Predictors of civic competence in Spanish students in Compulsory Secondary Education

Predictores de la competencia cívica de los estudiantes españoles de Educación Secundaria Obligatoria

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Abstract

In recent years, adolescents' acquisition of civic competence to function as active and participatory citizens has gained importance. This study analyses the influence of student- and school-associated predictors on civic competence performance among students in Compulsory Secondary Education (ESO). The sample comprised 3,487 Spanish students in the second year of ESO (50.2% boys; 49.8% girls) who participated in the International Civic and Citizenship Education Study (ICCS 2022). A hierarchical model was employed to analyse the effect of a set of predictors on the dependent variable at two levels: students and school. At the student level, the results show that girls score higher than boys. The socioeconomic context of students has a significant impact on performance. Moreover, student participation in community groups or organisations, as well as engagement with digital media activities, has a considerable effect on student performance. Significant differences in performance have been found between native and immigrant students in favour of the former. At the school level, students from independent schools score higher than those from state schools. The predictors in the final model explain 27% of the differences between students and 53% of the variability between schools. These findings suggest the need to promote collaboration between families and schools in civic education activities, encourage partnerships between schools and community organisations, develop improvement plans to enhance civic education among immigrant students, and increase the use of technology in schools to support civic education initiatives.

Keywords: Civic competence, gender gap, citizenship education, civic education, Compulsory Secondary Education, hierarchical model.

Resumen

En los últimos años, ha cobrado importancia la adquisición de la competencia cívica de los adolescentes para actuar como ciudadanos activos y participativos en la sociedad. El objetivo de este artículo es analizar la influencia de los predictores asociados al estudiante y al centro sobre el rendimiento en la competencia cívica del alumnado de Educación Secundaria Obligatoria (ESO). La muestra está formada por 3.487 estudiantes españoles de 2º de la ESO (50,2% chicos; 49,8% chicas) que han participado en el Estudio Internacional sobre Educación Cívica y Ciudadana (ICCS 2022). Se ha utilizado un modelo jerárquico, en el que se analiza el efecto de un conjunto de predictores sobre la variable dependiente en dos niveles: Estudiantes y Centro. En el primer nivel, los resultados muestran que las chicas obtienen más puntos que los chicos. El contexto socioeconómico del alumnado tiene un gran impacto sobre el rendimiento. La participación del alumnado en grupos u organizaciones comunitarias y en actividades con medios digitales tienen un efecto significativo sobre el rendimiento. Se han encontrado diferencias significativas en el rendimiento entre el alumnado nativo e inmigrante, a favor de los primeros. En el segundo nivel, los estudiantes que proceden de centros privados tienen más puntos que los de centros públicos. Los predictores del modelo definitivo explican el 27% de las diferencias entre los estudiantes y el 53% de la variabilidad entre centros educativos. Estos resultados sugieren la necesidad de promover la colaboración entre la familia y la escuela en actividades sobre educación cívica, fomentar la colaboración entre los centros y diferentes grupos comunitarios, diseñar un plan de mejora en los centros a fin de reforzar el conocimiento del alumnado inmigrante sobre la educación cívica, así como promover el uso de las tecnologías en los centros en actividades sobre educación cívica.

Palabras clave: Competencia cívica, brecha de género, educación ciudadana, educación cívica, Educación Secundaria Obligatoria, modelo jerárquico.

Introduction

The International Civic and Citizenship Education Study (ICCS) aims to understand how adolescents are prepared for their role as active and participatory citizens in society (Ministry of Education, Vocational Training and Sports, 2024a). Civic competence is defined as 'the body of knowledge about political and social issues, critical thinking skills, and values, which are reflected in participation in the community' (Guérin et al., 2013, p. 437).

The significance of ICCS 2022 lies in its uniqueness as the only international study to analyse how students engage with contemporary societal

issues, such as social justice (Ministry of Education and Vocational Training, 2024).

Isac et al. (2019) and Pereira et al. (2015) have identified several key predictors of students' civic competence, including gender, socioeconomic context, immigrant status, participation in community groups or organisations, and engagement with digital media.

