case studies that present evidence on India and the US. As these are the two countries with the largest scope of available evidence, we use this comparative assessment to tease out differences in policy design and impact.

4.1 Inclusion criteria

The key defining criterion that distinguishes systematic reviews from conventional literature reviews is the application of rigorous and transparent methods to collect and analyse data. Our methodology follows the *Cochrane Handbook for Systematic Reviews of Interventions* (Higgins et al. 2019). The inclusion criteria informing the literature-screening process were structured using PICOS elements (population, intervention, comparator, outcome, and study design) following standard procedure (for a more detailed discussion, see Schotte et al. 2023).

For the original project with global scope, the population (P) considered interventions targeting ethnic groups, broadly defined,¹ that were historically disadvantaged within any country context. The intervention (I) of interest was AA measures that provided some type of positive action for under-represented ethnic groups in the areas of education, employment, or business, or in electoral representation at the national or subnational levels. To provide a broad assessment of the available evidence, we purposefully refrained from imposing any restrictions on the type of control (C) used, incorporating analyses that assessed the effect of AA with regard to target group(s) in the absence of intervention, target group(s) under alternative interventions, or non-target group(s) in the same society. Similarly, we imposed no restrictions on the type of outcome (O) studied. Regarding the study design (S), we focused on studies written in English that provided their own quantitative data analysis, including both descriptive and causal analyses.

For this paper, we have modified the inclusion criteria in three ways. First, we have limited the scope of the population to country case studies on India and the US, specifically those presenting evidence on AA policies targeting groups defined by caste or race respectively. In so doing, we have excluded case studies on other countries as well as comparative studies in which India and/or the US are investigated together with other countries. Second, we have restricted the scope of interventions to AA policies in the areas of education and employment that are anchored in national-level legislation. Thus, studies investigating AA in political representation (which has been undertaken in India but not the US) are excluded from this paper. Third, we have excluded analyses of hypothetical policy changes in which none of the model parameters correspond to a real-life situation (i.e. simulation studies and laboratory experiments in which comparisons across different hypothetical policies are made).

4.2 Screening process

In the global literature search, a total of 4,389 publications were identified, of which 194 studies met the PICOS inclusion criteria and were selected for review (for details on the literature search and screening process, see Schotte et al. 2023). Of these 194 studies, 66 were case studies on the US and 33 on India, giving us an initial sample of 99 publications. From these, we excluded studies investigating AA policies in political representation, given the lack of comparable evidence for both country cases. Consequently, we selected a total of 88 studies that met the specified PICOS criteria, 65 on the US and 23 on India.

¹ Following new standards in the ethnic politics literature, which is grounded in constructivist and instrumentalist frameworks, 'ethnic' here encompasses a broad set of categories based on attributes such as skin colour, language, tribe/kinship, caste, and religion (Canelas and Gisselquist 2018).

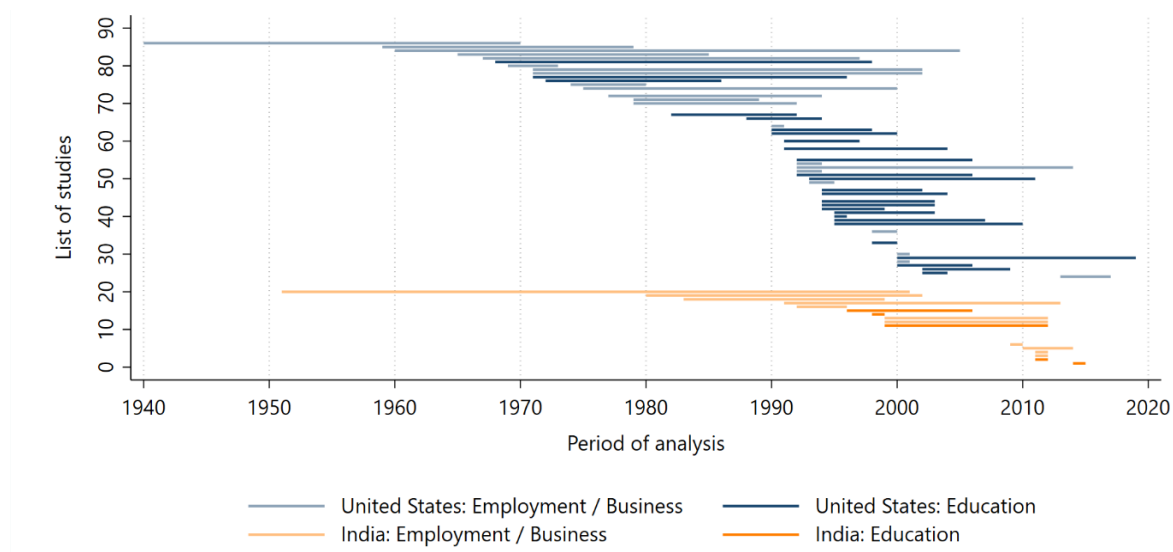
4.3 Study coverage

The included evidence is relatively evenly distributed over the two policy domains covered, with a total of 46 studies assessing policies in education and 42 studies assessing policies in employment or business (see Figure A1 in the Appendix). Articles published in scientific journals make up the largest share of the evidence (69 studies, equivalent to 78.4 per cent). In addition, our analysis draws on six working papers, seven book chapters, one report, and five mimeos.

The included studies were published between 1975 and 2022. The earliest available study, published in 1975, assesses race differentials in the US labour market in consideration of a range of AA policies sparked by the adoption of the Civil Rights Act in 1964 (Sowell 1975). This research interest is reflected in much of the earlier work. As Figure 4 illustrates, most of the studies investigating AA policies in employment or business in the US draw on data collected up to 2000, while the bulk of studies in education draw on data collected from 1990 onwards. Importantly, 20 of the 36 studies in the area of education in the US assess the weakening or abolition of AA policies (see section 3.2), such as the Bakke decision (Orfield and Whitley 2001; Welch and Gruhl 1998), California’s Proposition 209 (see *inter alia* Arcidiacono et al. 2014; Caldwell 2009; Contreras 2005), or the Grutter v. Bollinger ruling (L.M. Lee 2021).

Even though India has a longer history of AA policies than the US, the earliest study on the impact of these measures that met our inclusion requirements was published in 2001 (Xaxa 2001). While three studies assessing reservations in government employment consider data dating back to the 1980s or before, the remainder of the evidence draws on data collected after 1990, which is when the reservation policy was extended to OBCs (see section 3.1).

Figure 4: List of studies by period of analysis



Source: authors' illustration.

5 Synthesis of evidence

This review aims to provide a synthesis of the evidence on the impact of AA in education and employment, drawing on research findings concerning India and the US as case studies. Table A1 in the Appendix provides an overview of the evidence by policy domain and outcomes studied.

We start our discussion with an assessment of the effect of AA on the target groups—including SCs, STs, and OBCs in India and the Black, Hispanic, and Native American populations in the US. We offer a differentiated discussion by policy domain and outcome studied, distinguishing between first- and second-order effects. In our typology, first-order effects refer to the most immediate outcome directly targeted by the policy, while second-order effects refer to the consequences for other outcomes, which usually materialize with a larger time lag. As Figure A2 in the Appendix illustrates, most of the included studies investigate the effect of AA on more than one target group simultaneously, which is why we are not able to provide a disaggregated discussion by subgroup.²

We then provide a discussion of the effects on non-target groups, where we distinguish between other marginalized groups, who experience social or economic exclusion but are not targeted by the specific AA under study, and non-marginalized groups.

For each group-level effect, we classify the direction of impact of AA into one of four mutually exclusive categories: positive, negative, mixed (combining both positive and negative effects), and insignificant. The direction of impact is coded as communicated by the study and does not necessarily imply statistical significance. That is, given the inclusion of purely descriptive work, ‘insignificant’ here comprises estimation studies that report effects not statistically significant from zero (at common significance levels) as well as descriptive studies that report null effects.

