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Scientific articles

El rendimiento académico y su relación con el género, grado y contexto escolar de estudiantes de preparatorias de la Universidad Autónoma de Sinaloa

Academic performance and its relationship with gender, grade, and school context of high school students at the Autonomous University of Sinaloa

Desempenho acadêmico e sua relação com gênero, série e contexto escolar de alunos do ensino médio da Universidade Autônoma de Sinaloa

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Resumen

Investigar el rendimiento académico resulta complejo por los diversos factores implicados y por la forma en que se operacionalizan y se asocian las variables que lo causan. Por lo que, el objetivo del artículo fue establecer la relación del género, grado académico y contexto escolar con el rendimiento académico de discentes de preparatorias de la Universidad Autónoma de Sinaloa (UAS), ubicadas en los municipios de El Fuerte y Ahome, en Sinaloa. La metodología fue cuantitativa. La muestra no probabilística incluyó a 252 estudiantes de cuatro preparatorias, la técnica utilizada fue la encuesta, a partir de un cuestionario de elaboración propia que se diseñó en Google Forms, el cual fue anónimo y de libre decisión para participar. Los datos se validaron y exportaron al Software Estadístico para las Ciencias Sociales (IBM SPSS); se usaron estadísticos descriptivos univariados y análisis de correlación de Spearman ($\alpha=0.05\%$). En resultados, los hombres obtienen un rendimiento académico inferior en comparación con las mujeres; el estudiantado de primer grado tiene el más bajo nivel de rendimiento académico. Aunque no se estableció una asociación directa entre el contexto escolar y el rendimiento académico, sí se identificó una relación indirecta. Se concluye que el objetivo se cumplió y no se rechaza la hipótesis de que el género y el grado escolar se asocian con un bajo rendimiento académico, mientras que se rechaza la hipótesis relativa al contexto escolar.

Palabras clave: variables personales, escolares, apoyo familiar, pandemia.

Abstract

Investigating academic performance is complex due to the diverse factors involved and the way in which the variables that cause it are operationalized and associated. Therefore, the objective of this article was to establish the relationship between gender, academic grade, and school context with the academic performance of high school students from the Autonomous University of Sinaloa (UAS), located in the municipalities of El Fuerte and Ahome, in Sinaloa. The methodology was quantitative. The non-probability sample included 252 students from four high schools. The technique used was a survey, based on a self-developed questionnaire designed in Google Forms. Participants were anonymous and allowed free choice. The data were validated and exported to the Statistical Software for the Social Sciences (IBM SPSS); univariate descriptive statistics and Spearman's evaluation analysis ($\alpha=0.05\%$) were used. The results show that men achieve lower academic performance compared to women; The first-grade male students present the lowest levels.



Although no direct association was established between school context and academic performance, an indirect relationship was identified. It is concluded that the objective was met and the hypothesis that gender and grade level are associated with low academic performance is not rejected, while the hypothesis related to school context is rejected.

Keywords: personal variables, school variables, family support, pandemic.

Resumo

Investigar o desempenho acadêmico é complexo devido aos diversos fatores envolvidos e à forma como as variáveis que o influenciam são operacionalizadas e associadas. Portanto, o objetivo deste artigo foi estabelecer a relação entre gênero, ano escolar e contexto escolar com o desempenho acadêmico de alunos do ensino médio da Universidade Autônoma de Sinaloa (UAS), localizada nos municípios de El Fuerte e Ahome, Sinaloa. A metodologia foi quantitativa. A amostra não probabilística incluiu 252 alunos de quatro escolas de ensino médio. A técnica utilizada foi um levantamento, baseado em um questionário desenvolvido pelos autores utilizando o Google Forms, que era anônimo e aberto à participação. Os dados foram validados e exportados para o Software Estatístico para as Ciências Sociais (IBM SPSS). Foram utilizadas estatísticas descritivas univariadas e análise de correlação de Spearman ($\alpha=0,05\%$). Os resultados mostraram que os alunos do sexo masculino obtiveram desempenho acadêmico inferior em comparação com as alunas; os alunos do primeiro ano apresentaram o menor nível de desempenho acadêmico. Embora não tenha sido estabelecida uma associação direta entre contexto escolar e desempenho acadêmico, identificou-se uma relação indireta. Conclui-se que o objetivo foi alcançado e a hipótese de que gênero e nível escolar estão associados ao baixo desempenho acadêmico não foi rejeitada, enquanto a hipótese referente ao contexto escolar foi rejeitada.

