

<https://doi.org/10.23913/ride.v14i28.1940>

*Scientific articles*

***Factores asociados con la satisfacción del estudiantado de  
bachillerato en un colegio militarizado***  
***Factors associated with high school student satisfaction in a militarized  
school***  
***Fatores associados à satisfação de estudantes do ensino médio de uma  
escola militarizada***

**David Fernando Lozano Treviño**

Universidad Autónoma de Nuevo León, Nuevo León, México  
[davidflozano@gmail.com](mailto:davidflozano@gmail.com)

<http://orcid.org/0000-0002-5455-4223>

**Diego Cristóbal Rodríguez Rodríguez**

Universidad Autónoma de Nuevo León, Nuevo León, México  
[diego.rodriguezrdr@uanl.edu.mx](mailto:diego.rodriguezrdr@uanl.edu.mx)

<https://orcid.org/0000-0002-7341-930X>

## **Resumen**

Las instituciones escolares que se preocupan por la satisfacción de sus estudiantes procuran fomentar su éxito académico con el fin de retener o aumentar su matrícula. Con base en esta premisa, el objetivo de la presente investigación fue precisar un concepto de satisfacción estudiantil pertinente a la naturaleza de un colegio militarizado —y su incidencia en el éxito educativo—, así como identificar los factores que predicen dicha satisfacción. Para ello, se diseñó estudio exploratorio, el cual se sustentó en una revisión documental de material científico recolectado en repositorios de acceso libre. Los resultados obtenidos permitieron definir la satisfacción del estudiantado en el contexto del estudio y elaborar un modelo teórico compuesto por ocho factores predictores: académicos, docentes, instructores, personales, institucionales, infraestructura, extracurriculares y vinculación. Además, se identificaron las variables de estos constructos independientes que influyen en la satisfacción del alumnado que cursa el bachillerato en la referida institución.



**Palabras clave:** académico, docente, estudiantes, infraestructura, satisfacción

## Abstract

School institutions concerned with their student satisfaction, to promote the academic success in order to retain, or increase their enrollment. Based on this premise, the purpose of the investigation was to create a concept of student satisfaction, relevant to the nature of a militarized school, -and its impact on educational success- and also to identify the factors that predict this satisfaction. The exploratory study was designed, based on a documentary review of scientific material collected in open access repositories. The results obtained, allowed us to define Student Satisfaction under study and allow us to develop a theoretical model composed with eight main factors: Academic, Teachers, Instructors, Personal, Institutional, Infrastructure, Extracurricular and Connection. In addition, the variables of these independent constructors that affect the satisfaction of high school students from the aforementioned institution were identified.

**Key words:** Academic, teacher, student, infrastructure, satisfaction.

## Resumo

As instituições escolares que se preocupam com a satisfação dos seus alunos procuram promover o seu sucesso acadêmico de forma a reter ou aumentar as suas matrículas. Partindo desta premissa, o objetivo desta investigação foi especificar um conceito de satisfação estudantil relevante para a natureza de uma escola militarizada - e o seu impacto no sucesso educativo - bem como identificar os fatores que predizem essa satisfação. Para tanto, foi desenhado um estudo exploratório, que se baseou em revisão documental de material científico coletado em repositórios de acesso aberto. Os resultados obtidos permitiram definir a satisfação dos alunos no contexto do estudo e desenvolver um modelo teórico composto por oito fatores preditores: acadêmico, docente, instrutores, pessoal, institucional, infraestrutura, extracurricular e conexão. Além disso, foram identificadas as variáveis desses construtos independentes que influenciam a satisfação dos estudantes do ensino médio da referida instituição.

**Palavras-chave:** acadêmico, professor, alunos, infraestrutura, satisfação.



**Reception date:** January 2024

**Acceptance Date:** May 2024

---

## Introduction

According to Souza (2019), the educational quality offered by an institution can be determined from students' perceptions of their achievements and educational experiences, as well as through their opinions about the academic and administrative qualities offered by said educational environment (Álvarez *et al* , 2015; Mancilla *et al* ., 2019). These perceptions are covering pedagogical practices, forms of evaluation in learning units (especially in language and mathematics), participation in civic events, institutional innovation, scientific research, etc. (Avendaño *et al* ., 2016). That is, students evaluate their satisfaction with school services according to their own socioeconomic and cultural needs, as well as their age and gender, for which they take into account whether aspects such as diversity are addressed, whether learning is beneficial to them, whether there are spaces for institutional participation and if they are motivated to achieve success, job placement or the continuity of their higher studies (Méndez-Rodríguez *et al* ., 2022; Sunza -Chan *et al* ., 2021).

For this reason, the measurement of the quality of any educational institution must be carried out constantly, since it varies over time and depending on the environments in which it is located (Romero-Varela and Martínez-González, 2019), since in this way School directors, especially private institutions, can propose strategies that seek to increase enrollment, permanence, and terminal efficiency. For their part, for those who work in public institutions, these actions allow them to access greater budgetary resources and increase indicators such as those mentioned above in private schools (Echeverría-Ramírez and Mazzitelli , 2021).

Indeed, valuing the opinions and expressions of the student body allows decisions to be made to achieve educational quality objectives ( Surdez -Pérez *et al* ., 2018), since this reflects the progress of both institutions and countries in general ( Hernández and Mejías, 2018). Therefore, student satisfaction is a fundamental component (Mancilla *et al* ., 2019; Manrique and Sánchez, 2019), since a satisfied student – be it a child, young person or adult – will be more motivated and will show greater commitment to their activities. (Ramírez and Martínez, 2022), so the school should be the most appropriate place to promote these practices (Muñoz *et al* ., 2013).

