



SOCIO DEMOGRAPHIC DATA FROM MIDDLE AND HIGH SCHOOL STUDENTS FROM THE CITY OF SINCELEJO IN COLOMBIA

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ABSTRACT- The database introduced in this article, presents socio-demographic information of a sample of students from the middle and high school level, belonging to 10 educational Institutions from the city of Sincelejo in Colombia. These data generally describe the social, economic, and demographic context in which students coexist, in addition to the academic performance obtained by them at the end of the school year in the mathematics subject. Data was collected through a direct survey. The sample of surveyed students belongs to education grades 6th to 11th, and their ages range from 9 to 20 years. The applied questionnaire consisted of 13 questions related to the age and sex of the students, the socioeconomic conditions of the students and their parents, the places where the students live and whether they were victims of forced displacement in the past, generated by the violence that Colombia has suffered in recent years. This database can be used by other entities or education professionals or government entities, to correlate the students' socio demographic characteristics with their performance in math and determine up to what extent, the social condition of the students influences their academic performance in that subject.

Keywords: Social, economic, demographic characteristics, school performance, mathematics.

I. INTRODUCTION

Achieving academic achievement and social adaptation are primary learning outcomes resulting from schooling. This explains why the potential success of a learner in life is often attributed to his or her capacity for successful learning. The learning of students is a result of many structured activities and several variables can be correlated with how well students perform at school. The social atmosphere of schools, the form of school in terms of ownership and administration and gender are among these influences. The social factor of school shows whether the educational atmosphere is friendly or hostile. The school climate encompasses all facilities, support programs, school policing procedures, and related organized activities for the benefit of students and staff, according to the American Institutes for Research (2019). The atmosphere is comparable to a hidden chain that links all the school's activities in several ways, and all members of the school feel its influence.

Given the impact of the school setting, it is easy to see irrelevant information that hinder students' ability to excel in their studies. For example, there are positive and respectful relationships in a supportive school setting between teachers and students, teachers and teachers, students and students, and students and support staff. There is also less prejudice against students in this type of school who may have such mental, social or academic challenges, such as those with special needs. School community members benefit from comfort, safety and protection. In a positive school setting, excessive opposition, persistent student-to-adult conflict in school, and discontent with all forms of violence are uncommon.

II. RESEARCH METHODOLOGY

Specifications Table

Subject	Education
Specific subject area	Mathematics education

Type of data	Table
How data were acquired	By means of a survey that was applied to the sample of students chosen in each educational institution. Microsoft EXCEL 2015
Data format	Raw and Analyzed data
Parameters for data collection	In order to collect the data, the population under study should be made up of students from Basic Secondary and Middle schools in the city of Sincelejo and whose parents had signed the informed consent in advance
Description of data collection	A sociodemographic survey was applied to a sample of 1288 students, belonging to 10 public and private educational institutions in the city of Sincelejo, Colombia
Data source location	<p>Institution: Universidad de Sucre City: Sincelejo Region: Sucre Country: Colombia</p> <p>Educational institutions: Institución Educativa Simón Araujo Institución Educativa Pre - Universidad Estudiantil Institución Educativa Juanita García Manjarrez Institución Educativa Rafael Núñez Institución Educativa Paulo Freiré Institución Educativa Bethel Institución Educativa San Antonio Institución Educativa Técnico Industrial Antonio Prieto Institución Educativa Rogelio Rodríguez Severiche Institución Educativa El Carmen</p>
Data accessibility	Raw data was deposited in the Mendeley repository as Data, v1, 2020, DOI:10.17632/wjg4hksxm6.1 http://dx.doi.org/10.17632/wjg4hksxm6.1
Related research article	L. Vitola, J. Fera, O. Perna, Classification of Students According to Academic Performance and Socioeconomic Factors in Mathematics Using a Discriminant Multivariate Analysis Technique, International Journal of Applied Engineering Research. Volume 13, Number 18, (2018) 13940-13944. https://www.ripublication.com/ijaer18/ijaerv13n18_75.pdf

Value of the Data

- The database allows showing an overview of the sociodemographic and economic characteristics of the students who are studying for bachelor's degrees in educational institutions in the city of Sincelejo, in northern Colombia.
- The data set is useful for educational institutions, researchers and government entities in charge of managing educational policy in the country.
- The database can be extended to other areas of knowledge such as chemistry, biology, physics, history, geography, languages, among others, by designing a similar questionnaire, through which a relationship between socioeconomic variables can be established and student performance.

