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The Relationship of Educational Attainment to the Well-Being of Mexican Households

La Relación entre Nivel Educativo con el Bienestar de los Hogares Mexicanos

Claudia Fabiola Sánchez Cervantes[1]; Erika Ochoa Rosas[2]

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ABSTRACT

Objective: This research aims to demonstrate the effect that access to higher level and better-quality education generates and promotes, primarily for the most disadvantaged sectors. The researchers intend to contribute to the visibility of educational managers, governments, the productive sector, and society in general regarding the path formal education must follow to achieve better well-being for Mexicans. **Justification:** The researchers believe this research highlights the economic benefits of education and the overall well-being of individuals within Mexican society. **Methodology:** The researchers employed a quantitative, relational, and transversal methodological approach. They used association tests to investigate the relationship between income, access to health, food consumption habits, and type of housing with the achieved level of formal education. The researchers collected data from the 2020 National Household Income and Expenditure Survey and the 2020 National Survey of Victimization and Perception of Public Safety. They determined the sample size to be 8,660 observations. **Results:** The results indicated no significant correlation contrary to the human capital theory. However, the opposite may be true, necessitating a redirection of opportunity strategies in Mexico to ensure more people have access to quality education. Conclusions: A higher educational level entails perceiving the individual and social benefits that the economics of education theory establishes.

KEYWORDS: Economy, education, inequality, management, opportunity.

RESUMEN

Objetivo: En esta investigación pretende mostrar el efecto que genera y promueve el acceso a la educación de mayor nivel y mejor calidad principalmente a los sectores más desfavorecidos para contribuir en la visibilizarían de gestores educativos, gobiernos, sector productivo y sociedad en general, sobre la ruta que debe seguirse desde la educación formal para lograr mejores niveles de bienestar en los mexicanos. **Justificación**: el impacto de esta investigación plantea no solo la parte económica como beneficio del nivel educativo sino un bienestar global de los individuos que conforman la sociedad mexicana. **Metodología**: A partir de un enfoque metodológico cuantitativo, relacional, transversal. Se emplearon pruebas de asociación para indagar la relación entre: ingreso, acceso a la salud, hábitos de consumo alimenticio y tipo de vivienda con el nivel educativo formal alcanzado; los datos se recogieron de la Encuesta Nacional de Ingresos y Gastos de los Hogares 2020 y la Encuesta Nacional de Victimización y Percepción sobre Seguridad Pública 2020. El tamaño de la muestra se determinó en 8,660 observaciones. **Resultados:** reflejaron que al contrario de lo que propone la teoría del capital humano no hay significancia, pero si hay al revés se requiere redireccionar estrategias de oportunidades en México para lograr que más personas tengan acceso a la educación de calidad **Conclusiones**: A mayor nivel educativo conlleva poder percibir los beneficios individuales y sociales que la teoría de la economía de la educación establece.

PALABRAS CLAVE: Economía, educación, desigualdad, gestión, oportunidad.

[1] Doctora en Gestión de la Educación Superior (DGES). **Universidad de Guadalajara, Jalisco, México**. E-mail: fabiola.sanchez@live.com.mx. ORCID: 0000-0001-7941-9581

[2] Posdoctorado en la Universidad de Guadalajara por CONAHCYT, Doctora en Investigación e Innovación Educativa (DIIE). **Benemérita Universidad Autónoma de Puebla, Jalisco, México**. E-mail: ochoarosaserika@gmail.com. ORCID: 0000-0002-7489-4321

1.- INTRODUCCIÓN

This research highlights the economic benefits of education and the overall well-being of individuals within Mexican society. Its objective was to demonstrate the effect generated by access to higher level and better quality education, primarily for the most disadvantaged sectors. The researchers aimed to contribute to the visibility of educational managers, governments, the productive sector, and society in general regarding the path that should be followed from formal education to achieve better levels of well-being for Mexicans.

