The impact of teacher credibility and student motivation on teaching evaluations*

El impacto de la credibilidad docente y la motivación del estudiante en la evaluación de la docencia

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Abstract:

The evaluation of teaching performance is a challenge and a necessity for the university community, which confers importance to it as it reflects the quality of the teaching-learning process. Different factors influence the outcomes of the teacher-student relationship, such as teacher credibility or academic motivation. Therefore, the purpose of this study was to predict the results of the evaluation on university teachers based on student perceptions of teacher credibility, mediated by the motivation of university students. 674 students from the University of Seville participated in the study, aged between 18 and 42 years (78.2% women and 21.8% men). The Credibility Scale, the Motivated Strategies for Learning Questionnaire and the Evaluation of University Teaching Questionnaire were all applied. The data obtained were analyzed from a structural equation modeling approach using partial least squares (PLS-SEM) to predict teaching evaluation. The results highlight the direct effect of teacher credibility and motivation on teaching evaluation, as well as the mediating effect of motivation between teacher credibility and teaching evaluation. Through the predictive validity of the model, it is concluded that teaching credibility and the motivation of the university students predict the evalu-

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ation of university instructors. The findings relate to prior literature, and future research is proposed to analyse other possible methods for teachers to improve the teaching-learning process. Strategies are provided for teachers to manage their credibility in the teaching context, thus increasing the motivation of their students and improving the evaluations of their teaching.

Keywords: teacher evaluation, teacher credibility, student motivation, teacher-student relationship, higher education, structural equation modelling, predictive validity.

Resumen:

La evaluación del desempeño docente es un reto y una necesidad para la comunidad universitaria, que le atribuye importancia en tanto que refleja la calidad del proceso de enseñanza-aprendizaje. Diferentes factores influyen en los resultados de la relación profesorado-alumnado, como la credibilidad docente o la motivación académica. Por ello, el objetivo de este estudio fue predecir el resultado de la evaluación de los docentes universitarios a partir de las percepciones de los estudiantes sobre la credibilidad docente, mediada por la motivación del estudiantado universitario. En el estudio participaron 674 estudiantes de la Universidad de Sevilla con edades comprendidas entre 18 y 42 años (78.2 % mujeres y 21.8 % hombres). Se administraron la escala de credibilidad, el cuestionario de estrategias de aprendizaje y motivación y el cuestionario de evaluación de la docencia universitaria. Los datos obtenidos se analizaron desde un modelo de ecuaciones estructurales empleando el método de mínimos cuadrados parciales (PLS-SEM) para predecir la evaluación de la docencia. Los resultados destacan el efecto directo de la credibilidad docente y la motivación sobre la evaluación de la docencia, así como el efecto de mediación de la motivación entre la credibilidad docente y la evaluación de la docencia. Mediante la validez predictiva del modelo, se concluye que la credibilidad docente y la motivación del estudiantado universitario predicen la evaluación de los docentes universitarios. Se relacionan los hallazgos con la literatura previa y se proponen futuras investigaciones que indaguen en otras tácticas posibles de los docentes para mejorar el proceso de enseñanza-aprendizaje. Se proporcionan estrategias para que el profesorado gestione su credibilidad en el contexto docente, aumentando así la motivación de sus estudiantes y mejorando las evaluaciones acerca de su docencia.

Descriptores: evaluación del profesor, credibilidad docente, motivación del estudiante, relación profesor-alumno, educación superior, ecuaciones estructurales, validez predictiva.

1. Introduction

The continuous improvement of teaching quality is a challenge for all higher education institutions, even those in our country (Jiménez, 2017). The quality of higher education depends, among other factors, on teaching quality, which is significantly influenced by the quality of the teachers themselves (Moreno-Olivos, 2018). The teacher evaluation is currently a funda-

mental element in analysing the training and professional quality of education institutions (Moreno-Murcia et al., 2015) and it has become a practice used in most Spanish universities (Andrade-Abarca et al., 2018).