In contrast, students who are dissatisfied with school—whether due to poor infrastructure conditions, poor teacher knowledge and training, adverse school environment, or inappropriate school coexistence—will be demotivated, which will negatively affect their learning and, therefore, their progress and that of its environment (Claus, 2018; Souza, 2019).

Now, this research was developed specifically at the “General Mariano Escobedo” Militarized School, in the state of Nuevo León, México (CM), which offers upper secondary and higher education under a militarized modality. This has a technological baccalaureate program in logistics for men and women, with three years duration, where they are trained as warehouse accounting assistants, sports promoters and cultural promoters. In addition, they receive judo training during their school stay; and men fulfill their national military service, while women are volunteer.

At the higher level, students can study engineering in Logistics, Computer Security or Sustainable Development, with a duration of four and a half years. Education is full-time, Monday through Friday from 8:00 am to 5:00 pm, with three hours a day dedicated to physical or civic activities, and they receive breakfast, lunch, and summer, winter, and sports uniforms. Everything is completely free for all the students, provided by Nuevo Leon Government. (Gobierno del Estado de Nuevo León [GENL], 2019).

The goal of the state public institution is to train young leaders, capable of being intellectual leaders and social entrepreneurs in scientific, economic, civic and ecological contexts, both in the entity, in the country and beyond the borders. All students must maintain high honor, discipline and excellence in their work (“General Mariano Escobedo Militarized School” of the State of Nuevo León, México [CM], 2019). In summary, as an institution that seeks excellence and the best possible results both in its financial and mainly, educational indicators, quality assurance and the satisfaction of young people are two of its main purposes (CM, 2019).

According whit the previous context described, it can be indicated that the objectives of this research were to form a concept of satisfaction of high school students relevant to the nature of CM that affects educational success and determine the factors that influence it. To this end, the research question formulated was the following: what is the concept of high school student satisfaction appropriate for CM students, according to its nature? and what components does predict it?

Addressing aspects of educational quality and student satisfaction, in addition to being a priority task (Ruvalcabar and Roblero, 2022), must be carried out before admissions are reduced or budget allocations decrease, which would avoid students' academic failure (Zapata *et al.* , 2016), since educational success is a widely accepted measure as a reflection of quality and satisfaction (Miranda, 2018).

### **The concept of satisfaction**

Satisfaction is an institutional quality that seeks to maximize the value of the product or service for the consumer or user (Álvarez *et al.* , 2015), which is the reason of it is defined as a feeling of joy when the needs are met (Mireles and García, 2022) or as a sensitive reflection that projects a positive state by obtaining something tangible or intangible (Osorio-Álvarez and Parra, 2016). Likewise, it can be considered as the ability to meet the needs, expectations and priorities of users (Mancilla *et al.* , 2019), and is a primary objective of societies that seek growth and development to promote a process of continuous improvement for those who benefit from it. they adopt (Avendaño *et al.* , 2016; Echeverría-Ramírez and Mazzitelli , 2021).

Satisfaction causes a sense of gain in an exchange, as the customer feels that they have received more than they paid for a good or service. This *gap* perceived by the acquirer means that if he feels that he has received more, he perceives that he has won; On the contrary, if you feel that you have received less, you will be dissatisfied (Souza, 2019). Therefore, it can be assured that satisfaction is a vital variable that helps the establishment design organizational strategies for continuous improvement (Báez-Benítez and González-Ruiz, 2017; Surdez -Pérez *et al.* , 2018), hence is a concept widely discussed and propagated by managers, it is mentioned in the missions and objectives of almost all institutions, including those dedicated to education (Avendaño *et al.* , 2016).

In this area, satisfaction is a priority for students in the assessment of school services and, therefore, it is crucial to measure the quality of the teaching-learning process (Mancilla *et al.* , 2019). In addition, characteristics such as innovation, novelty, people's tastes and preferences, and the inclusion of aspects such as diversity, culture, gender and sustainability have also been added as satisfying elements (Romualdo, 2023).

## Satisfaction in school contexts

There are various components that stimulate student satisfaction in educational institutions. Below, they are described by areas to precisely identify the elements that comprise some of these:

a) *Academics*: This component addresses aspects related to study plans, programs and content that will guide student learning. It includes educational plans and programs, study topics, evaluation methods, scientific and research training, group size, teaching materials, sequence of learning units, flexibility of programs, schedules, the availability of subjects, the academic load and the way of delivering activities and tasks, among others (Echeverría-Ramírez and Mazzitelli, 2021; Souza, 2019; Sunza -Chan *et al .*, 2021; Tolentino, 2020; Zapata *et al .*, 2016).

b) *Teachers*: This factor refers to the characteristics of the teaching staff of an educational institution. It includes pedagogical skills, knowledge, level of studies, mastery of topics, updating, promotion of student participation, relationship with students, use of teaching and technological materials, communication skills, attendance and punctuality, general knowledge and the ability to transmit it in class (National Institute for Educational Evaluation [INEE], 2007; Méndez-Rodríguez *et al .*, 2022; Romero-Varela and Martínez-González, 2019).