- The data provide a basis for future research that may be carried out in other regions of the country or in other developing countries, with sociodemographic characteristics similar to those of Colombia.

Data Description

A survey was designed with questions oriented to the students in order to collect the information, which sought to research the sociodemographic situation of the context in which they live. The raw data file was deposited in the Mendeley data repository DOI: 10.17632/wjg4hkxm6.1 <http://dx.doi.org/10.17632/wjg4hkxm6.1>. Database was made up of 14 variables and 1288 observations, and, out of the 14 variables, 2 were quantitative and 12 qualitative.

Table 1 describes the number of students who were surveyed in each of the 10 educational institutions where the research was carried out. Table 2 shows the name and type of variable (quantitative / qualitative).

Table 1. Number of students surveyed by Educational Institution

Educational Institution	Number of Students Surveyed
Institución Educativa Simón Araujo	155
Institución Educativa Pre - Universidad Estudiantil	131
Institución Educativa Juanita García Manjarrez	143
Institución Educativa Rafael Núñez	274
Institución Educativa Paulo Freiré	56
Institución Educativa Bethel	131
Institución Educativa San Antonio.	54
Institución Educativa Técnico Industrial Antonio Prieto	163
Institución Educativa Rogelio Rodríguez Severiche	91
Institución Educativa El Carmen	90
Total	1288

Table 2. Variable names and variable types

Variable Number	Variable Name	Variable Type
1	Zone Where Student Lives	Qualitative
2	Age of Students	Quantitative
3	Gender of Students	Qualitative
4	Type of Family	Qualitative
5	Social Stratum	Qualitative
6	Displaced by Violence	Qualitative
7	Academic Level from Parents	Qualitative
8	Economic Activity from Parents	Qualitative
9	Housing Tenure	Qualitative
10	Housing conditions	Qualitative
11	Public Services in Housing	Qualitative
12	Number of brothers	Quantitative
13	Family Conflicts	Qualitative
14	Math Performance	Qualitative

Regarding the variable 'Math Performance', as the interest was to observe whether the student passed the subject, the results obtained by the students at the end of the school year were coded as follows:

Considering that a student with a score from 1.0 to 2.9, fails the subject and that a student with a score from 3.0 to 5.0, passes the subject, the coding was as follows:

- If the student obtained a final grade between 1.0 and 2.9, the result was coded with "Failed Math".
- If the student obtained a final grade between 3.0 and 5.0, the result was coded with "Passed Math".

This is illustrated in Table 3:

Table 3. Coding of the Variable: "Math Performance"

Variable Code	Meaning
Performance in Mathematics	Failed Math
Performance in Mathematics	Passed Math

Information on the age of the students who participated in the study is shown in Fig. 1, while in Fig. 2, the gender of the students participating in the study is shown.

