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# **Journal-Labor and Demographic economics**

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Support the international scientific community in its written production Science, Technology and Innovation in the Field of Social Sciences, in Subdisciplines of Demographic economics: Demographic trends and forecasts, Marriage, Marital dissolution, Family structure, Fertility, Family planning, Child care, Children, Youth, Economics of the elderly, Economics of minorities and races, Economics of gender, Value of life, Foregone income; Time allocation, Work behavior, Employment determination and creation: Labor force and employment, Size, and Structure, Time allocation and labor supply, Employment determination, Demand for labor, Self-employment, Human capital, Skills, Occupational choice, Labor productivity, Retirement, Retirement policies, Safety, Accidents, Industrial health, Job satisfaction, Related public policy; Wages, Compensation, and Labor costs: Wage level and structure, Wage differentials by skill, Training, Occupation, etc., Nonwage labor costs and benefits, Private pensions, Compensation packages, Payment methods; Particular labor markets: Contracts: Specific human capital, Matching models, Efficiency wage models, and Internal labor markets, Monopsony, Segmented labor markets, Agricultural labor markets, Professional labor markets and Occupations firm behavior, Public sector labor markets, Particular labor markets; Labor-Management relations, Trade unions, and Collective bargaining: Trade unions, Dispute resolution, Labor-Management relations, Industrial jurisprudence, Producer cooperatives, Labor managed firms; Mobility, Unemployment, and Vacancies: Geographic labor mobility, Immigrant workers, Occupational and intergenerational mobility, Turnover, Vacancies, Layoffs, Unemployment, Unemployment insurance, Severance Pay, Plant closings; Discrimination; Labor standards: National and International; Working conditions, Labor force composition, Workers' Rights.

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## **Presentation of Content**

As a first article we present, *Entrepreneurial traits and pillar sustainable development in the Sinaloa region*, by CERVANTES-ROSAS, María de los Ángeles, CARRANZA-ORTEGÓN, Gabriela, PÉREZ-SÁNCHEZ, Abel and DEL PINO-PEÑA, Rebeca, with adscription at Universidad Autónoma de Occidente, in the next article *Economic impact of teleworking on teaching activities of professors at the Universidad de Guanajuato, Mexico*, by REYES-MONTUFAR, Claudia Libeth, ORTIZ-GIL, Miguel Ángel, ARENAS-FLORES, Maribel and GUZMÁN-CABRERA, Rafael, with adscription at Universidad de Guanajuato, in the next article *Lack of infrastructure in a municipal sanitary landfill causes contamination of the water table*, by MURRAY-NÚÑEZ, Rafael, OROZCO-BENÍTEZ, Guadalupe, FLORES-VILCHES, Fernando and MARCELEÑO-FLORES, Susana, with adscription at Universidad Autónoma de Nayarit, in the next article *Perception of students and teachers of English on the use of didactic materials in Nayarit*, by CARRILLO-BELTRÁN, Julio César Cuauhtémoc, FLORES-VILCHEZ, Fernando, RAMIREZ-JIMÉNEZ, Armando and ARVIZU-LÓPEZ, Bertha Alicia, with adscription at Universidad Autónoma de Nayarit.

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**Entrepreneurial traits and pillar sustainable development in the Sinaloa region****Rasgos del emprendedor y pilares de desarrollo sustentable en la región de Sinaloa.**

CERVANTES-ROSAS, María de los Ángeles†, CARRANZA-ORTEGÓN, Gabriela, PÉREZ-SÁNCHEZ, Abel\* and DEL PINO-PEÑA, Rebeca

*Universidad Autónoma de Occidente. Department of Economic and Administrative Sciences, Mexico.*

ID 1<sup>st</sup> Author: *María de los Ángeles, Cervantes-Rosas* / **ORC ID:** 0000-0003-3338-4816, **CVU CONACYT ID:** 414701

ID 1<sup>st</sup> Co-author: *Gabriela, Carranza-Ortegón* / **ORC ID:** 0000-0002-2049-7275

ID 2<sup>nd</sup> Co-author: *Abel, Pérez-Sánchez* / **ORC ID:** 0000-0002-0088-1122

ID 3<sup>rd</sup> Co-author: *Rebeca, del Pino-Peña* / **ORC ID:** 0000-0001-5178-8019, **CVU CONACYT ID:** 516620