5.1 Effects on the opportunities available to target groups

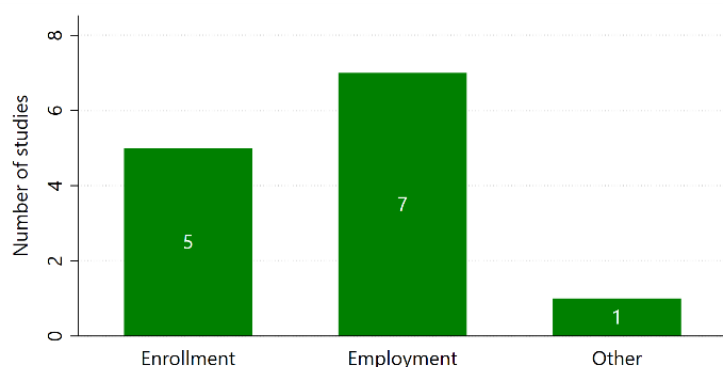
With 68 out of 88 records, the vast majority of the reviewed studies (77.3 per cent) provide evidence on first-order effects, which concern the opportunities available to target groups as an immediate result of AA (see Table A1 in the Appendix). In this regard, studies assessing education policies mainly provide evidence on enrolments in response to preferences in admissions to higher education, as well as on educational attainment as a result of training programmes to strengthen academic skills. Other outcomes studied include the targeting of admissions preferences and institutional barriers to the implementation of AA. Furthermore, studies assessing labour policies mostly focus on the representation of target groups in employment. Other outcomes considered in the US context are earnings, business performance, and managerial diversity.

Overall, we observe a strong positive effect of AA on the opportunities available to target groups. Of the 68 studies that provide evidence on first-order effects, 51 studies (75 per cent) arrive at positive results. However, as Figure 5 shows, clear differences across the two countries can be identified: while all studies on India find the effects to be positive, 31 per cent of the studies on the US show a mixed (four) or insignificant (13) impact.

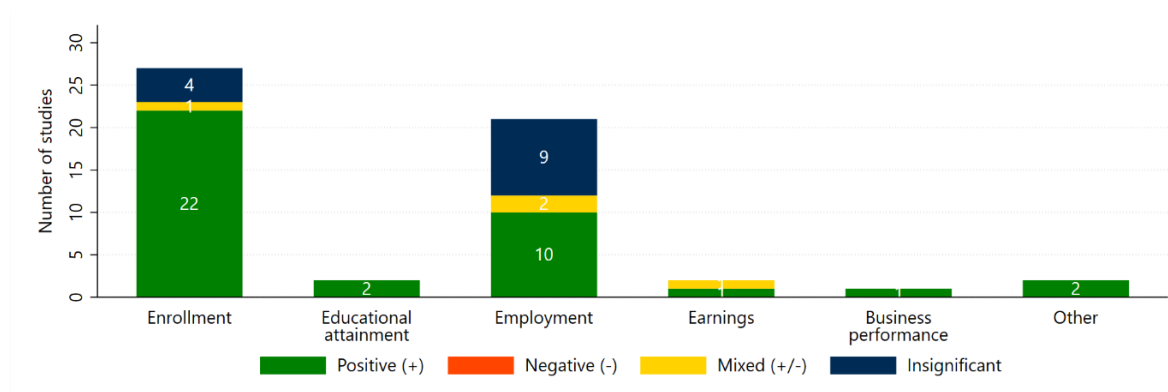
² We would have been interested in the disaggregated effect of AA on each marginalized group. However, this was complicated by the fact that only a few studies report disaggregated effects; the majority report an aggregate effect, which may mask substantial subgroup discrepancies. For example, at the aggregate level, a strong positive effect on the largest subgroup may overshadow an insignificant or even negative effect on the smallest subgroup—and we are unable to assess the extent to which this is the case.

Figure 5: First-order effects on the target groups

a. India



b. US



Source: authors' illustration.

These diverging cross-country patterns are in agreement with our expectations, considering the discussed differences in the legal frameworks regulating AA (see section 3). For India, all studies investigate the impact of legally binding quotas in education and employment, while studies on the US investigate a mix of policies—ranging from quotas implemented at university level to academic training programmes, measures against discrimination in hiring and pay, and opportunity-enhancing business practices.

Opportunities in education

Out of 32 studies that assess the effect of preferences in admissions on educational enrolment, 27 find a positive effect, four find no significant effect, and one reports mixed effects (Figure 5). In addition, two studies report positive effects of training programmes and supplemental instruction on university retention and performance (Barlow and Villarejo 2004; Gilmer 2007).

Importantly, three of the studies finding insignificant effects (L.M. Lee 2021; Lin 2013; Welch and Gruhl 1998) investigate the impact of the weakening or abolition of race-based AA in the US.³ That the elimination of strong preferences—against expectations—does not always result in a

³ Out of 20 studies investigating the weakening or ban of AA in the US, 16 find a negative impact on the enrolment of minority students, which we treat as evidence of a positive effect of the original AA policy. Another insignificant effect is reported by Harper and Griffin (2010), who indicate that high-achieving Black students at private colleges in the US attribute their college access not to race-sensitive AA but to other initiatives targeting lower-income students, including Whites.

significant reduction in minority enrolments may be because many universities maintained soft programmes after other measures were banned.

The only study reporting a mixed effect on enrolment also assesses the abolition of race-based AA in the US. Hicklin (2007) finds that the Hopwood v. Texas judicial decision and California's Proposition 209 significantly reduced the enrolment of African-American and Hispanic students in the most selective universities (a similar effect is observed by Alon 2015; Epple et al. 2008; Mickey-Pabello and Garces 2018) but increased minority enrolments at universities considered less or non-selective. This finding suggests that quota systems in more selective higher-education institutions do not necessarily increase the total enrolments of designated groups—since prospective beneficiaries would enrol in other, less selective institutions in the absence of these policies (see also Bleemer 2022)—but may mainly influence the quality of higher education received by minority students (Lin 2013). We come back to this effect in section 5.2.

Opportunities in employment and business

Compared with the largely positive first-order effects of education policies, we observe a more diversified picture in the employment domain. Specifically, all seven studies that assess the effect of government quotas on minority employment in India report positive effects; but out of 21 studies assessing the effect of labour policies on employment in the US, 10 report positive, nine insignificant, and two mixed results (Figure 5).

One interpretation of these results is that quota systems (such as India's) are a more efficient measure to increase the representation of historically marginalized groups, while softer policy measures to reduce discrimination and enhance the skill set of under-represented groups (such as those adopted in the US) tend to yield weaker and less immediate effects.⁴ The findings of the US studies may be partly attributable to the persistence of stereotypes (despite efforts to address them). They also are consistent with the expectation that building the capacity of long-marginalized groups to compete on equal terms takes time. This latter point, by extension, raises a potential point of caution for the India results: if capacity-building is equally a long-term process there, it may be that at least some of those who access positions of power via quotas will not *ex ante* bring the required qualifications. The extent to which they still manage to perform well in these positions is assessed via the second-order effects discussed in section 5.2.

Reflecting the wider scope of policy measures, another five studies investigate the effect of AA on the US labour market beyond employment—reporting largely positive effects. Among these, House-Soremekun (2007) finds that minority set-aside programmes (also known as disadvantaged business programmes) improve the success of Black business owners, and Burstein and Edwards (1994) associate victories in anti-discrimination court cases during the mid-1970s with increases in the relative earnings of Black people. However, Heckman (1989) puts this latter finding in perspective, arguing that although the relative earnings of Black people increased in the period following the Civil Rights Act, absolute differentials in real earnings between Black and White people widened.

