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Senior Thesis

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Professor Gender Impact on Princeton University Course Evaluations

Motivation and Goal: The main goal of this project is to examine whether the gender of Princeton University professors has an impact on course quality, through examining course evaluations. The motivation from this stems from my own experiences in hearing students talk about certain courses, and how they tend to regard them differently depending on the gender of the professor teaching it. In analyzing the various chosen course evaluations from three departments (one from STEM, one from the humanities, and one from the social sciences), the project also seeks to determine if there is a correlation between professor gender and course *quality*, based off the evaluations. This could be beneficial in diagnosing gender biases in the education field.

Problem Background and Related Work: In the first cited study (see below), it was shown that male professors are evaluated higher than female professors. The second article addresses the underrepresentation of women in university roles. The third source acknowledges that there is a disparity between the treatment of genders in academia and seeks to rectify it. Contrary to the related work, the biggest insight that this project provides is the examination of *Princeton's* courses and professors in particular. There is also a more concrete source of data – rather than rely on word of mouth and surveys, this relies on official course evaluations that impact other student decisions to enroll in a course.

Approach: The main approach lies in the sentiment analysis of existing Princeton University course evaluations, which can be accomplished using Python with the NLTK library. This library can be used to generate sentiment analysis for the course evaluations (determine overall positivity/negativity) and the types of adjectives used (more personality vs course content oriented). The course evaluations themselves will be scraped/obtained from the Princeton

Registrar. The evaluations will also manually be compared once their sentiment analysis is generated to determine if there is a correlation between professor gender and overall course rating.

Plan: The first step of this would be to determine which departments are being analyzed. Ideally, one will be from the social sciences, one from the humanities, and one from the STEM fields. Next, it would be best to narrow down the departmentals into courses that are taught frequently and taught by multiple professors of different genders, which brings down the number of courses *significantly*. Ideally, there would be a consistent amount of courses in the following categories: introductory lectures, upper level seminars, and other lectures. Afterwards, once the course collections are finalized, it would be important to manually examine the course evaluations and filter out any courses with lacking evaluations (ie a few words or no real substance, such as “don’t take this course”). Then, it would be a matter of using the NLTK Python library to sift through the data and generate a sentiment analysis for each respective course across multiple semesters, and determine if there is a clear bias between male and female professors. In addition, the course ratings will be taken into account and factored in manually.

Evaluation: The evaluation of this project will be based off the successful inclusion of a multitude of courses and course types, and whether a clear bias is found across the course evaluations. Another route it could be tested is via the analysis of a fourth department, to examine whether the conclusion of the project holds true outside of the three departments analyzed.

Related Work:

1. Hoorens, Vera, Gijs Dekkers, and Eliane Deschrijver. "Gender Bias in Student Evaluations of Teaching: Students' Self-Affirmation Reduces the Bias by Lowering Evaluations of Male Professors." *Sex Roles*, vol. 84, no. 1-2, 2020;2021;, pp. 34-48.
2. Henningsen, Levke, Alice H. Eagly, and Klaus Jonas. "Where are the Women Deans? the Importance of Gender Bias and self-selection Processes for the Deanship Ambition of Female and Male Professors." *Journal of Applied Social Psychology*, vol. 52, no. 8, 2022;2021;, pp. 602-622.
3. Poppenhaeager, Katja. "Unconscious Gender Bias in Academia: From PhD Students to Professors." *AIP Conference Proceedings*, vol. 2109, no. 1, 2019.