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Influence of Teaching on Emotional Clarity: an Econometric Analysis

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Summary

The objective of this study was to analyze the relationship between teaching vocation and emotional clarity in teachers, applying an econometric model of simple linear regression. The research was carried out with a sample of 64 teachers, who were selected under specific criteria related to their professional experience and voluntary availability to participate in the study. Previously validated scales were used to measure both variables, obtaining a mean of 8.797 in teaching vocation and 30.91 in emotional clarity, on scales of 10 and 40 points respectively. The econometric analysis, represented by the equation Y=B0+B1X1+uY = B_0 + B_1X_1 + u, revealed that the teaching vocation significantly influences emotional clarity (B_1 = 1.6512, $p < 0.05$). In addition, the intercept (B_0 = 16.381, $p < 0.01$) was statistically significant, suggesting that there is a baseline level of emotional clarity independent of the teaching vocation. However, the adjusted coefficient of determination (adjusted R^2 = 0.07497) indicated that the model explains approximately 7.5% of the variability in emotional clarity, suggesting the presence of other variables that could affect this emotional capacity. Statistical tests performed to evaluate the validity of the model confirmed that the assumptions of simple linear regression are true. The GVLMA global test (p = 0.4044) indicated that the model is adequate; the Rainbow test confirmed the linearity of the model (p = 0.8368); the Durbin-Watson test (DW = 1.8292, p = 0.2456) ruled out significant autocorrelation in the residuals; the Breusch-Pagan test (p = 0.1232) validated homoscedasticity; and finally, the Shapiro-Wilk normality test (p = 0.5546) confirmed that the residues follow a normal distribution.

These results suggest that a higher level of teaching vocation is associated with an increase in emotional clarity, which underscores the importance of strengthening teachers' vocational identity as a strategy to improve their emotional capacities and professional well-being.

Keywords: teaching vocation; emotional clarity; mathematics teaching

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Introduction

The exercise of teaching not only involves the transmission of knowledge, but also requires effective emotional management to face the challenges of the classroom. Emotional clarity, defined as the ability to identify and understand one's own affective states, is a key factor in psychological stability and rational decision-making in educational settings (Salovey & Mayer, 1990). Teachers with high levels of emotional clarity can more accurately recognize their emotions, which allows them to regulate their responses to

stressful situations and improve interaction with their students (Extremera & Fernández-Berrocal, 2016). In this context, the teaching vocation, understood as the degree of commitment and satisfaction towards the educational profession, could play a decisive role in the development of emotional clarity, favoring a more balanced and resilient professional performance in the face of adversity (Day & Gu, 2014).

Despite the increasing attention that emotional intelligence has received in the educational field, there are few studies that explore the specific relationship between teaching vocation and emotional clarity from a quantitative perspective. Previous research has addressed the teaching vocation as a relevant factor in the permanence in the profession and in the quality of teaching (Vallejo & González, 2022), but has not analysed in depth its impact on the emotional regulation of teachers. In particular, emotional clarity has been widely studied as a central dimension of emotional intelligence, but its relationship with the teaching vocation remains an area that has been little explored from a statistical and econometric approach (García & Mendoza, 2021).

Since teaching involves constant interaction with students and the management of emotionally demanding situations, it is essential to understand whether the teaching vocation influences the emotional clarity of teachers. While recent studies suggest that teachers with a stronger vocational identity have higher levels of satisfaction and less emotional exhaustion (Skaalvik & Skaalvik, 2018), empirical evidence is still required to support this claim from an econometric approach. In this sense, the present study seeks to fill this gap in the literature, evaluating the relationship between teaching vocation and emotional clarity through the application of a simple linear regression model, which allows estimating the magnitude and significance of this relationship in practicing teachers.

This analysis will not only contribute to theoretical knowledge about the relationship between these variables, but will also provide key information for the design of training and professional development strategies in the educational field. By understanding the impact of vocation on emotional clarity, educational institutions will be able to implement programs that reinforce the professional identity of teachers and promote more effective emotional management in the exercise of teaching, in order to improve both the well-being of teachers and the quality of the educational process.