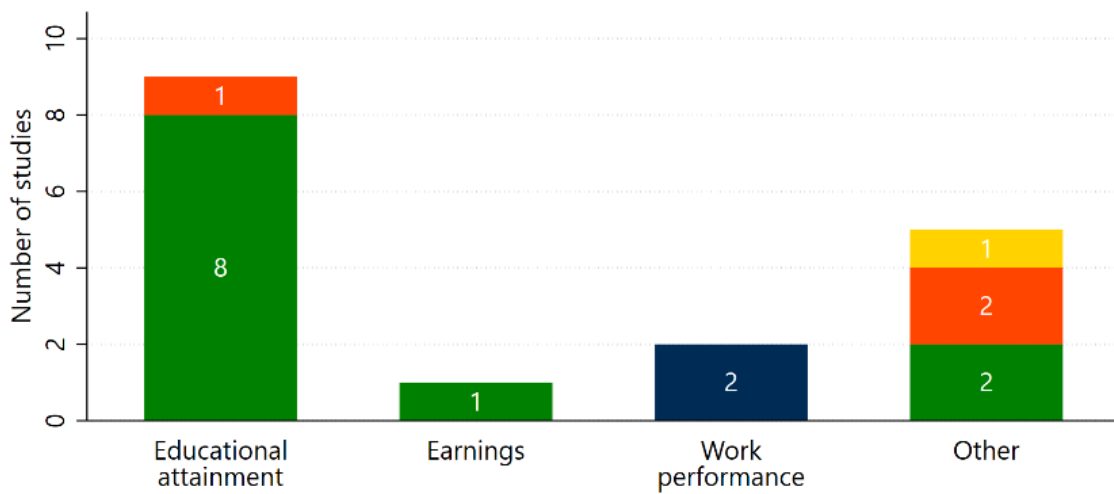
⁴ Among the studies reporting a mixed effect on employment, Rodgers and Spriggs (1996) find a positive impact of federal-contract status on African Americans but not on Hispanic workers, and Kalev et al. (2006) find that AA structures establishing responsibility (such as AA plans, diversity committees, and diversity staff positions) increase managerial diversity, while programmes that target managerial stereotyping through education and feedback (such as diversity training and evaluation) do not lead to significant improvements.

5.2 Effects on the performance and achievements of target groups

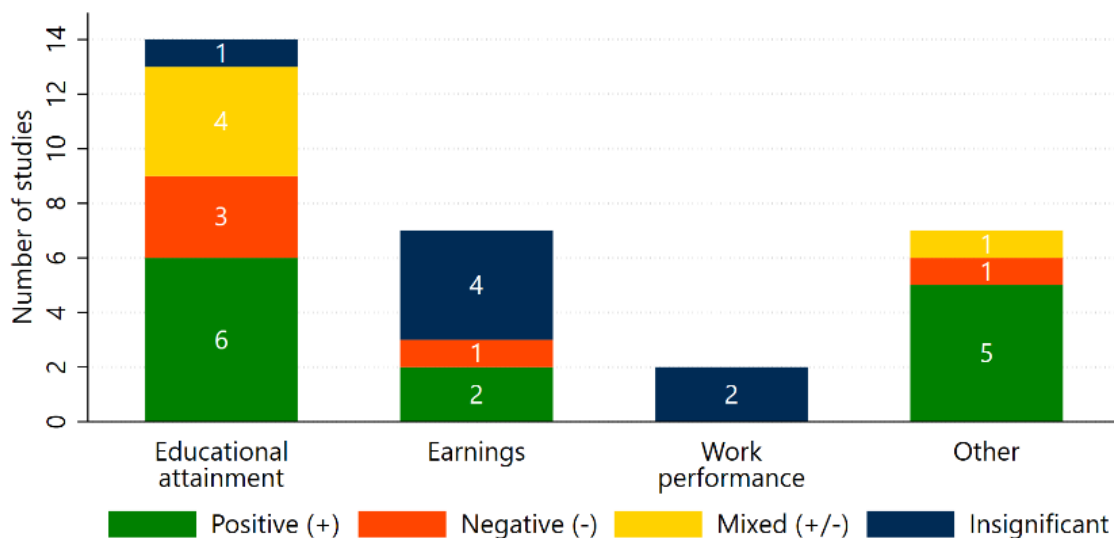
With 47 out of 88 records, about half of the reviewed studies (53.4 per cent) provide evidence on second-order effects, which concern the performance and achievements of target groups in relation to AA (see Table A1 in the Appendix). For policies regulating admissions to higher education, these mainly focus on indicators of educational attainment, such as dropout and graduation rates, as well as labour market returns. Other outcomes concern educational experience, perceptions of (un)fairness, and social stigma, among others. For policies in employment or business, most studies assess the implications for earnings and work performance. In addition, backwards linkages from better employment opportunities to higher educational attainment have been studied in the Indian context (Khanna 2020; A. Lee 2021; Sheth 2004). Other outcomes include the quality of employment, mobility aspirations, and job satisfaction.

Figure 6: Second-order effects on the target groups

a. India



b. US



Source: authors' illustration.

For both countries, the evidence on the performance and achievements of AA beneficiaries is more ambiguous than the first-order effects reported above. Of the 47 studies with available evidence on these second-order effects, 24 report positive, nine insignificant, eight negative, and six mixed results. Once again, the diversity in the results is higher for the US than for India (Figure 6).

Quality of academic performance and returns to education

About 40 per cent of the studies reporting second-order effects (19 out of 47) focus on the implications of preferential admissions in higher education for the quality of academic performance among AA beneficiaries and evidence of mismatch. Of these, five studies were conducted in the Indian context,⁵ while 14 studies look at the US.

Only two of the five studies on India explicitly investigate the mismatch hypothesis, arriving at opposite conclusions. Frisancho and Krishna (2016) confirm that minority students—especially those taking more selective majors—fall behind their same-major peers in terms of grades as they progress through college. Bagde et al. (2016) find no evidence of mismatch; on the contrary, they conclude that attending higher-quality colleges increases the first-year achievements of designated students.

Of the 14 studies on the US, which all relate to the mismatch theory, six find positive results and four report negative effects. Among the latter, Sander (2004) argues that AA policies lead Black law applicants to end up at schools where they will struggle academically and fail at higher rates than they would in the absence of preference. Similarly, Arcidiacono et al. (2014) and Hinrichs (2014) indicate that the graduation rates of under-represented minority groups at selective institutions rise when AA is banned. In contrast, Bleemer (2022), L.M. Lee (2021), Orfield and Whitla (2001), and Rothstein and Yoon (2008b) find no evidence of mismatch. Concordantly, several studies conclude that eliminating AA would further intensify the under-representation of minority groups in prominent professions (Ayres and Brooks 2004; Chambers et al. 2005; Rothstein and Yoon 2008a), such as law and medicine, which in return would negatively affect the delivery of legal and healthcare services to minority communities (Conrad and Sharpe 1996).

Mirroring the mixed findings regarding potential mismatch, evidence on whether AA-facilitated enrolments at elite rather than less selective universities enhance the (future) earnings of minority students is inconclusive. For the case of India, Bertrand et al. (2010) conclude that despite much lower entry exam scores, those who are admitted by AA benefit economically from attending engineering college. By contrast with this positive result, three US studies report an insignificant impact of AA in education on the earning prospects of minority groups (Arcidiacono 2005; Grove and Hussey 2011; Lin 2013), and one US study even points to a negative effect on the median salaries of Black college graduates (Detterman 2000).

Quality of work performance and earnings differentials

In contrast to the mixed implications of AA for the academic performance of minority students, studies evaluating the impact of AA in the labour market on the quality of work performance agree that there are no significant differences between minority and majority hires.

⁵ Of the nine studies that investigate second-order effects of AA on educational attainment in the Indian context, five look at educational policies, while the other four assess backwards linkages from labour market policies.

Specifically, for the US, Holzer and Neumark (1999) show that the performance ratings of Black employees in establishments using AA are at least as high as those of other comparable workers, and McCrary (2007) finds that court-ordered changes in hiring policies have had no impact on police performance. While these AA policies in the US context are largely confined to diversity policies that only give preference to minority candidates with equal levels of qualification, we also find no evidence of differences in the quality of work performance between minority and majority hires in India, despite the application of hard reservations in government employment. Both Bhavnani and Lee (2021) and Deshpande and Weisskopf (2014) conclude that—contrary to fears about potential detrimental effects—AA has had no consequences for bureaucratic effectiveness or factor productivity, as those recruited via AA perform no worse than others.

Moreover, the majority of studies with available evidence conclude that the enhancement of employment opportunities has narrowed the earnings gap between minority and majority groups. For the case of India, Sheth (2004) argues that reservations have made the Indian middle class more inclusive; for the US, two early studies document a decline in Black-White earnings differences during the 1960s and 1970s as a consequence of changing employment opportunities (Jencks 1985; Leonard 1984).

