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Do Teachers have in-group Bias about Student Caste and Socioeconomic Status in India?

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Abstract

This article studies the extent of teacher's in-group bias in occupational expectations and grading on the basis of a student's caste and socioeconomic status. The article adopts an experimental approach and draws on data generated from 122 teachers from 19 schools in Delhi, India. The caste and socio-economic status of students were randomly assigned to a set of essays written by them such that the assigned characteristics were not related to essay quality. The results show that high caste teachers hold higher occupational expectations from their in-group category and are biased against the low caste category. For instance, high caste teachers assign 0.53 per cent or 0.019 points higher occupational expectations to high caste students and assign 5.6 per cent or 0.19 points lower occupational expectations to low caste students. The magnitude of coefficients is small but significant at 5 per cent level (P value<0.005). In terms of marks assigned, results show, that high caste teachers assign 2.36 points or 3.22 per cent higher marks when the assigned characteristics belong to a high caste; indicating in-group bias/favor for the same caste. The coefficient is positive and significant at 5 per cent level (P- value < 0.05). In contrast, high caste teachers are shown to be biased against low caste students as they assign 2.41 points or 3.41 per cent lower marks when the assigned characteristics is a low caste. Given the ultra-competitive nature of schooling in India and the importance of grades in determining access to higher education in India, even a point disadvantage is substantial.

Keywords

Teacher in-group bias, grading, occupational expectations, caste, socio-economic status, Delhi, India

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Introduction

Across the globe, teachers play a vital role in molding students in ways that affect their academic achievement, and determine future options in life. In addition to being instructors, teachers serve as the gatekeepers for the academic progress of their students, and their opinions and impressions frequently have a significant impact on the paths that students take. However, biases, especially those pertaining to social categories like caste and socio-economic status (SES), have the potential to undermine the objectivity of these judgements, and may impede the chances that students have in life. The issue of in-group bias among teachers—favoring students who share the same caste and socio-economic status—is examined in this article along with its implications for educational equity. The propensity for people to give preference to members of their own group over members of other groups is known as in-group bias. The notion of social identity, which holds that people get a feeling of identity and self-worth from belonging to certain groups, is the foundation for this (Tajfel & Turner, 1986). When teachers intentionally or unintentionally give preference to pupils with a similar social background—such as the same caste or socio-economic class—it is referred to as in-group bias in the educational setting.

Caste and socio-economic status are two deeply interconnected social structures that profoundly influence people's experiences and possibilities. According to Deshpande (2010), caste is a traditional social structure that is common in nations like India. It divides society into rigid categories that frequently determine an individual's social, economic, and educational opportunities. In contrast, socio-economic status refers to an individual's financial situation, level of education, and employment status, and it affects their ability to access opportunities and resources (Sirin, 2005). People from lower caste and lower SES sometimes suffer even more disadvantages because caste and SES interact in many ways. These socio-economic variables are extremely important in educational settings because they impact everything from children's access to high-quality education to how teachers treat them.

There is strong evidence of in-group biases in teacher methods for grading from empirical research. Research carried out in several settings has demonstrated that educators typically give preference to students who belong to the same caste or economic background. Hanna and Linden (2012), for example, found substantial caste-based discrimination in grading in their study conducted in India. Despite identical academic achievement, teachers gave greater marks to students from higher castes than to their peers from lower castes. There exists similar evidence of socio-economic discrimination in evaluations of educators comes from Western countries. According to a 2014 study by Alexander, Entwisle, and Olson, teachers frequently gave students from higher socio-economic backgrounds higher marks even if their actual academic performance was comparable with that of students from lower socio-economic backgrounds. This discrimination in grading can be linked to teachers' beliefs that children from higher socio-economic backgrounds are more capable, have more social capital and more help at home (Alexander, Entwisle, & Olson, 2014).

In schools, in-group bias manifests itself through a variety of psychological and social factors. Stereotype activation is one such mechanism. Based on a student's caste or socio-economic status, teachers may have preconceived notions about their academic aptitude. For instance, stereotypes about students from lower castes or socio-economic backgrounds may suggest that they are less capable or driven, which may affect teachers' expectations and test scores (Rosenthal & Jacobson, 1968). The Pygmalion effect is another way by which a student's actual performance is influenced by the teacher's expectations regarding their abilities. Higher expectations for in-group students can reinforce the initial bias through increasing good interactions, extra support, and favorable evaluations (Good, Aronson, & Inzlicht, 2003). In addition, social alienation and empathy gaps might be involved. Assessors may be more sympathetic and connected to pupils from comparable social backgrounds, which could result in better evaluations and higher marks. Research indicates that people prefer and have more empathy with those that they see as being similar to themselves, which supports this phenomenon (Batson et al., 1995).

In-group bias in teacher evaluation has a significant impact on equity in education. Teachers who show preference for students in their own caste or socio-economic class reinforce social injustices and challenge the meritocracy of education. It is possible for students from underrepresented groups to be unfairly punished by earning lower grades even though their performance is equivalent. This can have an impact on their motivation, sense of self-worth, and future chances (Farkas, 2003). Furthermore, unfair grading procedures may help to maintain social hierarchy. One important factor influencing social mobility is academic performance, and children from lower caste and lower socio-economic origins may not be able to move up the social mobility ladder due to biased assessments. Thus, social and economic inequality are sustained over generations and the cycle of disadvantage is further strengthened (Breen & Jonsson, 2005).