At the same time, the researchers sought to demonstrate the importance of the educational level as a determinant of human development and highlight the conditions afflicting Mexicans, such as inequality, poverty, inequity, and insecurity. Their goal was to reduce youth dropout rates, encourage more academics or teachers to reflect on and motivate their students to reach higher educational levels, and foster greater understanding among those who decide to invest in resources and educational spaces for the population.

For this reason, the research question is: ¿What is the relationship between educational level and economic income, access to health, food consumption habits, type of housing, and levels of insecurity in Mexico between 2018 and 2020?

It should also be mentioned that researchers currently consider the increase in intangible goods such as knowledge as an engine for the economic development of nations. This is why education has become a fundamental tool for the generation of social well-being. In other words, researchers believe that the higher the educational level of a country's citizens, the greater the country's capacity to produce well-being for its entire population.

This, in contrast, is due to the premise that economic growth in nations leads to better individual incomes, lower levels of inequality, and a reduction in inequity. This is because researchers believe that economic growth, when coupled with sound political decisions, can enable nations to make more goods and services, such as health, food, security, and employment, available to all people (CEPAL, 2024).

Regarding the region of Latin America and the Caribbean, since 2015, researchers observed a deterioration in well-being levels, characterized by a stagnation in the progress of educational achievements and a rise in poverty. The effects of the COVID-19 pandemic further exacerbated this unfavorable climate (CEPAL, 2022a). This consequently generated a social crisis in which many people lost their jobs, and the quality of education was significantly reduced. Researchers observed a high level of educational abandonment. The difference in attention paid to students enrolled in public and private institutions became evident, which widened the gap in terms of knowledge acquisition between those who were enrolled in public institutions (generally the least advantaged) and those who continued to receive education in private education institutions (the most favored) (CEPAL, 2022c).

It should be noted that some of the percentages that CEPAL presents are as follows: adults with low educational attainment cared for 55% of girls, boys, and adolescents in poverty, and 62%

lived in homes without an Internet connection. Of the affected population, 44% had low income, compared to 29% with medium-low income (CEPAL, 2022b).

It should also be added that researchers found that the percentage of the population affected by poverty decreased as income increased. Latin America's poverty rate was 32.3% of the population in 2021, only 0.5% lower than in 2020. Extreme poverty remained practically stable at 12.9% and 13.1% for 2020 and 2021, respectively. Researchers found that extreme poverty occurs primarily in the population residing in rural areas, followed by households whose head of family has incomplete primary school education. Conversely, households with a head of family with completed tertiary education have the lowest poverty levels (CEPAL, 2022d).

An important consideration is that employment recovery occurred essentially through informal employment, which represents a high risk of falling into poverty in the face of the current inflationary panorama in the region. It has a more significant impact on the social well-being of the population. However, in the region, researchers found that employment opportunities are scarce and unequal, which can be explained by considering the differences in educational levels achieved by the population.

In the Mexican case, in 2021, 9.2% of the population was in extreme poverty and 37.4% in poverty. By educational level, 45% of the poor over 25 have incomplete primary school, 26% complete secondary education, and 7% have tertiary education. Complete. Approximately half of people in poverty are under 18 years of age. In general numbers, 96.1% of the population had completed primary education, while the population with completed secondary education was 88.6%; only 58.7% had completed upper secondary education, and 30% had completed higher education. Opportunities for access to schooling present a higher gap when compared by income level groups and between Indigenous and non-indigenous young people residing in urban areas compared to rural areas (CEPAL, 2022b).

The indicators reflect that people in poverty and with a lower educational level are most affected concerning access to Information and Communications Technologies (ICT), health, and critical deprivation in essential housing services. In Table 1, we show the percentage of ICT users by socioeconomic stratum for the year 2021, which confirms that in Mexico, the population of the socioeconomic strata, low and medium-low, is the one that had the least access to ICT (INEGI, 2022).

Table 1. Percentage of Information and Communications Technology Users by Socioeconomic Stratum in 2021

Socioeconomic Stratum	Percentage of Computer Users	Percentage of Internet Users	Percentage of Cellular Telephone Users
Low	13.5	52	60.1
Medium-low	34.9	77.7	80.2
Medium-high	52.9	86.8	86.7
High	71.2	92.2	90
National	**37.4**	**75.6**	**78.3**

Source: INEGI. National Survey on Availability and Use of ICT in Homes, ENDUTIH 2021.