c) *Personal*. These satisfiers depend directly on the student himself. They include aspects such as self-realization, the sense of belonging, the creation of identity, the interest in success, the ease of relating with colleagues, and participation in institutional decision-making, among others (Álvarez *et al .*, 2015; Heredia *et al .*, 2020; Hernández and Mejías, 2018 ;

d) *Institutional*. They refer to the organizational qualities of an educational institution that distinguish it from others. These may include administrative and admission support services, institutional organization, school norms and rules, tutoring, vocational guidance, administrative processes, the level of bureaucratization, telephone service, updating the website, management of social networks, institutional security, school scholarships, the trust that the institution transmits to students and their parents, school coexistence, work practices among the academic community, recognition of achievements, and the existence of café, breakfasts or school meals, including aspects such as flavors, portions, nutritional variety and



hygiene in preparation (Changotasig and Joza , 2023; Hernández-Rangel and Páramo-Bernal, 2023; INEE, 2007; Méndez-Rodríguez *et al.* , 2022; Ruvalcabar and Roblero, 2022);

e) *Infrastructure*. It refers to the buildings, equipment and services that allow the operation of an educational institution and the teaching-learning process. Among these elements are the buildings, their maintenance, cleanliness and accessibility; the conditions of the classrooms, such as their size, equipment, decoration, ventilation, lighting, sound and temperature; libraries, Internet access, computer rooms, biochemistry and language laboratories, and the sound equipment used in them; practice workshops, sports fields and gyms, common spaces for recreation and rest; the number and condition of toilets, drinking water supply and drainage; the auditorium, the gardening, dining rooms and their equipment (Echeverría-Ramírez and Mazzitelli , 2021; INEE, 2014; Quesada-Chaves, 2018; Miranda, 2018; Souza, 2019; Sunza -Chan *et al.* , 2021).

f) *Extracurriculars*. These activities contribute to the training of students, but are not included in academic plans and programs, which is why they are not necessarily mandatory in some institutions. Among them are cultural, artistic and sports activities, socio-emotional workshops, formation of reading and mathematics groups, participation in civic ceremonies and community services, and attendance at scientific and technological fairs, among others (Álvarez *et al.* , 2015; Avendaño *et al.* al ., 2016; Romero-Varela and Martínez-González, 2019).

g) *Linking*. These actions promote student mobility and establish relationships with other institutions in the educational or productive sector for academic exchanges and job placement. They include dual training programs, organization of conferences, symposiums, colloquiums, institutional dialogues, discussions, and school visits to museums, cultural spaces, artistic events or scientific and technological research centers, among others (Romero-Varela and Martínez-González, 2019).

## Method

The present study was exploratory in nature and aimed to form a concept of satisfaction of high school students relevant to the nature of the aforementioned militarized school (CM). Furthermore, an attempt was made to identify the factors and elements that influence this satisfaction.

To achieve this, first scientific bibliographic material was collected through academic search engines, using descriptors such as “student satisfaction”, “student satisfaction”, “student satisfaction” and “school satisfaction”. 82 documents were located in open access repositories such as SciELO and Redalyc, of which 33 were selected for their relevance in detailing the term school satisfaction, the factors and elements that cause it, and the timeliness of the publication of the article.

Likewise, it was established as a requirement that at least 70% of the bibliography used was not older than seven years, and research that addressed the concept of student satisfaction from a business or purely administrative perspective, rather than from a purely administrative perspective, was excluded. social, educational and personal. Publications more than 10 years old were also eliminated and, in the case of articles that dealt with similar concepts, factors or variables, the most recent ones were selected.

Based on the 33 selected and reviewed works, the term “student satisfaction” was conceptualized in the organizational and school context of the CM, considering exclusively the high school level. In this regard, it is worth remembering that this institution is mixed, militarized and has a full day from 7:00 a.m. to 5:00 p.m., so it has retired civil and military personnel, administrative, teaching, and officers. High school graduates receive free education, food and clothing, carry out three hours of physical activity and instruction daily, participate in social and ecological activities, civic, cultural and sports ceremonies, and perform their military service or volunteer work. The institution seeks to serve mainly young people in situations of social or economic vulnerability.

Based on the above, a theoretical model was proposed that includes the following components: academic, teachers and instructors, personal, institutional, infrastructure, extracurricular and connection, as well as the variables that make up each of these factors.

## Results

Table 1: shows the documented factors that influence student satisfaction in educational institutions, as well as the variables that make up these components.



**Table 1.** Theoretical model

Factor	Variables
Academics	a) Baccalaureate plans and programs, b) job training plans and programs, c) contents of the learning units, d) forms of evaluation, e) civic training (closed order), f) scientific training, g) size of classroom groups, h) size of companies, i) teaching materials used, j) sequence of learning units in job training programs, k) schedule of activities, l) academic load per cycle, m) training load per cycle, n) ways of delivering activities and tasks.
Teachers	a) Teaching skills, b) knowledge, c) degree of studies, d) mastery of the topics taught e) updating, f) encouragement of participation, g) coexistence between teacher and student, h) use of teaching materials , i) use of technological materials, j) ways of communicating in front of the group, k) ways of communicating with each student, l) attendance, m) punctuality, n) general knowledge, ñ) ability to talk about topics of general interest in front of the group.
Instructors	a) Instructional skills of the officers, b) leadership skills of the officers, c) degree of motivation of the officers to the students, d) degree of discipline exercised by the officers, e) knowledge of discipline, f) respect for the students, g) coexistence between officer and student, h) appropriate physical condition.
Personal	a) Self-realization, b) sense of belonging, c) creation of identity, d) interest in success, e) ease of relating to colleagues, f) participation in institutional decision-making
Institutional	a) Administrative services, b) admission or entry to the institution, c) institutional organization, d) school norms and rules, e) tutoring, f) vocational guidance, g) agility in paperwork processes, h) bureaucratization, i) telephone attention, j) updating of the Internet page, k) management of social networks, l) institutional security, m) school scholarships, n) trust in the institution ñ) school coexistence, o) work culture among the academic community, p) recognition of achievements,