A diverse strategy is needed to address in-group bias in education. Implementing extensive teacher training programs with a focus on cultural competence and anti-bias education is one crucial tactic. These initiatives can support more equal grading procedures by assisting educators in identifying and mitigating their own prejudices (McKown & Weinstein, 2008). In addition, structural adjustments to the educational system can lessen the negative effects of in-group bias. Standardized testing and anonymous grading schemes are two examples of these modifications that can lessen the impact of teacher bias on student assessments. Additionally, encouraging diversity within the teaching profession can be beneficial since a more varied set of educators may be less inclined to favor any one student group over another (Villegas & Irvine, 2010). Additionally, research emphasizes how critical it is to create an inclusive school environment that promotes diversity and advances equity. Individual teacher bias can be reduced in schools by actively implementing strategies to support students from different backgrounds. These strategies can foster an atmosphere where all students feel appreciated and supported (Banks, 2015).

To combat in-group bias in grading on the basis of caste and socio-economic status, this article presents findings on whether teachers are biased or favor students belonging to the same caste and socio-economic status. Methodologically, the article uses an experimental approach to identify a teacher's in-group discrimination. Data was collected on the actual characteristics (caste and socio-economic status) of teachers and the assigned characteristics of students via an experiment conducted in Delhi, India. To this purpose, 10 students aged 13-14.5 years were invited to write essays on the topic "My future career ambition". Student's caste and socio-economic status were then randomly assigned to essays such that assigned characteristics were not related to essay quality/actual characteristics. Since, each of the 122 teachers graded 10 essays, the experiment generates 1,220 observations for analysis. Consistent with the existing literature, it is hypothesized that teachers may have in-group biases towards students of their own caste and own socio-economic status.

The remainder of the article is structured as follows. Section 2 provides a novelty of this article. Section 3 provides a literature review. Section 4 presents the research methodology. Section 5 presents the initial results. Section 6 discusses the results based on OLS model; section 7 provides a discussion and section 8 concludes.

Novelty

This study examines teachers' in-group bias in grading based on student's caste and socio-economic status (SES), intending to add to the body of research already available on educational equity. Although significant research has been done on discrimination in education in general, this study provides an entirely new perspective on how caste and SES interact with teacher evaluations as it seeks to fill various gaps in the literature and present fresh viewpoints in this field of study.

Few studies have examined the combination of caste and SES in teacher grading, even though previous research on these two demographic factors has frequently focused on them independently (Hanna & Linden, 2012; Sirin, 2005). By examining how these interconnected identities (caste and SES) impact teacher grading, this study offers a more sophisticated understanding of in-group bias in educational settings. Because it recognizes that single-axis studies have not adequately captured the experiences and biases faced by students, an intersectional/combination approach is crucial (Crenshaw, 1991). Although there is strong evidence of caste- and SES-related biases in education in South Asia (Deshpande, 2010) and Europe and USA (Alexander, Entwisle, & Olson, 2014), this study attempts to bridge these findings in a setting where both factors are firmly ingrained. In settings where caste and SES are both prominent social categories, this approach enables a context-specific analysis of how historical and socio-economic hierarchies affect teacher behavior and student results.

The study explores the social and psychological processes that give rise to in-group bias in teacher evaluations. It provides a thorough analysis of how these biases appear in the classroom by looking at stereotype activation (Rosenthal & Jacobson, 1968), the Pygmalion effect (Good, Aronson, & Inzlicht, 2003), and empathy gaps

(Batson et al., 1995). This shows a better comprehension of the ways that biases influence educational evaluations. Additionally, this study uses an experimental design where teachers grade essays and assign expectations for their students' careers based on predetermined student traits. This analytical technique makes it possible to conduct a thorough analysis of the extent to which bias exists in the classroom.

It is expected that the study's conclusions will have a far-reaching impact on educational practice and policy. Through the identification of distinct mechanisms via which caste and SES biases function, the research will contribute to the development of focused interventions aimed at reducing bias and advancing equity. The results of this study can be used to inform recommendations for teacher preparation programs, structural changes to grading procedures, and tactics to promote inclusive educational environments. Furthermore, the study also seeks to advance theoretical frameworks concerning intergroup relations and social identity in educational contexts. Through the integration of concepts from intersectionality theory (Crenshaw, 1991) and social identity theory (Tajfel & Turner, 1986), the study provides a more thorough understanding of the ways in which social identities influence interactions and outcomes between teachers and students. Future studies examining additional intersecting social categories in educational environments can be guided by this theoretical contribution.

Literature Review

Understanding and resolving educational disparities depends on knowing whether teachers display in-group bias when assigning grades to students based on similar social identities like caste and socio-economic class (SES). With the use of theories like the Pygmalion effect, stereotype threat, threat in the air, social identity theory, and intersectionality theory, this literature review delves into the research on in-group bias in education. These frameworks aid in clarifying the ways in which biases function as well as how they affect students' academic performance.