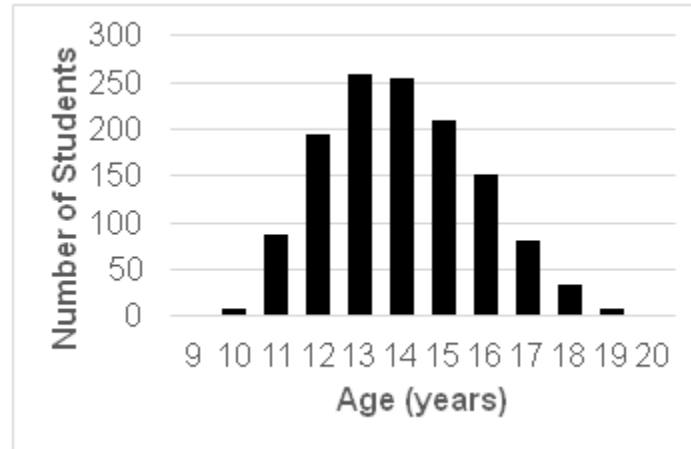


Fig. 1. Age of Students

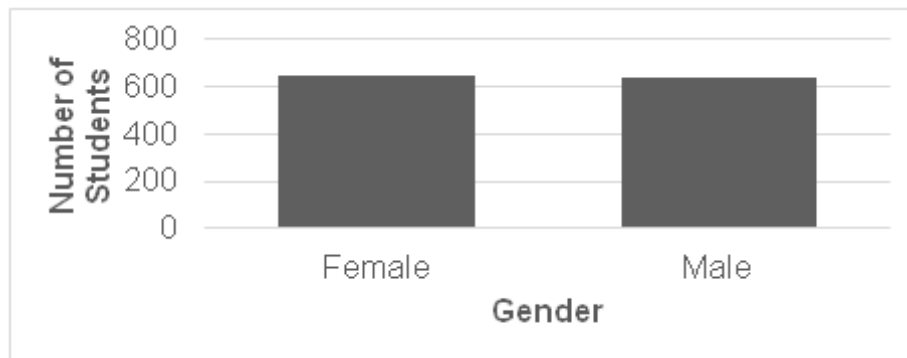


Fig. 2. Gender of Students

Fig. 3 shows the areas where the students currently live and whether they were victims of displacement due to violence. Fig. 4 shows the distribution of the socioeconomic strata of the surveyed students.

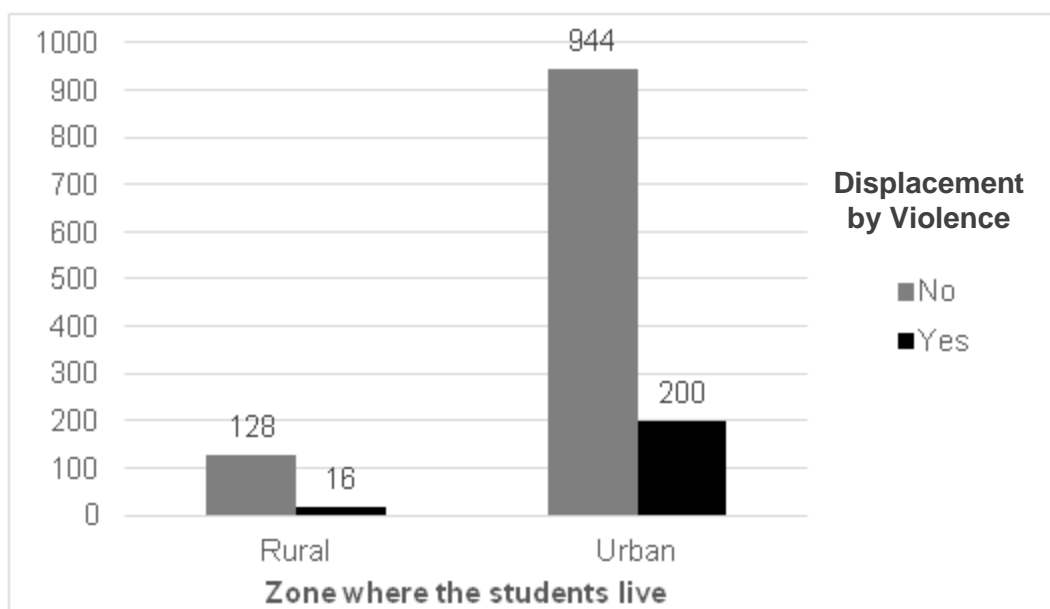


Fig. 3. Place of residence and involvement due to student violence

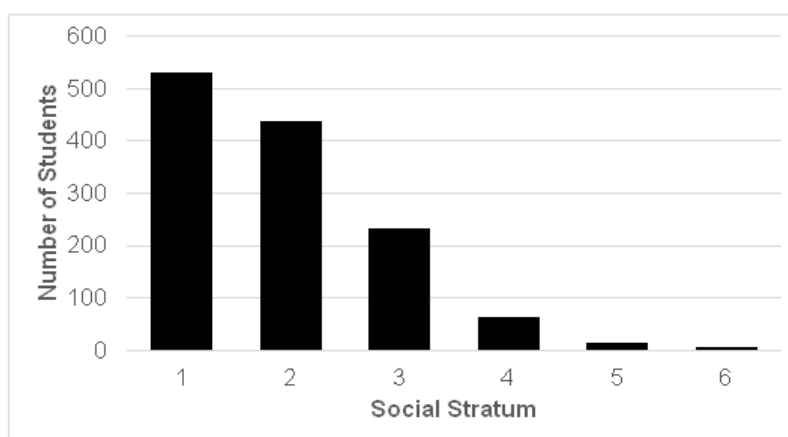


Fig. 4. Socioeconomic stratum

Fig. 5 shows the relationship between the level of education attained by parents and the economic activity they carry out. Fig. 6 shows the percentage distribution of students who passed or failed the math course.