Currently, the teacher evaluation focuses on performance, in other words, the undertaking of their duties and responsibilities, and the output that materialises from it (Tejedor, 2012). Furthermore, it is important to state that teacher performance is an indicator closely linked to education quality, in the sense that the limitations that exist in the initial and ongoing training process of teaching personnel are visible, as well as the challenges that all teachers must overcome as part of their work in providing quality education in today's society (Escribano, 2018). The evaluation system of teacher performance is the set of mechanisms that allows us to establish the extent to which teachers contribute to meeting the standards and objectives of the institution (Tejedor, 2018). The evaluation of teacher practice is a professional improvement and development tool that provides teachers with knowledge and helps them to understand the activity undertaken and to discover ways of improving said practice (Calatayud, 2014). As Ochoa-Sierra & Moya-Pardo (2019) suggest, it entails a source of information mainly for the teachers themselves, as it helps them to measure the efficacy and relevance of their work in order to find alternatives that improve their practice. The main objectives of the teaching evaluation are therefore to provide information that facilitate and help to improve teaching, to contribute to students receiving better education and to help higher education institutions to meet their commitment to society as regards training professionals capable of meeting the demands and issues inherent to their field (Cámara et al., 2018).

Studies on the evaluation of university teacher performance suggest that questionnaires on student perception are the method most used for such purpose (Gómez & Valdés, 2019). The students themselves are the best source of information on the teaching-learning process, given that they are directly involved and can be points of reference for the performance of their teachers (Tirado et al., 2007) and judge if the teaching has helped them learn (Pascual & Gaviria, 2004). As such, the use of these instruments for improving teaching, making decisions on academic personnel and safeguarding the control of education quality is recommended (Cortés et al., 2014).

Regarding the student evaluations on teacher performance, López-Barajas & Ruiz-Carrascosa (2005) suggest that the interaction dimension with students was the one that best predicted the overall teacher rating. One of the most important elements in term of the teacher-student relationship is the credibility of the teacher (Teven, 2007) defined as the student perception of whether or not the teacher in question is credible (McCroskey, 1992). According to McCroskey & Teven (1999), it comprises three dimensions: (1) competence, which regards perception of their knowledge and/or command of the subject taught; (2) goodwill, which entails the level to which students perceive that teachers show interest in their wellbeing; and (3) trust, which

refers to the perception of their reliability and kindness. Teacher credibility has a significant influence on the teaching-learning process (Finn et al., 2009), playing a fundamental role in classroom dynamics and becoming a necessary requirement for efficient teaching (Russ et al., 2002). One of the variables linked to the teaching-learning process that are affected by teacher credibility is student motivation (Froment et al., 2020).

Katt & Condly (2009) state that, although some of the differences perceived in student motivation may be attributed to individual characteristics, others must be attributed to their reactions to circumstances within the teaching-learning process, such as, for example, teacher conduct (Millette & Gorham, 2002). In other words, the perception of students regarding the conduct of their teachers in class influences their motivation (Frymier & Shulman, 1995). Similarly, the level of motivation towards learning affects the way in which students evaluate their environment (Smimou & Dahl, 2012) and, therefore, the way in which they perceive the teaching given (Feldman, 1998), as, when they show interest in the subject, their evaluation of teacher performance is positive (Feistauer & Richter, 2018a, 2018b; Olivares, 2001).

As such, the aim of this study is to predict the results of the teaching evaluation based on the perceptions of university students regarding teacher credibility, mediated by the academic motivation of the students themselves (Graphic 1). In line with the theoretical framework developed, the following research hypotheses are established:

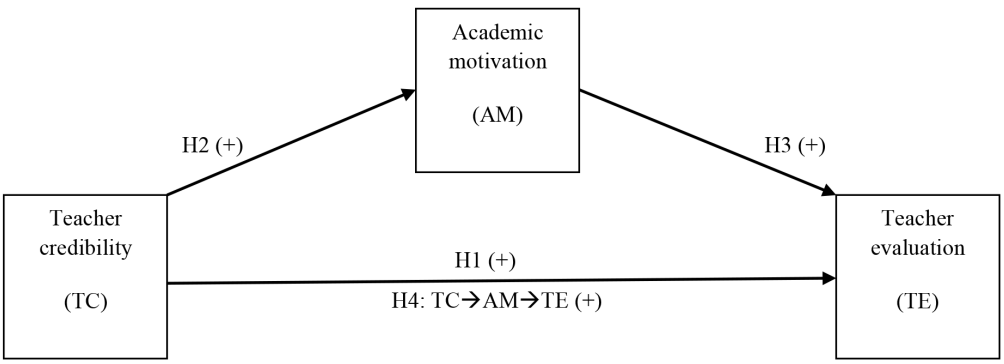
Hypothesis 1 (H1): Teacher credibility will have a positive effect on the teacher evaluation.