Perceptions and social justice: between stigmatization and incentive

Perceptions of the potential of AA beneficiaries to perform well in the opportunities created via AA play an important role in policy success or failure (see section 2). On the one hand, negative stereotypes in combination with de facto skills differentials can expose beneficiaries to a ‘stigma of incompetence’, which may deter applicants. On the other hand, the opportunities created via AA can foster aspirations and a sense of belonging among marginalized groups, and increased diversity can reduce stereotypes.

The reviewed studies suggest that both these effects may exist in parallel. Specifically, for the case of India, Gille (2013) shows that social stigma can prevent those entitled to preferential educational admission from applying. However, this mainly concerns higher-ranking OBCs (Gille 2013), while those from the lowest-ranking groups who make it to university are commonly seen as role models (Cassan 2019). In addition, several studies report positive incentive effects of university quotas on school enrolments and secondary school completion rates, which help to raise literacy rates among minorities (Bhattacharjee 2019; Cassan 2019; Kamat 2008). Similar backwards linkages are also observed from reservations in government positions, which can incentivize higher educational attainment and provide a basis for mobility aspirations (Khanna 2020; A. Lee 2021; Sheth 2004).

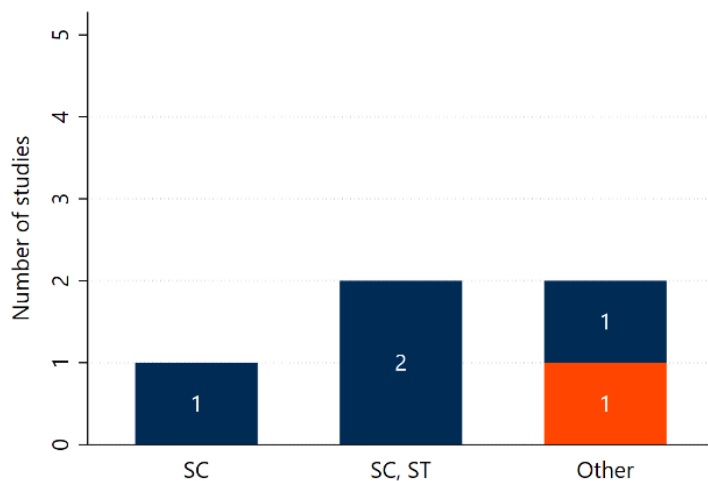
For the US, Harper and Griffin (2010) show that Black students from low-income and working-class families who attend predominantly White private colleges face accusations that they were unfairly admitted via AA policies and practices. On the other hand, Orfield (2001) finds that most minority students at elite universities see diversity as a positive contributor to their total educational experience, and Heller (2002) observes an increase in feelings of alienation and isolation among minority students following AA bans. Moreover, in employment, Niemann and Dovidio (2005) show that AA that is seen as willingly pursued relates positively to job satisfaction, whereas perceptions that it is imposed tend to be negatively related to satisfaction. Similarly, Taylor (1994) finds no evidence that benefiting from AA has detrimental social-psychological consequences and argues that those employed at AA workplaces show greater occupational ambition.

5.3 Effects on non-target marginalized groups

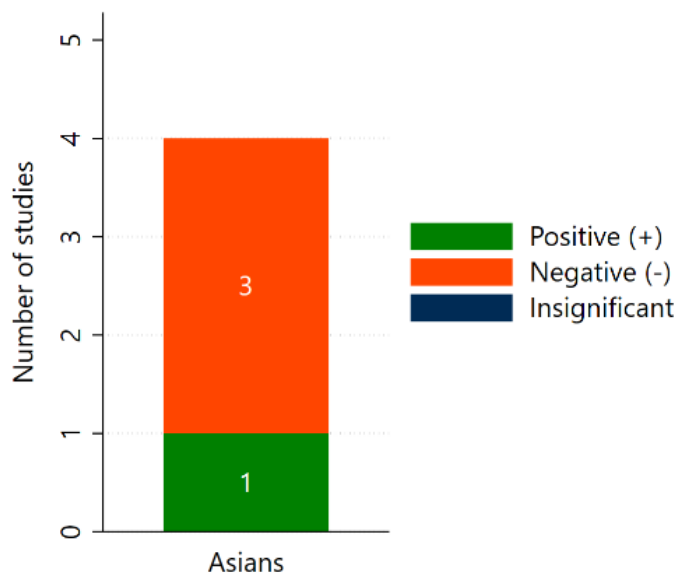
In addition to the effects of AA policies on the target groups, this review is interested in examining the consequences of those policies for non-target groups. Our systematic review shows, however, that this evidence is rarely reported in the literature (see Figure A3 in the Appendix). Specifically, we have found only nine studies that investigate the impact of AA policies on other marginalized groups that are not targeted by the specific AA policy under study, five for India and four for the US. Figure 7 reports the results of these studies.

Figure 7: Effects on non-target marginalized groups

a. India



b. US



Source: authors' illustration.

In the case of India, the other marginalized groups studied comprise SCs and STs for analyses investigating the extension of reservations to OBCs as well as other EWS, specifically Muslims (Khanna 2020) and females (Bertrand et al. 2010), with the latter two representing disadvantaged subgroups that cut across caste lines.

The empirical evidence analysing the expansion of the reservation policy to OBCs in 1990 is unanimous in recognizing that SCs and STs, who had benefited from that same policy since the early 1950s, were not negatively affected by the extension. Bhattacharjee (2019), Khanna (2020), and A. Lee (2021) report no significant changes in the educational attainment of SCs and STs, and Gulzar et al. (2020) find no significant consequences for the employment of SCs.

Interestingly, Borooah (2019) finds that Muslims experience the largest discrimination in public-sector employment in India, but the study does not allow us to draw conclusions about whether their situation is negatively affected by SC reservations. The only study that estimates the effect directly is by Khanna (2020), who reports that the effects of reservations on both Muslims and poorer groups of upper-caste Hindus are economically and statistically insignificant.

Bertrand et al. (2010) is the single study on India to suggest that caste-based targeting may lead to the exclusion of other disadvantaged groups, finding a negative effect of reservations in higher education on the overall number of females entering engineering colleges.

In contrast, the empirical evidence on the US shows that Asian Americans experience negative displacement effects as a consequence of quotas for other racial minorities in university admissions (Caldwell 2009; Conrad and Sharpe 1996; Grove and Hussey 2011). At the same time, Asian Americans have benefited from ethnoracial diversity programmes in the labour market (Heilig et al. 2019).

5.4 Effects on non-target non-marginalized groups

Evidence on non-marginalized groups concerns the effect of AA on forward castes (FCs) in India—a summary term used to denote all ‘non-backward’ castes—and on the White majority population in the US (see Figure A3 in the Appendix).⁶ As Figure 8 illustrates, we have found five studies for India and 11 studies for the US assessing these effects.

The studies are practically unanimous in stating that FCs and Whites are the net losers of AA policies targeting ethnic marginalized groups in their respective countries. For India we find these negative impacts for enrolment (Bagde et al. 2016), employment (Borooah 2019; Gulzar et al. 2020), and earnings (Bertrand et al. 2010). In the US, similar results are registered for enrolment (Caldwell 2009; Conrad and Sharpe 1996; Epple et al. 2008; Hinrichs 2014), educational attainment (Arcidiacono and Lovenheim 2016), and employment (Chatterji et al. 2014; Holzer 1996; Rodgers and Spriggs 1996).

Despite negative displacement effects in higher education, Bleemer (2022) finds no significant impact on the labour market outcomes of White (and Asian) students that were not admitted to UC Berkeley due to preferential policies. According to this author, 15 years after the displacement, these ‘unsuccessful’ White and Asian applicants attained similar educational and labour market outcomes after enrolling at other universities. Likewise, for India, Bhattacharjee (2019) reports no significant spillover effects on enrolment in secondary school or completion of high school for non-beneficiary groups in reaction to the implementation of AA policies for OBCs in higher education.