Concerning what the National Housing Commission (CONAVI, 2024) proposes, it considers a population in critical deprivation in essential services to have at least one of the following characteristics: The first of them is the material of the apartments. The house is made of land. The second is the material of the roof of the house, whether it is cardboard or waste. The third is the material of the house's walls, whether made of mud or Bajareque; reed, bamboo, or palm; cardboard, metal, asbestos sheet; or waste material. The room is the number of people living per room (overcrowding), which is more significant than 2.5. The fifth is that the water obtained from a well, river, lake, stream, or pipe, or the piped water can be obtained by hauling it from another home or the public tap or hydrant. The sixth is that they do not have a drainage service, or the drain has a connection to a pipe that leads to a river, lake, sea, ravine, or crevice. The seventh is that they do not have electricity; finally, the eighth is the fuel used to cook or heat food, firewood, or coal without a chimney (CONEVAL, 2022).

Concerning this context, the United Nations Development Program (UNDP) of the United Nations Organization (UN, 2024) proposes seeking balanced development between social, economic, and environmental sustainability to end poverty, protect the planet, and guarantee that by the year 2030. It requires that financial resources, creativity, knowledge and technology be available, attached to a human development approach. In terms of citizens can be and do what they want or decide, but these choices are not limited by the conditions of the country (United Nations Development Programme, 2021).

In this sense, the structure of this article includes an introduction with a brief explanation of the researchers' motivation for conducting this research. The research aims to demonstrate the effect generated and promoted by access to a higher level and better quality education, primarily for the most disadvantaged sectors. The researchers intend to contribute to the visibility of educational managers, governments, the productive sector, and society in general regarding the path that must be followed from formal education to achieve better levels of well-being in Mexicans. The introduction also includes some background information on relevant organizations and institutions.

Subsequently, the theoretical foundation of the economics of education and the human capital, the quantitative methodology, the results with their corresponding tables, the most representative conclusions, and the bibliography in order to enrich, facilitate, and clearly convey it to the reader.

2.- THEORETICAL FRAMEWORK

In the middle of the 20th century, there was a boom in the development of studies. These studies presented education as an investment good that has a multitude of effects on the individual and society. The theoretical support is based on the theory of human capital, which can be classified from two approaches: the first emphasizes the private monetary effects of education, represented

by the Mincer model (Mincer, 1958), and the second focuses on the non-monetary effects of education. Researchers also raise these elements from the theory of the economics of education since it covers different aspects of education. Therefore, this research highlights the importance of these interconnected theories.

Continuing with the background of the theory of capital in the 1960s, Schultz (1972) proposed that economic growth and, therefore, a better quality of life could be determined by the knowledge and experience individuals acquire. Schultz (1972) mentions that people contribute to the wealth of nations as they invest time and resources in acquiring skills and knowledge that lead them to be more productive. This training process should be understood as an investment since it results from resource allocation, known as "human capital." The theory of education proposes this concept from both an individual and a macro perspective. From an individual perspective, it emphasizes that people strive to train themselves academically and prepare for the world of work. From a macro perspective, it views human capital as an improvement in institutions or companies that affects economic issues in society, in this case, Mexican society (Vitale, Fernández & Cabrera, 2020).

It should also be mentioned that, according to the theory of human capital, people invest in more education and vocational training, which coincides with the theory of the economics of education and is a point to emphasize in this research. Therefore, it is considered that the individual presents a rational behavior in which he conceives the benefits of the return on investment in a given time, thus becoming an agent of economic growth (Schultz, 1961). In other words, the theory of human capital assumes that acquiring knowledge and skills positively affects the improvement of the individual's quality of life and is, therefore, essential to promoting greater well-being.