Hypothesis 2 (H2): Teacher credibility will have a positive effect on the academic motivation of students.

Hypothesis 3 (H3): The academic motivation of students will have a positive effect on the teacher evaluation.

Hypothesis 4 (H4): The academic motivation of students will mediate the effect of teacher credibility in the teacher evaluation.

GRAPHIC 1. Research and hypothesis model.



Source: Own elaboration.

2. Method

2.1. Participants

To select the participants, a non-probabilistic sample design was applied due to accessibility (Gil-Escudero & Martínez-Arias, 2001). The sample comprised 674 students from the Universidad de Sevilla studying the degrees of primary education (32.2%), pre-school education (17.5%), pedagogy (26.7%), physical activity and sports sciences (13.6%), psychology (2.8%) and labour relations and human resources (7.1%). The average age of the participants was 20.71 (SD=2.52) and the distribution of participation by sex was 527 women (78.2%) and 147 men (21.8%).

2.2. Instruments

To analyse student perception of teacher credibility, the Spanish version of the Credibility Scale (Froment et al., 2019) was used. This instrument has 18 bipolar adjectives, six for each dimension (competence, goodwill and trust). The students had to indicate their perception of the teacher according to values from 1 to 7, taking into account that the closer the number of the adjective, the greater the accuracy will be in the evaluation conducted.

To measure the academic motivation of students, with regard to a determined class, the Motivated Strategies for Learning Questionnaire (Martínez & Galán, 2000) was used. This instrument comprises two questionnaires, one that evaluates motivation and the other that evaluates the learning strategies of the university students. For this study, only the academic motivation questionnaire was chosen. This consists of 25 items distributed into the subscales: intrinsic orientation, extrinsic orientation, task value, control of beliefs, self-efficiency and anxiety. To respond to the items, values must be chosen that range from 1 (*It doesn't describe me at all*) to 7 (*It completely describes me*).

For the evaluation of teacher performance, the Evaluation of University Teaching Questionnaire (López-Barajas & Ruiz-Carrascosa, 2005) was used. This instrument comprises 24 items, distributed into the subscales: interaction with students, methodology, teacher obligations and evaluation, and means and resources. To respond to the items, values must be chosen that range from 1 (*Completely disagree*) to 5 (*Completely agree*).

To determine the reliability of the instruments used, they were subject to an internal consistency analysis, in line with composite reliability, as it is the most suitable measure for evaluating reliability (Peterson & Kim, 2013). Acceptable values were obtained due to being > .70 (Hair et al., 2017); .96 for teacher credibility; .89 for academic motivation and .96 for teacher evaluation.

2.3. Process

The participants voluntarily filled out the instruments and they all gave their informed consent before doing so. The objectives of the study were explained and the anonymous nature of the participation was emphasised. It was also stressed that the data collected would only be

used for the purposes of the research and they were asked to give honest responses. They were also told that there are no wrong or right answers. The instruments were provided in the class in paper and pencil format by experts in the following order: Credibility Scale, Motivation Questionnaire and Evaluation of University Teaching Questionnaire. The participants took around 25 minutes to fill out the instruments. The data collected were processed in a database for their subsequent analysis.

In conducting the study, the criteria set out by the Ethics Committee of the Universidad de Sevilla were considered in terms of ensuring respect for the dignity, integrity and identity of those participating in the study. Furthermore, said committee has stated that the study, which involves no handling of people or animals, does not require explicit permission by the institution.

2.4. Statistical analysis

To analyse the relationship between teacher credibility, academic motivation and teacher evaluation, partial least square structural equation modelling (PLS-SEM) was applied, a variance-based model that is mainly used in the education field (Ghasemy et al., 2020; Lin et al., 2020). The partial least square models are defined through two sets of linear equations: the measurement model, which describes the link between a construct and its indicators, and the structural model, which focuses on the relationship between constructs (Henseler, 2017). As such, the PLS-SEM evaluation was initially conducted in two stages (Roldán & Sánchez-Franco, 2012): the evaluation of the measurement model and that of the structural model.