Palavras-chave: variáveis pessoais, variáveis escolares, apoio familiar, pandemia.

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Introduction

Low academic performance is one of the problems that generates the greatest concern among students, parents, teachers, educational authorities, and researchers in Mexico and around the world. Its study, both nationally and internationally, emerged in the 1990s, and since then, a considerable amount of research has been conducted addressing its multiple causes, consequences, and relationships (Sánchez & Pozo, 2023).



For the purposes of this investigation, and based on a theoretical and practical analysis of the problem, the following definition is proposed: Academic performance is the degree of fulfillment of the objectives, learning, skills and attitudes that the student acquires during the teaching process of a subject or academic program that he/she is taking; this level is evaluated through qualitative and quantitative criteria, from which a grade is assigned (Sánchez and Pozo, 2023; Padua-Rodríguez, 2019).

Sánchez and Pozo (2023) determine three levels to assess academic performance: “1) high: Outstanding mastery of the expected learning outcomes, satisfactorily fulfilling all the goals, achievements, and objectives established in the course. The average grade is between 9 and 10; 2) medium: Expected mastery of the learning outcomes established based on the goals, achievements, and objectives. Grades range between 8.0 and 8.9; and 3) low: Lacks mastery of the expected learning outcomes, partially fulfilling the goals, achievements, and objectives. Grades are below 7.9” (p. 10).

Research on academic performance becomes complex due to the multiple perspectives involved in its analysis, as well as the operationalization and association of the variables involved in its determination (Morales-Oropeza, 2022), including: academic (Sánchez and Pozo, 2023; Acosta *et al.*, 2022; Morales-Oropeza, 2022; Martínez-Vicente *et al.*, 2020; Padua-Rodríguez, 2019; Zamudio *et al.*, 2019); social (Morales-Oropeza, 2022; Borja-Naranjo *et al.*, 2021; Ramírez-Vázquez *et al.*, 2020; Rodríguez and Rosquete, 2019); family (Pérez-Salas *et al.*, 2022; Padua-Rodríguez, 2019); personal (Sánchez and Pozo, 2023; Padua-Rodríguez, 2019) and socio-economic (Ruiz-Ramírez *et al.*, 2023; Morales-Oropeza, 2022; Borja-Naranjo *et al.*, 2021; Ramírez-Vázquez *et al.*, 2020; Valladares *et al.*, 2020; Rodríguez and Rosquete, 2019).

The following describes the existing notions of the three variables analyzed in this research, which are gender, academic level, and school context.

Gender and academic performance

Martínez-Vicente *et al.* (2020), Padua-Rodríguez (2019), and Regueiro *et al.* (2015) state that gender is a factor that influences academic performance; they found that women have higher academic performance than men. Conversely, Centeno *et al.* (2019) determine that “academic performance is similar between men and women” (p. 269).

According to Martínez-Vicente *et al.* (2020) and Regueiro *et al.* (2015), women show greater interest in studying, are more hardworking and consistent, put more effort into

completing tasks, dedicate more time to academic activities, and are persistent and organized, in contrast to men. These authors also consider that women's attitudes are primarily positive and that they have better organizational, emotional self-regulation, and motivational skills.

For their part, Martínez-Vicente *et al.* (2020) mention that “female students dedicate many hours to fulfilling their extracurricular tasks, studying for their exams and are more satisfied with their good academic performance, compared to men” (p. 162).

Grade level and academic performance

Martínez-Vicente *et al.* (2020) determined that students in higher grades have superior academic performance compared to students in lower grades, due to characteristics of cognitive development; that is, older students have a greater capacity to disregard irrelevant distractions during class, as well as improved study strategies and efficient time management. According to Martínez-Vicente *et al.* (2020, p. 161), “as grade level increases, the perceived importance of completing assignments and studying for exams also increases. These characteristics contribute to students having greater academic satisfaction and higher academic performance.”

