Significant Factors Influencing Students' Perceptions Towards University Teachers' Evaluations
Using a Generalized Linear Model

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Abstract:

The study explores the various aspects that impact the opinions of university students regarding instructor evaluations, with a specific focus on feedback scores. The present study investigates the impact of multiple variables, including gender, age, and experience, and educational level, on feedback scores. Cihan University provided a quality assurance dataset, containing responses from a total of 27,641 students across various learning stages. We employed different statistical techniques, such as generalized linear models, one-way ANOVA, post-hoc multiple comparison methods, t-tests, and goodness-of-fit tests. The most important findings are that female students give lower feedback scores to teachers than male students, while students in the second stage of education are more satisfied with their teachers than those in the third stage, with first and fourth stage students having lower satisfaction levels, respectively; teachers with a master's degree in science receive lower feedback scores than Ph.D. holders; assistant lecturers receive higher feedback scores than professors; and middle-aged teachers are more likely to be satisfied with their students than younger or older teachers. Comprehending these factors is essential for presenting opportunities to develop pedagogy methods, enhancing student contentment, and elevating the quality of education

Keywords: Students Perception, Teacher Evaluation**,** Feedback, Generalized Linear Model, One-way ANOVA.

الملخص:

أن الهدف الرئيسي من هذا البحث هو دراسة مجموعة من العوامل الخاصة بشخصية طلاب الجامعة كـ: (الجنس و المرحلة الدراسية)و كذلك العوامل الخاصة بشخصية المدرس، كـ:(الجنس، العمر، الشهادة الأكاديمية، مجال التدريس، اللقب العلمي، مدة الدراسة و نوع العقد)، و ذلك لعرض مستوى أثرها على تقييم الأساتذة من قبل الطلاب و نسبة التغذية الراجعة (فيدباك) التي يأخذونها في نهاية درسة السمسترات، و لهذا الغرض تم إستخدام جمعا هائلا من بيانات الأساتذة في جامعة جيهان، حيث تملك ثلاثة ميادين جامعية (كومبيوس) مستقلة و مختلفة (أربيل، السليمانية، و دهوك) المكونة على 27,641 من إجابة طلاب الجامعة للمدرسين، و من ثم تم إستخدام مجموعة من الطرق العلمية الإحصائية لتحليل بياناتنا كـ: (generalized linear models, one-way ANOVA, post-hoc multiple comparison methods, t-tests, and goodness-of-fit tests) . و بالنتيجة بدا لنا بأن الطالبات تعطي التغذية الراجعة أقل إلى المدرسين بنسبة 30% و ذلك مقارنة بالطلاب.

و كما يفضل طلاب السنة الثانية الأساتذة أكثر من طلاب السنة الثالثة، حينما يفضل الأساتذة من قبل طلاب السنة الأولى وطلاب السنة النهائية أقل من طلاب السنة الثالثة. من ناحية أخرى، فإن الأساتذة الحاصلين على درجة الماجستير في العلوم لديهم مستويات أقل من التغذية الراجعة للطلاب مقارنة بالحاصلين على درجة الدكتوراه. كما يحصل المدرسون الحاصلون على لقب المدرس المساعد التغذية الراجعة أفضل من الأساتذة، فيما يتعلق بعمر المدرسين، فإن الأساتذة الذين في منتصف العمر أكثر إرضاءً عند الطلاب حسب تقييماتهم من الأساتذة الذين في عمر الشباب أو كبار السن. إن الاهتمام بالعوامل المذكورة أعلاه وفهمها سيزيد من تعزيز أساليب التدريس، و بذلك يتم توفير بيئة أكثر ملاءمة للعلوم والتعلم مما يؤدي إلى مزيد من ثقة و رضا الطلاب وعملية التعلم بشكل عام.

الكلمات المفتاحية: إدراك الطلاب، تقييم المعلم، ردود الفعل، النموذج الخطي المعمم، تحليل التباين أحادي الاتجاه.

پوخته:

ئامانجی سەرەكی ئەم توێژینەوەیە بریتیه له دیراسەكردنی كۆمەڵێك فەكتەرى تایبەت به كاراكتەرى خوێندكارى زانكۆ وەكو (ڕەگەز و قۆناغی خوێندن) هەروەها فاكتەرى تایبەت به كاراكتەرى مامۆستا وەكو (ڕەگەز، تەمەن، بڕوانامەی ئەكادیمی، بوارى وانه وتنەوه، نازناوى زانستی، كاتی خوێندن و جۆرى گرێبەست) بەمەبەستی نیشاندانی ڕادەى كاریگەریتیان لەسەر هەڵسەنگاندنی مامۆستایان لەلایەن خوێندكارانەوە ڕیزەى ئەو فیدباكەى كه وەریدەگرن له كۆتایی خوێندنی هەر سێمیستەرێك. بۆ ئەو مەبەستەش داتایەكی گەوهرى فیدباكی مامۆستایان بەكارهێنراوه له زانكۆى جیهان كه خاوەنی سێ كەمپسى سەربەخۆی جیاوازه (هەولیر، سلێمانی و دهۆك) كه بریتیبوو له 27,641 وەڵامى خوێندكارانی زانكۆ بۆ مامۆستایان. پاشان كۆمەڵێك میتۆدی زانستی ئامار بەكارهێنرا بۆ شیكردنەوەى داتاكەمان وەكو generalized linear models, one-way ANOVA, post-hoc multiple comparison methods, t-tests, and goodness-of-fit tests. له دەرئەنجامدا بۆمان دەركەوت كه خوێندكارانی ڕەگەزى مێ فیدباكی كەمتر ئەدەن به مامۆستاكان بەبەروارد به خوێندكارانی ڕەگەزى نێر . هەروەها خوێندكارانی قۆناغی دووەم به ڕێژەى زیاتر مامۆستایانیان لا پەسەندە به بەروارد به قۆناغی سێیەم، له كاتێكدا خوێندكارانی قۆناغی یەكەم و كۆتا قۆناغی خوێندن كەمتر مامۆستاكانیان لا پەسەندە بەبەراورد به قۆناغی سێیەم. لەلایەكى ترەوه ئەو مامۆستایانەى كه هەڵگرى بڕوانامەى ماستەرن له بوارى زانستیەكاندا له ئاستی فیدباكی خوێندكاران بۆیان نزمتر دەبیت له هەڵگرانی بروانامەی دكتۆرا. هەروەها ئەو مامۆستایانەى كه نازناوى زانستیان مامۆستای یاریدەمره فیدباكیان باشتر دەبیت له پڕۆفیسۆرەكان. سەبارەت به تەمەنی مامۆستایان، ئەو مامۆستایانەى كه له تەمەنێكى مامناوەندان زیاتر جێگەى ڕەزامەندى خوێندكاران بە گوێرەى هەڵسەنگاندنیان له مامۆستا گەنج و بەتەمەنەكان. گرینگدان و تێگەیشتن لەو فاكتەرانەى سەرەوه زیاتر ڕێگاكانی وانه وتنەوه بەهێزتر دەكات، بەمەش ژینگەیەكی لەبارترى زانست و خوێندنی وا فەراهەم دەكریت كه دەبێته جێگەى متمانەو ڕەزامەندى زیاترى خوێندكاران و پڕۆسەى خوێندن به گشتی.