Firstly, it should be noted that, in the research model, all the constructs are considered as composite measures with a reflective design approach, where all the indicators and dimensions represent different facets, although there are correlations among them (Becker et al., 2013). As such, the variables studied are estimated in A Mode, due to the presence of high correlations between indicators in each construct (Rigdon, 2016). Therefore, traditional reliability and validity measures could be used (Henseler et al., 2016). Lastly, to model the multidimensional constructs, a two-stage approach was applied (Sarstedt et al., 2019).

With regard to the evaluation of the measurement model, the indicator reliability measures of internal consistency, convergent validity and discriminant validity were applied (Hair et al., 2019). In relation to the reliability of the indicators, these have to be > .70 (Roldán & Sánchez-Franco, 2012) and the indicators with loadings between .40 and .70 are to be considered candidates for elimination should the filtering serve to increase the values of the composite reliability or of the average variance extracted above the desirable minimum values (Hair et al., 2019). In accordance with the internal consistency, the composite reliability was met due to the limitations

of Cronbach's alpha, the value of which had to be > .70 (Hair et al., 2017). In terms of the convergent validity, the average variance extracted (AVE) was used, the values of which must be > .50 (Hair et al., 2018). As regards the discriminant validity, the criteria of Fornell & Larcker (1981) was used, which establishes that the square root of the AVE of each latent variable must be greater than the correlations it has with the other latent variables of the model, and the Heterotrait-Monotrait Ratio (HTMT), the value of which must be < .90 (Henseler et al., 2015). It is worth mentioning that the point of interest of this study is not the dimensions, but rather the higher order constructs and, as such, the discriminate validity will be analysed at the level of second-order constructs.

In relation to the evaluation of the structural model, the sign, size and significance of the structural model coefficients were assessed (Roldán & Sánchez-Franco, 2012). In this regard, the bootstrapping technique (5,000 samples) was used for *t*-statistics, *p*-values and bias-corrected confidence intervals of 95% (Hair et al., 2011). Bootstrapping is a resampling process that assesses the precision of the PLS-SEM estimations (Streukens & Leroi-Werelds, 2016), allowing the statistical significance of the relationship between the variables of the structural model to be evaluated (Martínez-Caro et al., 2020). Furthermore, the values of the coefficient of determination (R^2) and the values of the effect size (f^2) were evaluated and the Q^2 predictive relevance test was conducted through the blindfolding technique (Roldán & Sánchez-Franco, 2012). As regards the coefficient of determination, R^2 values of .75, .50 and .25 for the endogenous construct can be described as significant, moderate and weak, respectively (Hair et al., 2011). As for the effect size, the f^2 values of .02, .15 and .35 indicate a small, moderate and large effect, respectively, of an exogenous over an endogenous construct (Cohen, 1988). With regard to the predictive relevance, the Q^2 values higher than 0, .25 and .50 indicate situations of small, medium and large predictive relevance, respectively, of an exogenous over an endogenous construct (Hair et al., 2019).

Subsequently, the mediation effect of academic motivation in the relationship between teacher credibility and evaluation was examined. To conduct the mediation analysis in PLS-SEM, the bootstrapping method (Streukens & Leroi-Werelds, 2016) was applied with bias-corrected reliability estimations (Hayes, 2013) and a 95% confidence interval of the indirect effects. Furthermore, the index of variance explained (VAF), which determines the indirect effect size in relation to the total effect, was calculated, the values of which that are under 20%, between 20-80% and above 80% indicate the absence of mediation, partial mediation and total mediation, respectively (Hair et al., 2017).

Subsequently, the goodness-of-fit of the structural model was evaluated in line with the standardised root mean square residual (SRMR), which is the only cri-

terion recommended for evaluating the goodness-of-fit in PLS-SEM (Henseler et al., 2016), the < .08 value of which would indicate a good goodness-of-fit model (Hu & Bentler, 1999).