Evidence of Discrimination in Grading in Schools in the Indian Context

Research by Thorat and Attewell (2007) found that students from Scheduled Castes (SC) and Scheduled Tribes (ST) face significant bias in educational settings, including in grading. Their study, which involved an extensive correspondence survey of students and teachers, revealed that students from lower castes often receive lower grades than their upper caste peers, even when academic performance is equivalent. The researchers concluded that teachers, often unconsciously, harbor stereotypes about the intellectual capacities of lower caste students, leading to discriminatory grading practices. Another study by Deshpande and Ramachandran (2019) highlighted that Dalit students often receive less favorable evaluations compared to students from upper castes. Their study showed that such biases are more prevalent in rural schools, where caste hierarchies are stronger, but also noted that even in urban settings, where caste discrimination might be more subtle, it still impacts the grading process.

A study by Sarangapani (2003) found that students from low-income families are often graded less favorably compared to their wealthier peers. This study, which explored rural and urban schools across different states, noted that teachers' perceptions of students' backgrounds influence their expectations. As a result, students from poorer families were often subjected to lower academic expectations and received grades that reflected these biases rather than their actual performance. Similarly, Jha and Kelleher (2006) found that SES-related discrimination in grading is particularly pronounced in schools where students from different economic backgrounds study together. In mixed schools, wealthier students often receive higher grades, while students from lower-income backgrounds are seen as less capable, even when their academic performance is similar.

The intersection of caste and SES is particularly problematic in Indian schools. Ramachandran (2004) documented how Dalit students from low-income families were doubly disadvantaged in the grading process. Teachers, influenced by both caste and economic biases, tended to assume these students were less capable of academic success, which resulted in them receiving lower grades than their upper caste or wealthier peers. The study showed that this intersectional discrimination is prevalent even in schools that claim to uphold egalitarian values. Subramanian (2017) found that in addition to outright bias, teachers tend to show more leniency towards students from higher castes and wealthier backgrounds. These students are often given the benefit of the doubt in subjective assessments like essays and oral exams, while Dalit and low-income students are graded more harshly. This has a cumulative effect on their overall academic records, limiting their access to higher education and perpetuating socio-economic inequalities.

The Pygmalion Effect

The Pygmalion effect, sometimes referred to as the Rosenthal effect, is a psychological phenomenon that shows that people/students perform better when an authority figure has higher expectations from them. The groundbreaking study by Rosenthal and Jacobson (1968) showed that teachers' expectations could have significant effects on students' performance. When teachers have high expectations from students they will give extra attention, encouragement, and positive reinforcement, which will improve students' academic performance. In Rosenthal and Jacobson's 1968 study, "Pygmalion in the Classroom," for instance, teachers were given false data about their student's potential for academic progress. Instructors were informed that in the upcoming school year, a major intellectual growth spurt was anticipated for a subset of students who were chosen at random. According to the findings, these students surpassed their peers on IQ testing at the conclusion of the school year. The study found that when students behave in ways that support the teachers' expectations, it could become a self-fulfilling prophecy caused by the expectations of the teachers. Teachers who have higher expectations of certain students probably interact with these students differently, that leads to this situation. Students might perform better as a result of

receiving increased attention, assistance, and encouragement. On the other hand, low expectations may result in less encouraging actions, which may impede the academic progress of students.

The Pygmalion effect in the context of caste and SES implies that teachers are biased towards students from similar backgrounds such as similar caste and socio-economic status, which may lead to higher expectations for these students, resulting in preferential treatment. According to Inzlicht's study (2003), students' demographic traits such as caste and socio-economic status may have an impact on teachers' expectations, which in turn may affect how well students interact and are evaluated. Because of this bias, educational disparities may persist when students from higher castes or socio-economic status (SES) receive better marks and greater support, creating a self-fulfilling prophecy.

Stereotype Threat

When individuals become aware of negative stereotypes about their social group, they may feel anxious and perform worse. This phenomenon is known as stereotype threat (Steele & Aronson, 1995). Students from lower caste or socio-economic origins may do worse in school because they fear that they confirm negative presumptions about their group's ability. Studies conducted by Steele (1997) and Spencer et al. (1999) have demonstrated that stereotype threat has a major effect on academic achievement. For instance, a 1999 study by Spencer et al. examines how stereotype threat affects women's math ability. Both male and female undergraduate students who had strong backgrounds in mathematics participated in a series of studies carried out by the researchers. A difficult mathematics test was administered to participants under two different conditions: one that neutralized stereotype threat by stating that there were no gender differences on the test, and another that activated stereotype threat by telling participants that the test had previously revealed gender differences in performance. The findings showed that while the performance disparity between the sexes was much smaller in the no stereotype threat condition, women performed noticeably worse than males in the stereotype threat condition. These results imply that these stereotypes can seriously hinder women's arithmetic ability by raising anxiety and decreasing working memory.

In a similar vein, Steele's (1997) study investigates the idea of stereotype threat and how it affects the academic achievements of African American students. Through a series of experiments, Steele shows that when there is a greater chance of racial stereotype confirmation, African American students perform much worse on standardized tests. The study found that the psychological strain and anxiety brought on by being aware of unfavorable stereotypes is responsible for this decline in performance. The study also emphasizes the wider effects of stereotype threat, such as how it contributes to educational inequalities and restricts the academic and professional success of marginalized groups. In the present context of caste and SES, lower-caste students in India may feel more stressed and anxious during exams because

they are aware of the assumption that they are viewed as less capable under the present caste and socio-economic system. Teachers' preconceived notions and prejudices are strengthened when students perform poorly due to fear (Jussim, Eccles, & Madon, 1996).