كلیله وشه: تێڕوانینی خوێندكار، هەڵسەنگاندنی مامۆستا، فیدباك، مۆدیلی خطی گشتگیر، ANOVA ى یەك-ئاراسته.

1. INTRODUCTION

In the long run, clarity, interaction, organization, excitement, and feedback are just a few of the many interconnected mechanisms found in the teaching process, which is a complicated endeavor. In general contexts, effective teaching is critical for student success (Yahya et al., 2023; Al Ansari et al., 2020).

The students and what they learn are the most significant elements of the educational process, even though the teachers tend to think that teaching is all about them and their job. This prompts them to reflect on what exactly they mean by "learning." Reading educational literature, particularly educational psychology, reveals a multitude of theories and definitions. Learning a new skill, understanding a scientific principle, or changing one's mindset can bring about a shift in the educational process (Siqueira AH, 2012).

While technological advances in educational methods and the explosion of knowledge are increasing rapidly, teaching will not be an easy profession. However, it is important to consider that students have their own unique perspectives when evaluating teachers. Regardless of the educational approach, the success of the learning process and the assessment of teacher effectiveness rely heavily on the students' viewpoints and feedback (Al-Ansi, 2023; Mahmood et al., 2021; Peimani, & Kamalipour,2021).

Feedback is the outcome of a person's responses to their duties. Student feedback is the most well-known form of teacher evaluation, as well as the basis for compensation and promotion decisions (Vogt et al., 2020). Age, gender, and experience are frequently believed to have an impact on teaching. In general, the teacher's age and expertise gave off a stronger initial impression (Shah & Udgaonkar, 2018; Mahmood et al., 2022).

This study builds a generalized linear model using a normal distribution and an identity link function to examine the perspectives of university students regarding the factors that influence teacher evaluation based on feedback scores. These factors include students' characteristics (such as gender and stage of education) and teachers' characteristics (such as gender, age, academic title, qualification, position, degree of education, and field of teaching). By formulating and verifying the generalized linear model, we achieve the study's subsequent objectives.

1. To identify significant independent variables that influenced the teacher's overall performance.
2. Determine whether there is a statistically significant difference between the levels or groups of each element based on the students' feedback scores.

2. LITERATURE REVIEW

Job performance refers to the overall anticipated value of the organization resulting from the distinct behavioral episodes carried out by an individual during a specified timeframe (Wen et al, 2019; Mahmood et al., 2019). Teaching performance refers to the exemplary performance of a teacher's duties, positions, and obligations with the aim of attaining educational goals. The contribution of teaching performance to the learning process is extremely significant, and the study assesses the ability of teachers to effectively instruct in unfamiliar teaching settings and achieve consistent teaching outcomes, as shown by the students' feedback scores (Kusumaningrum et al., 2019; Du et al, 2023).

The article by (Kadir & Omer, 2021) explores teaching effectiveness from the viewpoint of students at a specific university. It utilizes an ordinal regression model to determine the teacher attributes that impact student feedback. The study employs a 5-point Likert scale and analyzes the responses from a substantial sample of 21,566 students. The findings revealed significant factors that influence student feedback, such as the instructor's age, experience, academic title, nationality, and department. The study highlights the significance of student feedback systems in enhancing teaching and learning. The study demonstrates how certain instructor qualities have a significant impact on how positive feedback is received.

Research consistently demonstrates that a variety of factors, including gender and age, influence students' perceptions of their professors. For instance, González (2022) discovered that the combination of course level and field of study amplifies gender bias, leading to a more negative evaluation of full professors compared to those with lower academic titles. However, Belhadj-Tahar and Dendane (2022) found that students do not mind studying in mixed-gender classes and have a positive attitude towards both male and female teachers. Lesch et al. (2024) underscored the significance of professors as role models, emphasizing that female students perceive female professors as more competent and better teachers and that role models influence both male and female students in their career objectives. Alegado (2022) further demonstrated that students' perceptions of teachers' classroom management strategies, potentially influenced by age and experience, significantly influence their health, maturation, thinking and learning styles, and interpersonal interactions. These studies collectively suggest that teachers' age and experience could indeed affect students' perceptions.

Recent research has found that students favor instructors who are knowledgeable, communicative, and patient with their students. Thus, they intended to include student feedback in their classroom instruction regarding their preference for the teacher's gender and age. To clarify, they administered a questionnaire to 75 second-year medical students, asking them about their preferences for the gender, age, and experience of their lecturers (whether male or female, young or old, experienced, or inexperienced), along with their reasons for these preferences. As a result, most students believe that no gender or age is a barrier if the teacher is active, effective, and has practical experience to relate what he or she really tends to (Shah & Udgaonkar, 2018).

Studies have revealed that several attributes of teachers, including their physical appearance, personality traits (such as age, gender, position, and scientific title), and leadership abilities, have a substantial impact on how students perceive them. They highlight the significance of teacher personality in influencing student performance and engagement, as well as the importance of teacher leadership in fostering meaningful learning. The combined results indicate that a teacher's attributes, such as attire, personality, and ability to lead, have a significant influence on how students perceive and engage with their education (Marici et al., 2023; Liaqat et al., 2023; Espinosa & González, 2023). Although there have been several studies on the effects of educational systems and teacher characteristics on student learning outcomes and their satisfaction, previous research has primarily focused on factors related to teacher characteristics. Student characteristics also play an important role in students' perceptions of the education system and their teachers' performance. Therefore, in this current study, we have examined various factors specific to both teachers and students' characteristics, with the aim of identifying significant differences in the levels of each factor as well as factors that significantly influence students' attitudes.

3. METHODOLOGY

3.1. Research Questions

1- What are the key independent variables that influence the overall performance of university teachers, as indicated by student feedback scores?
2- Are there any significant distinctions between the levels or groups within each factor (teacher and student characteristics)?