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**Abstract**

Sustainable development has become an emergency due to problems mainly related to climate change. Entrepreneurs are required to have this approach in order to achieve sustained growth and common welfare, in accordance with the provisions of the 2030 Agenda. Therefore, the objective of this study was to validate the components of the entrepreneur's traits and the pillars of sustainability in Sinaloa companies in Mexico. For this purpose, a measurement instrument based on the Global Reporting Initiative, the Sustainable Development Goals and the Decalogue of the Global Compact was used. Among the main findings are optimal normality characteristics, the correct representativeness of the items with the specific related constructs, the demonstration of the reliability of the construct in general, in addition to supporting the corresponding factor analysis. These results denote the importance of identifying the traits of the entrepreneur to implement actions aimed at achieving organizational sustainability in the study region.

**Resumen**

El desarrollo sustentable se ha convertido en una urgencia debido a la problemática relacionada principalmente con el cambio climático. Se requiere que los emprendimientos tengan ese enfoque con el fin de lograr un crecimiento sostenido y el bienestar común, de acuerdo con lo establecido en la Agenda 2030. Por ello, el objetivo de este estudio fue validar los componentes de los rasgos del emprendedor y los pilares de la sustentabilidad en las empresas de Sinaloa en México. Para tal efecto se utilizó un instrumento de medición fundamentado en la Iniciativa de Reporte Global, los Objetivos de Desarrollo Sostenible y el Decálogo del Pacto Mundial. Entre los principales hallazgos se aprecian características óptimas de normalidad, la representatividad correcta de los ítems con los constructos específicos relacionados, la demostración de la fiabilidad del constructo en general, además de que se avala el análisis factorial correspondiente. Dichos resultados denotan la importancia de identificar los rasgos del emprendedor para implementar acciones orientadas al logro de la sustentabilidad organizacional en la región de estudio.

**Sustainability, Entrepreneur Traits y Regional Development**

**Sustentabilidad, rasgos del emprendedor, desarrollo regional**

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\* Correspondence to Author (Email: [abel.s@alfaomega.mx](mailto:abel.s@alfaomega.mx))

† Researcher contributing first author.

## Introduction

Companies are one of the decisive elements in the development of regions, not only as generators of wealth but also as ways of satisfying social demands (Delfín and Acosta, 2016). Historically, the main business objective was focused on producing goods and services that would allow them to extract a surplus to compensate the capitalist partners for the amount of their investment, a share of the profits generated and the guarantee that their investment would continue to produce. However, this utilitarian conception (Friedman, 1970), based on economic theory, is no longer acceptable as an absolute truth (Cajiga, 2010). Today, companies have to assess how their activities affect the communities in which they operate, and these effects are not always positive. This shift in perspective has implied a transition from an economic focus to a stakeholder focus, building bridges to sustainability (Hinrichs, 2014).

Concern for environmental protection intensified in the 1980s as a result of climate change and its manifestations in ocean temperatures; more intense natural phenomena; alarming pollution rates; population growth and food security risks; as well as environmental disasters caused by companies (Cervantes and Aldeanueva, 2016). The environmental impact of economic activities has been "unprecedented in the last two decades" (García, Martínez and Andrade, 2016:102); the greater the growth of economic activity, the greater the impact on environmental degradation; in many cases ignoring the consequences or doing nothing to minimise them (López, Calle and Molina, 2017). Ever since Friedman (1970) pointed out that the only obligation of business was to generate profits and all others belonged to the government, voices have emerged encouraging the involvement of such companies in local community affairs; not only to be socially responsible but also to be sustainable.

In fact, the emergence of the concept of Sustainable Development came about in the Brundtland Report, also known as "Our Common Future", which compiled results of studies and public consultations on environment and development (World Commission on Environment and Development, 1987).

This document sought to raise awareness of the irreversible effects on the environment as a result of lifestyles and how to bring about qualitative and immediate changes through common objectives for countries, recognising their differences and inequalities.

The Rio Declaration of 1992 defines sustainable development as meeting the needs of present generations without compromising those of the future (World Commission on Environment and Development, 1987). In this regard, Mexico acts as a bridge between Latin American countries when it assumes commitments on sustainability for the development of the regional economy in the 2030 Agenda for Sustainable Development, taking into account the structural gaps that exist in relation to more developed countries (Prado, 2016).