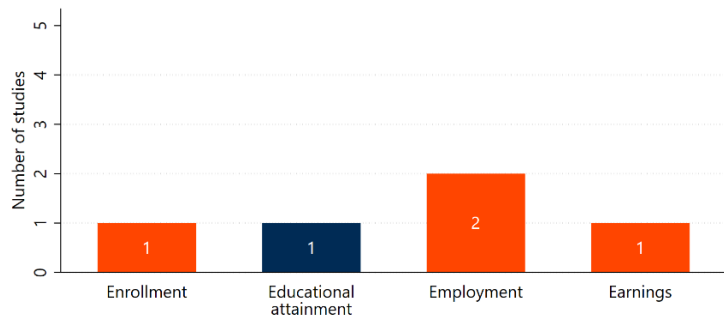
The single study reporting positive effects for a non-target majority group is Orfield and Whitley (2001), who take a different angle on AA in education, assessing the impact of racial diversity on

⁶ In addition, one study assesses the cost of AA in hiring at the enterprise level in the US context, reflecting a broader societal effect that cannot be attributed to one specific group (Griffin 1990).

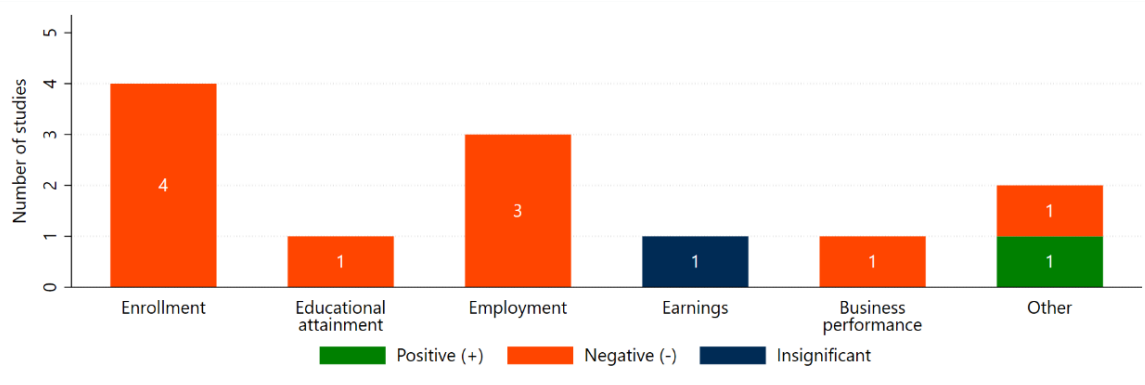
educational experience. According to the study, AA policies that increase the representation of minority students at elite institutions improve the intercultural skills of White students—many of whom have grown up with little interracial contact—particularly by increasing their awareness and effort to deal with social segregation issues.

Figure 8: Effects on non-target non-marginalized groups

a. India



b. US



Source: authors' illustration.

6 Conclusions

India and the US have adopted AA policies to address HIs between caste and race groups respectively. In both countries, these measures have been repeatedly contested. A key point of contention is the conflict between the constitutional commitment to equality on the one hand, and on the other the value of special measures to enhance the opportunities of marginalized groups and remedy the effects of past discrimination.

Our systematic literature review provides three key insights in this regard.

First, the creation of opportunities for people who might not otherwise have them due to their identity is an obvious benefit of AA. Our review confirms that AA policies in both countries have expanded the representation of marginalized target groups in education and employment. While findings on this first-order effect are unanimously positive for India, several studies for the US also find null or insignificant effects, especially in the area of employment. We attribute these diverging cross-country patterns to differences in the respective legal frameworks regulating AA. The positive effects recorded for India suggest the efficiency of strict quota systems in increasing the representation of historically marginalized groups; the higher share of null or insignificant results for the US suggests that non-quota anti-discrimination or opportunity-enhancing policies

may not always yield the expected effects, at least in the short term. From this we conclude that to address group-based inequalities successfully, a combination of both types of AA may be required. While quota systems may be the more efficient tool to increase the representation of minority groups in the short run, accompanying measures are required to combat discrimination and stereotypes and to build the capacity of marginalized groups to compete on equal terms in the medium to long run.

Second, the higher share of negative and mixed findings with regard to the impact of AA on the performance and actual achievements of target groups substantiates the need for accompanying policies. While we find no evidence of differences in work performance between beneficiaries and non-beneficiaries of AA, evidence in the area of education is mixed, revealing that beneficiaries of AA have some difficulty in making up for their pre-tertiary education deficits without additional support. Studies investigating the (second-order) effects of preferential university admission on beneficiaries' academic performance are limited for India, but in the US context there is a more substantial body of research investigating the effects on test scores, dropout rates, and graduation rates, for example—with mixed conclusions. Moreover, evidence on the social-psychological consequences of AA is also mixed. On the one hand, negative stereotypes expose beneficiaries to social stigma. On the other hand, evidence from India suggests that opportunities created via AA can foster aspirations and upwards mobility among marginalized groups, and evidence on the US points to general benefits from increased diversity.

Third, by design, AA redistributes opportunities in education and employment towards formerly excluded groups. Where slots are limited, this leads to replacement effects among groups that were formerly over-represented. Our review finds support for this effect in research on FCs in India and the White (particularly White male) population in the US: in both countries, individuals belonging to these groups have sued the state over unfair preferences and reverse discrimination. Moreover, in the US we observe a negative effect of AA in education on Asians as a racial minority group. Asians have been over-represented at highly selective education institutions but are increasingly under pressure as they are competing against other minorities who benefit from AA as well as the White majority. While Muslims in India may be experiencing a similar replacement effect, there is a lack of evidence on the implications of reservations for other marginalized groups.

An important limitation in assessing these spillover effects is the general shortage of studies investigating the implications of AA for non-target groups, particularly other marginalized groups. Future research should seek to address this gap, looking at immediate replacement effects as well as the implications for outcomes achieved and potential social-psychological implications. While there is indicative evidence that displaced members of non-marginalized groups may be able to obtain similar outcomes by making use of other opportunities available to them, more research is needed to substantiate this finding. For the US, a few studies attempt to track the outcomes of displaced applicants who are not accepted to a highly selective university as a result of AA implementation or elimination, finding that they end up in similar positions after attending less selective universities. A higher number of studies tracking the outcomes of beneficiaries and non-beneficiaries at the margin would be of great value to understand the long-term impact of AA. Moreover, there is indicative evidence that greater ethnic diversity in higher education and the labour market may have beneficial effects, but these studies are limited and require further exploration.

In addition, there is a need for more studies that investigate the impact of AA separately for each ethnic group. While it is very possible that AA does not benefit all target groups equally, given their distinctive group characteristics and constraints (SCs, STs, and OBCs in India, and Black, Native, and Hispanic Americans in the US), we have not been able to draw conclusions about these differences, because most studies analyse the effect on all target groups collectively.

Finally, while studies of AA in India and the US are numerous and offer a rich basis upon which to build knowledge about the impact of AA policies, it is important also to recognize the challenges of generalizing from research on these two cases alone. AA policies are adopted within particular national contexts, and it may be that findings about the impact of AA policies in the US and India are dependent on particular institutional histories, economic structures, or group configurations. There is thus a need for more research to better understand the universe of AA policies and to probe the generalizability of findings drawn from one country to others.