Regarding gender—the first predictor—research has revealed significant differences in civic competence between boys and girls. Gómez and Suárez (2023) examined the relationship between educational practices and students' civic knowledge in the ICCS 2016 across five Latin American and Caribbean countries (Chile, Colombia, Peru, the Dominican Republic, and Mexico). They found that girls consistently outperform boys in the cognitive component of the test, suggesting that girls possess a level of civic knowledge higher than that of boys. Similarly, Solhaug and Kristensen's (2020) research on secondary school students in Denmark and Norway showed that girls scored higher in civic competence, suggesting greater engagement with social issues and increased participation in school activities that promote equity and social justice (Juanes & Jacott, 2020; Ten Dam et al., 2020). However, some studies (Cicognani et al., 2012; Marta et al., 2006) found no significant gender differences in civic competence, implying equal participation in school activities that promote social justice (Manganelli et al., 2014).

With regard to the second predictor—socioeconomic context—research has demonstrated its significant impact on academic performance (Berkowitz et al., 2017; Coleman et al., 1966). Deimel et al.'s (2020) study on the impact of socioeconomic context on civic education in Belgium, Denmark, Germany, and the Netherlands revealed that students from advantaged backgrounds received more civic education than those from disadvantaged contexts. This translated into a deeper understanding of democratic institutions and processes (Ye, 2018), as well as a greater intention to vote in adulthood (Castillo et al., 2015). Miranda (2023) assessed the relationship between socioeconomic context and civic participation among young people in the 2016 edition of the ICCS. The findings indicated that students from advantaged backgrounds are more willing to participate in society than those from disadvantaged backgrounds. This includes voting, attending demonstrations,

and solving community problems (Carrasco et al., 2020). This research highlights the importance of factors determining students' socioeconomic context, such as the number of books at home.

Regarding the third predictor—immigrant status—research has revealed a performance gap between native and immigrant students (Guerra et al., 2019; Teltemann & Schunck, 2017). Zhu and Chiu's (2020) analysis of Danish students who participated in the ICCS 2016 showed that native families demonstrated higher civic knowledge than immigrant families, attributed to a stronger attachment to their country of residence (Azzolini, 2016; Choi & Cha, 2021). Conversely, Zhu et al. (2019) found that in Hong Kong, immigrant students exhibited greater civic knowledge than native ones, owing to higher parental expectations for academic progress. This emphasises the importance of family environment and school resources, such as textbooks (Goodman, 2021), in developing immigrant students' civic literacy.

The fourth predictor—student participation in community groups or organisations—has been shown to impact civic competence performance (Maurissen, 2020; Myoung & Liou, 2022). Blaskó et al. (2019) analysed data from the ICCS 2016 and found that students with higher civic knowledge are more likely to participate in community groups and hold positive attitudes towards ethnic minorities and immigrants. In the German context, Deimel and Abs (2022) demonstrated a correlation between civic education and youth societal participation (Feitosa, 2020), emphasising the importance of student engagement in achieving transferable learning and competencies (Granizo et al., 2019).

The fifth predictor—student participation using digital media—indicates that Internet use favours the acquisition of civic competence. This process includes sharing information on social issues posted by others (Gleason & Von Gillern, 2018), searching for information on social issues, conducting responsible online research (Cabero-Almenara et al., 2019; Lauricella et al., 2020), and publishing content on specific topics such as climate change (Pangrazio & Sefton-Green, 2021), gender equality (Estanyol et al., 2023), and political news (Kim & Ellison, 2021; Ohme, 2019).

School ownership—the sixth predictor—has been shown to influence student performance significantly (Park & Holloway, 2017). The type of

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school and the approach to teaching social issues impact civic competence (Keating, 2016). Collado et al. (2015) analysed Chilean students' performance in the ICCS 2009 and found that students from private schools outperformed those from public schools (Mizala & Torche, 2012). Nevertheless, Dijkstra et al. (2023) examined Dutch students' civic competence in the ICCS 2016 and found no significant differences in performance between state and independent schools (Gil-Flores & García-Gómez, 2017).