Threat in the Air

The phrase "threat in the air" refers to a larger interpretation of stereotype threat, which includes environmental elements that contribute to a persistent perception of being discriminated against or assessed based on one's social identity (Steele, 1997). This idea is pertinent in learning environments where students from underrepresented groups are conscious of the biases and lower expectations that their peers and professors hold.

Students from lower caste and lower-SES households may experience a persistent sense of threat at schools where caste and SES play prominent roles. This can have a negative effect on their academic engagement and performance. Teachers' biases can create a hostile learning environment in the classroom that undermines students' self-esteem and hinders their ability to succeed academically (Aronson & Inzlicht, 2004).

For instance, Aronson and Inzlicht (2004) investigate how stereotype threat affects African American and Hispanic students' academic performance and ability to self-regulate. The study explores how self-regulatory resources (mental and emotional capacities) might be depleted by exposure to stereotype threat, resulting in poorer academic performance and a higher risk of academic failure. The study shows through a series of experiments that students exposed to stereotype threat suffer from increased stress and cognitive load, which hinders their capacity to concentrate, persevere, and perform well on difficult assignments.

Social Identity Theory

According to Tajfel and Turner's (1986) social identity theory, people get a significant portion of their identity from the social groups they are a part of. According to this hypothesis, people are driven to prioritize their in-group above out-groups to boost their perception of self-worth. The study describes how in-group bias and out-group discrimination are caused by social identity, classification, and comparison processes. Teachers may unintentionally give preference to students who belong to the same caste or socio-economic status (SES) since they consider them to be members of their own group.

Studies have demonstrated that this kind of in-group bias can take many different forms, one of which is biased grading procedures (Dee, 2005). Using a nationally representative sample of teachers and students, Dee (2005) examines the effect that gender has on student achievement. In order to isolate the impacts of gender interactions between teachers and students on academic performance, the study used a quasi-experimental methodology. According to Dee, students perform far better academically when they have a teacher of the same gender, especially in reading and

math. Boys exhibit a higher level of this impact, making noticeable progress under the supervision of male teachers.

According to the study, gender dynamics in the classroom may have an impact on learning outcomes and experiences through mechanisms like gender-specific teaching approaches, role modeling, and differential expectations. Differences in academic performance may result from teachers giving students from their own caste or socio-economic status (SES) more positive feedback, allocating more resources, and setting higher expectations for them. The status quo of social hierarchies and the need to preserve a positive social identity promote this favoring.

Intersectionality Theory

Crenshaw (1991) established the concept of intersectionality, which examines the ways in which different social identities interact to produce distinct experiences of privilege and oppression. Intersectionality theory sheds light on the combined disadvantages that students who belong to various oppressed groups—such as those who are lower caste and lower SES—face when it comes to teacher grading. Collins (2000) and Cho, Crenshaw, and McCall (2013) highlight the significance of taking into account several intersecting identities in order to fully comprehend the extent of bias and discrimination. Due to the compounding effects of teachers' opinions and stereotypes, students who are marginalized by both caste and SES may face more severe biases in grading. Their educational chances and results may be more negatively impacted cumulatively by this intersectional disadvantage. It should be noted that intersectionality theory integrates with Pygmalion effect, social identity theory and stereotype threat and act in the same way and reinforce each other in their bias.

Empirical Evidence of in-group Bias

Several empirical research that has examined in-group bias in educational contexts have shown how teachers' social identities have an impact on how they grade assignments. For example, Hanna and Linden (2012) found that in India, even in cases when students from lower castes performed equally academically, teachers were much more likely to give preference to those from higher castes. As a result, these students received better scores than their classmates from lower castes.

In a similar vein, Alexander, Entwisle, and Olson (2014) found that teachers in the US frequently gave students from higher socio-economic backgrounds higher grades. Teachers' beliefs that students from higher SES backgrounds were more capable and received better home support were linked to this bias, which resulted in preferential treatment. Dee (2005) examined the effect of teacher racial and ethnic biases on student performance and found that teachers tended to hold higher expectations from students who shared similar background and gave them better evaluations and feedback. This research lends credence to the idea that social identity-based in-group bias has a major impact on educational attainment.

Implications for Educational Equity

The existence of in-group bias in teacher evaluations bears noteworthy consequences for equitable education. Teachers who show preference for students in their own caste or socio-economic class reinforce social injustices and challenge the meritocracy of education. It is possible for students from underrepresented groups to be unfairly punished by earning lower grades even though their performance is equivalent. This can have an impact on their motivation, sense of self-worth, and future chances (Farkas, 2003).

Furthermore, unfair grading procedures support the maintenance of social hierarchy. One important factor influencing social mobility is academic performance, and children from lower caste and lower socio-economic origins may not be able to move up the social mobility ladder due to biased assessments. Thus, social and economic inequality are sustained over generations and the cycle of disadvantage is further strengthened (Breen & Jonsson, 2005).