	q) cafeteria or snacks, r) food, s) flavors and portions of food, t) variety of dishes, u) hygiene in food preparation.
Infrastructure	a) Buildings, b) maintenance, c) cleaning, d) accessibility, e) classroom conditions, f) space in classrooms, g) equipment in classrooms, h) decoration in classrooms, i) ventilation in classrooms , j) lighting in classrooms, k) sound system in classrooms, l) temperature in classrooms, m) libraries, n) connectivity, ñ) computer rooms, o) biochemistry laboratories, p) language laboratories, q) practice workshops, r) sports fields, s) gym, t) esplanade, u) common spaces for recreation and rest; v) quantity and condition of toilets, w) drinking water, x) drainage, y) auditorium, z) gardening, aa) dining rooms and their equipment.
Extracurriculars	a) Cultural activities, b) artistic activities, c) sports activities, d) socio-emotional workshops, e) formation of reading groups, f) formation of groups for mathematics practices, g) participation in civic ceremonies, h) participation in services community, i) attendance at scientific and technological fairs.
Bonding	a) Participation with other educational institutions, b) participation with companies, c) academic exchanges, d) support for job placement, e) support for the continuity of higher studies, f) participation in the dual training program, g) organization conferences, symposiums, colloquiums, institutional dialogues, or conversations, h) school visits to museums, cultural spaces, artistic events and scientific or technological research centers.

Source: Own elaboration based on documentary review

On the other hand, eight components were proposed.

1. *Academics*: This covered elements related to the education of the students, with 14 variables identified:

- a. High school plans and programs.

- b. Work training plans and programs.
- c. Contents of the learning units.
- d. Forms of evaluation.
- e. Closed order exercises.
- f. Scientific training.
- g. Size of classroom groups.
- h. Size of the companies.
- i. Teaching materials used.
- j. Sequence of learning units in job training programs.
- k. Activities schedule.
- l. Academic load per cycle.
- m. Training load per cycle.
- n. Forms of delivery of activities and tasks.

It should be noted that a variable referring to the sequence of learning units in the baccalaureate program was not proposed because these programs at the upper secondary level in Mexico are established by the Ministry of Public Education at the federal level and all institutions must align with them.

2. *Teachers*: This factor included the following elements that reflect the characteristics of the teaching staff of an institution:

- a. Teaching skills.
- b. Knowledge.
- c. Level of study.
- d. Mastery of the topics taught.
- e. Update.
- f. Encouragement to participation.
- g. Coexistence between teacher and student.
- h. Use of teaching materials.
- i. Use of technological tools .
- j. Forms of communication in front of the group.
- k. Ways to communicate with each student.
- l. Attendance.

- m. Punctuality.
- n. General knowledge.
- o. Ability to talk about topics of general interest in front of the group.

3. *Instructors*: Given that the CM is a militarized institution made up of civilians and soldiers, and the students receive education from both teachers and officers, this third specific component was established for the officers, who in the case of the CM are military personnel in situation retirement. It is made up of eight variables:

- a. Officer training skills.
- b. Leadership skills.
- c. Degree of motivation towards students.
- d. Discipline exercised.
- e. Knowledge of discipline.
- f. Respectfull.
- g. Coexistence between officer and student.
- h. Physical state.

4. *Personal*. It refers to elements in which the student himself must intervene to be covered. This set contains six aspects:

- a. Self realization,
- b. Sense of belonging.
- c. Identity creation.
- d. Interest in success.
- e. Ease of relating to colleagues.
- f. Participation in institutional decision making.

5. *Institutional*. This covers administrative distinctives that differentiate one school from another, and included the following variables:

- a. Administrative services.
- b. Admission or entry to the institution.
- c. Institutional organization.
- d. School rules and regulations.
- e. Tutorials.
- f. Vocational orientation.

- g. Agility in paperwork processes.
- h. Bureaucratization.
- i. Telephone attention.
- j. Update of the Internet page.
- k. Management of social networks.
- l. Institutional security.
- m. School scholarships.
- n. Trust in the institution.
- o. School life.
- p. Work culture among the academic community.
- q. Recognition of achievements.
- r. Cafeteria or *snack services* .
- s. Feeding.
- t. Food flavors and portions.
- u. Variety of dishes
- v. Hygiene in food preparation.

6. *Infrastructure*. It included 28 variables in the theoretical model.

- a. Buildings.
- b. Maintenance.
- c. Cleaning.
- d. Accessibility.
- e. Classroom conditions.
- f. Space in classrooms.
- g. Equipment in classrooms.
- h. Decoration in the classrooms.
- i. Ventilation in classrooms.
- j. I lighting in the classrooms.
- k. Sound system in the classrooms.
- l. Temperature in the classrooms.
- m. Library.
- n. Connectivity.

- o. Computer room.
- p. Biochemistry laboratory.
- q. Language lab.
- r. Practice workshops.
- s. Sports fields.
- t. Gym.
- u. Esplanade.
- v. Common spaces for recreation and rest.
- w. Quantity and condition of toilets.
- x. Drinking water.
- y. Sewer system.
- z. Audience.
- aa. Gardening.
- bb. Dining rooms and their equipment.

7. *Extracurriculars*. It included non-compulsory, but training activities for young people:

- a. Cultural activities.
- b. Artistic.
- c. Sports.
- d. Socio-emotional workshops.
- e. Reading groups.
- f. Mathematics practice groups.
- g. Participation in civic ceremonies.
- h. Community Services
- i. Attendance at scientific and technological fairs.