International studies have synthesised these predictors' influences. Kuang and Kennedy (2018) analysed Asian countries in the ICCS 2009 and found that the profile of a citizen with greater civic knowledge corresponds to a girl from a favourable socioeconomic background with high participation in community groups or organisations. Similarly, Trunk et al. (2022) focused on European countries in the ICCS 2016 and identified students' socioeconomic level and immigrant status as significant predictors of civic education outcomes.

This theoretical foundation suggests the need to advance our understanding of the variables influencing civic competence in students at the Compulsory Secondary Education (*Educación Secundaria Obligatoria*; ESO) level. This knowledge is crucial as it affects how students comprehend and prepare for citizenship in a world where civic participation is continuously evolving (Ministry of Education and Vocational Training, 2024). Therefore, this research investigates the influence of student- and school-associated predictors on the civic competence performance of ESO students.

Method

This research employed a non-experimental design, as the variables could not be manipulated, and the participants could not be randomly assigned. It was an *ex post facto* study, analysing the phenomenon after it had occurred, without the ability to manipulate the independent variable (Kerlinger & Lee, 2002).

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Sample

In the 2022 edition of the ICCS, each country selected a nationally representative sample to represent the study's target population (14-year-old students) and make 95% confidence estimates. The participating sample comprised 3,519 Spanish students in the second year of ESO from 157 schools (Ministry of Education, Vocational Training and Sports, 2024b). The treatment of missing values included eliminating cases with one or more missing values. This study considered the Socioeconomic Index variable (Murillo et al., 2023), which comprises the mean of three variables (the highest educational level of the parents, their occupation, and the number of books at home). Substituting a lost value for an estimate affects the exact value of the Socioeconomic Index (Enders, 2010). The final sample comprised 3,487 Spanish students in the second year of ESO (50.2% boys; 49.8% girls).

Instruments

This study utilised the two ICCS 2022 assessment instruments: the student questionnaire and the school questionnaire. The first comprises 121 Likert-type, multiple-choice, and open-ended items on various aspects related to civic competence, such as student participation using digital media and in community groups or organisations. The second, completed by the headteachers, comprises 26 questions on the characteristics of the schools, as well as contextual variables related to civic participation at school (Ministry of Education, Vocational Training and Sports, 2024b).

Procedure

The ICCS establishes four levels of performance (A = 563 points or more, B = 479 to 562 points, C = 395 to 478 points, D = 311 to 394 points) (Ministry of Education, Vocational Training and Sports, 2024b).

The average performance in civic competence in Spain (510) is 73 points behind Taiwan, the highest-scoring country (583). Spanish students fall within Level B—they are familiar with the broad concept of representa-

tive democracy and understand the influence of citizenship on local communities, society, and the world.

The percentage of Spanish students at the higher achievement level (29%) is lower than expected due to the percentage of students at lower levels (60% with a medium level and 11% with a low level) (Ministry of Education, Vocational Training and Sports, 2024b).

The ICCS employs item response theory to assign scores to students, expressing achievement levels on a scale with a central benchmark of 500 points. For each student, the *a posteriori* distribution of the measured skill was obtained, from which five plausible values were extracted (Ministry of Education, Vocational Training and Sports, 2024b).

To calculate the dependent variable (civic competence performance), independent estimates were generated for each of the five plausible values available in the database, and average risk values were calculated.

From the ICCS 2022 database, the independent variables with the greatest impact on the dependent variable were selected by means of decision tree analysis. This approach reduces the number of independent variables and identifies those affecting civic competence. To this end, two methods were employed. The first was classification and regression trees (CART) (Strobl et al., 2009), a recursive partitioning procedure based on the 'divide and conquer' rule, which includes binary segmentations and a measure of independent variables' relevance (Asensio et al., 2018; Hernández Orallo et al., 2004). The second was a chi-square automatic interaction detector (CHAID) used complementarily to identify the predictor with the strongest interaction with the dependent variable at each step.