The school context and academic performance

According to Morales-Oropeza (2022) and Borja-Naranjo *et al.* (2021), socioeconomic status is a factor that influences a student's academic performance. The authors argue that there is a positive and significant impact on student performance as socioeconomic status increases. Conversely, the chances of academic success decrease when students live in rural or economically disadvantaged communities.

In this regard, Ramírez-Vázquez *et al.* (2020) and Rodríguez and Rosquete (2019) point out that students from rural areas face greater exposure to risk factors, which increases their vulnerability to low educational achievements, such as low academic performance and low completion rates.

Ruiz-Ramírez *et al.* (2023); Martínez and Emynick (2023) and Rodríguez and Rosquete (2019) consider that students from rural contexts lack the economic conditions to acquire a computer or access the internet; they do not have the necessary means to fulfill their curricular tasks, which causes a decrease in their academic performance.

In contrast, Valladares *et al.* (2020) found that “the socio-economic level of the students does not affect their academic performance” (p. 6).

Based on the above, research on academic performance is a priority due to the operationalization and association of all possible variables that cause it, and because of the short- and long-term consequences, such as students with low academic performance, educational lag, grade repetition, and school dropout (Sánchez & Pozo, 2023; Borja-Naranjo *et al.*, 2021; Panadero, 2019; Zamudio *et al.*, 2019). This is especially important because education contributes to breaking the cycle of poverty and preventing social inequality. Therefore, according to the Organisation for Economic Co-operation and Development (OECD, 2016), any costs associated with researching low academic performance are small compared to the numerous benefits that can be obtained.

In this context, the research question is posed: How are gender, grade level, and school context related to the low academic performance of high school students at the Autonomous University of Sinaloa (UAS)? The objective is to establish the relationship between gender, grade level, and school context with the low academic performance of UAS high school students located in the municipalities of El Fuerte and Ahome, Sinaloa. The proposed hypothesis is that gender, grade level, and context are related to low academic performance.

Materials and methods

The research employed a quantitative method with a descriptive and correlational scope. The sample was non-probabilistic, consisting of 252 students: 159 women (63.1%) and 93 men (36.9%), who participated freely and voluntarily. This represents a methodological limitation of the research, since the results cannot be generalized to institutions or contexts other than those analyzed. The participating institutions were four high schools of the Autonomous University of Sinaloa (UAS): 80 students from the San Blas Preparatory Academic Unit (31.7%) located in San Blas; 53 from the La Constancia extension (21%), in the community of La Constancia; 42 from the Las Higueras extension (16.7%), located in Las Higueras de los Natoches, all three institutions located in the municipality of El Fuerte; and 77 students from the University City Academic Unit (30.6%) located in Los Mochis, municipality of Ahome. The high schools located in San Blas, La Constancia and Las Higueras are attended by students who live in different rural areas; the students of the Ciudad Universitaria high school live in the urban area.

The technique used was a survey, employing a self-designed questionnaire created in Google Forms. The questionnaire consisted of 150 items, organized into seven sections: 1) general information, 2) academic factors, 3) personal factors, 4) family factors, 5) economic

factors, 6) social factors, and 7) the COVID-19 pandemic. To validate the questionnaire, it was reviewed by four researchers specializing in academic performance, learning strategies, didactics, and research methodology. These experts contributed to content validation by reviewing the items and assessing the relevance and scope of the variables under investigation. Based on their observations, adjustments were made to the instrument. Subsequently, a pilot test was administered to 16 students, who suggested modifications focused on improving the clarity, coherence, and relevance of the items. Finally, a Cronbach's alpha reliability analysis was performed, yielding a value of 0.845.

For data collection, the questionnaire link was distributed to students through official WhatsApp groups managed by tutors or institutional authorities. The questionnaire was administered from April 21 to May 7, 2023. Before completing the questionnaire, an introductory section was included explaining the research objective, the confidential nature of the information collected, and its exclusive use for academic purposes; therefore, participation was completely voluntary and anonymous.