8. *Bonding*. The following variables that involve student mobility were considered:

- a. Participation with other educational institutions. companies.
- b. Academic exchanges.
- c. Support for job placement.
- d. Support for the continuity of higher education.
- e. Participation in dual training programs.



- f. Organization of conferences. symposiums. colloquiums. institutional dialogues or conversations.
- g. School visits to museums. cultural spaces and artistic events
- h. Scientific or technological research centers.

In short, it is expected that the components detailed in the theoretical model in Table 1 will affect the satisfaction of the CM students, which, based on the theoretical review of this research, is conceptualized as the feeling of joy of the students when perceiving that their educational needs have been met.

## Discussion

The proposed theoretical model included eight factors that are considered to influence the satisfaction of high school students in the CM. In the *academic factor*, elements were found that agree with previous research such as those of Tolentino (2020) and Sunza -Chan *et al.* (2021), who mention that study plans, academic load and schedules are determining factors for student satisfaction. Furthermore, other studies such as those by Echeverría-Ramírez and Mazziretti (2021) add variables such as group size, use of materials and the task delivery system, while Avendaño *et al.* (2016) suggest that scientific practices and exercises are also decisive.

For the *teaching and instructor factors*, the identified variables are aligned with previous research such as those of Álvarez *et al.* (2016), Zapata *et al.* (2016) and Surdez - Pérez *et al.* (2018), which report that characteristics of teachers such as their skills, teaching methods, communication with students and responsibility impact student satisfaction. Other studies such as that of Pacheco (2021) refer to the importance of teacher motivation and leadership, while Mancilla *et al.* (2019) and Méndez-Rodríguez *et al.* (2022) highlight the influence of interactions between teaching staff and students on satisfaction.

Regarding the *personal construct*, the components included in Table 1, are in accordance with previous research such as those of Álvarez *et al.* (2016) and Mancilla *et al.* (2019), which specify that self-realization, the sense of belonging, the search for success and the ease of relating to peers are determinants for student satisfaction. Other studies such as those by Avendaño *et al.* (2016) and Báez-Benítez and González-Ruiz (2017) refer to student participation in institutional issues as an influential factor, while Ortega *et al.* (2022)

conclude that certain personal characteristics of students promote their own enjoyment when attending school.

In relation to the *institutional factor*, the results reflect findings similar to those reported by the INEE (2007), which explains that the ease in the admission processes, the security of the campuses, the institutional planning and organization, as well as the efficiency in the procedures, they impact the student community. Other studies such as those by Surdez -Pérez *et al.* (2018), Tolentino (2020) and Méndez-Rodríguez *et al.* (2022) highlight the significance of administrative services, long opening hours, and the use of institutional social networks to generate satisfaction among students. In addition, it was found that aspects such as trust in school and security are also determining factors (Ruvalcabar and Roblero, 2022; Patrón-Cortés, 2021). In fact, it was identified that breakfast and lunch programs, as well as hygiene in food preparation, also contribute to student satisfaction (Public Health Agency of Catalonia, 2020; Fuentes and Estrada, 2023; Hernández-Rangel and Páramo- Bernal, 2023).

Regarding the satisfaction generated by the infrastructure, the data coincide with those reported by Surdez -Pérez *et al.* (2018), Sunza -Chan *et al.* (2021), Ortega *et al.* (2022) and Cadenillas *et al.* (2023), who detected elements such as classroom equipment, libraries, connectivity, cafeterias, rest spaces, sports facilities and the cleanliness of the institution as satisfiers. Likewise, it was observed that aspects such as accessibility for all areas and basic services such as water, drainage and electricity also influence student satisfaction (Echeverría- Ramírez and Mazziretti, 2021; Pacheco, 2021). Other factors such as the number of bathrooms, their good condition, civic squares and classroom dimensions were also identified as determinants for student satisfaction (INEE, 2014; Claus, 2018).

On the other hand, the elements added in the *extracurricular factor* are assimilated to what was published by the INEE (2007), Álvarez *et al.* (2016) and Heredia *et al.* (2020), who highlighted that participation in cultural and extracurricular activities in general promotes student satisfaction. In this sense, Avendaño *et al.* (2016) and Surdez -Pérez *et al.* (2018) expanded this notion by including activities such as reading clubs and any complementary educational service that contributes to the training of students. In addition, it was observed that the social impact activities in which students participate also stimulate their satisfaction (Mireles and García, 2022).

*linkage* component and its variables within the theoretical model (table 1) align with what was expressed by Romero-Varela and Martínez-González (2019), who indicated that participation in activities that promote student mobility, as well as in events and spaces scientific, artistic and cultural, contributes to student satisfaction.

Finally, regarding the concept of *student satisfaction* at the high school level and in the context of CM—defined in this research as the feeling of joy experienced by students when perceiving that their educational needs have been met—it corresponds with the definitions proposed by Mireles and García (2022) and Surdez -Pérez *et al.* (2018), which consider that it is a state of well-being experienced by young students when they feel that their perspectives on education have been adequately covered by the institution. For their part, Hernández and Mijes (2018) describe it as the cognitive and sensitive appreciation of the student body towards the education received in order to achieve their goals and satisfy their desires and rational expectations. On the other hand, Ramírez and Martínez (2022) conceive it as the result of the educational experience compared to the expectations of the students, while Ruvalcabar and Roblero (2022) simplify it as the academic satisfactions derived from having studied at a specific institution, and they define it as the feeling of pleasure resulting from learning experiences.