References

- Ali, M. (2012). 'Indian Muslim OBCs: Backwardness and Demand for Reservation'. *Economic and Political Weekly*, 47(36): 74–79.
- Alon, S. (2015). *Race, Class, and Affirmative Action*. New York: Russell Sage Foundation.
- Alon, S., and M. Tienda (2005). 'Assessing the "Mismatch" Hypothesis: Differences in College Graduation Rates by Institutional Selectivity'. *Sociology of Education*, 78(4): 294–315. <https://doi.org/10.1177/003804070507800402>
- Arcidiacono, P. (2005). 'Affirmative Action in Higher Education: How Do Admission and Financial Aid Rules Affect Future Earnings?' *Econometrica*, 73(5): 1477–524. <https://doi.org/10.1111/j.1468-0262.2005.00627.x>
- Arcidiacono, P., E. Aucejo, P. Coate, and V.J. Hotz (2014). 'Affirmative Action and University Fit: Evidence from Proposition 209'. *IZA Journal of Labor Economics*, 3(1): 1–29. <https://doi.org/10.1186/2193-8997-3-7>
- Arcidiacono, P., and M. Lovenheim (2016). 'Affirmative Action and the Quality-Fit Trade-off'. *Journal of Economic Literature*, 54(1): 3–51. <https://doi.org/10.1257/jel.54.1.3>
- Ayres, I., and R. Brooks (2004). 'Does Affirmative Action Reduce the Number of Black Lawyers?' *Stanford Law Review*, 57: 1807.
- Bagde, S., D. Epple, and L. Taylor (2016). 'Does Affirmative Action Work? Caste, Gender, College Quality, and Academic Success in India'. *American Economic Review*, 106(6): 1495–521. <https://doi.org/10.1257/aer.20140783>
- Barlow, A.E., and M. Villarejo (2004). 'Making a Difference for Minorities: Evaluation of an Educational Enrichment Program'. *Journal of Research in Science Teaching*, 41(9): 861–81. <https://doi.org/10.1002/tea.20029>
- Bertrand, M., R. Hanna, and S. Mullainathan (2010). 'Affirmative Action in Education: Evidence from Engineering College Admissions in India'. *Journal of Public Economics*, 94(1–2): 16–29. <https://doi.org/10.1016/j.jpubeco.2009.11.003>
- Bhattacharjee, A. (2019). 'Spillovers in Affirmative Action: Evidence from OBC Quotas in India'. Leeds University Business School Working Paper 19-03. Leeds: Leeds University Business School. <https://doi.org/10.2139/ssrn.3269203>
- Bhavnani, R.R., and A. Lee (2021). 'Does Affirmative Action Worsen Bureaucratic Performance? Evidence from the Indian Administrative Service'. *American Journal of Political Science*, 65(1): 5–20. <https://doi.org/10.1111/ajps.12497>
- Bleemer, Z. (2022). 'Affirmative Action, Mismatch, and Economic Mobility After California's Proposition 209'. *Quarterly Journal of Economics*, 137(1): 115–60. <https://doi.org/10.1093/qje/qjab027>
- Borooh, V.K. (2019). *Disparity and Discrimination in Labour Market Outcomes in India*. Cham: Springer. <https://doi.org/10.1007/978-3-030-16264-1>

- Burstein, P., and M.E. Edwards (1994). 'The Impact of Employment Discrimination Litigation on Racial Disparity in Earnings: Evidence and Unresolved Issues'. *Law and Society Review*, 28(1): 79–112. <https://doi.org/10.2307/3054138>
- Caldwell, R. (2009). 'The Erosion of Affirmative Action and Its Consequences for the Black-White Educational Attainment Gap'. *University of Kansas Law Review*, 57: 813.
- Canelas, C., and R.M. Gisselquist (2018). 'Horizontal Inequality as an Outcome'. *Oxford Development Studies*, 46(3): 305–24. <https://doi.org/10.1080/13600818.2018.1508565>
- Cassan, G. (2019). 'Affirmative Action, Education and Gender: Evidence from India'. *Journal of Development Economics*, 136: 51–70. <https://doi.org/10.1016/j.jdeveco.2018.10.001>
- Chambers, D.L., T.T. Clydesdale, W.C. Kidder, and R.O. Lempert (2005). 'The Real Impact of Eliminating Affirmative Action in American Law Schools: An Empirical Critique of Richard Sander's Study'. *Stanford Law Review*, 57(6): 1855–98.
- Chatterji, A.K., K.Y. Chay, and R.W. Fairlie (2014). 'The Impact of City Contracting Set-Asides on Black Self-Employment and Employment'. *Journal of Labor Economics*, 32(3): 507–61. <https://doi.org/10.1086/675228>
- Chowdhury, S.M., P. Esteve-Gonzalez, and A. Mukherjee (2020). 'Heterogeneity, Leveling the Playing Field, and Affirmative Action in Contests'. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3655727>
- Conrad, C.A., and R.V. Sharpe (1996). 'The Impact of the California Civil Rights Initiative (CCRI) on University and Professional School Admissions and the Implications for the California Economy'. *Review of Black Political Economy*, 25(1): 13–59. <https://doi.org/10.1007/BF02690051>
- Constitute. (2016). 'India 1949 (Rev. 2016)'. Available at: www.constituteproject.org/constitution/India_2016?lang=en (accessed 2 January 2023).
- Contreras, F.E. (2005). 'The Reconstruction of Merit Post-Proposition 209'. *Educational Policy*, 19(2): 371–95. <https://doi.org/10.1177/0895904804274055>
- Crosby, F.J., A. Iyer, and S. Sincharoen (2006). 'Understanding Affirmative Action'. *Annual Review of Psychology*, 57(1): 585–611. <https://doi.org/10.1146/annurev.psych.57.102904.190029>
- Cunningham, C.D. (1999). 'Affirmative Action: India's Example'. *Civil Rights Journal*, 4: 22.
- De Zwart, F. (2000). 'The Logic of Affirmative Action: Caste, Class and Quotas in India'. *Acta Sociologica*, 43(3): 235–49. <https://doi.org/10.1177/000169930004300304>
- Deshpande, A. (2005). 'Affirmative Action in India and the United States'. World Development Report Background Paper. Washington, DC: World Bank.
- Deshpande, A., and T.E. Weisskopf (2014). 'Does Affirmative Action Reduce Productivity? A Case Study of the Indian Railways'. *World Development*, 64: 169–80. <https://doi.org/10.1016/j.worlddev.2014.05.024>
- Detterman, D.K. (2000). 'Tests, Affirmative Action in University Admissions, and the American Way'. *Psychology, Public Policy, and Law*, 6(1): 44.
- Epple, D., R. Romano, and H. Sieg (2008). 'Diversity and Affirmative Action in Higher Education'. *Journal of Public Economic Theory*, 10(4): 475–501. <https://doi.org/10.1111/j.1467-9779.2008.00373.x>
- Frisancho, V., and K. Krishna (2016). 'Affirmative Action in Higher Education in India: Targeting, Catch Up, and Mismatch'. *Higher Education*, 71(5): 611–49. <https://doi.org/10.1007/s10734-015-9927-1>
- Fryer, R.G., and G.C. Loury (2005). 'Affirmative Action and Its Mythology'. *Journal of Economic Perspectives*, 19(3): 147–62. <https://doi.org/10.1257/089533005774357888>
- Gille, V. (2013). 'Stigma in Positive Discrimination Application? Evidence from Quotas in Education in India'. Presentation. Paris: Centre d'Economie de la Sorbonne.