As participants completed the questionnaires, the data were automatically recorded in an online Excel spreadsheet. This data was then exported to Microsoft Excel to validate the information and, finally, to the statistical software for the Social Sciences (IBM SPSS), version 27. The analysis of the data obtained was carried out using univariate descriptive statistics and Spearman correlation tests ($\alpha=0.05\%$) between the variables of academic performance (average of the grades assigned by the teacher), gender (male and female), school grade (first, second and third), school context (rural and urban) and the items corresponding to the seven sections of the questionnaire.

Results

Socio-academic information

36.9% of the student body (93) are in the first year of high school, 44.4% (112) in the second year, and 18.7% (47) in the third year. The lowest recorded age was 15 years and the highest was 19; the mean age was 16.1 years. The majority of students attend the morning shift (196 = 77.8%), and 56 (22.2%) attend the afternoon shift. 11 students (4.3%) from the Las Higueras Extension speak an indigenous language.

The marital status of the parents is as follows: 62.3% married, 16.3% divorced, 9.5% in a common-law relationship, 6% widowed, and 5.8% indicate that their mother is single. They live in their own home (90.9%), in a home borrowed from a relative (4.4%), rent (4.4%),

and live in a shared residence (0.4%). In their families, the most common level of education is high school (45.2% of mothers and 38.9% of fathers), followed by middle school (22.2% of mothers and 20.6% of fathers). Thirteen students (5.2%) responded that they do not have a father and, therefore, do not know his level of education.

Regarding economic level, 52% have a low level (monthly income less than \$11,000), 47.2% a medium level (monthly income from \$12,000 to \$22,000) and only 0.8% a high level (monthly income of \$77,000 or more).

Regarding the academic performance of the students, it is classified into three levels: 1) high, 93 students (36.9%) with average of 10 to 9; 2) medium, 85 students (33.7%) with a rating of 8.9 to 8 and 3) low, 74 students (29.4%) with a rating below 7.9. The average student rating is 8.5, the minimum 5.4 and the maximum 10.

Academic performance

Spearman's correlation analysis ($\alpha=0.05\%$) with very high significance indicates that gender is associated with academic performance (Rho=0.166; p-value=0.008); that is, the female students of the high schools analyzed present a higher academic performance compared to their male peers.

Gender and its relationship to school causes

Female students, compared to male students, tend to submit assignments more regularly and dedicate more time to completing and studying them (Table 1). These characteristics allow them to achieve better academic performance, as they reinforce learning by fostering a better understanding of the subject matter.

Table 1. Correlation between gender and variables of school performance

	Rho	P-value	Significance
Complete tasks	-0.283	0.000	**
Hours spent doing chores	-0.206	0.001	**
Prepare your own notes	0.183	0.003	**
Average	-0.176	0.005	**
Skilled at writing	0.166	0.008	**
Review notes at home	0.160	0.011	*
Probability of finishing high school	0.145	0.021	*
Skilled at reading	0.140	0.026	*
Hours spent studying	-0.129	0.041	*

Source: Own elaboration.

The school-related factors that negatively affect male students' academic performance include a lack of note-taking, which means they lack the necessary materials for extracurricular activities and studying for exams. They also exhibit poor reading comprehension and numerous spelling errors, either because they don't know the correct spelling of many words or because their handwriting is illegible. As a result, the analysis indicates that male students have a low probability of completing their high school studies.

Regarding the teacher's work and gender, the students indicated that some teachers have favorite students (Rho=0.139; p-value=0.027) and that they have felt harassed by the way the teacher looks at them (Rho=0.129, p-value=0.040). These results require priority attention, as they constitute indicators of psychological aggression and gender-based violence within the institutions analyzed, which directly affects the students.

Gender and its relationship to personal causes

In the personal factor (Table 2), Women perceive themselves as more timid and exhibit high levels of stress, anxiety, and depression; however, these variables have not been decisive in harming their academic performance, as they have higher academic performance and feel satisfied with their achievements.

Table 2. Correlation between gender and personal variables

	Rho	P-value	Significance
I'm stressed	0.372	0.000	**
I have anxiety	0.204	0.001	**
I feel satisfied with myself	0.208	0.001	**
I like my body	0.166	0.008	**
I am shy	-0.160	0.011	*
I like the way I am	0.145	0.021	*
I have depression	0.128	0.042	*

Source: Own elaboration.