In a bibliographic review on the term “human capital,” it is found that the production of 236 documents between the years 1989 and 2023; the increase in research production began in 2005; by country, the one that has contributed the most is Spain, followed by countries in the Latin American region; The United States of America occupies the fifth place. Of the total number of documents, only 3% shows empirical evidence that allows us to reflect and establish conclusive results about the relationship between human capital and other socioeconomic variables (Lu & Wu, 2023).

Studies shows that countries with a high level of human capital exhibit the highest values in terms of health (Pérez & Castillo, 2016). Researchers have found an inverse relationship between educational level and malnutrition (Jiménez, Rodríguez & Jiménez, 2010). Similarly, studies demonstrate a relationship between human capital and the satisfaction of basic needs, such as housing and health (Mayer & Ramírez, 2011). Research has shown that violence negatively affects the process of human capital accumulation and consequently economic growth (León, 2016). Therefore, it is possible to infer that human capital is positively correlated with health, food, and housing variables, and negatively correlated with the rate of violence. In other words, researchers conclude that higher levels of human capital are associated with lower levels of violence.

In the same way that it is proposed in the theory of economics, where the academic training of individuals leads to raising their quality of life and consequently having better health, it improves

their individual, family, and social context, economically and not only in that. However, their perception of happiness changes due to the values that they acquire during academic training, so the long-term investment in education is favorable, but we must recognize that although it is a universal right, it is not available to everyone, as we can see in this research (Leyva & Cárdenas, 2002).

That is why all these theories consider education as the accumulation of knowledge, training, qualifications and experience, as a determinant in the improvement at the individual level of: income, level of health, level of satisfaction; greater capacity for making consumer decisions; better chances of accessing better-valued jobs; greater social status and prestige; and lower chances of unwanted pregnancies. At a social level, it has been shown that education is decisive in reducing crime, improving the quality of democracy, greater stability of social structures, improving technological research and development capacity, widespread improvement in population health, and environmental benefits (Cordero, Gil & López, 2021).

However, some of the limitations regarding the theory of human capital and the theory of economics of education are as follows: Researchers argue that these theories do not consider the innate abilities of individuals, and that some people have few or no opportunities to reach basic levels of schooling or complete their academic careers. Another relevant aspect that these theories do not consider is that unemployment rates are lower and less prolonged for individuals with a higher educational level. However, researchers recognize that there are various factors that influence the positive effects of individual and social conditions.

This research aims to demonstrate the effect that access to higher level and better-quality education generates and promotes, primarily for the most disadvantaged sectors. The researchers intend to contribute to the visibility of educational managers, governments, the productive sector, and society in general regarding the path that must be followed from formal education to achieve better levels of well-being in Mexicans, and with this in the future, implement programs or strategies derived from public policies to reduce this problem.

3.- METHOD

In this research, we propose an empirical, transversal, associative research based on the quantitative method as a methodological strategy for establishing the relationship between the educational level and the well-being of Mexican households. The sample size is determined by 8,660 observations, which resulted from grouping the selected variables that constitute the dimensions income, health, food, housing, and violence.

Therefore, for this research, we obtained data from the National Survey of Household Income and Expenses (ENIGH), a survey that the National Institute of Statistics and Geography (INEGI, 2021a) publishes biannually. The latest available version of ENIGH is the 2020 series that was carried out from August 21 to November 28, 2020. For the violence factor, we considered data from the National Survey of Victimization and Perception of Public Security (ENVIPE) 2020, an

annual survey. To have temporal correspondence between the data, we used the year 2020 (INEGI, 2021b).

The considered the educational level as an independent (exogenous) variable in the ENIGH 2020 and ENVIPE 2020 surveys. The educational level variable was categorized differently; therefore, we coded and segmented both databases to have information on the people grouped into nine educational levels, as shown in table 2. For the purposes of this research, we did not consider responses for educational level equal to "not specified" and omitted "technical career with secondary school finished" reported by ENVIPE 2020 but not ENIGH 2020 (INEGI, 2021c).

Table 2. Classification of the Independent Variable

Independent Variable	Classification
educational level	Ordinal {0= None 1= Preschool 2=Primary 3= Secondary 4= Preparatory or Baccalaureate 5= Normal 6= Technical Career 7= Bachelor's or Professional 8= M Master's or Doctorate}

Source: Own elaboration, 2025.