3.2. Data collection

The main goal of this study is to investigate the viewpoints of university students on various factors (students' characteristics and the teacher's characteristics) that influence teacher evaluation based on the feedback scores they have received. At the end of each academic semester, the university's Quality Assurance Directorate requires learners to perform an evaluation of their lecturers. The process involves a total of twelve questions that inquire about the teaching process and the teacher's performance. For each question, students must provide their feedback score to the teacher using the Likert scale method. On a scale from 1 to 5, the level of satisfaction ranges from (not satisfied at all) to (extremely satisfied). As a result, we collected a dataset containing the responses of 27641 students from various stages at Cihan University, a non-governmental institution with three primary campuses located in Erbil, Sulaymaniyah, and Dohuk. The following table illustrates the characteristics of the students and teachers used in this study.

Table 1. the characteristics of students and teachers with their types of variables.

Independent Variables	Characteristics of students	Gender	Female and Male
		Education stages (levels)	1st Stage, 2nd Stage, 3rd Stage, and 4th Stage
		Gender	Female and Male
	Characteristics of teachers	Gender	Female and Male
		Qualification	M.A, M.Sc., and Ph.D.
		Academic Title	Assistant Lecturer, Lecturer, Assistant Professor, and Professor
		Field of teaching	Art and Science
		Study Type	Daytime and Evening-time
		Lecturer's position	Part-time and Full-time
		Age Groups	Less than 30, 30 – 39, 40 – 49, 50 – 59, 60 – 69, and Greater than 79
Dependent Variables	Average students' feedback scores	AVSFS	Minimum score = 1 and Maximum score=5

3.3. Statistical analysis

To analyze our data, we first present descriptive statistics (means, standard deviations, and 95% confidence intervals) for the average mean score of students' feedback across different factors. Next, we used one-way analysis of variance (ANOVA) and post-hoc multiple comparison methods to see if there was a significant difference in the mean score of feedback between groups for each factor. This was possible because our data met the assumptions of a one-way ANOVA, namely that the variance should be normal and homogeneous. Then, to determine whether any factors have affected the students feedback scores provided to their teachers, we use a generalized linear model with a normal distribution and a link function of identity. In addition, we used R-programing and JMP-Pro Version 17 as statistical tools to analyze the data.

3.4. Generalized Linear Model (GLM)

Generalized linear models are well-suited for managing highly correlated variables and effectively applying shrinkage methods to reduce the number of predictors. Several strategies have been suggested to tackle this issue, including using adaptive regularization penalties and introducing innovative penalization techniques that promote grouping effects among highly correlated predictors, such as Ridge, Lasso, and Elastic Net. These approaches enhance estimation accuracy by minimizing shrinkage bias, improving variable selection, and precisely estimating coefficients (Mahmood, 2013).

3.5.GLM Components and Link Functions

Random Component

• Chooses a probability distribution for the response variable.
• Can be any exponential family of distributions (normal, binomial, Poisson, gamma).

Systematic Component

• Linear predictor, a linear combination of explanatory or independent variables.
• Explains systematic variability between means.
• Locates the linear predictor on the right-hand side of the equation.

Let $x_1, x_2, \cdots, x_p$ be the numerical or category predictor variables, then the linear predictor is:
$$\eta_i = \beta_0 + \beta_1 x_{1i} + \beta_2 x_{2i} + \cdots + \beta_p x_{pi} = x_i^T \beta \qquad \cdots (1)$$
Where $(\beta = \beta_0, \beta_1, \ldots, \beta_p)$ is the vector of parameter, and $x_i^T = (1, x_{1i}, x_{2i}, \ldots, x_{pi})$ is the vector of predictor or independent variables.

Even though η is a linear function, the x's can have a nonlinear form. As an illustration, η can take the form of a quadratic, cubic, or higher-order polynomial. The relationship between the expected value of y_i and the linear predictor η_i is determined by the link function.

Link Function

Then the link function specification, which enables a nonlinear connection between the average of the response variable and the linear predictor. This link is represented as g (μ).
$$g(\mu) = \eta$$
One option is to utilize the "identity link" function, which ensures that the mean matches with the linear predictor.
$$\mu = \eta$$
In our normal distribution, the link function is just the identity function, where η is equal to μ. The maximum likelihood estimator is the same as ordinary least squares in parameter estimation methods such as linear regression and analysis of variance (ANOVA) models (Salinas, 2023).

4. RESULTS

We utilized student feedback scores to evaluate the perceptions of lecturers' abilities among 27641 undergraduate students at Cihan University. Then, we calculate the methods of average mean scores, standard deviation, and a one-way ANOVA to determine whether there is a statistically significant difference among the levels of each factor in students' perceptions. After that, we use a generalized linear model to determine whether there are any factors that influence students' perceptions.

4.1. Feedback scores of students based on teacher qualifications.

Table 2. Means and Standard Deviations for the Qualification of the Lecturers

Level	Number	Mean	Standard Deviation	Standard Error	Lower 95%	Upper 95%
M.A	6314	3.70	0.9810	0.0123	3.6785	3.7269
M.Sc.	8860	3.65	1.0340	0.0110	3.6295	3.6725
Ph.D.	12467	3.67	1.0111	0.0091	3.6513	3.6868

The results in Table 2 indicate that the average mean score feedback for lecturers with an M.A. certification is 3.70, for M.Sc. is 3.65, and for Ph.D. is 3.67. The corresponding standard deviations are 0.9810, 1.0340, and 1.0111, respectively. Their average mean scores are rather close. In addition, each test has a confidence interval that shows a 95% level of confidence that the actual population average student feedback scores for the M.A. qualification fall between 3.6785 and 3.7269; the population average student feedback scores for the M.Sc. qualification fall between 3.6295 and 3.6725; and the population average student feedback scores for the Ph.D. qualification fall between 3.6513 and 3.6868. However, in order to evaluate if there is a significant difference in the mean scores of their students' feedback, a one-way analysis of variance (ANOVA) must conduct a hypothesis test for the difference in the qualification levels of the lecturers.

Table 3. One-way Analysis of Variance for Feedback Scores of Lecturers' Qualifications

Source	DF	Sum of Squares	Mean Square	F Ratio	p-value
Qualification	2	9.932	4.96619		
Error	27638	28290.884	1.02362	4.8616	**0.0078***
C. Total	27640	28300.816			

Table 3 shows that the p-value of 0.0078 is less than the significant level of 0.05. Conclude that there is evidence to reject the null hypothesis H_0. In other words, there are significant differences between at least two means of the student's feedback for the lecturer's qualifications levels. In

addition, a Tukey HCD multiple comparison technique can be used for further clarification and emphasis on the above results.