Theoretical Approaches

The relationship between teaching vocation and emotional clarity is based on various theoretical approaches that address intrinsic motivation, self-efficacy and emotional intelligence in the exercise of teaching. The main conceptual frameworks that support the central hypothesis of this study are presented below.

1. Theory of Self-Determination and Teaching Vocation

The Self-Determination Theory (Deci & Ryan, 2000) postulates that human motivation is divided into three categories: intrinsic motivation, extrinsic motivation, and amotivation. In the educational context, the teaching vocation is mainly related to intrinsic motivation, since it implies personal satisfaction derived from professional practice and commitment to teaching. According to this theory, teachers with strong intrinsic motivation tend to experience greater emotional well-being and develop more effective emotional regulation strategies (Ryan & Deci, 2017). In this sense, emotional clarity, understood as the ability to identify, differentiate and understand one's own emotions (Salovey & Mayer, 1990), could be strengthened by a well-defined vocational identity.

Recent studies have found that self-determination in teaching influences emotional resilience and job satisfaction. Vallejo and González (2022) argue that teachers with a high sense of vocation not only have higher levels of intrinsic motivation, but also exhibit a greater capacity to reflect on their emotional experiences and manage them constructively. This finding is particularly relevant in educational contexts where teachers face high levels of stress and emotional exhaustion, suggesting that vocation can act as a protective factor against emotional instability.

2. Emotional Intelligence and Emotional Clarity in Teaching

The concept of emotional intelligence, introduced by Salovey and Mayer (1990) and later popularized by Goleman (1996), states that people with high levels of emotional intelligence are better able to recognize, regulate, and adequately express their emotions in different contexts. Within this framework, emotional clarity is considered one of the key dimensions of emotional intelligence and is defined as the ability to accurately understand one's own emotional states and differentiate them from others (Extremera & Fernández-Berrocal, 2016).

In the educational field, emotional clarity is an essential component for teachers' affective regulation, as it allows them to maintain adequate control over their emotions and respond assertively to situations of stress or conflict in the classroom (Pekrun, 2017). According to García & Mendoza (2021), teachers with high emotional clarity tend to experience less anxiety and frustration in their work, which favors their professional well-being and decision-making capacity. In this sense, it is proposed that the teaching vocation, being associated with professional satisfaction and commitment to teaching, could contribute to the development of emotional clarity by providing an internal frame of reference to interpret and regulate affective experiences in the exercise of teaching.

3. Teaching Self-Efficacy and Emotional Regulation

The concept of self-efficacy, developed by Bandura (1997), refers to the belief in one's own ability to face and overcome challenges in different areas of life. In the educational context, teacher self-efficacy is associated with the perception of professional competence, the ability to handle difficult situations in the classroom and confidence in one's own pedagogical skills. According to this approach, teachers with high self-efficacy are not only more likely to experience job satisfaction, but also have a greater ability to manage their emotions effectively (Skaalvik & Skaalvik, 2018).

Previous research has indicated that teacher self-efficacy is directly related to emotional regulation and stress management in teaching. Day and Gu (2014) argue that teachers who are confident in their professional skills tend to have better emotional coping strategies, which translates into a lower incidence of emotional exhaustion and greater emotional clarity. This argument is consistent with the findings of Valdivieso and Rodríguez (2021), who found that teacher self-efficacy significantly predicts teachers' ability to identify and regulate their emotions in the classroom.

Since teaching vocation is closely related to self-efficacy, it can be inferred that teachers with a high sense of vocation also experience higher levels of emotional clarity. The present research seeks to empirically test this relationship through a simple linear regression model, with the purpose of quantifying the influence of the teaching vocation on emotional clarity within the analyzed teaching population.

4. Relationship between Teaching Vocation and Emotional Clarity

Although there are studies that have addressed teaching vocation and emotional intelligence independently, few have explored the direct relationship between vocation and emotional clarity from a quantitative approach. Previous evidence suggests that teachers with a strong vocational commitment experience lower stress levels, higher job satisfaction, and better emotional management (Extremera & Fernández-Berrocal, 2016; Pekrun, 2017). However, the absence of econometric models that analyze the relationship between teaching vocation and emotional clarity makes it impossible to establish precisely the magnitude of this effect.

