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Why do good performing students highly rate their instructors? Evidence from a natural experiment

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ABSTRACT

This article analyzes the behavior of students in a college classroom with regard to their evaluation of teacher performance. As some students are randomly able to see their grades prior to the evaluation, the "natural" experiment provides a unique opportunity for testing the hypothesis as to whether there exists a possibility of a hedonic (implicit) exchange between the students' grades and teaching evaluations. Students with good grades tend to highly rate the teaching quality of their instructors, in comparison with those who receive relatively poor grades. This study finds that students with better grades than their expected grades provide a psychological "gift" to their teachers by giving a higher teacher evaluation, whereas it is the opposite with those students receiving lower grades than their expectation. These empirical results demonstrate that a previous interpretation on the effect of student grades in an incumbent course with regard to the teaching quality may have to be somewhat discounted.

1. Introduction

As there has been an increased emphasis on the public accountability of universities, the role of the faculty in teaching and conducting research at a university is becoming more important. Teaching plays a major role in college education, and the student evaluation of teaching (hereinafter, SET) is a reference for improving the quality of instruction (Lee & Cho, 2014). In many universities, student evaluations are used as key materials for the academic promotion process as well as associating the number of course registrations with the students' preference for faculty. As a result, not only the course content (e.g., clarity of instruction, adequacy of course materials and instruction methods), but also other factors such as an instruction itself (e.g., competency and enthusiasm of the faculty and grades assessed by student evaluations) are becoming significant.

In previous studies, there have been many efforts to identify the determinants of student evaluations at universities, such as characteristics of faculty, courses, students, etc. First, as for faculty characteristics, many studies tried to examine the effects of faculty age, gender, and position (Feldman, 1984; Fernández & Mateo, 1997; Marsh, 2007; Ting, 2000). However, at most, the effect of faculty characteristics is found to be very minimal, and varies across studies.

Second, there are also many studies on the effects of course characteristics on student evaluations. A study on the electivity of a course suggests that instructors teaching an elective course usually receive higher scores of student evaluations compared to the instructors teaching a required course (Marsh, Hau, Chung, & Siu, 1997). Among the fields of study, student evaluations are the highest for the faculty of college of arts and humanities, but the differences are not

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large (Ory, 2001). Class size sometimes affects student evaluations. Feldman (1984) found that a very large or a very small class receives higher scores of student evaluations. Yet, on the contrary, a study by Bedard and Kuhn (2008) found that as class size becomes larger, student evaluations become lower.

Third, as for students' characteristics, some studies indicated that a student's grade also influences student evaluations, suggesting a statistically significant positive relationship between the students' grades in the current course and student evaluations (Arnold, 2009; Heckert, Latier, Ringwald, & Silvey, 2006; Spooren, 2010). Those studies interpreted this relationship as a reflection of the teaching effectiveness or student learning. Because students learn more and better from faculty who teach effectively than those who do not, they can get higher grades; thus, it naturally follows that a faculty member would obtain better student evaluations.

Unlike these studies, many economics studies are concerned about bias on student evaluations because of the students' expectations about their course grades. From a "bias" point of view, the students with good grades tend to highly rate their instructors on teaching evaluations. Thus, instructors are likely to have some incentive to give more inflated grades to students since teaching evaluation can ultimately affect the promotion of instructors. According to this "grading leniency" hypothesis, the faculty tries to "relax" grading standards in order to receive higher evaluations (e.g., Brockx, Spooren, & Mortelmans, 2011). Several studies employ an expected grade in order to empirically test the grading leniency hypothesis on student evaluations because students do not know their own course grades at the time of the evaluations (Aigner & Thum, 1986; Ewing, 2012; Ginexi, 2003; Greenwald & Gillmore, 1997; Isely & Singh, 2005; Krautmann & Sander, 1999; Matos-Diaz & Ragan, 2010; McPherson, 2006). However, since the expected grade denoted in the student evaluation questionnaires tends to be noisy (i.e., imprecise or perhaps biased), some studies alternatively use the course grades (Brockx et al., 2011; Marsh, 1984; Spooron, 2010; Weinberg, Hashimoto, & Fleisher, 2009). For example, Weinberg et al. (2009) use the actual grade in the current course as a measure of the expected grade because students can have some idea of what grades they will receive based on midterm results, homework scores, and other objective information on their course performance, as well as any possible "signals" from the instructor, although students generally do not receive perfect information on final grades before completing their evaluations.

Instead of utilizing the expected or actual grades directly, some studies use the composite terms. For example, Isely and Singh (2005) use the gap between the expected grade and cumulative GPA as the relative expected grade, and Davies, Hirschberg, Lye, Johnston, and Mcdonald (2007) calculated the difference between the students' course grades and average grade for other courses being taken during the same semester. The students who obtained higher grades, relative to their expectation, would hence give a psychological "gift" to their teachers by giving higher evaluations; whereas, it is the opposite with those students receiving lower grades than their expectations.

Under the assumption that student with better grades are likely to give more favorable evaluations, this study focus on the possibility of a hedonic (implicit) exchange between the students' course grades and student evaluations. In this paper, the reservation grade is defined as the minimum grade expected by students. If the actual grade is higher than the reservation grade, then a grade surplus is realized; as a result, students provide higher evaluations based on their hedonic value of the grade surplus. On the other hand, if the actual grade is lower than the reservation grade or in the face of a negative grade surplus, the students pay back by rating teachers through lower evaluations. Since students with better grades are likely to have a positive hedonic value of grade surplus, the empirical estimation (without appropriately considering this component) may be biased. This study will identify the very existence of the bias factor, suggesting that the positive influence of the students' grades on teaching quality may have to be discounted as much as the bias factor.

This paper is organized as follows. Section 2 demonstrates how the data for teaching evaluation was created. Section 3 describes the summary statistics of the data used in this study. Section 4 describes a theoretical model of this analysis. Section 5 describes the empirical models. Section 6 reports the results and Section 7 is the conclusion.

2. Data of teaching evaluation

In order to empirically identify the existence of the aforementioned bias factor, which might exist in estimating teaching evaluations, this study exploited a very novel data set. In order for this empirical work to be done, there should be two groups of students. One group is composed of students who are informed of their grades in class, prior to submitting the evaluations, whereas another group includes those who are not informed of their grades. The novel data set was created by a system-related technical error that happened at one of the major universities in Korea, Sungkyunkwan University. The system error occurred in 87 classes at the College of Engineering during the spring semester of 2012. At the College of Engineering, course evaluations are largely divided into the two major types: one is for ABEEK programs[1] and the other is for general courses required for the major. The Information and Communications Center responsible for building a course evaluation system was supposed to classify course evaluations according to prescribed course type by setting "ABEEK" for the ABEEK programs and setting "null" for other major-related courses, before students evaluate their courses for the semester. However, the center failed to properly mark "null" for general courses, even though it properly set "ABEEK" for the ABEEK programs.

After the student evaluations and final exams were completed, students were able to check their grades. During the grade announcement period, the Information and Communications Center discovered that the course evaluation type was not properly set for other major-related courses. After correcting this error, the Information and Communications Center sent the data to the administrative division, which manages course evaluation for calculating evaluation scores.

[1] ABEEK programs refer to the engineering education programs accredited by the Accreditation Board for Engineering Education of Korea (ABEEK). Those programs are designed to nurture highly qualified engineers who are needed by major companies in some industries.