Finally, an evaluation on the predictive validity of the model was conducted through a cross-validation of the holdout sample (Shmueli et al., 2016). The predictive validity of a model refers to its capacity to make precise new-observation predictions, whether of a temporary or cross-section nature (Shmueli & Koppius, 2011). The predictive validity indicates that the exogenous variables (teacher credibility and academic motivation) can predict the endogenous variable (teacher evaluation) (Straub et al., 2004). Specifically, the PLSpredict algorithm was applied in the SmartPLS program, version 3.2.7., (Ringle et al., 2015) to evaluate the predictive validity of the model for the construct and its dimensions, as, on interpreting the results of PLSpredict, focus must be on the key endogenous construct of the model (Chin et al., 2020). To undertake PLSpredict, with regard to the number of sections (folds), k = 22 was set taking into account that N = 674, thereby fulfilling the sample minimum of 30 cases per section and, in relation to the number of repetitions, r = 10 was set (Cepeda-Carrión et al., 2016). To evaluate if the model has prediction capacity, the Q^2 value was resorted to. Values of $Q^2 > 0$ indicate that the prediction errors of the results of the PLS model are lower than the prediction errors produced when only the average values are used and, therefore, the model would have predictive validity (Shmueli et al., 2019).

The main reason for using the PLS-SEM lies in the fact that this technique allows the predictive power of the exogenous variables (teacher credibility and academic motivation) over the endogenous variable (teacher evaluation) to be evaluated both inside and outside the sample (Shmueli et al., 2019). In other words, unlike other multivariate methods, PLS-SEM allows for the evaluation of whether or not the exogenous variables are capable of predicting the behaviour of the endogenous variable in samples separated from the set of data initially used to test the theoretical research model (Shmueli et al., 2016). In this regard, PLS-SEM uses the values of the holdout sample of the independent constructs by applying the parameter estimations of the model that were obtained from the training sample (portion of the overall set of data that is used to estimate the parameters of the model) to generate predictions regarding the dependent constructs (Hair et al., 2019).

Furthermore, PLS-SEM does not make any kind of assumption regarding the distribution of the data (Hair et al., 2011) and it is the method to use when the research purpose is the explanation and prediction of key constructs (Hair et al., 2017). As such, PLS-SEM helps to achieve two aims of the study (Henseler, 2018): (1) Explanatory, to understand the causal links between the variables and, (2) predictive, with the aim of predicting values for individual cases. For the evaluation of the

structural model, the Smart-PLS 3.2.7 software was used (Ringle et al., 2015).

3. Results

3.1. Measurement model

In relation to the reliability of the indicators, these entail external loading > .70, except for the items OE3, AU6, AN1, MET4, ODE1 and ODE2. As such, the reliability of the items is considered suitable. The items OE3, AU6, AN1, MET4, ODE1 and ODE2 were not ruled out, given that the constructs obtained composite reliability values > .70. As such, they are suitably reliable and the filtering of said items is not necessary as values between .40 and .70., were obtained. However, the items OE1, OE2, AN2 and AN3 were eliminated due to obtaining external loadings < .40. With regard to the convergent validity, the average variance extracted (AVE) was applied, with the constructs exceeding the suggested value of .50, indicating that the variance extracted by the factor is higher than the variance associated to the error (Table 1).

TABLE 1. Evaluation of the measurement model.

Dimensions/Indictors	M	SD	External loading	CR	AVE
Competence (COM)				.94	.72
COM1	6.23	.87	.85***		
COM2	6.40	.85	.87***		
COM3	6.23	.86	.82***		
COM4	6.30	.88	.84***		
COM5	6.10	.98	.85***		
COM6	6.26	.89	.85***		
Goodwill (GW)				.96	.81
GW1	5.24	1.53	.92***		
GW2	5.25	1.50	.93***		
GW3	5.73	1.32	.82***		
GW4	5.15	1.45	.93***		
GW5	5.33	1.30	.89***		
GW6	5.63	1.30	.89***		
Trust (TRU)				.95	.78
TRU1	5.99	1.10	.88***		
TRU2	5.87	1.10	.89***		
TRU3	5.78	1.07	.89***		
TRU4	5.96	1.05	.89***		
TRU5	5.94	1.07	.88***		
TRU6	6.09	1.01	.84***		
Intrinsic orientation (IO)				.78	.55
IO1	4.76	1.61	.77***		