- Gilmer, T. (2007). 'An Understanding of the Improved Grades, Retention and Graduation Rates of STEM Majors at the Academic Investment in Math and Science (AIMS) Program of Bowling Green State University (BGSU)'. *Journal of STEM Education*, 8(1): 11–21.
- Gisselquist, R.M., S. Schotte, and M. Jung Kim (forthcoming). 'A New Database on Affirmative Action Around the World'. WIDER Working Paper. Helsinki: UNU-WIDER.
- Griffin, P.B. (1990). 'The Impact of Affirmative Action on Labor Demand: A Test of Some Implications of the Le Chatelier Principle'. Santa Barbara: University of California, Santa Barbara.
- Grove, W., and A. Hussey (2011). 'Affirmative Action in MBA Programs: Investigating the Mismatch Hypothesis for Race and Gender'. Mimeo. Available at: www.researchgate.net/publication/228835177 (accessed 2 January 2023).
- Gulzar, S., N. Haas, and B. Pasquale (2020). 'Does Political Affirmative Action Work, and for Whom? Theory and Evidence on India's Scheduled Areas'. *American Political Science Review*, 114(4): 1230–46. <https://doi.org/10.1017/s0003055420000532>
- Harper, S.R., and K.A. Griffin (2010). 'Opportunity Beyond Affirmative Action: How Low-Income and Working-Class Black Male Achievers Access Highly Selective, High-Cost Colleges and Universities?'. *Harvard Journal of African American Public Policy*, 17: 43.
- Hasan, Z. (2022). 'OBCs and the Politics of Reservations in India: Past and Present'. WIDER Working Paper 2022/119. Helsinki: UNU-WIDER. <https://doi.org/10.35188/UNU-WIDER/2022/252-2>
- Heckman, J.J. (1989). 'The Impact of Government on the Economic Status of Black Americans'. NBER Working Paper 2860. Cambridge, MA: NBER. <https://doi.org/10.3386/w2860>
- Heilig, J.V., I.W. Flores, A.E. Barros Souza, J.C. Barry, and S.B. Monroy (2019). 'Considering the Ethnoracial and Gender Diversity of Faculty in United States College and University Intellectual Communities?'. *Texas Hispanic Journal of Law and Policy*, 1: 1–31.
- Heller, D.E. (2002). 'The Role of Institutional Financial Aid in Increasing Minority Student Enrollment in a Post-Hopwood Environment'. Presentation, annual meeting of the Association for the Study of Higher Education, Sacramento, CA.
- Hicklin, A. (2007). 'The Effect of Race-Based Admissions in Public Universities: Debunking the Myths About Hopwood and Proposition 209'. *Public Administration Review*, 67(2): 331–40. <https://doi.org/10.1111/j.1540-6210.2007.00716.x>
- Higgins, J.P., J. Thomas, J. Chandler, M. Cumpston, T. Li, M.J. Page, and V.A. Welch (eds) (2019). *Cochrane Handbook for Systematic Reviews of Interventions*. New York: John Wiley & Sons. <https://doi.org/10.1002/9781119536604>
- Hinrichs, P. (2014). 'Affirmative Action Bans and College Graduation Rates'. *Economics of Education Review*, 42: 43–52. <https://doi.org/10.1016/j.econedurev.2014.06.005>
- Holzer, H. (1996). 'Employer Hiring Decisions and Antidiscrimination Policy'. Discussion Paper 1085-96. Madison: University of Wisconsin-Madison, Institute for Research on Poverty.
- Holzer, H., and D. Neumark (1999). 'Are Affirmative Action Hires Less Qualified? Evidence from Employer-Employee Data on New Hires'. *Journal of Labor Economics*, 17(3): 534–69. <https://doi.org/10.1086/209930>
- Holzer, H., and D. Neumark (2000). 'Assessing Affirmative Action'. *Journal of Economic Literature*, 38(3): 483–568. <https://doi.org/10.1257/jel.38.3.483>
- House-Soremekun, B. (2007). 'The Impact of Minority Set-Aside Programs on Black Business Success in Cleveland, Ohio: Implications for Public Policy'. *Western New England Law Review*, 30: 19.
- Jencks, C. (1985). 'Affirmative Action for Blacks: Past, Present, and Future'. *American Behavioral Scientist*, 28(6): 731–60. <https://doi.org/10.1177/000276485028006003>

- Jorda, V., and J.M. Alonso Alonso (2020). ‘What Works to Mitigate and Reduce Relative (and Absolute) Inequality? A Systematic Review’. WIDER Working Paper 2020/152. Helsinki: UNU-WIDER. <https://doi.org/10.35188/UNU-WIDER/2020/909-9>
- Justia. (1996). ‘Hopwood v. Texas, 78 F.3d 932 (5th Cir. 1996)’. Available at: <https://law.justia.com/cases/federal/appellate-courts/F3/78/932/504514/> (accessed 2 January 2023).
- Kalev, A., F. Dobbin, and E. Kelly (2006). ‘Best Practices or Best Guesses? Assessing the Efficacy of Corporate Affirmative Action and Diversity Policies’. *American Sociological Review*, 71(4): 589–617. <https://doi.org/10.1177/000312240607100404>
- Kamat, S. (2008). ‘Education and Social Equity with a Special Focus on Scheduled Castes and Scheduled Tribes in Elementary Education’. Center for International Education Faculty Publications 24. Amherst: University of Massachusetts. Available at: https://scholarworks.umass.edu/cie_faculty_pubs/24 (accessed 2 January 2023).
- Khanna, G. (2020). ‘Does Affirmative Action Incentivize Schooling? Evidence from India’. *Review of Economics and Statistics*, 102(2): 219–33. https://doi.org/10.1162/rest_a_00848
- Laskar, M.H. (2010). ‘Rethinking Reservation in Higher Education in India’. *ILJ Law Review*, 1(1): 25.
- Lee, A. (2021). ‘Does Affirmative Action Work? Evaluating India’s Quota System’. *Comparative Political Studies*, 54(9): 1534–64. <https://doi.org/10.1177/0010414021989755>
- Lee, L.M. (2021). ‘Affirmative Inaction: A Quantitative Analysis of Progress Toward “Critical Mass” in US Legal Education’. *Michigan Law Review*, 119(5). <https://doi.org/10.36644/mlr.119.5.affirmative>
- Leonard, J.S. (1984). ‘The Impact of Affirmative Action on Employment’. *Journal of Labor Economics*, 2(4): 439–63. <https://doi.org/10.1086/298041>
- Lin, Y. (2013). ‘Does Elimination of Affirmative Action Affect Postsecondary Admission and Earnings? Evidence from California?’ Mimeo. Available at: www.researchgate.net/profile/Yuxin-Lin-5/publication/320022096_Does_Elimination_of_Affirmative_Action_Affect_Postsecondary_Admission_and_Earnings_Evidence_from_California/links/59c93454a6fdcc451d545712/Does-Elimination-of-Affirmative-Action-Affect-Postsecondary-Admission-and-Earnings-Evidence-from-California.pdf (accessed 2 January 2023).
- McCrary, J. (2007). ‘The Effect of Court-Ordered Hiring Quotas on the Composition and Quality of Police’. *American Economic Review*, 97(1): 318–53. <https://doi.org/10.1257/aer.97.1.318>
- Mickey-Pabello, D., and L.M. Garces (2018). ‘Addressing Racial Health Inequities: Understanding the Impact of Affirmative Action Bans on Applications and Admissions in Medical Schools’. *American Journal of Education*, 125(1): 79–108. <https://doi.org/10.1086/699813>
- Munusamy, K. (2022). ‘The Legal Basis for Affirmative Action in India’. WIDER Working Paper 2022/74. Helsinki: UNU-WIDER. <https://doi.org/10.35188/UNU-WIDER/2022/205-8>
- Murrell, A.J., and R. Jones (1996). ‘Assessing Affirmative Action: Past, Present, and Future’. *Journal of Social Issues*, 52(4): 77–92. <https://doi.org/10.1111/j.1540-4560.1996.tb01849.x>
- Niemann, Y.F., and J.F. Dovidio (2005). ‘Affirmative Action and Job Satisfaction: Understanding Underlying Processes’. *Journal of Social Issues*, 61(3): 507–23. <https://doi.org/10.1111/j.1540-4560.2005.00418.x>
- Orfield, G. (2001). *Diversity Challenged: Evidence on the Impact of Affirmative Action*. Cambridge, MA: ERIC.
- Orfield, G., and D. Whitley (2001). ‘Diversity and Legal Education: Student Experiences in Leading Law Schools’. In G. Orfield (Ed.), *Diversity Challenged: Evidence on the Impact of Affirmative Action*. Cambridge, MA: Harvard Education Publishing Group.
- Oyez. (1979). ‘Regents of the University of California v. Bakke’. Available at: www.oyez.org/cases/1979/76-811 (accessed 2 January 2023).