The present study seeks to provide empirical evidence on this relationship through the application of a simple linear regression model, in order to determine to what extent the teaching vocation influences the emotional clarity of teachers. It is expected that the results will contribute to the theoretical understanding of the impact of vocational identity on the emotional stability of teachers and serve as a basis for the design of training strategies aimed at strengthening emotional well-being in the exercise of teaching.

Methodology

This study was carried out using a quantitative approach, with a correlational design and the use of a simple linear regression econometric model, with the purpose of determining the relationship between teaching vocation (independent variable) and emotional clarity (dependent variable). The choice of this design was based on its ability to estimate the direction, magnitude, and significance of the influence of one variable on another, thus allowing conclusions to be drawn based on rigorous empirical evidence (Hernández, Fernández, & Baptista, 2018). The equation of the econometric model used is expressed as follows:

$Y=B0+B1X1+uY = B\_0 + B\_1X\_1 + u$

where:

- YY represents emotional clarity,
- X1X_1 corresponds to the teaching vocation,
- B0B_0 is the intercept,
- B1B_1 is the regression coefficient that estimates the impact of the teaching vocation on emotional clarity, and
- uu is the term of error or disturbance that includes other factors not considered in the model (Gujarati & Porter, 2019).

Sample and Data Collection Procedure

The sample consisted of 64 in-service teachers, selected through intentional non-probabilistic sampling. The following inclusion criteria were established: teachers with at least five years of experience, at secondary or higher educational levels, and who expressed a voluntary willingness to participate in the study. The population universe was estimated at approximately 250 teachers, which implies that the sample represents about 25% of the total. This sample size satisfies the recommended methodological requirements for correlational and simple linear regression studies, guaranteeing statistical validity in the results (Soto & Vega, 2022).

For data collection, two scales previously validated in studies on teaching vocation and emotional intelligence were applied.

1. Teaching Vocation Scale: composed of Likert-type items (1-10 points) that measure professional commitment, job satisfaction and intrinsic motivation towards teaching.

2. Emotional Clarity Scale: adapted from emotional intelligence models, with a maximum score of 40 points, assessing teachers' ability to identify, differentiate and understand their own emotional states.

Subsequently, the collected data were organized on a structured basis and analyzed using R software, using appropriate statistical procedures for correlation and linear regression studies.

Statistical Analysis and Model Validation

To estimate the econometric model, the ordinary least squares (OLS) technique was used, with the aim of evaluating the magnitude of the effect of the teaching vocation on emotional clarity and determining its statistical significance. The validity of the model was confirmed through various statistical tests, ensuring compliance with the assumptions of simple linear regression:

1. GVLMA Global Test: allowed simultaneous evaluation of the assumptions of linearity, normality, functional specification and homoscedasticity ($p = 0.4044$).

2. Rainbow Test for Linearity: confirmed that the model fits the relationship between the variables ($p = 0.8368$).

3. Durbin-Watson test for autocorrelation: ruled out the existence of significant autocorrelation in the residuals ($DW = 1.8292$, $p = 0.2456$).

4. Breusch-Pagan test for Homoscedasticity: validated that the residuals have constant variance (p = 0.1232).

5. Shapiro-Wilk Normality Test: confirmed that the residuals follow a normal distribution (p = 0.5546).

These results confirmed that the estimated econometric model meets the required assumptions, which guarantees the validity and reliability of the results obtained in the study.

Results

The descriptive analysis of the variables showed that both teaching vocation and emotional clarity presented high values in the sample analyzed. The teaching vocation obtained an average of 8,797 on a 10-point scale, which suggests a high level of commitment and professional motivation among the participants. On the other hand, emotional clarity presented a mean of 30.91 on a maximum scale of 40 points, indicating that the teachers analyzed have a moderately high capacity to recognize and understand their own emotional states. For a better visualization of these data, graphs showing the distribution of both variables in the sample studied are included (see Figure 1 and Figure 2).