The considered the dependent variable the well-being of Mexican households, which consists of five dimensions: income, health, food, housing, and violence. We operationalized each of these dimensions of analysis into indicators that we observed in the ENIGH and ENVIPE 2020. In table 3, we show the indicators that make up each dimension (INEGI, 2019).

The ordinal variables are quarterly income, wall material, roofing material, flooring material, water supply, drainage, availability of electrical energy, and fuel. We categorized these indicators with a value of one for the lowest level. For example, we categorized the quarterly income indicator as an ordinal variable into four groups of the same amplitude ($1,646,902.50). We considered all the data ranging from the minimum ($0.00) to the maximum quarterly income ($6,587,610.00). At level 1, we considered those with the income level of $0.00 to $1,646,902.50; level 2 from $1,646,902.50 to $3,293,805.00; level 3 from $3,293,805.00 to $4,940,707.50; and level 4 from $4,940,707.50 to $6,587,610.00. The nominal indicators are: health problems, health care, lack of food in your home due to lack of money; some adult in the home stopped having breakfast, lunch, or dinner due to lack of money or resources; and crimes of which they were a victim.

Table 3. Classification of the dependent variables

Dimension	Variable	Classification
Income	Quarterly income	Ordinal {1= from $0.00 a $1,646,902.50 2= from $1,646,902.50 a $3,293,805.00 3= from $3,293,805.00 a $4,940,707.50 4= from $4,940,707.50 a $6,587,610.00}
Health	Health problems	Nominal Dichotomous {1=Yes; 2=No}
	Health care	Nominal Dichotomous {1=Yes; 2=No}
Food	Lack of Food in Your Home Due to Lack of Money	Nominal Dichotomous {1=Yes; 2=No}
	Any Adult in the Home Stopped Having Breakfast, Lunch, or Dinner Due to a Lack of Money or Resources	Nominal Dichotomous {1=Yes; 2=No}
	Any Minor Under 18 In The Home Went To Bed Hungry Due To Lack Of Money Or Resources	Nominal Dichotomous {1=Yes; 2=No}
Dwelling	Wall Material	Ordinal Polyatomic {1= Waste material; 2= Cardboard sheet; 3= Asbestos or metal sheet; 4= Bamboo reed or palm; 5= Embarro or Bajareque 6= Wood; 7= Adobe; 8= Partition, brick, block}
	Roofing Material	Ordinal Polyatomic {1= Waste material; 2= Cardboard sheet; 3= Metal sheet; 4= Asbestos sheet; 5= Fiber cement sheet; 6= Palm or straw; 7= Wood or shingle;

		8= Terrace or beams; 9= Tile; 10= Concrete slab or joists with vault}
	Flooring material	Ordinal Polyatomic {1= Earth; 2= Cement or firm; 3=Wood, mosaic or other covering}
	Water Supply	Ordinal Polyatomic {1= Occasionally; 2= Once a week; 3= Every third day; 4= Twice a week; 5= Daily}
	Drainage	Ordinal Polyatomic {1= Does not have drainage 2= A septic tank; 3= A pipe that leads to a ravine or crack; 4= A pipe that goes to a river, lake, or sea; 5= The public network}
	Electricity availability	Ordinal Polyatomic {1= It does not have electric light; 2= From a particular plant; 3= Solar panel; 4= Public service}
	Fuel	Ordinal Polyatomic {1=Firewood; 2= Coal; 3= Tank gas; 4= Natural or pipeline gas; 5= Electricity; 6= Other fuel}
Violence	Crimes of which he was a victim	Nominal Polyatomic {1= Theft; 2= Paint of fence or graffiti; 3 = Fraud; 4= Threats; 5= Injuries;

6= Kidnapping;
7= Harassment or attempted rape;
8= Rape;
9= Not specified}

Source: Own elaboration, 2025.