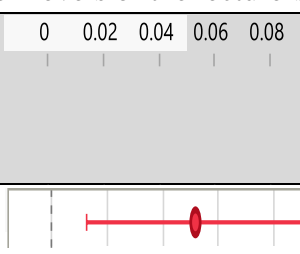**Table 4.** Tukey HCD test for multiple comparison between qualification levels of the lecturers

Level	- Level	Mean Difference	Std Error	95% Lower CL	95% Upper CL	p-Value	0 0.02 0.04 0.06 0.08
M.A	M.Sc.	0.0517	0.0166629	0.0126	0.0908	**0.0055***	
M.A	Ph.D.	0.0336	0.0156277	-0.0030	0.0702	0.0802	
Ph.D.	M.Sc.	0.0181	0.0140584	-0.0148	0.0511	0.4020	

Table 4 indicates that the different average mean scores of the student's feedback for M.A and M.Sc. are the only statistically significant differences due to their small p-value of 0.0055, which is less than 0.05. Since the p-values in difference mean between the other qualification levels are greater than 0.05, there is no significant difference between them.

Furthermore, since the lower and upper limits of the 95% confidence intervals for both (M.A. and Ph.D.) and (Ph.D. and M.Sc.) contain zero, there is no significant difference between them. In other words, there is no evidence to conclude that there is a difference between their students' feedback mean scores.

4.2. Feedback scores of students based on academic title of teachers.

Table 5. Means and Standard Deviations for the Academic Title of the Lecturers

Level	Number	Mean	Standard Deviation	Standard Error	Lower 95%	Upper 95%
Assistant Lecturer	12745	3.688	1.0124	0.009	3.6699	3.705
Lecturer	9284	3.662	0.999	0.0104	3.6421	3.683
Assistant Professor	4041	3.694	1.0146	0.016	3.6629	3.726
Professor	1571	3.527	1.0644	0.0269	3.4746	3.58

The results presented in Table 5 show that the mean score feedback for lecturers holding the academic title of assistant lecturer is 3.688, for lecturer is 3.662, for assistant professor is 3.694, and for professor is 3.527. The standard deviations for each associated value are as follows: 1.0124, 0.9990, 1.0146, and 0.0269. Their average mean scores are similar. Furthermore, each test includes a confidence interval that indicates a 95% confidence interval in the range of actual population average student feedback scores for each academic title. More specifically, the assistant lecturer's scores are estimated to fall between 3.6699 and 3.7051, the lecturer's scores between 3.6421 and 3.6828, the assistant professor's scores between 3.6629 and 3.7255, and the professor's scores between 3.4746 and 3.5800.

Table 6. One-way Analysis of Variance for Feedback Scores of Lecturers' Academic Titles

Source	DF	Sum of Squares	Mean Square	F Ratio	p-value
Academic Title	3	38.762	12.9207		
Error	27637	28262.054	1.0226		**0.0001***
C. Total	27640	28300.816		12.6349	

Table 6 indicates that the p-value of 0.0001 is smaller than the significance level of 0.05. Conclude that there is sufficient evidence to reject the null hypothesis. Put simply, there are significant differences between the feedback provided by students on the different academic titles of the lecturers. Furthermore, the utilization of a Tukey HCD multiple comparison technique might provide additional clarification and emphasis on the conclusions.

Table 7. Tukey HCD test for multiple comparison between academic titles of the lecturers

Level	- Level	Mean Difference	Std Error	95% Lower CL	95% Upper CL	p-Value	0 0.05 0.10 0.15 0.20
Assistant Professor	Professor	0.1669	0.03007	0.0896	0.2441	**0.0001***	
Assistant Lecturer	Professor	0.1602	0.02704	0.0907	0.2297	**0.0001***	
Lecturer	Professor	0.1351	0.02759	0.0642	0.2060	**0.0001***	
Assistant Professor	Lecturer	0.0318	0.01905	-0.0172	0.0807	0.3416	
Assistant Lecturer	Lecturer	0.0251	0.01379	-0.0104	0.0605	0.2652	
Assistant Professor	Assistant Lecturer	0.0067	0.01825	-0.0402	0.0536	0.9832	

Table 7 indicates that the different average mean scores of the student's feedback for (assistant professor and professor), (assistant lecturer and professor), and (lecturer and professor) are statistically significant differences due to their small p-values of 0.0001, which is less than 0.05. On the other hand, since the p-values of the other pair academic titles are greater than 0.05, there is no significant difference between their average mean scores of student's feedback.

In addition, as the 95% confidence intervals for (assistant professor and lecturer), (assistant lecturer and lecturer), and (assistant professor and assistant lecturer) contain zero, it can be concluded that there is no statistically significant difference between them. In short, there is no empirical evidence supporting the concept that there is a statistically significant difference in the average mean scores of feedback provided by their respective students.

4.3. Feedback scores of students based on age groups of teachers.

Table 8. Means and Standard Deviations for the Age Group of the Lecturers

Group Age	Number	Mean	Standard Deviation	Standard Error	Lower 95%	Upper 95%
Less than 30	1010	3.80	0.9534	0.03000	3.7445	3.8622
30 – 39	12831	3.66	1.0076	0.01250	3.6413	3.6762
40 – 49	6292	3.71	0.9899	0.01838	3.6819	3.7308
50 – 59	2871	3.77	0.9853	0.01837	3.7304	3.8025
60 – 69	3530	3.57	1.0914481	0.02999	3.5352	3.6072
Greater than 79	1107	3.56	0.9978186	0.029998	3.5024	3.6200

The results presented in Table 8 show that the mean score feedback for lecturers who are younger than 30 years old is 3.80; for lecturers with ages between 30 and 39, it is 3.66; for lecturers with ages between 40 and 49, it is 3.71; for ages 50 to 59, it is 3.77; and for ages 60 to 69, it is 3.57; and for those older than 79, it is 3.56, with standard deviations of 0.9534, 1.0076, 0.9899, 0.9853, 1.0914, and 0.9978. Their average mean scores are slightly different from each other. Furthermore, each test includes a confidence interval that indicates a 95% confidence interval in the range of actual population average student feedback scores for each age group. More specifically, the feedback scores of lecturers younger than 30 years old are estimated to fall between 3.7445 and 3.8622; the feedback scores of lecturers between 30 and 39 years old are between 3.6413 and 3.6762; the feedback scores of lecturers 40 to 49 years old are between 3.6819 and 3.7308; the feedback scores of lecturers 50 to 59 years old of ages are between 3.7304 and 3.8025; the feedback scores of lecturers 60 to 69 years old of ages are between 3.5352 and 3.6072; and the feedback scores of lecturers older than 70 are between 3.5024 and 3.6200.