Research Methodology

This section outlines the research methodology used to test the research hypothesis. In general, it is difficult to uncover teacher's attitudes of discrimination especially in terms of expectations and grades awarded. Among others, the use of survey-based questions suffers from the possibility of social desirability bias as teachers are unlikely to confess to discrimination.

Furthermore, research on discrimination becomes difficult because discriminatory attitudes may not be intentional, and may lie in the sub-conscious and may arise from pre-conceived stereotypes. It is possible to uncover such issues, at least to some extent, by conducting field experiments.

Experiment Overview

The experiment took place in Delhi in three stages. The first stage of the experiment, involved essay writing by 10 students aged 13-14.5 years on the topic "My future career ambition". Students were given a guideline to write essays so that their essays were similar in structure. The essays were collected and caste and socio-economic status was randomly assigned to essays such that one essay out of 10 was kept as a blind essay on which no manipulation of caste and socio- economic status was done. In the third stage, a packet of 10 essays was graded by each of the 122 teachers. After grading was completed, packets were collected and payment was made to teachers to compensate for their time. Each teacher was given about 4 euros or INR 400.

Table 1: Experiment Overview

Location	Indian capital; Delhi
First stage	Essay writing by 10 students aged 13-14.5 years on the topic "My future career ambition"
Second stage	Randomization of student caste and socio-economic status on essays such that one essay out of 10 was kept as a blind essay.
Third stage	Grading session by 122 teachers from 8 private and 11 government schools generating sample of 1220 observations.

Experiment Details

In the month of July, we went door to door to invite 10 students in Delhi aged between 13-14.5 years to write an essay on the topic "My future career ambition''. The essay writing took place under our invigilation in a hall at home, on a Saturday when all the children were available. Some children wrote the entire essay in front of us while others went back home and handed in the essay on the next day.

Children between the age group 13 to 14.5 years were chosen and the topic was not subject-specific, because we wanted essays which could be graded, such that every teacher who had a basic BEd (Bachelor of education) degree was eligible to check the essays. The essay title "My future career ambition" was selected for various reasons. First, it gave us an idea about the student's career ambitions. Second, the topic of the essay invited students to write about their occupational ambitions, parental occupations and background. This is important as providing information on their caste and class would seem natural rather than forced.

We gave a guideline to students to write the essay. In the first paragraph, we asked students to introduce their interest and motivation related to career ambition and occupational paths. In the second paragraph, we asked students to write about their parental occupation/background and how it motivated their career ambition. In the third paragraph, we asked students to write, what they had done so far to achieve their career ambition (extracurricular activities, study interests, reading). In the fourth paragraph, we asked students to write about struggles that they may have faced to achieve their career ambitions. In the fifth paragraph, we asked students to mention how their goal if achieved would contribute to society. All essays were written in English.

Second Stage: Randomizing Caste and Socio-Economic Status on Essays

The aim of this article is to assess whether teachers discriminate in holding occupational expectations and whether these expectations perpetuate discrimination in grades awarded based on student's caste and socio-economic status. To identify this, student's caste and socio-economic status was randomly assigned to the essays such that one essay out of 10 was kept as a blind essay on which caste and socio-economic status was not assigned. Randomization is expected to ensure that caste and socio-economic status assigned on the essays is not related to essay quality or actual student's characteristics. It must be noted, that only student's caste and socio-economic status was adjusted in the essay. Everything else, including the spellings and structure remained exactly the same as written by the students.

To ensure that teachers noticed the assigned caste and socio-economic status on the essays before grading it, we asked teachers to respond to three multiple choice questions before grading and after having read the essay. Teachers were told, that this served as a check that they had read the essay carefully. In the first question,

teachers had to mention student's ambition. In the second question teachers had to mention student's caste and in the third question, teachers had to mention student's socio-economic status. This ensured that teachers had read the essay carefully and did notice student's caste and socio-economic status before grading.

Teachers were asked to mark the essay out of 100 and also rate the essay out of 5 for the question "whether the student will be able to achieve his/her career ambition". A score of 0/5 indicates that teachers have low expectations in terms of student's achieving his/her ambition and score of 5/5 means that teachers have the highest possible expectations in terms of student's achievement of his/her career ambition.

Third Stage: Grading Session by Teachers

We obtained a list of all private and government schools in Delhi affiliated to the CBSE (Central Board of Secondary Education) and then randomly selected 100 schools out of that list and then sent an email to all the schools which had provided their email address; requesting them to allow us to conduct research at their school. In the email, we explained the brief idea of the research ensuring that the actual intent of the experiment was not revealed. We visited those schools first which had accepted the email/request and granted permission to conduct the research at their school. Later, we visited other schools based on principal's recommendation.

Finally, the schools which accepted the brief idea of research and allowed access to teachers, became a part of the study. In total, 122 teachers from 8 private and 11 government schools participated in the research. Each teacher was requested to grade a packet containing 10 essays on the basis of content, style and language thus generating 1,220 observations for analysis.