IO2	5.56	1.43	.74***		
IO3	5.71	1.21	.70***		
Extrinsic orientation (EO)				.74	.60
EO3	4.73	1.68	.64***		
EO4	4.18	1.92	.89***		
Task value (TV)				.91	.71
TV1	5.00	1.66	.83***		
TV2	5.47	1.34	.74***		
TV3	5.10	1.56	.91***		
TV4	5.13	1.73	.88***		
Control of beliefs (CB)				.84	.56
CB1	5.68	1.32	.73***		
CB2	4.21	1.77	.75***		
CB3	5.78	1.19	.74***		
CB4	4.10	1.82	.77***		
Self-efficiency (SE)				.90	.61
SE1	4.45	1.47	.77***		
SE2	4.44	1.52	.78***		
SE3	5.88	1.17	.80***		
SE4	4.88	1.45	.83***		
SE5	5.20	1.34	.83***		
SE6	6.06	1.06	.66***		
Anxiety (AN)				.75	.62
AN1	2.91	1.70	.55***		
AN4	3.21	2.17	.96***		
Interaction with the student (IN)				.95	.76
IN1	4.05	1.07	.85***		
IN2	4.20	1.01	.89***		
IN3	4.14	1.08	.86***		
IN4	4.15	1.01	.86***		
IN5	3.72	1.23	.90***		
IN6	3.80	1.15	.86***		
Methodology (MET)				.91	.65
MET1	4.02	1.08	.78***		
MET2	4.01	1.17	.88***		
MET3	4.07	1.10	.84***		
MET4	4.67	0.64	.63***		
MET5	3.94	1.08	.80***		

MET6	4.17	1.04	.87***		
Teacher obligations and evaluation (TOE)				.88	.50
TOE1	4.45	0.89	.56***		
TOE2	3.88	0.95	.59***		
TOE3	4.23	0.98	.72***		
TOE4	4.46	0.84	.70***		
TOE5	4.22	0.84	.76***		
TOE6	3.86	0.94	.73***		
TOE7	4.17	0.88	.80***		
TOE8	4.15	0.93	.73***		
Mean and resources (MR)				.89	.67
MR1	4.15	0.98	.85***		
MR2	4.07	0.97	.88***		
MR3	3.88	1.01	.79***		
MR4	4.11	1.09	.75***		

Note: M= mean, SD= standard deviation, CR= composite reliability, AVE= average variance extracted. *** $p < .001$.
Source: Own elaboration.

Finally, as regards the discriminate validity, the criterion of Fornell & Larcker (1981) was applied, finding that the square root of the AVE of each latent variable is greater than the correlations that it has with the other latent variables of the model, as well as the Heterotrait-Monotrait (HTMT) ratio, obtaining a satisfactory value as it was under the suggested value of .90, thereby indicating that each variable differs from the other (Table 2).

TABLE 2. Discriminate validity.

Fornell-Larcker criterion				**Heterotrait-Monotrait (HTMT) ratio**			
	TC	AM	TE		TC	AM	TE
TC	.90			TC			
AM	.62	.75		AM	.69		
TE	.78	.69	.89	TE	.86	.76	

Note: TC= teacher credibility, AM= academic motivation; TE= teacher evaluation.
Source: Own elaboration.

The results obtained demonstrate that there was no problem with the evaluation of the measurement model in terms of its reliability and validity. As such, it is appropriate to proceed with the evaluation of the structural model to corroborate the hypotheses formulated.

3.2. Structural model

In relation to the effects among the variables of the structural model, it was found that teacher credibility has a positive effect on the teacher evaluation ($\beta = .58, p < .001$) and on academic motivation ($\beta = .62, p < .001$). As such, H1 and H2 are accepted. Similarly, academic motivation has a positive effect on the teacher evaluation ($\beta = .32, p < .001$) and, as such, the H3 is accepted (Table 3).