Table 9. One-way Analysis of Variance for Feedback Scores of Lecturers' age groups

Source	DF	Sum of Squares	Mean Square	F Ratio	p-value
Group Age	5	102.173	20.4347		
Error	27635	28198.643	1.0204	20.0262	**0.0001***
C. Total	27640	28300.816			

According to Table 9, the p-value of 0.0001 is less than the significance level of 0.05. Determine that there is ample evidence to dismiss the null hypothesis. In simple terms, the feedback provided by students to lecturers of different age groups differs significantly. Moreover, employing a Tukey HCD multiple comparison technique might provide more clarification and emphasis on the outcomes.

Table 10. Tukey HCD test for multiple comparison between age group of the lecturers
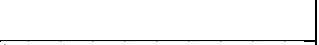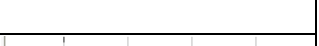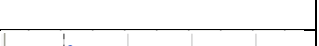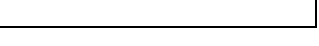
Level	- Level	Mean Difference	Std Error	95% Lower CL	95% Upper CL	p-Value	
Less than 30	Greater than 70	0.2421814	0.0439552	0.116911	0.3674522	**0.0001***	
Less than 30	60-69 Y's	0.2321836	0.0360466	0.129452	0.3349151	**0.0001***	
50-59 Y's	Greater than 70	0.2052562	0.0357377	0.103405	0.3071074	**0.0001***	
50-59 Y's	60-69 Y's	0.1952584	0.0253866	0.122908	0.2676093	**0.0001***	
40-49 Y's	Greater than 70	0.1451717	0.0329233	0.051342	0.2390019	**0.0002***	
Less than 30	30-39 Y's	0.1446592	0.0330124	0.050575	0.2387434	**0.0002***	
40-49 Y's	60-69 Y's	0.1351739	0.0212424	0.074634	0.1957139	**0.0001***	
50-59 Y's	30-39 Y's	0.1077340	0.0208552	0.048297	0.1671707	**0.0001***	
30-39 Y's	Greater than 70	0.0975222	0.0316432	0.007340	0.1877043	**0.0252***	
Less than 30	40-49 Y's	0.0970097	0.0342413	-0.000577	0.1945962	0.0524	
30-39 Y's	60-69 Y's	0.0875244	0.0191987	0.032809	0.1422400	**0.0001***	
50-59 Y's	40-49 Y's	0.0600845	0.0227506	-0.004754	0.1249228	0.0876	
40-49 Y's	30-39 Y's	0.0476495	0.0155467	0.003342	0.0919570	**0.0265***	
Less than 30	50-59 Y's	0.0369252	0.0369555	-0.068397	0.1422470	0.9184	
60-69 Y's	Greater than 70	0.0099978	0.0347970	-0.089172	0.1091680	0.9997	

Table 10 indicates that the different average mean scores of the students' feedback for the lectures' age group of (less than 30 years old) and each of the (30-39, 60-69, and greater than 70) years old are statistically significant due to their small p-values of 0.0002, 0.0001, and 0.0001, respectively. Furthermore, the different average mean scores of the students' feedback for the lectures' age group (30–39 years old) and each of the 40–49, 50–59, 60–69, and greater than 70 years old are statistically significant. Likewise, the average mean scores of the students' feedback for lectures at 40–49 years old and each of the age groups of 60–69 and more than 70 years old are significantly different. Also,

lecturers' age groups of 50–59 years old, with each of the age groups of 60–69 and older than 70 years old, are statistically significant based on students' feedback scores.

On the other hand, since the p-values of the other pair age groups are greater than 0.05, there is no significant difference between their average mean scores of student's feedback. In addition, as the 95% confidence intervals for (less than 30 and each of 40-49 and 50-59 years old of lecturers), (40-49 and 50-59 years old of lecturers), and (60-69 and greater years old of lecturers) contain zero, it can be concluded that there is no statistically significant difference between them.

4.4. Feedback scores of students based on education levels (stages) of students.

Table 11. Means and Standard Deviations for the Stage of the Learners

Level	Number	Mean	Standard Deviation	Standard Error	Lower 95%	Upper 95%
First	7011	3.619	0.9781	0.0117	3.5962	3.6420
Second	6478	3.715	1.0377	0.0129	3.6899	3.7404
Third	7837	3.688	1.0110	0.0114	3.6661	3.7109
Fourth	6315	3.66	1.0205	0.0128	3.6363	3.6866

The results presented in Table 11 provide information on the mean score feedback received by teachers at different stages of the learners. In the first stage, the mean score is 3.619; in the second stage, it is 3.715; in the third stage, it is 3.688; and in the fourth stage, it is 3.66. The standard deviations for each value of the stages are 0.9781, 1.0377, 1.0110, and 1.0205, respectively. It appears that the average mean scores vary among them. In addition, every test comes with a confidence interval that provides a 95% level of confidence in the range of actual population average student feedback scores for each stage. In the initial phase, the scores are predicted to range from 3.5962 to 3.6420. Moving on to the second phase, the scores will likely fall between 3.6899 and 3.7404. As for the third phase, the scores are estimated to be within the range of 3.6661 to 3.7109. Lastly, in the fourth phase, the scores are expected to range from 3.6363 to 3.6866.

Table 12. One-way Analysis of Variance for Feedback Scores of Lecturers based on Stages of the Students

Source	DF	Sum of Squares	Mean Square	F Ratio	p-value
Stages	3	34.474	11.4914		
Error	27637	28266.342	1.0228		
C. Total	27640	28300.816		11.2355	0.0001*

According to the data in Table 12, the p-value of 0.0001 is lower than the significance level of 0.05. It can be concluded that there is enough evidence to reject the null hypothesis. In simple terms, there are significant differences in the feedback given by students at different stages of their education. In addition, employing a Tukey HCD multiple comparison technique could offer more clarity and emphasis on the conclusions.

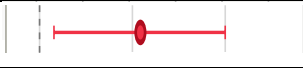**Table 13.** Tukey HCD test for multiple comparison between education stages of the students

Level	- Level	Mean Difference	Std Error	95% Lower CL	95% Upper CL	p-Value	
Second	First	0.0960418	0.0174289	0.051264	0.1408198	**0.0001***	
Third	First	0.0693533	0.0166249	0.026641	0.1120657	**0.0002***	
Second	Fourth	0.0537231	0.0178842	0.007775	0.0996709	**0.0142***	
Fourth	First	0.0423187	0.0175454	-0.002759	0.0873960	0.0748	
Third	Fourth	0.0270346	0.0171016	-0.016903	0.0709718	0.3896	
Second	Third	0.0266885	0.0169820	-0.016941	0.0703186	0.3950	

Table 13 shows that there are significant differences in the average mean scores of student feedback from some different stages. The p-values for the comparisons between the second and first stages, the third and first stages, and the second and fourth stages are 0.0001, 0.0002, and 0.0142, respectively. These p-values are all less than 0.05. However, given that the p-values of the remaining pair of education stages are greater than 0.05, it can be concluded that there is no significant difference in the average mean scores of students' feedback between these stages.
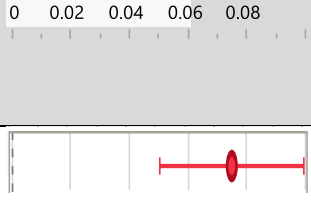
4.5. Feedback scores of students based on field of education

Table 14. Means and standard deviations for the field of education.