The procedure comprised five phases. In the first phase, initial models were estimated using CART, with the five plausible values treated as dependent variables, while items from the student and school questionnaires served as independent variables (2 questionnaires x 5 plausible values = 10 models). Average risk values were calculated for each questionnaire, yielding 3,120.43 for the student body and 721.19 for schools. In the second phase, initial models were estimated using CHAID (another 10 models) to identify variables from each questionnaire interacting with the dependent variable. In the third phase, variables with a normalised importance of at least 10% were selected

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and identified in the CHAID models. In the fourth phase, predictive values for each questionnaire were calculated (0.65 for the student questionnaire and 0.52 for the school questionnaire). In the fifth phase, variables meeting the described criteria and endorsed by research referenced in the theoretical framework were selected.

This study used a hierarchical model to analyse the effect of a set of predictors on the dependent variable, respecting the nested structure of the data: students and schools (Tourón et al., 2023).

TABLE I. Variables included in the model

Variable	Variable Type	Codification	Model level
Gender	Dummy variable	0=Male 1=Female	Level 1 (Students)
Socioeconomic context of students (ISEC)	Standardised variable	Index calculated from the educational level of the parents, their occupation, and the number of books at home	
Immigrant status	Dummy variable	0=Native 1=Immigrant	
Student participation in community groups or organisations	Standardised variable	Index calculated from student involvement in a range of organisations (0=I have never done it; 1=Yes, I have, but it has been more than a year; 2=Yes, I have done it in the last 12 months): -A youth organisation affiliated with a political party or union. -A volunteer group that works to help the town. -A group or organisation that campaigns for a particular cause (e.g. environmental protection, human or animal rights). -A global campaign for a particular issue (e.g., climate change). -A community youth group (e.g., Scouts). -A sports team. -A religious group or organisation.	
Student participation using digital media	Standardised variable	Index calculated from the frequency with which students conduct 11 activities (0=Never or almost never, 1=Monthly (at least once a month), 2=Weekly (at least once a week, 3=Daily or almost daily): -Watch television to stay informed about national and international news. -Read newspapers (including online versions) to learn about national and international news. -Discuss political or social issues with your family. -Talk to your family about events happening in other countries. -Discuss political or social issues with friends. -Talk to your friends about events happening in other countries. -Use the Internet to search for information on political or social issues. -Publish own content online about a political or social issue. -Share content about a political or social issue posted by someone else. -Comment on an online post related to a political or social issue. -Like an online post about a political or social issue.	
School ownership	Dummy variable	0=State 1=Independent	Level 2 (Schools)

Source: compiled by the author

Table II shows the measures of centralisation and dispersion of the variables analysed.

TABLE II. Measures of centralisation and dispersion of variables

Variable	Median	D.T.	Minimum	Maximum
Gender	0	0.5	0	1
Socioeconomic context	0.005	0.996	-2.389	1.948
Immigrant status	0	0.37	0	1
Participation in community groups or organisations	50.018	9.705	40.316	85.023
Participation using digital media	69.853	9.817	41.172	91.033
School ownership	0	0,48	0	1

Source: compiled by the author

According to the data in Table II, the typical student who participated in the ICCS 2022 edition was male and native-born and hailed from a middle socioeconomic background. This student had been involved in community groups or organisations for over a year, used digital media at least once a week to engage with political and social issues, and attended a state school.

Two programs were used to perform the analyses: SPSS 29 to calculate the measures of central tendency and dispersion of the variables as well as the decision trees and MLwiN 2.36, which allowed the calculation of the estimates using the iterative generalized least squares procedure (Goldstein, 2003).

Results

The results of the Student's t-test showed significant differences between the average scores for boys (504 points) and girls (519.66 points), with a critical

level of 0.019.