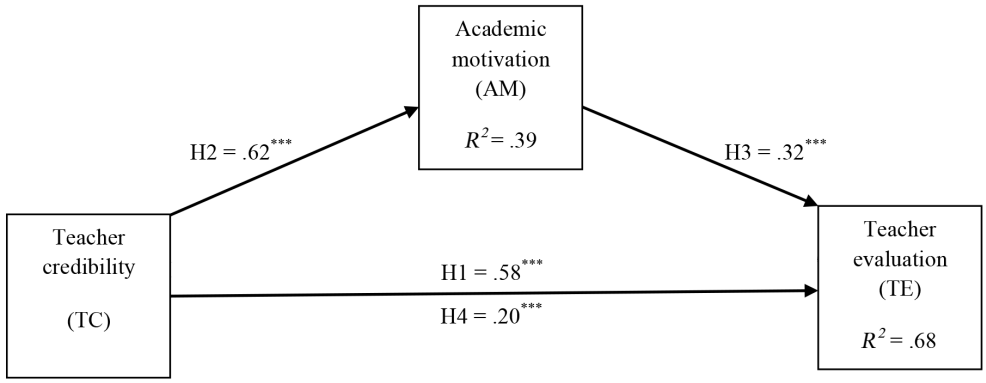
TABLE 3. Evaluation of the hypotheses.

Hypothesis	Relation	Coefficient path	*t*-statistics	95% BCCI	Conclusion
H1	TC → TE	.58***	19.38	[.53; .63]	Accepted
H2	TC → AM	.62***	23.69	[.58; .66]	Accepted
H3	AM → TE	.32***	10.20	[.27; .37]	Accepted

Note: TC= teacher credibility, TE= teacher evaluation, AM= academic motivation, BCCI= bias-corrected confidence intervals. *** $p < .001$.
Source: Own elaboration.

Similarly, the model possesses moderate predictive power on academic motivation, as an R^2 value between .25 and .50 was obtained, and significant predictive power on the teacher evaluation, as an R^2 value between .50 and .75 was obtained (Graphic 2). The size of the effect of teacher credibility on the teacher evaluation and on academic motivation had f^2 values of .64 and .63, respectively, which was large due to being > .35, while the size of the effect of academic motivation on the teacher evaluation had an f^2 value of .20, which was moderate due to being between the values of .15 and .35. Academic motivation obtained a Q^2 value of .21 and, as such, the model has small predictive relevance on academic motivation due to obtaining a Q^2 value between 0 and .25, and the teacher evaluation obtained a Q^2 value of .54 and, as such, this model has high predictive relevance on the teacher evaluation due to obtaining a Q^2 value of > .50.

GRAPHIC 2. Standardised regression and coefficients of determination for the structural model.



Source: Own elaboration.

Regarding the mediation effect of the academic motivation of students, as can be seen in Table 4, academic motivation mediates the effect of teacher credibility in the teacher evaluation (β = .20, p < .001) and, therefore, H4 is accepted. Similarly, a VAF value between 20-80% was obtained, thereby indicating that it entails partial mediation.

TABLE 4. Mediation effect.

Hypothesis	Relation	Effect	*t*-statistics	Value of *p*	95% BCCI	VAF	Conclusion
H4	TC → AM → TE	.20	8.87	.000	[.16; .25]	35.5%	Accepted

Note: TC= teacher credibility, AM= academic motivation, TE= teacher evaluation; BCCI= bias-corrected confidence intervals, VAF= index of variance explained.
Source: Own elaboration.

Finally, in relation to the evaluation of the goodness of fit of the structural model, a SRMR value of .06 was obtained, indicating a good goodness of fit due to being < .08.

3.3. Evaluation of the predictive validity of the model

In relation to the predictive validity of the model, it has satisfactory predictive validity both in terms of construct and dimensions due to obtaining Q^2 values of > 0 (Table 5). Therefore, the model considered has sufficient predictive power to predict the values for new cases as regards the endogenous variable (teacher evaluation). Furthermore, that means that teacher credibility and academic motivation may predict the teacher evaluation in additional samples that are separated from the set of data used to approve the structural model (Woodside, 2013), which entails additional support for the structural model considered in this study.

TABLE 5. Predictive validity of the model.

	Q^2 values
Construct prediction	
Teacher evaluation (TE)	.61
Dimension prediction	
Interaction with the student (IN)	.62
Methodology (MET)	.49
Teacher obligations and evaluation (TOE)	.41
Mean and resources (MR)	.42

Source: Own elaboration.