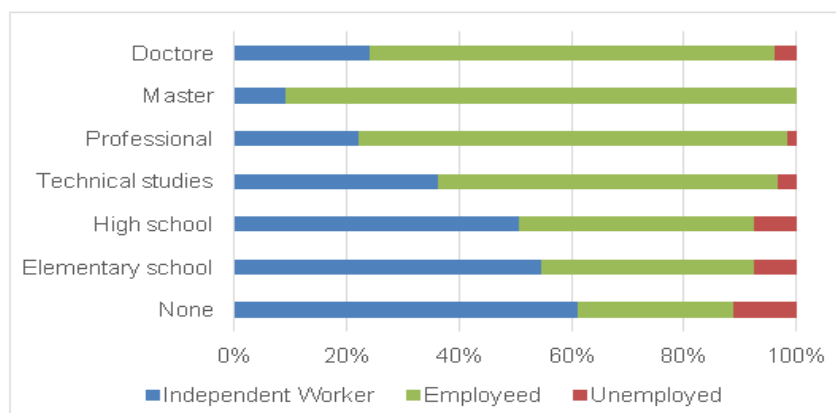


Fig. 5. Education Level vs. Economic Activity of Parents

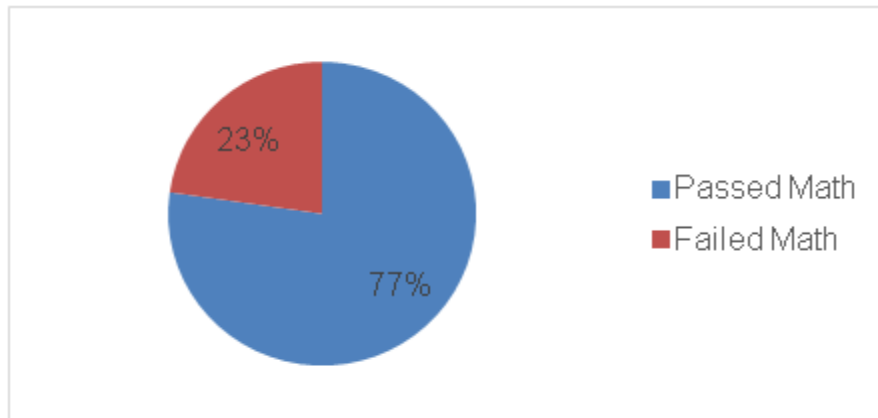


Fig. 6. Student performance in the mathematics subject

III. EXPERIMENTAL DESIGN, MATERIALS AND METHODS

3.1 Ethical Considerations

Ethical approval was granted from the Department of Education and Sciences from the University of Sucre, the principals of the 10 Educational Institutions participating in the study, and the informed consent from the parents and guardians of the students who answered the survey.

3.2 Study Population

The study population was made up of students belonging to the Institutions of Middle and High School Education in the city of Sincelejo. The application of the questionnaire was carried out between months September and December of year 2015.

3.3 Sample

The sample was made up of 1288 students, the students were in elementary and middle school and were in sixth to eleventh grades from the 10 educational institutions participating in the study.

3.4 Information Collection Technique

A direct survey was applied to the students from the selected sample of the 10 educational institutions participating in the study. In this survey, students were asked about their personal, family, and social living conditions in which they developed.

At the end of the school year, the principals from the 10 educational establishments were asked about the final grade in Mathematics obtained by the students who answered the survey.

The objective was to correlate the students' sociodemographic characteristics with their performance in math and determine up to what extent, the social condition of the students influences their academic performance in that subject, as manifested in [1, 2, 3], and in the results of [4, 5].

3.5 Data analysis

A descriptive analysis was made about some students' characteristics, such as age (Fig. 1), gender (Fig. 2), the area where the students live and if they had forced displacement due to violence (Fig. 3), the social stratum to which the students belong (Fig. 4). The level of study and work situation of the parents (Fig. 5) and the performance of the students at the end of the school year in the subject of mathematics (Fig. 6).

ETHICS STATEMENT

Since the population under study was made up of minor students, their parents had to sign an informed consent to which they authorized their children to answer the survey. Once this authorization was granted by the parents and guardians, the survey was applied to the students selected for the sample. The survey has been treated anonymously to protect the identity of the surveyed students and parents.

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DECLARATION OF COMPETING INTEREST

Direct and sole funding was provided by the "University de Sucre" to implement this research project.

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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