In another sense, women are not satisfied with their bodies and do not like their way of being, so they are self-conscious about their bodies and personalities; therefore, it may be that female students seek external approval through academic success.

Gender and its relationship to social causes

In the social factor, men are the ones who mostly smoke cigarettes ($Rho=0.210$; $p\text{-value}=0.001$), use vapes ($Rho=0.162$; $p\text{-value}=0.010$), drink alcoholic beverages ($Rho=0.164$; $p\text{-value}=0.009$) and go out to parties ($Rho=0.139$; $p\text{-value}=0.028$).

Gender and its relationship to family causes

Regarding the items related to the family factor, men reported that their families consider them to be bad or very bad students ($Rho=0.161$; $p\text{-value}=0.010$). In contrast, women considered their mother ($Rho=-0.214$; $p\text{-value}=0.001$) and father ($Rho=-0.124$; $p\text{-value}=0.048$) to play a fundamental role as a source of support because they provide them with all the materials they need ($Rho=-0.141$; $p\text{-value}=0.025$).

Furthermore, female students are the ones who assume responsibility for household chores ($Rho=-0.176$; $p\text{-value}=0.005$), which demonstrates the deep-rooted nature of gender stereotypes in a patriarchal culture that assigns domestic tasks to women. However, despite combining educational activities with domestic work, they achieve better academic performance.

Gender and its relationship to economic causes

One notable finding is that women, unlike men, are primarily the ones who perform paid activities in the afternoons during non-school hours or on weekends ($Rho=-0.225$, $p\text{-value}=0.000$); however, this has not been a limitation to achieving good academic performance.

Relationship between grade level and academic performance

Spearman's correlation analysis ($\alpha=0.05\%$) shows a very high significant relationship between school grade and the academic performance variable ($Rho=0.198$, $p\text{-value}=0.002$); that is, first-grade students have lower academic performance and a higher failure rate compared to their second and third-grade peers.

The grade and its relationship to school causes

Third-grade students report a high probability of completing high school ($Rho=-.209$; $p\text{-value}=0.001$), in contrast to first-grade students. First-grade students report a medium (40% to 69%) or low (1% to 39%) perception of their likelihood of finishing high school, as they perceive their grades as low, which increases their lack of confidence in their abilities.

Regarding the work of the teaching staff, first-grade students believe that their teachers are motivated during class, explain things well, enjoy teaching, grade assignments, and are patient; although the first-grade students have low academic performance, they value the teachers positively (Table 3). Therefore, no statistically significant difference was found between low academic performance and the teacher factor.

Table 3. School grade and teaching variables in academic performance

	Rho	P-value	Significance
They are motivated	-0.208	0.001	**
They like to teach	-0.151	0.016	*
They submit the graded assignments	-0.141	0.025	*
They are patients	-0.135	0.032	*
They explain well	-0.132	0.036	*

Source: Own elaboration

academic performance

Spearman's correlation analysis ($\alpha=0.05\%$) does not show a significant relationship between academic performance and the rural or urban context of the schools investigated ($Rho=-0.020$, $p\text{-value}=0.757$).

School context and its relationship with school causes

Table 4 presents the opinions of students from urban areas, who report that they do not like attending high school, dedicate less time to using educational platforms, do not perceive the importance of studying at the upper secondary level, and attend because their mothers or fathers force them to, or because they want to continue receiving the federal government scholarship known as "Benito Juárez." Due to this lack of interest, they get bored in their classes and do not take notes, two negative factors that result in low academic performance.

Table 4. School context and school variables

	Rho	P-value	Significance
I like going to high school	0.268	0.00	**
Perception of the study	0.239	0.000	**
I'm bored with classes	0.208	0.001	**
I prepare my own notes	0.154	0.015	*
I use the platform	-0.149	0.018	*

Source: Own elaboration.

School context and its relationship with teaching causes

Students from urban areas report that teachers assign a large amount of homework, in contrast to students from rural areas; as a result, urban students dedicate more hours to completing assignments (Rho=0.157, p-value=0.013). However, despite the time spent, teachers do not grade the assignments or return them with feedback or comments. This lack of feedback leads students to not perceive the usefulness of extracurricular assignments, which generates disinterest and demotivation in completing them correctly (Table 5).