Downloaded the data set "Section 3 of the main questionnaire" from ENVIPE, containing 314,324 observations, to structure the database. We segmented the file for each established educational level and identified the "Sex" and the "Person Identifier," consecutive numbers for each respondent. We eliminated the missing data and obtained the database [Extraction1] with 297,972 observations and three variables (ENVIPE, 2023).

From the ENVIPE data set's "Victimization Module," we recoded the variable "Crimes of which the victim was a victim." The selected the cases that correspond to the "Person Identifier" of the 297,972 observations, the variables "Sex & Educational level," eliminating missing data and duplicate values. We obtained a database of 27,903 and 4 variables (ENVIPE, 2023).

Entered the data set "Sociodemographic characteristics of household members" of the ENIGH 2020. We verified the coding of the variable "Educational level" and selected the variables "Health problems" and "Health care." We eliminated the lost data and obtained a database to find the coincidence between the educational level and the sex determined in the previous step. We extracted the "Housing file" and the "Number of residences" identifying the respondent.

This reduced the sample to 23,200 cases. With these data, we summed the quarterly income of each respondent from the data set: "Income and financial and capital perceptions of household members." This reduced the sample to 8,860 observations, which we searched in the sets: "Characteristics of the homes inhabited by the members of the household" and "Characteristics of the homes inhabited by the members of the household" to obtain data on the selected variables (ENIGH, 2020).

By the sample size, we performed the Kolmogorov-Smirnov normality test using the SPSS-25 program (IBM, 2025). Then, we performed the Chi-square association test, which allowed us to identify the variables that were dependent. Finally, we performed the Crammer and Lambda V intensity and direction tests for the nominal variables and the Gamma and Somers D tests for the ordinal variables (DATAtab Team, 2025a).

4.- RESULTS

The results of the normality test show that none of the variables have normal behavior, since in none of the cases the significance value is greater than 0.05, as shown in table 4. Therefore, the normality tests the association to which we proceed must be non-parametric tests; therefore, we performed a Chi-square association test (DATAtab Team, 2025b).

Table 4. Results of the Kolmogorov-Smirnov normality test

Variables	Indicators	Significance
Quarterly income	1*	0
Health problems	Yes	0
	No	0
Health care	Yes	0
	No	0
Quarterly income	1*	0
Health problems	Yes	0
	No	0
Health care	Yes	0
	No	0
Lack of Food in Your Home Due to Lack of Money	Yes	0
	No	0
Any Adult in the Home Stopped Having Breakfast, Lunch or Dinner Due to a Lack of Money or Resources	Yes	0
	No	0
Any Minor Under 18 In the Home Went To Bed Hungry Due To Lack Of Money Or Resources	Yes	0
	No	0
Wall Material	Waste Material	0
	cardboard sheet	0
	Asbestos or metal sheet	0
	Bamboo reed or palm	0
	Embarro or Bajareque	0
	Wood	0
	Adobe	0
	Partition, brick, block	0
Roofing Material	Waste Material	0
	cardboard sheet	0
	Asbestos or metal sheet	0
	Bamboo reed or palm	0
	Embarro or Bajareque	0
	Wood	0
	Adobe	0
	Partition, brick, block	0

Flooring Material	Earth	0
	Cement or firm	0
	Wood, mosaic or other covering	0
Water Supply	Diary	0
	Every third day	0
	twice a week	0
	once a week	0
	From time to time	0
Drainage	The public network	0
	a septic tank	0
	A pipe that leads to a ravine or crack	0
	A pipe that leads to a river, lake or sea	0
	It has no drainage	0
Electricity availability	Of public service	0
	From a particular plant	0.018
	solar panel	0.055
	From another source	0
	It does not have electric light	0
Fuel	Firewood	0
	Coal	0
	tank gas	0
	Natural or pipeline gas	0
	Electricity	0
	Other fuel	0
Crimes of which he was a victim	Heist	0
	Paint fence or graffiti	0
	Fraud	0
	Injuries	0

	Kidnapping	0
	Harassment or attempted rape	0
	Rape	0.001
	not specified	0

Source: Own elaboration, 2025. Note: *There are no valid cases for Educational Level when Quarterly Income = 3,000. Statistics cannot be calculated for this level. Educational level is constant when Income = 4.00. It has been omitted.