Level	Number	Mean	Standard Deviation	Standard Error	Lower 95%	Upper 95%
Art	17461	3.699	0.9899	0.0075	3.6834	3.7132
Science	10180	3.624	1.0468	0.0104	3.6033	3.6440

The results in Table 14 reveal the average mean score in the field of education for the lecturers. For the art stream, the mean score is 3.699 with a standard deviation of 0.9899, and for the science stream, the mean score is 3.624 with a standard deviation of 1.0463. In addition, there is a confidence interval that shows a 95% level of confidence in the range of actual population average student feedback in the field of education. Specifically, we estimate the art scores to range from 3.6834 to 3.7132. For science, the scores fall between 3.6033 and 3.6440.

Table 15. Report on the difference in students' feedback scores between the art and science streams.

Level	- Level	Mean Difference	Std Error	95% Lower CL	95% Upper CL	p-Value	0 0.02 0.04 0.06 0.08
Art	Science	0.0748461	0.0126104	0.0501290	0.0995632	**0.0001***	

According to Table 15, the average mean scores of students' feedback for lecturers in various education fields show significant differences due to the small p-value of 0.0001, which is less than the threshold of 0.05. In other words, there is notable difference between the scores of art and science in the students' feedback. Furthermore, the absence of zero in the 95% confidence intervals for art and science indicates a statistically significant difference between them.

4.6. Feedback scores of students based on study types of teachers.

Table 16. Means and standard deviations for the study types.

Level	Number	Mean	Standard Deviation	Standard Error	Lower 95%	Upper 95%
Day Time	25406	3.665	1.0128	0.0064	3.6523	3.6772
Evening Time	2235	3.741	0.9984	0.0211	3.6999	3.7828

The results in Table 16 depict the average mean score for the type of study for the lecturers. For the lecturers of the day-time study, the mean score is 3.665 with a standard deviation of 1.0128, and for the evening-time study, the mean score is 3.741 with a standard deviation of 0.9984. Furthermore, there is a confidence interval that shows a 95% level of confidence in the range of actual population average student feedback in the study types of lecturers.

Based on our analysis, it appears that the feedback scores for day-time teachers fall within a narrow range of values, specifically between 3.6523 and 3.6772. During the evening study, the feedback scores ranged from 3.6999 to 3.7828.

Table 17. Report on the difference in students' feedback scores between the day and evening times study.
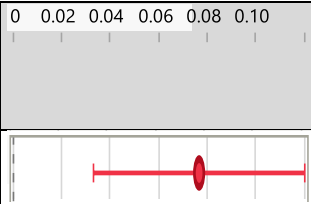
Level	- Level	Mean Difference	Std Error	95% Lower CL	95% Upper CL	p-Value	0 0.02 0.04 0.06 0.08 0.10
Evening-time	Daytime	0.07654	0.02232	0.03279	0.12028	**0.0006***	

Table 17 indicates that there are significant differences in the average mean scores of students' feedback for lecturers across different study types. The small p-value of 0.0006, which is below the significant level of 0.05, supports this. In other words, there is a significant difference in the students' feedback scores between the daytime and evening of the study. In addition, not having zero inside the 95% confidence intervals for daytime and evening time suggests a statistically significant distinction between the two time periods.

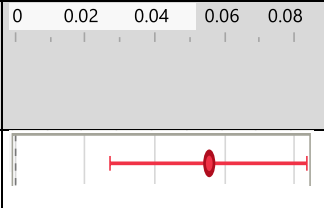### 4.7. Feedback scores of students based on the job positions of teachers.

Table 18. Means and standard deviations for the lecturer's position.

Level	Number	Mean	Standard Deviation	Standard Error	Lower 95%	Upper 95%
Full-time	21196	3.684	1.01164	0.0069	3.6703	3.6975
Part-time	6445	3.628	1.01159	0.0126	3.6037	3.6531

Table 18 displays the average mean score for the lecturers based on their positions. While part-time lecturers' mean score is 3.628 (standard deviation = 1.0159), full-time lecturers' mean score is 3.684 (standard deviation = 0.01164). Furthermore, a confidence interval with a 95% degree of confidence displays the range of actual population average student feedback in the lecturer's position. More specifically, we anticipate a range of 3.6703 to 3.6975 for the part-time courses. Somewhere between 3.6037 and 3.6531 are the feedback scores for part-time.

To test the hypothesis about the differences in positions across teachers, an independent sample t-test is required. We may use this information to see if full-time and part-time lecturers receive significantly different average feedback scores from students.

Table 19. Report on the difference in students' feedback scores between full-time and part-time lecturers.

Level	- Level	Mean Difference	Std Error	95% Lower CL	95% Upper CL	p-Value	0 0.02 0.04 0.06 0.08
Full-time	Part-time	0.0554956	0.01439	0.02729	0.08370	0.0001*	

The small p-value of 0.0001, which is less than the significant level of 0.05, indicates significant variations in the average mean scores of students' feedback for lecturers in various positions, as shown in Table 19. Put simply, the feedback from students shows a clear disparity between the lecturers' full-time and part-time jobs. Furthermore, the absence of zero in the 95% confidence intervals for full-time and part-time lecturer's jobs indicates a statistically significant difference between them.

4.8. Feedback scores of students based on gender of teachers.

Table 20. Means and standard deviations for the gender of lecturers.

Level	Number	Mean	Standard Deviation	Standard Error	Lower 95%	Upper 95%
Female	5534	3.67054	1.0148	0.0136	3.6438	3.6978
Male	22107	3.67107	1.0112	0.0068	3.6577	3.6844

The results presented in Table 20 illustrate the students' feedback mean scores for gender among the lecturers. The average mean score for the female lecturer is 3.67054, with a standard deviation of 1.0148. Similarly, the average mean score for the males is 3.67107, with a standard deviation of 1.0112. In addition, a confidence interval provides a 95% level of confidence in the range of actual population-average student feedback for lecturers. The real feedback scores for female teachers seem to vary between 3.6438 and 3.6978, while for male teachers, their feedback mean scores ranged from 3.6577 to 3.6844.