Table 5. Relationship between the school context and teaching variables

	Rho	P-value	Significance
They grade assignments with notes and observations	-0.218	0.000	**
They provide tutoring outside of class to help students pass the subject	-0.229	0.000	**
They explain well	-0.215	0.001	**
They answer the questions people ask	-0.199	0.001	**
They like to teach	-0.179	0.004	**
They know their class topics well	-0.147	0.020	**
Satisfaction with teacher performance	0.149	0.018	*
They leave a lot of homework	0.129	0.040	*
They instill fear with their comments	0.262	0.000	**
They harass with their comments	0.195	0.002	**
They have favorite students	0.150	0.018	*
They harass with their gaze	0.147	0.020	*
They discriminate	0.137	0.029	*
They insult	0.133	0.035	*

Source: Own elaboration.

Furthermore, the correlation shows that students in urban areas, compared to students in rural areas, express less satisfaction with the work activities of the teaching staff. This is because, in urban settings, assessments of aspects such as answering questions, mastery of the subject matter, enjoyment of teaching, and willingness to offer tutoring outside of class time are expressed with a frequency of "sometimes." In contrast, in rural areas, these

assessments are reported with a frequency of "always," indicating a more positive perception of teaching performance.

Students in urban areas perceive that teachers show favoritism toward certain students, harass them through staring, instill fear with their comments, and even insult and discriminate against them. Given this situation, it is necessary for the school administration to implement training programs, such as courses or workshops, for the teaching staff, with the aim of developing skills that will contribute to building a violence-free institution.

School context and its relationship with personal causes

With a very high statistical significance, it was determined that the highest number of students with visual problems are concentrated in rural areas, as they do not see well and do not use glasses ($Rho = -0.266$; $P\text{-value} = 0.000$). This situation is associated with the lack of medical care in their communities and the lack of economic resources to travel to the city to have vision tests done and acquire the glasses they require.

Rural students exhibit attention deficits ($Rho = -0.160$; $P\text{-value} = 0.011$), in contrast to their urban counterparts, which hinders their concentration and learning process. Therefore, it is crucial that staff, tutors, and counselors identify and address these cases in order to provide the necessary support or refer students to specialized professionals.

School context and its relationship with family causes

With high significance, students from rural contexts believe that their mothers always support them in their studies ($Rho = -0.138$; $P\text{-value} = 0.028$); unlike students from urban areas, who do not feel the support of their mothers; thus, in the rural context there is more family closeness and support from the mother to the students.

School context and its relationship with the Covid-19 pandemic

In rural areas, the COVID-19 pandemic led to a decline in students' learning skills ($Rho = -0.127$; $P\text{-value} = 0.044$) due to a lack of digital skills, electronic resources—such as computers or smartphones—and internet access. Meanwhile, students in urban areas did have these resources, and therefore reported that their academic skills were not affected during the period of online learning.

Discussion

Gender and academic performance

Gender is related to academic performance, as women have better academic performance than men, which coincides with what was reported by Martínez-Vicente *et al.* (2020); Padua-Rodríguez (2019) and Regueiro *et al.* (2015); however, this statement differs from Centeno *et al.* (2019) who indicate that there is no significant difference between gender and academic performance.

The high academic performance of the female students can be explained by their greater participation in school activities (completing homework, studying, and reviewing notes at home) compared to the male students. The frequency of these activities aligns with the findings of Martínez-Vicente *et al.* (2020), who reported that women are more organized than men in carrying out extracurricular tasks. This research argues that the positive effect of these activities lies in the fact that women reinforce the content covered in class, thus facilitating the acquisition of meaningful learning.

The students with the best academic performance mostly have paid employment. This finding aligns with Cervantes *et al.* (2019), who indicate that employment can strengthen skills and does not necessarily negatively impact academic performance. However, this research finding should be contextualized, as the effects of paid work depend on the type of work, the workload, and working conditions, all of which can influence academic performance.