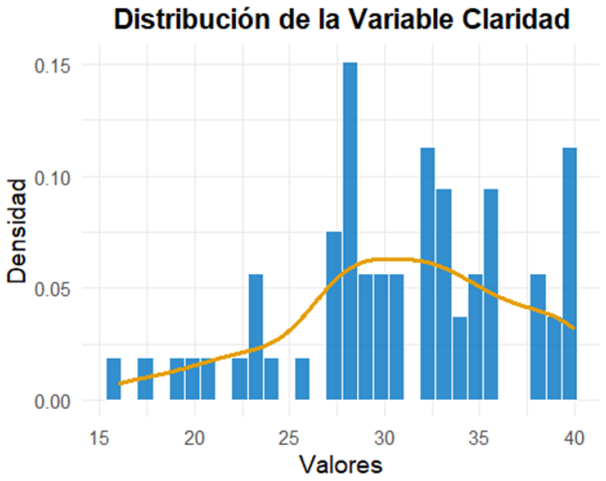

Figure 1 ***Evolution of the Teaching Vocation (N=64). In original Spanish language***

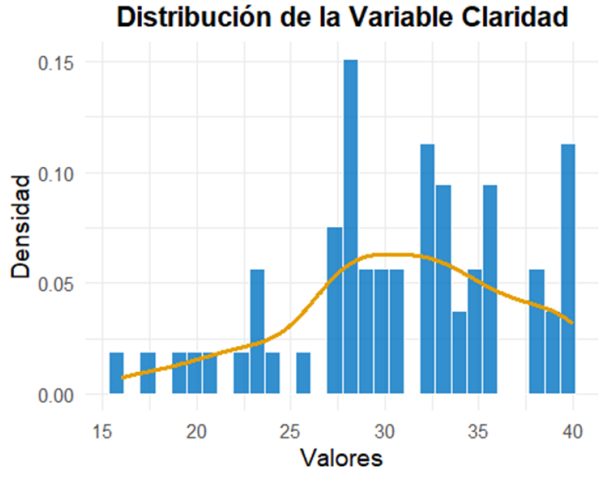

Figure 2 ***Evolution of Emotional Clarity (N=64). In original Spanish language***

Econometric Model Estimation

The estimation of the simple linear regression model showed that the teaching vocation significantly influences emotional clarity. The estimated coefficient $B_1 = 1.6512$ ($p < 0.05$) indicates that, for each unit

increase in teaching vocation, an average increase of 1.6512 points in emotional clarity is expected. Likewise, the intercept B_0 = 16.381 ($p < 0.01$) was significant, suggesting that there is a baseline level of emotional clarity, independent of the teaching vocation.

The adjusted coefficient of determination (adjusted R^2 = 0.07497) indicates that the model explains approximately 7.5% of the variability in emotional clarity, suggesting that, although teaching vocation has a positive effect on emotional clarity, there are other additional factors that could influence this emotional capacity.

Model Validation

To guarantee the validity of the results obtained, various statistical tests were applied that confirmed compliance with the assumptions of simple linear regression:

- GVLMA Global Test: validated that the model complies with the assumptions of normality, homoscedasticity and functional specification (p = 0.4044).
- Rainbow Test for Linearity: confirmed that the relationship between teaching vocation and emotional clarity is linear (p = 0.8368).
- Durbin-Watson test for autocorrelation: ruled out the presence of autocorrelation in the residuals (DW = 1.8292, p = 0.2456).
- Breusch-Pagan test for Homoscedasticity: verified that the residuals have constant variance (p = 0.1232).
- Shapiro-Wilk Normality Test: confirmed that the residuals follow a normal distribution (p = 0.5546).

Overall, these results ensure that the econometric model is statistically valid and reliable, allowing us to interpret with certainty the influence of the teaching vocation on emotional clarity in the sample analyzed.