Table 21. Report on the difference in students' feedback scores between female and male of the lecturers.
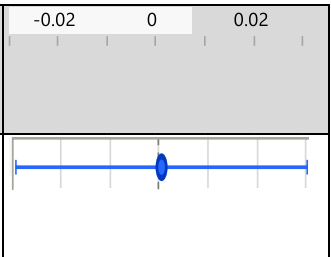
Level	- Level	Mean Difference	Std Error	95% Lower CL	95% Upper CL	p-Value	-0.02 0 0.02
Male	Female	0.00053	0.01521	-0.02928	0.03035	**0.9721**	

Table 21 indicates that there are no significant differences in the average mean scores of students' feedback for lecturers across males and females. The large p-value of 0.9721, which is greater than the significant level of 0.05, supports this. In other words, there is a significant difference in the students' feedback scores between males and females among the lecturers. In addition, since the zero value is inside the 95% confidence intervals for the gender of the lecturers, there is statistically no significant distinction between the two time periods.

4.9. Feedback scores of students based on gender of students.

Table 22. Means and standard deviations for the gender of students.

Level	Number	Mean	Standard Deviation	Standard Error	Lower 95%	Upper 95%
Female	12069	3.585	1.04286	0.00949	3.5665	3.6037
Male	15572	3.738	0.98209	0.00787	3.7221	3.7529

Table 22 shows the average feedback score that the students provided to their lecturers, considering their gender. The average feedback score for female students' lectures was 3.585, with a standard deviation of 1.04286. On the other hand, male students provided an average feedback score of 3.738, with a standard deviation of 0.01164. Moreover, a confidence interval with a 95% level of confidence represents an estimate of the mean student feedback within a population, according to the gender of the learners. To clarify, we expected a range of 3.5665 to 3.6037 for female students, while the feedback scores from male students for their teachers ranged between 3.7221 and 3.7529.

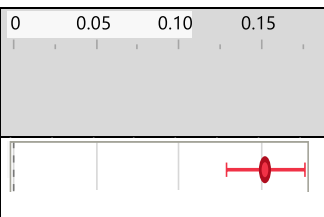**Table 23.** Report on the difference in students' feedback scores between female and male of learner.

Level	- Level	Mean Difference	Std Error	95% Lower CL	95% Upper CL	p-Value	0 0.05 0.10 0.15
Male	Female	0.1524	0.01224	0.12841	0.17638	0.0001*	

The p-value of 0.0001, which is smaller than the significance level of 0.05, suggests a significant difference in the average mean scores of feedback for lecturers based on the gender of the students, as illustrated in Table 23. In other words, the feedback from students indicates a notable difference between male and female students. In addition, an absence of zero in the 95% confidence intervals for male and female students demonstrates a significant difference between them.

4.10. Generalized Linear Model.

Table 24. Generalized Linear Model Summary.

Response Variable	AVGSF (Average mean score Feedback)
Distribution	Normal
Link Function	Identity
Estimation Method	Maximum Likelihood
Observations	27641

To determine whether the factors (gender of students, stage of education, field of teaching, qualification of teachers, academic title of teachers, gender of teachers, age of teachers, and study time) have any effect on the students' feedback scores, we use a generalized linear model with normal distribution and a link function of identity as mentioned in Table 24.

Table 25. Whole model test.

Model	-Log Likelihood	Chi-Square	DF	P-value
Difference	178.79046	357.5809		
Full	39368.1216		18	0.0001*
Reduced	39546.9121			

The whole model test demonstrates a difference in log-likelihoods between the full and reduced models. According to results in Table 25, the difference amount between them is 4.61. Given the p-

value of less than 0.0001, it suggests that the model as a whole (the full model) is significant. In order to validate whether our model is appropriate, we need the following goodness of fit statistic.

Table 26. Goodness Of fit statistic for the model.

Criterion	Chi-Square	DF	P-value	Overdispersion
Pearson	27937.06	27622	0.0904	
Deviance	27937.06	27622	0.0904	1.0107

The hypothesis test for goodness of fit is as below:

H_0: The fit model is good H_0 is a null hupothesis
H_1: There is lack of fit H_1 is an alternative hypothesis

Both the null hypothesis and the alternative hypothesis are based on the change in the negative log likelihood between the full model (fitted) and the saturated model. Since the p-values for the Deviance and Pearson Chi-squares are all larger than 0.05 (0.9260, 0.1412) and the overdispersion value (1.0107) is around 1, it indicates that there is no overdispersion and there is evidence to reject the null hypothesis. In other words, the model is appropriate.

Table 27. Effect Test

Term	Estimate	Standard Error	L-R Chi-Square	P-value
Intercept	8.8754	0.0745	14177.7780	**0.0001***
Gender Student [Female-Male]	-0.3032	0.0260	135.7259	**0.0001***
Fields [Art-Science]	0.0453	0.0309	2.1506	0.1425
Study Type [Day Time-Evening]	-0.0552	0.0509	1.1742	0.2785
Stage [First-Third]	-0.1512	0.0456	10.9752	**0.0009***
Stage [Fourth-Third]	-0.1173	0.0482	5.9184	**0.0150***
Stage [Second-Third]	0.2161	0.0480	20.2642	**0.0001***
Qualification [M.A-Ph.D.]	0.0063	0.0538	0.0136	0.907
Qualification [M.Sc.-Ph.D.]	-0.2613	0.0503	26.9635	**0.0001***
Academic Title [Assistant Lecturer-Professor]	0.2460	0.0843	8.5142	**0.0035***
Academic Title [Assistant Professor-Professor]	0.0641	0.0672	0.9117	0.3397
Academic Title [Lecturer-Professor]	-0.1105	0.0529	4.3657	**0.0367***
Gender Staff [Female-Male]	-0.1127	0.0364	9.5685	**0.0020***
Group Age [30-39]- [Less than 30]	0.0039	0.0572	0.0047	0.9451
Group Age [40-49]- [Less than 30]	0.1493	0.0623	5.7347	**0.0166***
Group Age [50-59]- [Less than 30]	0.3718	0.0800	21.6127	**0.0001***
Group Age [60-69]- [Less than 30]	-0.6026	0.0782	59.4075	**0.0001***
Group Age [Greater than 70]- [Less than 30]	-0.4844	0.1220	15.7551	**0.0001***
Status [full-time]-[part-time]	0.1404	0.0314	20.0084	**0.0001***

According to the results shown in Table 27, the p-values for the variables Field and Study Type are above the predetermined significance level of 0.05 (0.1425, 0.2785). This suggests that the influence of these two factors on the students' feedback scores is not statistically significant. Furthermore, we observed that lecturers with an M.A. degree and the academic title of assistant professor, as well as lecturers between the ages of 30 and 39, do not significantly influence the feedback scores provided by students. On the other hand, some other factors (gender of students, stage of education, gender of lecturer, status of job, qualification [M.Sc.], all academic titles accept assistant professor, group ages except (30-39) have an impact on the students' feedback scores due to their small p-values.