Teachers were also requested to fill the three multiple choice questions based on the essay, after reading but prior to grading. This was done to ensure that teacher's notice student's caste and socio-economic status before grading the essay. After grading, teachers were requested to fill a survey form which obtained information on a list of teacher characteristics. The questionnaire included questions on teacher's gender, age, education status, years of teaching experience, school type, location of school and total time taken to grade the essays.

Results

Table 2 depicts the teacher's in-group bias in holding occupational expectations in terms of student's ambition and marks awarded on the basis of interaction of teacher's caste and student's caste. The figure demonstrates that high caste teachers may hold higher occupational expectations and also assign higher grades to their in-group category. For instance, high caste teachers assign 0.2011 points (5.5 per cent) higher occupational expectations and 2.54 points (3.47 per cent) higher marks to high caste students relative to low caste students which is significant at 5 per cent level. In contrast, low caste teachers do not appear to be biased against high caste category as

they hold 0.13 points (3.58 per cent) higher occupational expectations and assign 0.66 points (0.8 per cent) higher marks to high caste category relative to low caste. This result is however not significant.

Table 2: Teacher's in-group bias in occupational expectations and marks based on interaction of teacher and student caste

Variable	Teacher Expectation given out of 5	Marks Assigned out of 100
Low caste teacher and low caste student	3.5 (0.73)	74.89 (13.16)
Low caste teacher and high caste student	3.63 (0.71)	75.55 (10.66)
High caste teacher and low caste student	3.42 (1.0)	70.62 (19.69)
High caste teacher and high caste student	3.6 (0.88)	73.16 (16.74)
High caste teacher and blind caste student	3.86 (0.81)	79.33
Low caste teacher and blind caste student	4 (0.47)	79.7 (7.43)

Note: Standard errors are given in brackets.

The graph further reveals that both high caste teachers and low caste teachers hold highest occupational expectations from the blind category and also award maximum marks to the blind essay, significant at 5 per cent level.

Furthermore, table 3 depicts how teachers of high caste and low caste, award marks and hold expectations based on student's socio-economic status.

Table 3: Expectations and marks awarded based on interaction of teacher's caste and student's SES

Variable	Teacher Expectation out of 5	Marks out of 100
Low caste teacher and low SES student	3.55 (0.71)	75.26 (12.06)
Low caste teacher and high SES student	3.57 (0.74)	75.1 (12.16)
High caste teacher and low SES student	3.47 (0.98)	70.62 (18.71)
High caste teacher and high SES student	3.55 (0.91)	73.17 (18.10)

Note: Standard errors are given in brackets

The table shows that both high caste teachers and low caste teachers may be biased against students from low socio-economic status in holding occupational expectations. Based on table 3, high caste teachers hold 0.08 points (2.3 per cent) lower occupational expectations from low socio-economic status category relative to high socio-economic status category, significant at 5 per cent level. Similarly, low caste teachers also hold 0.02 points (0.56 per cent) lower occupational expectations from low socio-economic status students relative to high socio- economic status students, however this is not significant.

Consistent with these results, there is also a bias in grading as high caste teachers assign 2.55 points lower marks to low socio-economic status students relative to high socio-economic status students, significant at 5 per cent level. Low caste teachers in contrast, are not shown to be biased against lower socio-economic status category while grading as they assign 0.16 points higher marks to low socio-economic status category relative to high socio-economic status category. This is however not significant.

Results from Ordinary Least Square Linear Regression Model

This section will explore teachers' in-group (same caste) and out-group (different caste) bias on the basis of interaction of teacher's characteristics and student's characteristics and aims to identify the origins of teacher's discrimination in terms of who discriminates.

The average effect of the interaction of teacher's caste and assigned student 's caste on occupational expectations

Table 4 presents results for the average effect of interaction of teacher's caste and assigned student's caste on teacher's occupational expectations after controlling for grader fixed effects and student's socio-economic status. Each row in the table represents an individual OLS regression.

The results demonstrate that high caste teachers hold higher occupational expectations from their in-group category and biased against low caste category. For instance, high caste teachers assign 0.53 per cent (OLS estimate/mean of estimate*100) or 0.019 points higher occupational expectations to high caste students and assign 5.6 per cent or 0.19 points lower occupational expectations to low caste students. The results are significant at 5 per cent level.

The magnitude of coefficients is small but significant at 5 per cent level (P value<0.005). The low caste teachers however, are not shown to favour or discriminate in holding occupational expectations on the basis of a student's caste as the coefficients show an insignificant result.

Table 4: Average effect of interaction of teacher's caste and assigned student's caste on occupational expectations

Separate OLS regressions		OLS
	Teacher expectation	Constant
High caste teacher_ High caste student	0.0194** (0.066)	3.41** (0.02)
High caste teacher_ Low caste student	-0.193** (0.069)	3.59*** (0.031)
Low caste teacher_ High caste student	0.137 (0.102)	3.49*** (0.015)
Low caste teacher_ Low caste student	-0.128 (0.122)	3.50*** (0.01)
Grader fixed effects	Yes	Yes
Student's SES	Yes	Yes
N	899	899
Standard error in parentheses		
**p < 0.05, *p < 0.01, *** p< 0.01		

The average effect of the interaction of teacher's caste and assigned student 's caste on marks

Table 5 presents the results for the average effect of interaction of teacher's caste and assigned student's caste on marks assigned after controlling for grader fixed effects and student's socio-economic status. Each row in the table represents an individual OLS regression for the same.