## Conclusions

The present study effectively addressed the research question and achieves its stated objective, since a conceptualization of the term *student satisfaction is achieved* within the context of CM, especially at the high school level. Furthermore, through an exhaustive documentary review, a theoretical model was developed that identifies the factors that influence student satisfaction, along with the variables that make up each of these constructs.

The findings obtained highlight several academic aspects that could influence the satisfaction of CM students, which include elements such as high school and job training plans and programs, subject content, evaluation methods, performance of closed-order exercises, the scientific training provided, the size of class groups and companies, the use of teaching materials and the organization of academic activities.

Likewise, it is observed that the characteristics of teachers and instructors are also important factors that could be associated with student satisfaction. These elements group

together skills in teaching or instruction, levels of knowledge and training, mastery of topics, professional updating, encouragement of participation, quality of interaction with students, use of technological resources, attendance and punctuality, as well as the ability of leadership, motivation, discipline and respect demonstrated by instructors and teaching staff.

Regarding the *personal factor*, it can be stated that variables such as self-realization, the sense of belonging, the creation of identity, the search for success, the ability to relate to colleagues and involvement in institutional decision-making contribute significantly to the student satisfaction.

On the other hand, the *institutional factor* also emerges as a possible generator of satisfaction among CM students. This factor includes aspects such as administrative services, admission processes, administrative organization, standards and regulations, tutoring and vocational guidance provided, efficiency in procedures and the level of bureaucracy, telephone service, management of the institutional website and social networks, security, available scholarships, trust and school coexistence, the work culture of the staff, the recognition of student achievements, cafeteria services, food and its components such as taste, portions, variety and hygiene in preparation.

In addition, variables such as buildings and their maintenance; the cleanliness, accessibility, space, conditions, equipment, decoration, ventilation, lighting, sound and temperature of the classrooms; the library, connectivity, computer rooms, biochemistry and language laboratories, workshops, sports infrastructure, civic esplanades, common spaces, the number and condition of toilets, the auditorium, the water supply and The drainage system, the gardens and the dining room, along with their equipment, were grouped in the *infrastructure factor*, which is perceived as a crucial element for student satisfaction.

On the other hand, cultural, artistic and sports activities, socio-emotional workshops, reading and mathematics groups, participation in civic ceremonies and community services, as well as attendance at scientific and technological fairs, considered as extracurricular components, are identified as facilitators of student satisfaction.

In relation to the *linkage factor*, composed of participation with other educational institutions and companies, academic exchanges, support for job placement and the continuation of higher studies, dual training, the organization of events such as conferences, symposiums, colloquiums, institutional dialogues or conversations, and school visits to

museums, cultural spaces, artistic events and scientific and technological research centers are also perceived as elements that influence the satisfaction of CM students.

Finally, the conceptual proposal of *student satisfaction*, based on the theoretical review carried out in this research, adjusts to the nature of the institution and can serve as an indicator to evaluate the degree of satisfaction experienced by students during their secondary education at the CM.

Finally, a limitation of the study was the exploration of the educational work nature of the personnel of the Mexican Armed Forces, who, although they provide their services in a militarized (civilian) and non-military institution, retain many of the characteristics of their culture. active service labor. This made it difficult to determine the variables that make up the *instructor factor* in a civilian environment.

### **Future lines of research**

For future research, it would be advisable to apply an instrument to determine, through statistical analysis, the causal relationship between the latent factors proposed in the theoretical model and the dependent factor called *student satisfaction of the CM* for high school students.

As a recommendation, it is suggested to carry out student satisfaction surveys at the CM on a semiannual or annual basis to identify the aspects that generate dissatisfaction or low satisfaction in order to correct them, as well as strengthen those that contribute to the educational enjoyment experienced by young students of bacculaureate.

## References

- Agencia de Salud Pública de Cataluña (ASPC) (2020). *La alimentación saludable en la etapa escolar*.  
[https://salutpublica.gencat.cat/web/.content/minisite/aspcat/promocio\\_salut/alimentacio\\_saludable/02Publicacions/pub\\_alim\\_inf/guia\\_alimentacio\\_saludable\\_etapa\\_escolar/guia\\_alimentacion\\_etapa\\_escolar.pdf](https://salutpublica.gencat.cat/web/.content/minisite/aspcat/promocio_salut/alimentacio_saludable/02Publicacions/pub_alim_inf/guia_alimentacio_saludable_etapa_escolar/guia_alimentacion_etapa_escolar.pdf)
- Álvarez, J., Chaparro, E. y Reyes, D. (2015). Estudio de la satisfacción de los estudiantes con los servicios educativos brindados por instituciones de educación superior del Valle de Toluca. *REICE Revista Iberoamericana sobre Calidad, Eficacia y Cambio en Educación*, 13(2), 5-26. <http://www.redalyc.org/articulo.oa?id=55138743001>
- Avendaño, W., Paz, L. y Parada-Trujillo, A. (2016). Estudio de los factores de calidad educativa en diferentes instituciones educativas de Cúcuta. *Investigación y Desarrollo*, 24(2), 329-355.
- Báez-Benítez, M. y González-Ruíz, J. (2017). Satisfacción escolar y expectativas motivacionales: estudio exploratorio con alumnos que cursan la preparatoria en Mazatlán. *Revista Electrónica Desafíos Educativos*, 1(2), 1-6. <http://portal.amelica.org/ameli/jatsRepo/151/151886002/html/>
- Cadenillas, V., Álvarez, C. y Castañeda, H. (2023). Diseño de la infraestructura en la prestación del servicio educativo de las instituciones educativas públicas. *Horizontes Revista de Investigación en Ciencias de la Educación*, 7(27), 295-307. <https://doi.org/10.33996/revistahorizontes.v7i27.514>
- Changotasig, A. y Joza, M. (2023). Estrategias educativas y hábitos alimentarios saludables en los estudiantes de sexto año de la U. E. Dr. José Viliulfo Cedeño Sánchez. *Revista Educare*, 27(1), 339-362. <https://revistas.investigacion-upelipb.com/index.php/educare/article/view/1834>
- Claus, A. (2018). *El impacto de la infraestructura escolar en los aprendizajes de las escuelas secundarias*. III Congreso Latinoamericano de Medición y Evaluación Educacional (COLMEE 2018). <https://www.academica.org/agustin.claus/13>
- Colegio Militarizado General Mariano Escobedo del Estado de Nuevo León [CBM] (2019). Plan de Desarrollo Institucional 2019-2024.