According to Martínez-Vicente *et al.* (2020), parental financial and emotional support is fundamental for achieving higher academic performance. In this sample, girls, who have the highest averages, report greater financial and emotional support from their parents. This support facilitates the consolidation of skills and knowledge acquired in class, which may explain the differences observed in this study.

Although the students reported experiencing stress, anxiety, and episodes of depression, they demonstrated higher academic performance, which aligns with Valladares-Guamán (2022) finding that there is no correlation between depression and academic achievement. One possible explanation is that the students have developed compensatory mechanisms — such as good organization, effort, and persistence in completing tasks and studying — that allow them to employ strategies and skills aimed at mitigating the effects of negative emotions.

Parents often perceive their children as poor students due to low grades stemming from poor academic performance. According to Pérez-Salas *et al.* (2022) and Padua-Rodríguez (2019), this perception can reinforce poor performance. However, from a personal perspective, this negative perception contributes to students internalizing the family's prejudice, reducing their motivation to overcome it and leading them to maintain unfavorable behaviors toward school activities.

This research identified alcohol and nicotine consumption as a factor associated with poor academic performance; students with lower academic performance are those who consume these substances most frequently. This finding aligns with the findings of Lamiña (2024) and Tejada-Rangel *et al.* (2023), who emphasize that these substances affect the central nervous system, limiting cognitive activity and concentration. Therefore, it is important that the institutions studied focus their efforts primarily on male students in order to design comprehensive strategies aimed at improving their academic performance.

Regarding domestic chores, women predominantly perform household tasks compared to male students, which aligns with Ruiz-Ramírez *et al.* (2023)'s finding that female students have deeply ingrained gender stereotypes in their culture. This result reflects an unequal burden of responsibility that limits the time and energy female students can dedicate to schoolwork. Despite this structural inequity, female students manage their domestic, paid, and school-related work—in other words, they have a triple shift—without compromising their high academic performance.

For the reasons mentioned above, women feel more satisfied with their school performance, a result that agrees with the stated by what Martínez-Vicente *et al.* (2020) stated.

Grade level and academic performance

First-year high school students, recent graduates of middle school, have lower academic performance compared to second- and third-year students. This finding aligns with Rodríguez and Guzmán (2019), who identify middle school as the level with the lowest academic performance in a student's academic trajectory. It also concurs with Martínez-Vicente *et al.* (2020), who maintain that low academic performance in the early grades is related to immaturity in cognitive development, difficulty in ignoring distractions, and a lack of awareness of the importance of studying. Furthermore, this research suggests that this result is explained by the transition students undergo when moving from middle school to

high school; during this process, they encounter new educational programs, different classmates and teachers, as well as different methods of assessing learning, which creates a disruption in their academic work patterns. This is compounded by the lack of life goals, as many students do not yet plan their academic or professional future, which contributes to reinforcing their poor performance.

Therefore, it is important to point out that strategies to improve academic performance should be designed, implemented, and evaluated, as a priority, in first-year students at the upper secondary level.

Currently, the Autonomous University of Sinaloa (UAS) offers full enrollment — accepting 100% of applicants — which has resulted in class sizes of up to 40 or 50 students per classroom. This situation places an excessive workload on faculty, who, faced with the diverse learning styles of the student body, find it difficult to provide adequate attention. Consequently, first-year students express feeling neglected, which translates into negative evaluations of their instructors. Although this generates dissatisfaction, the instructor factor was not identified as a cause of low academic performance, which coincides with the findings of Ramos and Roque (2021), who concluded that there is no association between the instructor factor and academic performance. It should be noted that this lack of significant association can be explained by the homogeneity of the faculty in the analyzed context; in this case, the faculty share similar characteristics in terms of professional training, teaching methods, working conditions, and institutional evaluation guidelines. Thus, differences in academic performance do not originate from teaching practices, but are related to students' study habits — such as failure to complete extracurricular tasks, lack of preparation time at home before taking an exam, absence of note-taking, and limitations in reading and writing skills — and to alcohol and nicotine consumption.