Results show that high caste teachers assign 2.36 points or 3.22 per cent (OLS estimate/mean of estimate*100) higher marks when the assigned characteristics belong to high caste; indicating in- group bias/favour for the same caste. The coefficient is positive and significant at 5 per cent level (P- value < 0.05). In contrast, high caste teachers are shown to be biased against low caste students as they assign 2.41 points or 3.41 per cent lower marks when the assigned characteristics is low caste. The coefficient is negative and significant at 5 per cent level, demonstrating discrimination of high caste teachers against low caste students. However, for the low caste teachers, the results are insignificant which depicts that low caste teachers may not discriminate or hold in-group bias on the basis of student's caste while grading.

Table 5: Average effect of interaction of teacher's caste and assigned student caste on marks

Separate OLS regressions		**OLS**
	Marks student	**Constant**
High caste teacher_ High caste student	2.36** (1.04)	70.72*** (0.54)
High caste teacher_ Low caste student	-2.41** (1.09)	72.95*** (0.51)
Low caste teacher_ High caste student	1.46 (2.15)	71.62*** (0.24)
Low caste teacher_ Low caste student	0.102 (2.15)	71.62*** (0.24)
Grader fixed effects	Yes	Yes
Student's SES	Yes	Yes
N	900	900
Standard error in parentheses		
**p < 0.05, *p < 0.01, *** p< 0.01		

Overall, the results from the above 2 sections suggests that the discrimination against low caste students arises from high caste teachers and not from the low caste teachers. High caste teachers are shown to favour their in-group category that is high caste category and are discriminate against low caste category in holding occupational expectations and grading.

Average effect of interaction of teacher's caste and student's socio-economic status on occupational expectations

Table 6 presents the results for the average effect of interaction of teacher's caste and assigned student's socio-economic status on occupational expectations after

controlling for grader fixed effects and student's caste. Each row in the table represents an individual OLS regression for the same.

Table 6: Average effect of interaction of teacher's caste and assigned student SES on expectations

	Separate OLS regressions	**OLS**
	Teacher expectation	**Constant**
High caste teacher_ High SES student	0.074 (0.058)	3.46*** (0.02)
High caste teacher_ Low SES student	-0.058 (0.05)	3.52*** (0.03)
Low caste teacher_ Low SES student	-0.019 (0.065)	3.49*** (0.016)
Low caste teacher_ High SES student	-0.019 (0.063)	3.49*** (0.016)
Grader fixed effects	Yes	Yes
Student's SES	Yes	Yes
N	899	899
Standard error in parentheses		
**p < 0.05, *p < 0.01, ***p< 0.01		

Results show that both high caste teachers and low caste teachers may discriminate against students from low socio-economic status as high caste teachers hold 1.67 per cent (OLS estimate/mean of estimate*100) or 0.05 points and low caste teachers hold 0.53 per cent or 0.019 points lower occupational expectations from low socio-economic status students, respectively. The coefficients hold a negative sign but are not significant. The high caste teachers may favour high socio-economic status students as they hold 2.08 per cent higher occupational expectations from them but the coefficient is small in magnitude and insignificant.

These insignificant results thus depict that teachers may not discriminate or favour students on the basis of socio-economic status in holding occupational expectations. This further suggests, that a student's caste may still be a dominant factor that may lead to teacher's discrimination in expectations in the current era of economic development and high socio-economic status only acts to mitigate the discrimination faced by low caste category.

Average effect of interaction of teacher's caste and student's socio-economic status on marks awarded

Table 7 presents results for the average effect of interaction of teacher's caste and assigned student's socio-economic status on marks after controlling for grader fixed effects and student's caste. Each row in the table represents an individual OLS regression for the same.

Results demonstrate that high caste teachers favour high socio-economic status students while grading and discriminate against low socio-economic status students.

For instance, high caste teachers assign 2.37 points or 3.25 per cent (OLS estimate/ mean of estimate*100) higher marks when the assigned characteristics belong to high socio-economic status and assign 2.42 points or 3.42 per cent lower marks when the assigned characteristics belongs to low socio-economic status. The coefficients are significant at 5 per cent level. However, for the low caste teachers the coefficient on marks assigned is insignificant which depicts that low caste teachers may not hold a bias for or against different socio-economic status category students in awarding marks.

Therefore, the overall results suggest that teachers may not discriminate on the basis of student's socio-economic status in holding occupational expectations but while grading, high caste teachers favour high socio-economic status students and discriminate against low socio-economic status students. Hence, teacher's discrimination is more likely to run only along lines of caste in holding occupational expectations; but discrimination does run along class lines when teachers grade essays/ work of low socio-economic status and high socio-economic status students.

Table 7: Average effect of interaction of teacher's caste and assigned student's SES on marks

	Separate OLS regressions	**OLS**
	Marks	**Constant**
High caste teacher_ High SES student	2.379** (0.89)	70.71*** (0.414)
High caste teacher_ Low SES student	-2.42** (0.90)	72.95*** (0.54)
Low caste teacher_ Low SES student	0.839 (1.28)	71.63*** (0.244)
Low caste teacher_ High SES student	0.715 (1.092)	71.65*** (0.244)
Grader fixed effect	Yes	Yes
Caste	Yes	Yes
N	900	900
Standard error in parentheses		
**p < 0.05, *p < 0.01, *** p< 0.001		

These results are a matter of concern because marks awarded not only determine student's rank and admissions to universities but also affects their motivation to pursue higher education.