Discussion

The results obtained in this study confirm the existence of a significant relationship between teaching vocation and emotional clarity, in line with the theoretical approaches previously presented. The econometric estimation of the model revealed that a higher level of teaching vocation is associated with an increase in emotional clarity, which reinforces the idea that teachers with a stronger professional identity have a greater capacity to identify, understand and regulate their emotional states. This finding is consistent with previous studies that have pointed to the importance of intrinsic motivation and self-efficacy in teachers' emotional regulation (Ryan & Deci, 2017; Vallejo & González, 2022).

From the perspective of Self-Determination Theory (Deci & Ryan, 2000), these results suggest that teachers with a strong vocational commitment not only find greater satisfaction in their work, but also develop better skills to interpret their emotions and handle stressful situations more effectively. In this sense, the teaching vocation not only acts as a motivational factor, but also influences the emotional stability of teachers. Previous research has shown that teachers with high levels of vocation have lower rates of emotional exhaustion and greater resilience in the face of classroom challenges (Day & Gu, 2014; Skaalvik & Skaalvik, 2018).

On the other hand, the low adjusted coefficient of determination (adjusted R^2 = 0.07497) suggests that the teaching vocation explains only a part of the variability observed in emotional clarity, which indicates the existence of other factors that may influence this ability. Research in the field of emotional intelligence has identified that emotional clarity is also influenced by variables such as institutional support, training in emotional management, and work experience (Extremera & Fernández-Berrocal, 2016; García & Mendoza, 2021). Therefore, although this study demonstrates that the teaching vocation contributes to the development of emotional clarity, it is necessary to consider other contextual and personal determinants in future research.

From a methodological point of view, the validity of the econometric model was confirmed by diagnostic tests that verified compliance with the assumptions of simple linear regression. The Durbin-Watson test ruled out the presence of autocorrelation in the residuals, the Breusch-Pagan test confirmed homoscedasticity, and the Shapiro-Wilk test validated the normality of the residuals. This ensures that the results obtained are statistically sound and can be used to support interventions aimed at strengthening emotional well-being in teachers.

In summary, this study provides empirical evidence that supports the idea that vocational engagement influences emotional clarity, which has important implications for the design of teacher education programs. The incorporation of strategies that reinforce professional identity and emotional management in the initial and continuous training of teachers could contribute to improving their emotional stability and, therefore, their performance in the classroom. However, future research could expand these findings by including other explanatory variables and exploring longitudinal methodologies that allow analyzing the evolution of emotional clarity over time.

Conclusions

The findings of this study show that teaching vocation significantly influences the emotional clarity of teachers, supporting the hypothesis that greater vocational commitment contributes to the effective regulation of emotions. The estimation of the econometric model showed that for each unit increase in teaching vocation, emotional clarity increases on average 1.6512 points ($p < 0.05$), which indicates a positive relationship between both variables. These results reinforce the theoretical approach of Self-Determination Theory (Deci & Ryan, 2000), which maintains that intrinsic motivation and professional identity are closely linked to emotional well-being.

From a practical perspective, the findings of this study suggest that educational institutions should incorporate strategies aimed at strengthening the teaching vocation as a way to improve the emotional stability of teachers. The implementation of initial and continuing education programs that reinforce the sense of purpose in teaching and emotional management could translate into greater psychological well-being and, consequently, better educational quality. In addition, considering that emotional clarity is a key component of emotional intelligence (Salovey & Mayer, 1990), its development from greater vocational engagement could have positive effects on student interaction and decision-making within the classroom.

However, the adjusted coefficient of determination (adjusted $R^2 = 0.07497$) suggests that the teaching vocation explains only a part of the variability in emotional clarity, which indicates the need to explore other factors that may influence this ability. Variables such as training in emotional management, teaching experience, institutional support and work environment could play a relevant role in the development of teachers' emotional clarity. Future studies could expand this research by using multivariate models or longitudinal designs that allow us to analyze the evolution of emotional clarity over time.

In conclusion, this study provides empirical evidence on the relationship between teaching vocation and emotional clarity, highlighting the importance of strengthening professional identity as a means to improve emotional stability in the practice of teaching. The results obtained can serve as a basis for the design of educational policies and programs aimed at improving the emotional well-being of teachers, thus guaranteeing a positive impact on the quality of the teaching-learning process.

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