For more details, female students provide about 30% lower feedback scores to their teachers compared to males. The students in the second stage of education are 22% more satisfied with their teachers than the students in the third stage, while those in the first and fourth stages have a lower level of satisfaction by 15% and 12%, respectively. Furthermore, teachers with a master's degree in science received a 26% lower feedback score from their students compared to Ph.D. holders. Regarding the academic titles, when the teachers have assistant lecturers, they gain 25% greater feedback scores from their students compared to professors; in contrast, those with lecturer academic titles receive 11% lower students' feedback scores. Likewise, middle-aged teachers (40–49 and 50–59) years old are more likely to be satisfied with their students than younger teachers by 0.4% and 15%, while the older teachers in groups ages 60–60 and greater than 70 received a lower feedback score from their students by 37% and 60%, respectively. Also, the teachers who have full-time jobs at the university received a 14% higher student's feedback score than those who have part-time jobs. When it comes to gender, female students provide 30% lower feedback scores than male students, and female teachers received a feedback score that was 11% lower than their male colleagues. In other words, male students are more satisfied with their education in general compared to females.

5. DISCUSSION:

Our study focuses on analyzing university students' perspectives on the various factors affecting teacher evaluation, as well as the feedback they received. Feedback from students is valuable for lecturers as it allows them to reflect on their teaching style, course content, and classroom policies. This feedback is critical to their efforts to improve student learning and information retention. Reflection is a truly powerful benefit that comes with evaluation. Colleges commonly utilize evaluations to assess performance and make decisions regarding raises, promotions, tenure, and teaching awards. There are differing viewpoints when it comes to the correlation between age and teaching. It is commonly believed that as teachers grow older and advance in their careers, their passion for teaching diminishes. Some others suggest a close relationship between age and experience. Age is a valuable advantage because teachers gain valuable experience over time, allowing them to tap into their students' potential and foster a deep sense of worth within them.

During our study, the students did view the teacher's age as a significant factor. More specifically, students are more likely to be satisfied with their middle-aged teachers than older or younger teachers. Some previous studies have also confirmed the significant difference in the age of lecturers when it comes to receiving positive feedback scores from students (Boring, 2017; Joye & Wilson, 2015), while other studies have found the opposite (Bodhe & Jankar, 2015).

The lecturers' gender has a significant effect on the students' feedback scores. More precisely, female teachers received a feedback score from students that was lower than that of their male colleagues. We can conclude that the participants unfairly judged their professors, favoring one gender over another. It was also consistent with other past studies that show the statistically significant difference in gender of teachers (Martirosyan, 2015; Boring, 2017; Gong-Song, 2018; Shah & Udgaonkar, 2018; Mahmood et al., 2018; Mengel et al., 2019; Poon, 2019; Chávez & Mitchell, 2020; Ted & Joseph, 2021), and the opposite of some research that found no difference in teaching skills between males and females (Tran & Do, 2022; Arrona-Palacios et al., 2020).

Additionally, the gender of the students suggests that, on average, female students provide lower feedback scores compared to male students. In other words, male students are more satisfied with their education in general compared to females. It indicates that male students expressed a greater sense of satisfaction with their teachers and the educational experience compared to female students. Previous research with students confirms this (Binderkrantz & Bisgaard, 2024; Kreitzer & Sweet-Cushman, 2021; Garcia-Aracil, 2009; Martirosyan, 2015; Gong-Song, 2018; Poon, 2019; Ted & Joseph, 2021; Mahmood et al., 2018). It is also the opposite of another study that found no significant gender differences in the students' satisfaction based on their feedback scores given to the teachers (Harvey et al., 2017).

The results of this study demonstrated that the level of teacher qualification has an impact on student perceptions of their teacher's evaluation. Teachers with M.A. and M.Sc. degrees receive different scores of student feedback compared to Ph.D. holders. Understanding the field of education is crucial when assessing lecturer performance through student feedback. According to our study, there was a significant difference in feedback scores between lecturers in the art and science streams, suggesting that the subject area of instruction can have an impact on student perceptions and

feedback. This finding is consistent with past studies that have similar results (Singh et al., 2023; Heffernan, 2022).

According to the findings, the education levels of the students are significantly different. In other words, there are variations in the feedback scores that students provide for teacher evaluations across different educational stages. It shows that the student's stage of development can impact how they perceive their teachers. Having an extensive understanding of these distinctions can assist in modifying teaching approaches to effectively meet the needs and goals of students at various educational stages. This finding is consistent with the prior study conducted by Yu (2021) and Oberle (2020).

In general, the study's findings offer valuable insights into the intricate dynamics of student feedback in educational settings. Through a thorough examination of different elements such as the qualifications of the teachers, the subjects they specialize in, the grade levels of the students, and the field of teaching employed, the higher educational establishments can acquire valuable knowledge to enhance their teaching methods, increase student contentment, and ultimately raise the standard of education they offer.

6. CONCLUSION

The objective of this study was to examine the various aspects that impact the opinions of university students regarding teacher evaluations, with a specific emphasis on feedback scores. The study made use of a substantial dataset comprising 27,641 students at a private university that has three main campuses and employed a range of statistical methods. The results revealed notable disparities in feedback ratings depending on the teacher's gender, the students' educational level, the teacher's qualifications, the academic titles, and the teachers' age groups. There is a tendency for female students to provide lower feedback scores compared to their male classmates. Additionally, students in the second educational stage exhibit higher levels of satisfaction compared to those in the third stage. Furthermore, we observed that teachers with a master's degree in science received lower feedback scores than those with a Ph.D., while assistant lecturers received higher marks than professors. Also, compared to younger or older teachers, middle-aged teachers are likely to be more satisfied with their students. This study highlights the need to comprehend these aspects in order to improve teaching methods and promote student satisfaction.

Researchers could conduct additional research in this field to investigate the potential impact of cultural and regional differences on student feedback scores. Additionally, it would be valuable to analyze how different teaching methods and pedagogical approaches might impact student satisfaction. To gain a deeper understanding of the complicated workings of student feedback in educational environments, additional studies must focus on providing a more comprehensive analysis. The study should identify effective strategies to enhance teaching methods and ultimately boost student satisfaction.

This study's focus solely on private universities may limit its applicability to public educational institutions. The study has also failed to address a potential knowledge gap by not investigating how cultural and regional characteristics may affect student feedback.
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