The modelling process begins with the formulation of the null model, which does not include predictor variables but is essential because it establishes the basis for comparing it with the final model and reports on the initial variance at the two levels (Tourón et al., 2023). The null model is represented as follows (Martínez-Garrido & Murillo, 2014):

$$\begin{aligned} Y_{ij} &= \beta_{0j} + e_{ij} \\ \beta_{0j} &= \beta_0 + \mu_{0j} \\ \mu_{0j} &\sim N(0, \sigma^2_{u0}) \\ e_{0j} &\sim N(0, \sigma^2_e) \end{aligned} \qquad (1)$$

- Y_{ij} is the civic competence performance of student *i* in educational centre *j*.
- $_0$ is the overall average performance among schools.
- $_{0j}$ is the average performance of the j-th school.
- $\sigma^2_{\mu_0} u_{0j}$ is the mean deviation of the educational centre *j* with respect to the actual score, assuming a normal distribution of mean 0 and variance
- $\sigma^2_{e_{ij}}$ is the residual variance at the first level or effect that expresses the deviation in student performance, which assumes a normal distribution of mean 0 and variance

Table III shows the results of the null model. The fixed parameter reports the value of the intercept or the average performance observed in civic competence for the students who constituted the sample (507.62 points).

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TABLE III. Null model estimation

Fixed Part	
Parameter	**Estimation (Standard Error)**
Constant	507.62 (5.63)
Random Part (Variance of Performance in Civic Competence)	
Level 1. Students	5,605.13 (137.42)
Level 2. School	1,799.81 (236.25)
Likelihood Ratio	40,318.25
Number of Parameters	3
Akaike Information Criterion (AIC)	40,323.25
Bayesian Information Criterion (BIC)	40,339.646

Source: compiled by the author

The random part of the null model revealed the variances of the residuals at the two established levels. A parameter is considered significant (alpha = 0.05) if the ratio of the parameter estimate to its standard error is greater than 1.96 (Gaviria & Castro, 2004). In this analysis, the parameters were statistically significant at both levels, as demonstrated by the ratios between students (5,605.13/137.42 > 1.96) and between schools (1,799.81/236.25 > 1.96). These significant parameters indicated the existence of unexplained variance at both levels, which justified extending the model to account for as much of its variance as possible (Rodríguez-Mantilla et al., 2018).

The likelihood ratio for the null model is 40,318.25 with three parameters. The Akaike Information Criterion (AIC) for this model is 40,323.25, while the Bayesian Information Criterion (BIC) is 40,339.646. These three values will be compared with those of subsequent models to assess improvements in goodness of fit.

The intraclass correlation coefficient (ICC) represents the degree of variability between schools compared to that between students in the same school (Pardo et al., 2007).

$$ICC = 1.799{,}81 \,/\, (5.605{,}13 + 1.799{,}81) = 0{,}2430 \qquad (2)$$

This value indicates that 24% of the variance is inter-school variance—the percentage of the variance not explained by the predictors can be

attributed to the clustering variable at level 2. Table IV presents the results of estimating the model with the first-level explanatory variables.

TABLE IV. Model with explanatory variables at level 1

Fixed Part	
Constant	481.39 (4.97)
Gender	10.23 (0.81)
Socioeconomic context of the students	19.47 (0.89)
Immigrant status	-16.09 (0.74)
Participation in community groups or organisations	5.13 (0.56)
Participation using digital media	3.58 (0.34)
Random Part	
Among students	4,852.34 (82.03)
Among centres	1,302.75 (67.22)
Likelihood ratio	28,172.04
AIC	28,177.04
BIC	28,198.31

Source: compiled by the author

According to the data in Table IV, the value of the constant is 481.39 points, slightly lower than that in the null model. This is because the reference group in this model differed from that of the null model; it represents the expected performance of children from an average socioeconomic background in the sample. The explanatory variables included in the random part were significant for civic competence, as the standard error was greater than 1.96.

In terms of gender, girls outperformed boys in civic competence, with the estimated average increasing by 10.23 among females. For every unit increase in socioeconomic status, performance improved by 19.47 points.

Immigrant status also impacted performance, with immigrant students scoring lower than native ones. Specifically, being an immigrant resulted in a decrease of 16.09 points in performance.

Participation in community groups or organisations influenced performance. Students who engaged with a group, organisation, or team scored

higher than those who did not. For each additional level of participation, performance increased by 5.13 points.

Similarly, participation in digital media activities affected performance. Students who regularly used digital media to engage with social issues performed better than those who rarely did or never used it. Each increase in frequency corresponded to a 3.58-point improvement in performance.