Theoretically, in the Chi-square test, if the p-value is less than 0.05, we reject the hypothetical assumption of independence at a 95% confidence level. According to the results of the Chi-square test, which we show in Table 5, we can confidently assert a significant relationship between the variables and the educational level. Regarding the income dimension, we observe that the result of the Chi-square test slightly exceeds the critical value. However, given the small difference, we decided to consider it.

Table 5. Results of the Chi-square association test

Variables that are considered associated with Educational Level	Significance
Quarterly income	0.060
Health problems	0.000
Health care	0.000
Lack of food in your home due to lack of money	0.000
Has any adult in the home stopped eating breakfast, lunch or dinner due to lack of money or resources	0.000
Any minor under 18 years of age in the home went to bed hungry due to lack of money or resources	0.000
Wall material	0.000
Roofing material	0.000
Flooring material	0.000
Water supply	0.000
Drain	0.000
Availability of electrical energy	0.005
Fuel	0.000
Crimes of which he was a victim	0.000

Source: Own elaboration, 2025.

Once we demonstrated statistically significant associations with the Chi-square test. Subsequently, we employed Cramer's V test to determine the association intensity among nominal variables and the Lambda test to establish the directionality of these associations (IBM, 2024).

Table 6 presents the results of the Cramer's V test. These results indicate that the variables exhibiting the strongest association with Educational Level are: Lack of food in their home due to lack of money (0.129), instances where an adult in the home skipped breakfast, lunch, or dinner

due to lack of money or resources (0.129), and occurrences where a minor under 18 years of age in the home went to bed hungry due to lack of money or resources (0.129). However, these associations are considered low, as moderate associations are typically characterized by values exceeding 0.3, and high associations by values ranging from 0.6 to 1.

The Lambda test reflects the reduction in statistical error when using the values of the independent variable to predict the values of the dependent variable. Specifically, Lambda values close to 1 indicate a high degree of certainty that the independent variable can predict the dependent variable. Conversely, Lambda values of 0 or close to zero suggest that the independent variable provides little to no predictive power for the dependent variable.

The conducted the Lambda test using educational level as the independent variable (Learn statistics, 2025), and the results are presented in Table 6. The observed Lambda values are close to 0, indicating that educational level does not effectively predict 'Health problems,' 'Health care,' 'Lack of food in your home due to lack of money,' 'Instances where an adult in the home stopped having breakfast, lunch, or dinner due to lack of money or resources,' 'Occurrences where someone under 18 years of age in the home went to bed hungry due to lack of money or resources,' and 'Crimes of which they were a victim.

Table 6. Results of the nominal variable symmetry and directionality tests

Dependent variables	V de Cramer	Lambda
Health problems	0.045	0
Health care	0.028	0
Lack of food in your home due to lack of money	0.129	0
Any adult in the home stopped eating breakfast, lunch or dinner due to lack of money or resources	0.129	0
someone under 18 years of age in the home went to bed hungry due to lack of money or resources	0.129	0
Crimes of which he was a victim	0.071	0.11

Source: Own elaboration, 2025.

A Gamma test to determine the strength of the relationship between the ordinal variables and the independent variable (Laerd Statistics, 2023). Table 8 presents the results, which demonstrate that all ordinal variables exhibit some level of association with educational level.

'Quarterly income' exhibits the strongest association (0.924), classified as very high. 'Material of the floors' shows a medium association (0.389), while 'Wall material' (0.221), 'Roofing material' (0.184), 'Availability of electrical energy' (0.143), 'Fuel' (0.118), 'Water supply provision' (0.106), and 'Drainage' (0.069) exhibit low associations.

We used Somers' D test to determine the directionality between the ordinal variables. Somers' D values of 1 or -1 indicate that the independent variable perfectly predicts the dependent variable. Conversely, values close to 0 suggest that the independent variable does not effectively predict the dependent variable.