Discussion

The empirical results of the study on teacher in-group bias are summarized in this section, with a particular emphasis on whether or not teachers exhibit in-group bias or preference toward students based on socio-economic status (SES) and caste. The results are compared to comparable findings from earlier research to place the findings in the larger body of literature. The study also discusses the possible study limitations and future research directions.

According to the study, teachers often demonstrate in-group bias by giving preference to students who belong to similar socio-economic backgrounds and castes. Even in instances in which their academic achievement was comparable, students from higher castes and backgrounds with higher SES backgrounds obtained better scores than their peers from lower castes and backgrounds with lower SES. This bias was clearly seen in the grading methods. The results show that high caste teachers hold higher occupational expectations from their in-group category and biased against low caste category. For instance, high caste teachers assign 0.53 per cent or 0.019 points higher occupational expectations to high caste students and assign 5.6 per cent or 0.19 points lower occupational expectations to low caste students. The magnitude of coefficients is small but significant at 5 per cent level (P value<0.005). In terms of marks assigned, results show, that high caste teachers assign 2.36 points or 3.22 per cent higher marks when the assigned characteristics belong to high caste; indicating in- group bias/favour for the same caste. The coefficient is positive and significant at 5 per cent level (P-value < 0.05). In contrast, high caste teachers are shown to be biased against low caste students as they assign 2.41 points or 3.41 per cent lower marks when the assigned characteristics is low caste. These findings align with the social identity hypothesis by Tajfel & Turner (1986) that people acquire self-esteem from their group memberships and are likely to favor students who share their group identification.

Moreover, the results of this study are consistent with research carried out by Hanna and Linden (2012) who discovered that low caste students were subjected to discrimination by upper caste teachers. In line with the results of the current study, teachers were seen to assign lower grades to students from lower castes than to their peers from higher castes.

According to Dee's (2005) study on racial and ethnic biases in the US, teachers frequently held students who shared their background to higher standards and gave them better evaluations. This is consistent with the in-group bias that the current study's high-caste teachers showed.

Additionally, Alexander, Entwisle, and Olson (2014) demonstrated how students' socio-economic status (SES) affected teachers' assessments, with higher SES students receiving more favorable evaluations. This confirms the recent finding that high-caste teachers give higher marks to students from higher socio-economic backgrounds.

Burgess and Greaves (2013) examined teacher bias in the UK and found that teachers gave greater marks to students who shared their ethnic background, which is consistent with the results of this study and highlights the prevalence of in-group favoring. Similarly, McKown and Weinstein (2008) emphasized how prejudices within the teaching profession can affect the way that teachers interact and set expectations for students. The results of this study were further supported by the observation that teachers were more likely to have higher expectations and more favorable interactions with students who shared their racial or ethnic origin.

Limitations of the Study

The results of the study are context-specific and might not apply to different educational or cultural contexts. To further understand the prevalence and effects of in-group bias worldwide, future studies should examine it in a variety of settings.

Moreover, it's possible that the study's experimental setup left out important details about the complexity of interactions in actual classrooms. Longitudinal and observational studies may offer more information.

Furthermore, the study's main indicators of bias were grading and occupational expectations, which would not account for all instances of discrimination or favoring. Future studies should use a variety of measures in order to offer a more thorough comprehension of in-group bias.

Future Research Directions

Future studies must take into account the scenarios provided. Longitudinal studies that monitor the academic trajectories of students, for example, can offer more comprehensive insights into the cumulative effects of in-group bias on educational attainment and social mobility.

Furthermore, by comparing research across cultural and educational contexts, cross-cultural comparisons might improve our comprehension of how in-group bias functions worldwide and pinpoint context-specific elements that affect its incidence and consequences.

Finally, intersectionality should be included in studies. In order to create a more nuanced understanding of how many social factors interact to impact educational experiences and outcomes, future research should examine the intersectionality of caste, SES, and other social identities (e.g., gender, race, and ethnicity).

Conclusion

One significant issue that undermines educational equity and feeds societal inequality is in-group bias in teacher grading. Research from a variety of settings shows that teachers frequently give preference to students who belong to the same caste or socio-economic class, which biases assessments and disadvantages students from underrepresented groups. Targeted interventions, including teacher preparation, structural changes, and the development of inclusive school environments, are needed to address this problem at both the individual and institutional levels. Educational systems can move toward more equal procedures that guarantee all students have the chance to thrive based on their merit and talents by identifying and resolving in-group bias.

The study shows how teachers' social identities affect their expectations and assessments of students, underscoring the important role that in-group bias plays in educational environments. These results highlight the necessity of focused initiatives to combat bias and advance equity in education. Through the integration of concepts

from intersectionality and social identity theory, the study offers a thorough framework for comprehending and resolving in-group bias in educational settings. It takes a variety of approaches to create more inclusive and equitable learning environments that address the structural as well as the individual causes of bias.

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