On the other hand, environmental regulations were also designed with the aim of reorienting processes towards sustainable development, seeking to make economic agents bear the costs of environmental impacts and promoting productive activity through efficiency, such as the General Law on Ecological Balance and Environmental Protection (LGEEPA). In this regulation, sustainable development is defined as a process that can be evaluated through environmental, economic and social criteria and indicators that tends to improve the quality of life and productivity of people, based on appropriate measures to preserve the ecological balance, protect the environment and make use of natural resources, in a way that does not compromise the satisfaction of future needs (LGEEPA, 2015:3).

Sustainable development seeks a balance between economic, social and environmental aspects in order to improve living conditions (García, Martínez and Andrade, 2016). One of the great challenges for entrepreneurs is to assume a commitment to environmental issues in a world of hyper-consumption and waste; where economic criteria are the ones that privilege decision-making (González, 2007) and environmental aspects are ignored even in financial information (García, Martínez and Andrade, 2016). Therefore, it is necessary to incorporate ethical principles and values in entrepreneurship (Bueno, 2013), which come from the family nucleus (Alegre, 2013).

In such a way that these enable awareness to be generated of the effects that companies have on the communities in which they operate and that affect their stakeholders. Therefore, all the decisions made in organisations have a positive or negative impact on the environment (Escobedo and García, 2018).

In this line of research, Velázquez and Vargas (2012) pointed out that for the company to reach a sustainable balance, the strategy must be ecologically appropriate, economically viable and socially fair, as this achieves the maximisation of benefits, not only of an economic nature. From this perspective, Rodríguez and Ríos (2016) presented as the main finding in 87 Colombian companies their tendency towards one or another dimension according to the sector to which they belong and their classification according to the level of sustainability, in three parameters: mature, developing or incipient company. They also state that the standardisation provided by the Global Reporting Initiative (GRI) is the most widely accepted and provides a frame of reference.

On the other hand, Paternoster (2011) carried out a comparative analysis of the sustainability reports of five Spanish companies of different sizes, evaluating the three dimensions: in the economic dimension, he focused mainly on profits; in the environmental dimension, on energy and waste; and in the social dimension, on jobs. Similarly, Petrini and Pozzebon (2010) proposed a model for integrating sustainability into organisational practices by analysing five companies that comply with sustainability principles, standards, certifications or issue sustainability reports; that are in the Dow Jones Index or the Bovespa Sustainable Business Index or both; and that have received public recognition for their sustainability-related actions.

These researchers collected data through interviews and presented a model for the context of Latin American companies based on a corporate vision that included management and leadership; organisational structure with governance and formal sustainability areas, as well as organisational mechanisms such as sustainability definition, communication and monitoring, education, recognition and valorisation.

Thus, with the implementation of this model, it was expected that sustainability practices would be integrated into the processes of the organisations, considering the specific characteristics of each company and how the process of implementing these practices would take place.

Based on this background, the objective of this work was to validate the components of the entrepreneurial trait variables and the social, economic and environmental pillars of sustainability in companies in Sinaloa, Mexico. The hypothesis put forward is that "The sustainability construct is composed of three dimensions, also called pillars, equidistant in importance: economic, social and environmental. According to Escobedo and García (2018:11), the economic pillar seeks the highest possible profit by carrying out sustainable activities, the social pillar focuses on satisfying the needs of society at the lowest possible environmental cost, and the environmental pillar is oriented towards the protection of resources. Escobedo and García, (2018) point out that the systemic vision of sustainability is to achieve a balance in the three dimensions, as pointed out by Velázquez and Vargas (2012) that encompasses the ecological, economic and social spheres, which for these authors is inescapable for survival". To this end, this paper first reviews the scientific literature on the research lines of entrepreneurship and sustainability, with the aim of laying the theoretical foundations on which the methodology of the study is based, aimed at designing a measurement instrument and validating the proposed analysis constructs. Subsequently, the main findings, the corresponding conclusions and the sources of consultation are presented.

### **Entrepreneurship and sustainability**

Starting a business or a wealth-generating activity requires people with attitudes and skills to manage new ideas or economic opportunities with the challenge of remaining and thriving in the market, assuming the potential for success as an inherent risk in the local, regional or global competitive environment.