Table 8 shows that the Somers' D test results for 'Quarterly income' (0.001), 'Wall material' (0.021), 'Roof material' (0.033), 'Floor material' (0.144), 'Water supply' (0.043), 'Drainage' (0.017), 'Availability of electrical energy' (0.001), and 'Fuel' (0.034) are all close to 0. Therefore, it is possible to conclude that the educational level allows predicting income and housing conditions.

Table 8. Results of the ordinal variable symmetry and directionality tests.

Dependent variables	Gamma	D de Somers
Quarterly income	0.924	0.001
Wall material	0.221	0.021
Roofing material	0.184	0.033
Flooring material	0.389	0.144
Water supply	0.106	0.043
Drainage	0.069	0.017
Electricity availability	0.143	0.001
Fuel	0.118	0.034

Source: Own elaboration, 2025.

5.- CONCLUSIONS

One of our conclusions aligns with the economics of education theories: higher educational levels positively affect not only monetary income but also overall well-being. This finding supports the perspectives of authors who emphasize the positive outcomes associated with higher education. However, as our statistical analysis demonstrates, many individuals reside in environments that do not prioritize education as a fundamental need.

This research explores the relationship between educational level and social well-being within Mexican households. We analyzed the following dimensions of well-being: access to health, food consumption habits, housing type, and levels of household insecurity, using data from 2018 to 2020. Our results highlight that in the Mexican context, factors beyond educational level significantly influence social well-being. Based on our findings and the statistical analyses employed (Crammer and Lambda V tests for nominal variables, and Gamma and Somers' D tests for ordinal variables), we selected the Lambda test for this research due to its ability to reflect the reduction of statistical error.

We decided to use the Kolmogorov-Smirnov normality test with SPSS-25 to assess the normality of the data. This decision was based on the sample size and the fact that educational level was considered the independent variable. To identify variables dependent on household well-being (comprising five dimensions: income, health, food, housing, and violence), we employed the Chi-square association test.

Since the data required non-parametric tests, we conducted the Chi-square association test. Subsequently, we used Cramer's V to determine the intensity of significant associations identified by the Chi-square test and the Lambda test to establish the directionality of these associations. The results of these statistical analyses support our research objective: demonstrating that greater educational access leads to improved quality of life.

Furthermore, our findings support the theoretical assertions that individuals with higher educational levels experience better access to healthcare, improved eating habits, and better-quality housing compared to those with lower educational levels. These findings align with our research objective: to demonstrate the positive impact of increased access to education and the importance of implementing strategies to improve access to formal education and enhance the well-being of Mexicans.

One limitation of this research stems from the observed educational attainment within the sample. 56% of the sample possess a technical or professional career, while no cases with completed professional degrees were observed. Additionally, 29.2% of the sample hold master's degrees, and 6.33% hold doctorates. This lack of representation at the highest educational levels limits our ability to observe the full effects on the variables constituting the dimensions of well-being. Due to the absence of data at these levels, we cannot delve deeper into this aspect.

This conclusion highlights not merely a methodological limitation but also a societal issue that demands attention at various levels. In Mexico, a significant portion of the employed population possesses low educational levels, presenting a considerable opportunity for improvement. This finding necessitates further investigation into subtopics lacking sufficient documentary evidence.

The conclusions presented clearly demonstrate the research objective, which leads us to consider educational level as a dependent variable. The analysis reveals a Somers' D value of 0.780 with respect to quarterly income, indicating that individuals from higher socioeconomic backgrounds generally have greater opportunities to attain higher levels of education. In essence, individual and family income levels significantly influence educational levels.

Therefore, we conclude that there is an urgent need to redefine economic, educational, and social strategies to provide opportunities for those in less privileged socioeconomic strata. This is crucial for Mexico to effectively evaluate and realize the theoretical effects of the economics of education. This research aims to stimulate further investigations into the economics of education, a field with limited research in Mexico. By presenting these findings, we aim to inform educational administrators, government officials, the productive sector, and society about the necessary path to achieve higher levels of well-being for Mexicans through improved formal education.

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