- Echeverría-Ramírez, J. y Mazzitelli, C. (2021). Estudio de la percepción sobre los factores institucionales que influyen en el rendimiento académico de estudiantes de la Universidad Estatal a Distancia de Costa Rica. *Revista Electrónica Educare*, 25(2), 1-20. <http://dx.doi.org/10.15359/ree.25-2.18>
- Fuentes, S. y Estrada, B. (2023). Alimentación escolar y educación alimentaria: tendencias recientes en la investigación en América Latina entre 2005 y 2021. *Revista Educación*, 47(1), 1-15. <https://doi.org/10.15517/revedu.v47i1.51724>
- Gobierno del Estado de Nuevo León [GENL] (2019). Ley que Crea al Colegio de Militarizado “General Mariano Escobedo” del Estado de Nuevo León. Pp. 17-37. Gobierno del Estado de Nuevo León. <http://www.nl.gob.mx/aplicaciones/periodicooficialdel estado>
- Heredia, D., Ramos, V., Ordinola, A. y Chuquicusma, M. (2020). Satisfacción de los estudiantes como indicador de calidad en una institución educativa en la ciudad de Piura. *Revista Conrado*, 16(76), 245-253. [http://scielo.sld.cu/scielo.php?script=sci\\_arttext&pid=S1990-86442020000500245&lng=es&nrm=iso](http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S1990-86442020000500245&lng=es&nrm=iso)
- Hernández, Y. y Mejías, A. (2018). Factores que determinan la satisfacción estudiantil en educación superior: análisis de caso en una universidad colombiana. *Ingeniería y Sociedad UC*, 13(2), 162-172.
- Hernández-Rangel, S. y Páramo-Bernal, P. (2023). El comedor escolar como un escenario de aprendizaje: una revisión sistemática. *Cultura, Educación y Sociedad*, 14(2), 49-72. <http://dx.doi.org/http://doi.org/10.17981/cultedusoc.14.2.2023.03%E2%80%A9>
- Instituto Nacional para la Evaluación Educativa (INEE) (2007). Infraestructura escolar en las primarias y secundarias. <https://www.inee.edu.mx/wp-content/uploads/2019/01/infraestructuracompletoa.pdf>
- Instituto Nacional para la Evaluación Educativa (INEE) (2014). *Infraestructura para el aprendizaje y el bienestar de los estudiantes*. <https://www.inee.edu.mx/wp-content/uploads/2018/12/ECEA3-1.pdf>
- Mancilla, A., Ángeles, J. y Orosco, P. (2019). Satisfacción de los estudiantes universitarios con su educación e índice de retención en UICUI. *Integración Académica en Psicología*, 7(21), 71-82. <https://integracion-academica.org/31-volumen-7-numero->

21-2019/252-satisfaccion-de-los-estudiantes-universitarios-con-su-educacion-e-  
indice-de-retencion-en-  
uicui#:~:text=La%20satisfacci%C3%B3n%20de%20los%20estudiantes%20de%20la%20UICUI%2C%20manifiestan%20una,los%20que%20supone%20la%20instituci%C3%B3n

- Manrique, K. y Sánchez, M. (2019). Satisfacción estudiantil universitaria: un referente para evaluar los indicadores de los cursos en línea impulsados por la Coordinación General de Educación Virtual de la UAGro. *Cuaderno Psicología Universitaria*, 16(31), 17-30. <http://dx.doi.org/10.29197/cpu.v16i31.321>
- Méndez-Rodríguez, R., Arellano-González, A., Ríos-Vázquez, N. y Carballo-Mendivil, B. (2022). Influencia de factores personales e institucionales en el rendimiento académico universitario mexicanos. *INNOVA Research Journal*, 7(2), 16-39. <http://revistas.uide.edu.ec/index.php/innova/index>
- Miranda, F. (2018). Políticas de infraestructura educativa y su efecto en el aprendizaje de los estudiantes: un análisis comparado en países de América Latina. *Revista Latinoamericana de Educación Comparada*, 9(13), 154-174. <https://dialnet.unirioja.es/descarga/articulo/6572537.pdf>
- Mireles, M. y García, J. (2022). Satisfacción estudiantil en universitarios: una revisión sistemática de la literatura. *Revista Educación*, 46(2), 1-26. <http://doi.org/10.1551/revedu.v46i2.47621>
- Muñoz, J., Santos, A. y Maldonado, T. (2013). Elementos de análisis de la educación para la alimentación saludable en la escuela primaria. *Estudios Sociales*, 21(42), 206-231. [https://www.scielo.org.mx/scielo.php?script=sci\\_arttext&pid=S0188-45572013000200009](https://www.scielo.org.mx/scielo.php?script=sci_arttext&pid=S0188-45572013000200009)
- Ortega, J., Valencia, N. y Hernández, J. (2022). Factores explicativos de la calidad de la educación media: análisis del caso de Córdoba, en Colombia. *Educar*, 58(1), 221-236. <https://doi.org/10.5565/rev/educar.1455>
- Osorio-Álvarez, M. y Parra, L. (2016). La satisfacción escolar en los estudiantes del primer año de la carrera de Médico Cirujano. *Investigación en Educación Médica*, 5(17), 3-10. <https://doi.org/10.1016/j.riem.2015.08.002>