These postulates essentially describe the models of entrepreneurship of Schumpeter, Kirzner, Knight and Henrekson mentioned by Narváez (2012); now with variables studied regionally as entrepreneurial culture by the Global Entrepreneurship Monitor (GEM) and by the World Economic Forum (WEF) with its Global Competitiveness Report; adding the initiatives combined by the Triple Helix (University - Business - Government) and the development of industrial clusters, to further develop entrepreneurship (Narváez, 2012).

Entrepreneurship is a social interaction that seeks economic growth and regional development by using available natural and financial resources to meet the consumption needs of current generations. However, Badii and Abreu (2006) argue that this cannot be conducive over time if society does not progress under the concept of sustainability, with its limits and conditions, to improve human well-being subject to biophysical and environmental impossibilities caused by modern socio-economic development behaviours.

Although the cultural context determines entrepreneurship (Rodríguez and Prieto, 2009), the family is the cradle and is where the behavioural patterns and values that will serve as a basis are given. What an entrepreneur must possess to be successful are: initiative, creativity, responsibility, autonomy, effort, perseverance, learning, the ability to take risks, confidence in projects, the ability to work in teams and not being afraid to try (Alegre, 2013). However, there are those who point out that the entrepreneurial spirit should be encouraged, especially in the part related to bureaucratic barriers and formalities that limit or inhibit entrepreneurship and additionally create favourable conditions for the entrepreneur to be successful (Leite, 2015).

Thus, one of society's challenges is to incorporate values in entrepreneurship (Bueno, 2013), as these values will generate trust. In fact, a good leader must incorporate values in his or her behaviour (Northouse, 2010). Additionally, as characteristics of the entrepreneur's personality, the propensity to take risks and the lack of fear of failure are considered to be qualities that favour taking advantage of opportunities (García, Martínez and Fernández, 2008) and that can influence the achievement of success.

It is the manager who has to drive change in organisations and this always involves risks and the need to adapt to new situations that arise; therefore, it is essential for the leader to reduce uncertainty and encourage the creativity of his or her collaborators (Suárez, 2014) so that their opinions are considered in decision-making. From this perspective, Cervantes et al. (2018) analysed risk-taking in 1412 entrepreneurial firms in northwestern Mexico, concluding that they were prudent in achieving returns by avoiding risk, unlike those in the commercial sector who adopted bolder and more aggressive stances to exploit potential opportunities; they were also more prone to high-risk projects even when situations of uncertainty existed.

In the same vein, Maldonado et al. (2018) showed that firms older than ten years were better than their competitors in profitability indicators and this gave them more freedom of action and risk management. Also (2014) points out that for a company to grow and position itself, it requires a leader with entrepreneurial traits and without fear of risk.

Although there are authors who point out that sustainable development is only an illusion and that the Millennium Development Goals were only focused on calming good consciences (González, 2007), the Sustainable Development Goals [SDGs] (UNESCO, 2016) are oriented towards achieving well-being and economic growth, which requires entrepreneurs who, in the creation of business ideas and innovations, consider the SDGs set out by the international community at the UN on 25 September 2015.

List of SDGs for 2030			
1. The end of poverty	2. Zero hunger	3. Health and well-being	4. Quality Education
5. Equality	6. Clean water and sanitation	7. Energy clean and renewable	8. Decent work and economic growth
9. Industry, Innovation and Infrastructure	10. Reduction of inequalities	11. Cities and communities sustainable	12. Responsible consumption and responsible
13. Climate Action for Climate	14. Underwater life	15. Life of terrestrial ecosystems	16. Peace, justice and strong institutions
17. Partnerships to achieve the Objectives			

**Table 1** Sustainable Development Goals (SDGs) for 2030  
Source: (UNESCO, 2016)

In addition, as mentioned by Delgado, Imaz and Beristain (2015:15), it is time to promote the green economy model that is complemented by seeking (1) better design and development of sustainable products, (2) attracting more customers and (3) increasing sales. Economic growth is about improving the common good and development with a focus on sustainability.

Thus, sustainability has been adapted to the context of organisations (Bell and Morse, 2000) and is considered inconsistent without the balance of the three pillars: economic, social and environmental or also as Triple P: profit, people and planet, as the construct is explained by the three strands (Alhadd, 2015). Sustainable development has an existential character as it is necessary to measure to influence people with power to ensure that there is a future for humanity (Bell and Morse, 2018).