The values of the likelihood ratio, AIC, and BIC were lower compared to the null model, indicating an improvement in the model's goodness of fit with the inclusion of level-1 explanatory variables. Table V presents the fixed and random components of the final model, including parameter values with standard errors shown in parentheses.

TABLE V. Final model with explanatory variables at levels 1 and 2

Fixed Part	
Constant	488.81 (4.52)
Gender	8.87 (0.74)
Socioeconomic context of the students	15.74 (0.91)
Immigrant status	-13.45 (0.66)
Participation in community groups or organisations	3.08 (0.32)
Participation using digital media	1.26 (0.17)
School ownership	10.35 (0.82)
Random Part	
Among students	4,076.65 (71.86)
Among centres	841.35 (59.47)
Likelihood ratio	15,036.48
AIC	15,041.48
BIC	15,057.23

Source: compiled by the author

According to the parameters of the fixed part of the model, the average civic competence score was 488.81 points. This represents the expected performance of children from a socioeconomic context that is average for the sample. All parameters in the final model were statistically significant, as the

ratio between the estimate and standard error was greater than 1.96 in each case (Gaviria & Castro, 2004).

In terms of gender, girls outperformed boys in civic competence, which explains the gender gap in favour of girls (boys = 504; girls = 519.66). Being female was associated with a performance boost of 8.87 points compared to boys.

Students from more advantaged socioeconomic backgrounds performed better in civic competence. For every point increase in the socioeconomic context, the average performance improved by 15.74 points. Immigrant status had a negative impact on performance, with immigrant students scoring 13.45 points lower than their native peers.

Participation in community organisations or groups had a positive effect on civic competence. For each additional point of participation, students' scores increased by 3.08 points. Students who frequently used digital media to engage with social issues performed better than those who rarely or never did. For each increase in the frequency of digital media use, performance improved by 1.26 points. School type significantly affected performance—students attending independent schools scored 10.35 points higher than those from state schools.

To assess the model's goodness of fit, the likelihood ratio of the null model was compared to that of the final model. The chi-square difference of 25,281.77 with six degrees of freedom was significant at the 0.01 level, confirming that the final model had a better fit. Additionally, the AIC and BIC values decreased, further validating the model's improved fit.

The R^2 coefficient indicated the proportion of variance in the dependent variable explained by the predictors in the final model. Upon comparing the random parameters of this model with those of the null model (Snijders & Bosker, 2012), we found that the final model explained 27% of the variance between students (R^2= 0.2726) and 53% of the variance between schools (R^2= 0.5325). This highlights the substantial influence of school ownership on civic competence outcomes.

Discussion and Conclussions

This research analysed the influence of student- and school-related predictors on the civic competence performance of students in ESO. To this end, six key predictors were identified based on the theoretical framework and the CART procedure, as they had the greatest impact on the dependent variable.

The first independent variable—student gender—emerged as a significant predictor of civic competence. The results indicated that girls outperformed boys, aligning with prior research (Gómez & Suárez, 2023; Solhaug & Kristensen, 2020) and demonstrating that girls tend to have higher levels of civic knowledge and are more likely to participate in activities promoting equity and social justice at school (Juanes & Jacott, 2020; Kuang & Kennedy, 2018; Ten Dam et al., 2020). However, Cicognani et al. (2012) and Marta et al. (2006) found no significant gender differences in civic competence. These findings suggest a need for educational practices to address and reduce the gender gap to promote education based on social justice.

The second independent variable—students' socioeconomic context—was also a significant predictor of civic competence, corroborating the results of previous studies (Berkowitz et al., 2017; Coleman et al., 1966), which found that students from advantaged backgrounds tend to perform better than those from disadvantaged backgrounds (Castillo, 2015; Deimel et al., 2020; Trunk et al., 2022). This may be due to the greater availability of resources in privileged households, which better support learning about democratic institutions and processes (Ye, 2018), leading to a higher willingness to participate in social justice activities (Carrasco, 2020; Miranda, 2023).