School context and academic performance

No correlation was found between academic performance and the rural or urban context of the schools studied. This finding coincides with the study by Valladares *et al.* (2020), who also did not identify an association. However, it differs from the findings of Morales-Oropeza (2022) and Borja-Naranjo *et al.* (2021), who assert that context determines the level of academic performance. Although in this study, the school context did not have a significant direct relationship with low academic performance, an indirect relationship was identified. This is because students in urban contexts lack parental support, and according to Martínez-

Vicente *et al.* (2020) and Padua-Rodríguez (2019), family support positively influences academic performance. Furthermore, students in urban contexts are disinterested, bored in class, and do not take notes; these three factors, according to Serrano *et al.* (2017), negatively affect academic performance. These attitudes can be explained by the absence of a defined life plan, typical of the adolescent stage, in which they do not yet see the importance of education, since their interests are usually oriented more towards social acceptance and cultural consumption than towards academics.

Furthermore, students in rural areas exhibit more visual problems compared to their urban peers, which aligns with Rodríguez and Guzmán (2019), who point out that rural students have limited access to healthcare. Therefore, rural schools should consider this finding because, according to Ramírez *et al.* (2020), visual impairments diminish reading, writing, and learning abilities. From the researchers' perspective, this health problem negatively impacts academic performance because it hinders the accurate perception of written content on the board, especially for students whose learning style is predominantly visual.

Another indirect cause of low academic performance in rural areas is the lack of technological tools — computers or smartphones — and the lack of internet access. This situation limits the development of skills in using educational platforms, which aligns with the findings of Ruiz-Ramírez *et al.* (2023), Martínez and Emynick (2023), and Rodríguez and Rosquete (2019). In contrast, although students in urban areas have greater access to internet connectivity and technological devices, they dedicate less time to using these educational platforms. This finding is important because it demonstrates that the availability of technological resources and connectivity does not guarantee their academic benefit, since these tools are frequently used for social media or online games. Therefore, in rural areas the problem arises from a lack of access to technology and the Internet, while in urban areas it is the inadequate use of these resources. Therefore, it is not enough to close the technological gap; it is essential to promote the development of digital skills in teachers and students that encourage the use of technology for academic purposes.

Conclusions

The stated objective was successfully met because it was possible to establish the relationship between gender, academic level and school context with the low academic performance of students from high schools of the Autonomous University of Sinaloa (UAS), located in the municipalities of El Fuerte and Ahome, in Sinaloa.

The hypothesis that gender is related to academic performance is not rejected, as a statistically significant association between the two variables was identified. In this study, female students achieved higher academic performance than their male peers. This difference is reflected in their greater satisfaction with their school performance and their high expectations for completing high school. Despite facing a triple burden — school, work, and home — these female students achieve better academic results. However, the women in the studied institutions express dissatisfaction with their bodies and their personalities; this suggests that a possible explanation for their academic performance could lie in their search for external validation through academic success.

The hypothesis that there is a relationship between grade level and academic performance is not rejected. This situation can be attributed to the fact that students in the early years of high school are still adapting to upper secondary education. At this stage of development, they tend to exhibit less emotional maturity, lower cognitive performance, and a lack of ability to ignore distractions; these factors influence lower academic performance and, consequently, higher failure rates.

The hypothesis that assumed an association between school context and academic performance is rejected. Academic performance is not directly related to school context, whether rural or urban. However, in each context, variables associated with low academic performance are identified. Students in urban contexts lack parental support, do not perceive the importance of studying, are uninterested in their studies, get bored during classes, and do not take notes. Students in rural contexts have attention deficit, visual problems, and lack access to technological tools.

Based on the findings obtained in relation to each of the variables analyzed, it is important that institutions develop and implement comprehensive strategies aimed at increasing academic performance, especially with male students in the first years of upper secondary school.

Future lines of research

The proposed lines of action include the research, design, application and evaluation of strategies for the development of study habits aimed especially at male students, since they present lower academic performance, in part, due to the absence of adequate study habits.

Furthermore, it is necessary to promote research analyzing the relationship between family factors and low academic performance, since male students report feeling unsupported or unloved by their parents, which may be negatively impacting their academic performance. Therefore, it is crucial to investigate and propose strategies that foster greater parental involvement and support.

also important to investigate gender-based violence-related aggression within educational institutions, which can undermine students' emotional and physical stability and, consequently, lead to poor academic performance.

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