- Ravallion, M. (2020). 'Ethnic Inequality and Poverty in Malaysia Since May 1969: Part 1: Inequality'. *World Development*, 134. <https://doi.org/10.1016/j.worlddev.2020.105040>
- Rodgers, W.M., and W.E. Spriggs (1996). 'The Effect of Federal Contractor Status on Racial Differences in Establishment-Level Employment Shares: 1979–1992'. *American Economic Review*, 86(2): 290–93.
- Rothstein, J., and A. Yoon (2008a). 'Affirmative Action in Law School Admissions: What Do Racial Preferences Do?' NBER Working Paper 14276. Cambridge, MA: NBER. <https://doi.org/10.3386/w14276>
- Rothstein, J., and A. Yoon (2008b). 'Mismatch in Law School'. Working Paper 14275. Cambridge, MA: NBER. <https://doi.org/10.3386/w14275>
- Sabbagh, D. (2011). 'Affirmative Action: The US Experience in Comparative Perspective'. *Daedalus*, 140(2): 109–20. https://doi.org/10.1162/DAED_a_00081
- Sander, R.H. (2004). 'A Systemic Analysis of Affirmative Action in American Law Schools'. *Stanford Law Review*, 57: 367.
- Schotte, S., R.M. Gisselquist, and T. Leone (2023). 'Does Affirmative Action Address Ethnic Inequality? A Systematic Review of the Literature'. WIDER Working Paper 2023/14. Helsinki: UNU-WIDER. <https://doi.org/10.35188/UNU-WIDER/2023/322-2>
- Sheth, D. (2004). 'Caste, Ethnicity and Exclusion in South Asia: The Role of Affirmative Action Policies in Building Inclusive Societies'. HDOCPA-2004-13. New York: United Nations Development Programme, Human Development Report Office.
- Singh, V. (1993). 'Case Comments: Indra Sawhney v. Union of India: A Review'. *National Law School of India Review*, 5(1): article 13, 72–78.
- Sowell, T. (1975). 'Affirmative Action Reconsidered: Was It Necessary?' Washington, DC: American Enterprise Institute for Public Policy Research.
- Stewart, F. (2000). 'Crisis Prevention: Tackling Horizontal Inequalities'. *Oxford Development Studies*, 28(3): 245–62. <https://doi.org/10.1080/713688319>
- Taylor, M.C. (1994). 'Impact of Affirmative Action on Beneficiary Groups: Evidence from the 1990 General Social Survey'. *Basic and Applied Social Psychology*, 15(1–2): 143–78. <https://doi.org/10.1080/01973533.1994.9646076>
- University of North Carolina and Chapel Hill. (2022). 'Admissions Case: Carolina's Case'. Available at <https://admissionslawsuit.unc.edu/lawsuit/carolinas-case/> (accessed 2 January 2023).
- Weisskopf, T.E. (2004). *Affirmative Action in the United States and India: A Comparative Perspective*. London: Routledge. <https://doi.org/10.4324/9780203799970>
- Welch, S., and J. Gruhl (1998). *Affirmative Action and Minority Enrollments in Medical and Law Schools*. Ann Arbor: University of Michigan Press. <https://doi.org/10.3998/mpub.15847>
- Xaxa, V. (2001). 'Protective Discrimination: Why Scheduled Tribes Lag Behind Scheduled Castes'. *Economic and Political Weekly*, 36(29): 2765–72.

Appendix

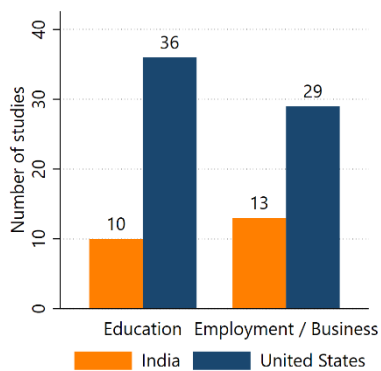
Table A1: Number of studies by outcome and country

	First-order			Second-order			Other marginalized			Non-marginalized		
	India	US	Total	India	US	Total	India	US	Total	India	US	Total
Education	6	30	36	7	23	31	2	3	5	3	7	10
Enrolment	5	27	32	.	.	.	1	3	4	1	4	5
Educational attainment	.	2	2	5	14	19	1	.	1	1	1	2
Earnings	.	.	.	1	4	5	.	.	.	1	1	2
Other	1	1	3	2	5	6	.	.	.	.	1	1
Employment/business	7	25	32	9	7	16	3	1	4	2	5	7
Employment	7	21	28	.	.	.	1	1	2	2	3	5
Earnings	.	2	2	.	3	3	.	.	.	.	.	.
Business performance	.	1	1	.	.	.	.	.	.	.	1	1
Work performance	.	.	.	2	2	4	.	.	.	.	.	.
Educational attainment	.	.	.	4	.	4	2	.	2	.	.	.
Other	.	1	1	3	2	5	.	.	.	.	1	1
Total	14	55	68	16	30	47	5	4	9	5	12	17

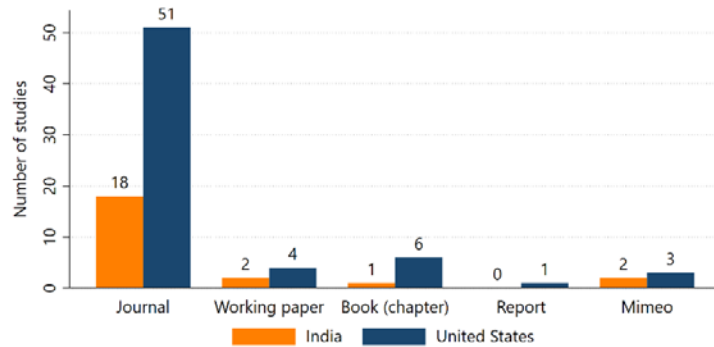
Source: authors' calculations.

Figure A1: Number of studies

a. By country and policy domain



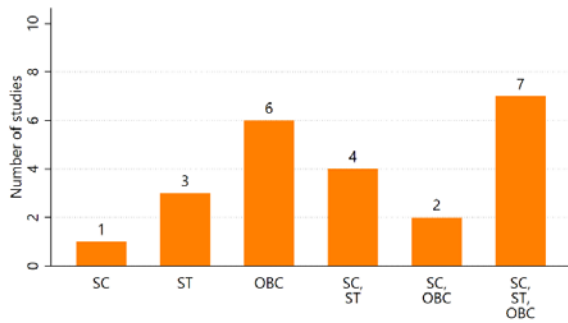
b. By country and type of publication



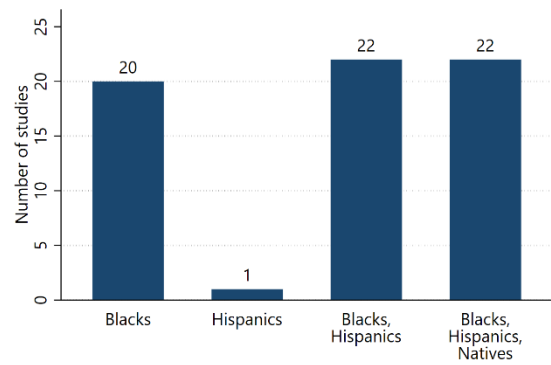
Source: authors' illustration.

Figure A2: Number of studies by investigated AA target group

a. India



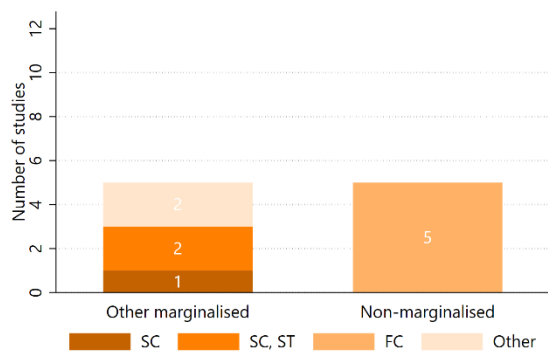
b. US



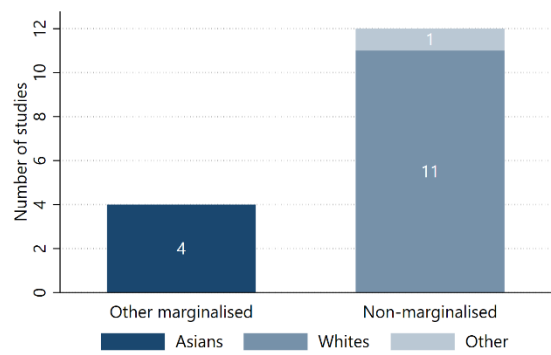
Source: authors' illustration.

Figure A3: Number of studies by investigated non-target group

a. India



b. US



Source: authors' illustration.