The third independent variable—immigrant status—revealed significant differences between native and immigrant students, with immigrant students performing worse in civic competence. This finding is consistent with other research (Guerra et al., 2019; Teltemann & Schunck, 2017) and is often attributed to native students having greater familiarity with the democratic processes of the country in which they reside (Azzolini, 2016; Choi & Cha, 2021). Nevertheless, these results vary across countries. For instance, Zhu et al. (2019) found that in Hong Kong, immigrant students outperform native students in civic competence, largely due to high parental expectations and

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a strong educational background at home and school (Goodman, 2021). This finding highlights the importance of civic education in fostering the inclusion and integration of immigrant students within schools.

Regarding the fourth independent variable—student participation in community groups or organisations—the results showed that it is a significant predictor of civic competence performance (Maurissen, 2020; Myoung & Liou, 2022). This is in accordance with the results of other studies (Blaskó et al., 2019; Deimel & Abs, 2022; Feitosa, 2020; Granizo et al., 2020), which demonstrated that students with higher levels of civic knowledge tend to have more positive attitudes towards ethnic minorities and immigrants and are more likely to engage in community groups or organisations.

The fifth independent variable—student participation using digital media—also proved to be a significant predictor of civic competence performance. This supports other research demonstrating the influence of various digital activities on civic competence, including sharing information on the Internet about social issues posted by others (Gleason & Von Gillern, 2018), searching for information safely and responsibly (Cabero-Almenara et al., 2019; Lauricella et al., 2020), and publishing content on the Internet on specific social issues, such as climate change (Pangrazio & Sefton-Green, 2021), gender equality (Estanyol et al., 2023), and politics (Kim & Ellison, 2021; Ohme, 2019).

The fourth and fifth conclusions underscore the critical role schools play in encouraging student participation in groups that promote civic education, with digital media serving as a key tool to drive engagement.

As for the sixth independent variable—school ownership—the results showed that it is a significant predictor of performance, consistent with other studies (Keating, 2016; Park & Holloway, 2017). The data revealed significant differences between state and independent schools, favouring the latter (Collado et al., 2015; Mizala & Torche, 2012). Nonetheless, some research suggested that there are no substantial differences between the two in terms of civic competence (Dijkstra et al., 2023; Gil-Flores & García-Gómez, 2017).

This study presents a series of conclusions and proposals aimed at enhancing civic competence among students in ESO in Spain. First, the disparity in civic competence between boys and girls highlights the need for

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further research into the gender gap in civic education. Second, the significant effect of socioeconomic context on civic competence suggests a strong need for collaboration between families and schools in promoting civic education. Third, the performance gap between native and immigrant students highlights the importance of developing targeted improvement plans in schools. These initiatives should aim at strengthening immigrant students' understanding of civic processes and encourage their active participation. Fourth, the positive impact of student participation in community groups or organisations on civic competence suggests that schools should actively collaborate with local organisations. This would raise awareness of the benefits of involvement in groups aligned with students' interests and concerns. Fifth, the influence of digital media in civic education activities indicates the need for schools to promote the responsible use of technology. Activities could include researching current events online and creating digital content that fosters civic engagement. Sixth, the significant differences in civic competence between students in state and independent schools highlight the need for increased resources in state schools, particularly those in disadvantaged areas, to strengthen civic education.

A limitation of this study is its exclusion of cases with one or more missing values, particularly when dealing with complex variables, such as the Socioeconomic Index of the students, which relies on averages of three independent factors. Analysing only complete cases ensure accurate and unbiased results.

This study opens new avenues for research, particularly on the gender gap, which disadvantages boys. Future studies should explore the reasons behind this inconsistency, such as the civic education received at home and boys' participation in civic-promoting activities. Additionally, there is scope for further research into the differences between state and independent schools in terms of civic competence, focusing on factors such as the civic education activities conducted within each institution.

In conclusion, this work demonstrates the influence of various student- and school-level predictors on the civic competence of Spanish students in the second year of ESO who participated in the ICCS 2022. The findings contribute to understanding how these factors shape students' roles as active

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citizens in society.

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