- Pacheco, N. (2021). Evaluación del impacto de la infraestructura física educativa en la educación. *Ride. Revista Iberoamericana para la Investigación y el Desarrollo Educativo*, 12(e226), 1-34. <https://doi.org/10.23913/ride.v11i22.940>
- Patrón-Cortés, R. (2021). Calidad y satisfacción de los servicios escolares de una institución de educación superior mexicana; la visión de los estudiantes. *RIDE. Revista Iberoamericana para la Investigación y el Desarrollo Educativo*, 12(22), 1-18. <https://doi.org/10.23913/ride.v11i22.870>
- Quesada-Chaves, M. (2018). Condiciones de la infraestructura educativa en la región pacífico central: los espacios escolares que promueven el aprendizaje en las aulas. *Revista Educación*, 43(1), 1-18. <https://doi.org/10.15517/revedu.v43i1.28179>
- Ramírez, J. y Martínez, D. (2022). Las dimensiones de satisfacción estudiantil como predictoras de riesgo de deserción escolar en estudiantes de una universidad virtual. *Revista Internacional de Estudios en Educación*, 22(1), 37-50. <https://doi.org/10.37354/riee.2022.219>
- Romero-Varela, D. y Martínez-González, M. (2019). Satisfactores del desarrollo infantil en contextos de interfase rural-urbana. *Perfiles Latinoamericanos*, 27(54), 1-23. <https://doi.org/10.18504/pl2754-014-2019>
- Romualdo, L. (2023). Análisis de la educación en México: barreras y limitantes para la congruencia, la calidad y la cobertura educativa actual. *Ciencia Latina Revista Científica Multidisciplinar*, 7(1), 4851-4883. [https://doi.org/10.37811/cl\\_rcm.v7i1.4805](https://doi.org/10.37811/cl_rcm.v7i1.4805)
- Ruvalcabar, O. y Roblero, G. (2022). Satisfacción estudiantil con los servicios educativos en una universidad privada del sur de México. *Revista Varela*, 22(62), 164-173. <https://revistavarela.uclv.edu.cu/index.php/rv/article/view/1401>
- Souza, M. (2019). Satisfacción estudiantil con la infraestructura educativa en Sao Luis-Maranhao (Brasil). *Publicaciones*, 49(5), 191-208. <http://doi.org/10.30827/publicaciones.v48i2.8331>
- Sunza-Chan, S., Ramírez, J., Ramírez, J., Sevilla-Santo, D. y Martín-Pavón, M. (2021). Factores institucionales que constituyen barreras para el aprendizaje en estudiantes de bachillerato en Yucatán. *Revista Electrónica de Educación y Pedagogía*, 5(9), 83-99. <https://doi.org/10.15658/rev.electron.educ.pedagog21.11050907>

- Surdez-Pérez, E., Sandoval-Caraveo, M. y Lamoyi-Bocanegra, C. (2018). Satisfacción estudiantil en la valoración de la calidad educativa universitaria. *Educación y Educadores*, 21(1), 9-26. <http://doi.org/10.5294/edu.2018.11.11>
- Tolentino, L. (2020). Cinco factores institucionales que inciden en la producción de las tesis en la Universidad de Lima. *Tradición. Revista de la Universidad Ricardo Palma*, 20, 115-122. <https://doi.org/10.31381/tradicion.v0i20.3529>
- Zapata, A., Cabrera, G. y Velázquez, M. (2016). Factores institucionales incidentes en el rendimiento académico: un estudio de percepción. *Revista de Psicología Universidad de Antioquía*, 8(1), 35-48. <https://doi.org/10.17533/udea.rp.326891>

Contribution Role	Author(s)
Conceptualization	<i>David Fernando Lozano Treviño (principal); Diego Cristóbal Rodríguez Rodríguez (support)</i>
Methodology	<i>David Fernando Lozano Trevino</i>
Software	<i>Diego Cristobal Rodríguez Rodríguez</i>
Validation	<i>David Fernando Lozano Trevino</i>
Formal Analysis	<i>David Fernando Lozano Trevino</i>
Investigation	<i>David Fernando Lozano Treviño (principal); Diego Cristóbal Rodríguez Rodríguez (support)</i>
Resources	<i>David Fernando Lozano Treviño (principal); Diego Cristóbal Rodríguez Rodríguez (support)</i>
Data curation	<i>David Fernando Lozano Treviño (principal); Diego Cristóbal Rodríguez Rodríguez (support)</i>
Writing - Preparation of the original draft	<i>David Fernando Lozano Treviño (principal); Diego Cristóbal Rodríguez Rodríguez (support)</i>
Writing - Review and editing	<i>David Fernando Lozano Treviño (principal); Diego Cristóbal Rodríguez Rodríguez (support)</i>
Display	<i>David Fernando Lozano Treviño (principal); Diego Cristóbal Rodríguez Rodríguez (support)</i>
Supervision	<i>David Fernando Lozano Trevino</i>
Project management	<i>David Fernando Lozano Treviño (principal); Diego Cristóbal Rodríguez Rodríguez (support)</i>
Fund acquisition	<i>Diego Cristobal Rodríguez Rodríguez</i>