4. Discussion

The main aim of this study is to predict the results of the teaching evaluation based on student perceptions regarding teacher credibility, mediated by the academic motivation of university

students. This study found that teacher credibility had a positive effect on the teaching evaluation, coinciding with prior studies that suggest that the perception of students regarding the conduct of their teachers influences evaluations on teacher performance (Roach et al., 2005; Schrodt et al., 2006, 2008). Furthermore, this outcome supports prior studies that suggest that teacher credibility has a positive effect on the evaluation of teaching activity (Lavin et al., 2010; McCroskey et al., 2004; Nadler & Nadler, 2001). Teachers must behaviour appropriately and use positive communication skills in providing more effective teaching in the classroom (Gray et al., 2011).

Furthermore, it was found that teacher credibility has a positive influence on the academic motivation of university students, which coincides with several studies that pointed to said influence (Froment et al., 2019; Kulkarni et al., 2018; Martin et al., 1997; Pogue & AhYun, 2006). As Zhu & Anagondahalli (2018) indicate, teacher credibility is one of the most significant factors in the relationship between teacher conduct and student learning. As such, credibility is an impression transmitted that all teachers must manage to achieve beneficial and relevant results for them and their students (Myers & Martin, 2018). The more students see them as being credible, the more interest and attention they will have and, therefore, the more they will learn (Teven & McCroskey, 1997). According to Froment et al. (2020), for teachers to improve their credibility, they have to: use an argumentative verbal style, and pro-social strategies in the classroom; reveal relevant personal information; use technological teaching resources; present oral and written information in a way that pupils can understand; show support and value the implication of students responding to their questions and demonstrating interest in learning; avoid inappropriate conduct and using verbal aggressiveness, and avoid transmitting negative personal information.

Finally, it was found that the academic motivation of university students has a positive influence on the evaluation of teacher performance and mediates the effect of teacher credibility in the evaluation of teaching activity, which supports studies that highlight the existence of a positive effect of the academic motivation of university students on the teaching evaluation (Griffin, 2016; Tan et al., 2019). The mediation effect may be due to the fact that academic motivation depends in part on the perceptions of students regarding the teachers (Rodríguez et al., 1996) and, also, that students that are motivated to make more of an effort, learn more and, therefore, expect to obtain good grades, which results in positive evaluations of the teaching received (Beran & Violato, 2005). As Jones (2008) indicates, student motivation is an important link between their own learning and the conduct of their teachers. In other words, teachers can have an influence on the motivation of students by us-

ing certain strategies and conduct in their teaching (Wheeless et al., 2011). As such, to improve student motivation, they have to: be friendly; use a competent socio-communicative style; be clear in their explanations; communicate with students outside the classroom to address academic issues; share relevant personal information for the course content and avoid verbal aggressiveness and conduct that indicates burnout or exhaustion (Christensen & Menzel, 1998; Khan et al., 2015; Myers & Rocca, 2001; Zardeckaite-Matulaitiene & Paluckaite, 2013; Zhang & Sapp, 2008; Zhang & Zhang, 2005).

Furthermore, this finding supports different studies that point to the characteristics of the students themselves, such as their disposition regarding the academic year, the grades expected and even their gender and age, as having an influence on their evaluations on teacher performance (Boring, 2017; Choet al., 2015; Hatfield & Coyle, 2013; Hejase et al., 2014; Korte et al., 2013). In addition to the characteristics of students, those of the class, the academic year and of the teachers also have an effect on the evaluations of students on teacher performance (Wallace et al., 2019).

As a future study, analysing the impact of student perceptions of other teacher conduct, such as clarity, self-revelations and humour, on performance evaluations is considered. As stated by Goldman et al. (2017), by studying how students perceive the conduct of their teachers, a better understanding may be achieved of their desires, needs and expectations, and of the problems generated when said perceptions are broken. Likewise, examining the effect of other variables related to student learning, such as their involvement, satisfaction and emotional exhaustion, on teaching quality is also proposed. In this regard, Benton & Cashin (2014) recommend adopting a teacher evaluation system that statistically controls factors that could influence said evaluations.

The main limitation of this study was that the sample fundamentally comprised women. Had there been higher male participation in the study, comparisons could have been made between the two to determine if the sex of students constituted a factor that affects their teaching evaluations. Despite this limitation, the study has significant practical implications, as it suggests that if teachers are perceived to be credible, students will be more motivated and, as such, the teaching will be positively evaluated.

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