This poses a great challenge considering the current situation of society and the planet: to create a new social structure in which entrepreneurship and sustainability generate regional development and add value to the green economy; obtaining sustainable returns (Rodríguez & Ricárdes, 2020). Such a challenge implies a paradigm shift, as described by Riechmann (2016:10) who points out that today we need something else: building adaptive flexibility and socio-ecological resilience in times of collapse.

To this end, and as a product of the coincidence of common objectives such as the creation of markets, the fight against corruption, the safeguarding of the environment and social inclusion, the Global Compact arises from which ten principles emanate to be incorporated into business activities with a focus on global sustainability. The main advantages of this proposal are the sharing of best practices, the creation of alliances and linkages at a global level, the use of experience and management instruments, and the creation of a global network.

All this through the acceptance of an institutional commitment to make the principles part of the organisation's strategy, which are grouped into Human Rights, Labour Standards, Environment and Anti-corruption. Specifically, the Human Rights section includes the protection of human rights and non-complicity in their violation; in relation to Labour Standards, support for free association, elimination of forced labour, eradication of child labour and abolition of discriminatory practices. In the case of the Environment, the preventive approach to protection, the promotion of initiatives for greater respect for the environment and the development and dissemination of environmentally friendly technologies; finally, in Anti-Corruption, action against all forms of corruption.

In this regard, it is pertinent to point out that this initiative, launched in 1999, has had a great impact on corporate citizenship worldwide in the promotion of good business practices (UN, 2009).

#### *Pillars of sustainability*

Sustainability is made up of three dimensions, also called pillars, which are equidistant in importance: economic, social and environmental. The economic pillar seeks the highest possible profit according to Escobedo and García (2018: 11) by carrying out sustainable activities, the social pillar focuses on satisfying the needs of society at the lowest possible environmental cost and the environmental pillar is oriented towards the protection of resources. Escobedo and García, (2018) point out that the systemic vision of sustainability is to achieve a balance in the three dimensions, as pointed out by Velázquez and Vargas (2012), which encompasses the ecological, economic and social spheres, which for these authors is inescapable for survival.

In the Global Compact, these three pillars are clearly visible in the common objectives that give rise to it: market creation in the economic pillar, safeguarding the environment in the environmental pillar and social inclusion in the social pillar (UN, 2009). Similarly, Elkington (1997), Alhaddi (2015) and Bell and Morse (2018) noted that another construct that is used interchangeably is the Triple Bottom Line (TBL) or which is integrated by the same three pillars or dimensions: economy, society and environment.

In particular, Rodríguez and Ríos (2016) under the GRI methodology measured the economic pillar with safe, reliable and durable products; the environmental pillar with the management of resources such as materials, energy, water, among others, as well as the development of environmental programmes; and the social pillar with the management of human talent, industrial safety, occupational health, relations with suppliers and social initiatives. They also identify biases towards one dimension or another.

In parallel, López, Calle and Molina (2017) analysed 264 Ecuadorian companies and found an unconscious development of economic activities by the companies and a lack of knowledge of environmental management tools, although a small part carried out activities related to recycling and waste collection and found that environmental management systems can help to improve the corporate image, take advantage of growth opportunities, improve processes and increase awareness of the environmental damage caused by the activities carried out.

### Methodology developed

Against this background, this research makes a first approach to the constructs of entrepreneurship, sustainability and the components of the variables entrepreneurial traits and the social, economic and environmental pillars of sustainability. Through the design of an instrument with a Likert-type scale (Hernández Sampieri et al., 2010), as well as an additive type of scale that corresponds according to Padua & Ahman (1979) to an ordinal level of measurement, consisting of a series of items or judgments to which the subject's reaction is requested.

This questionnaire is composed of five sections: company and respondent profile; entrepreneur traits; economic pillar; social pillar and environmental pillar. For content and construct validation, the variables were operationalised by verifying the behaviour of the indicators. The information gathering instrument was designed based on the operationalisation of variables, taking each of the indicators to item level, so that in accordance with the theoretical review and empirical evidence, two constructs, 4 dimensions and 40 indicators were determined.

Construct	Dimension	Authors
Entrepreneurial-durism	Entrepreneurial traits	Alegre (2013), Molina (2014), García et al (2008), Cervantes et al (2018), Riechman (2016), Suárez (2014), Bueno (2013), Northouse (2010).
Sustainability	Social pillar	Badí y Abreu (2006), UNESCO (2015), Rodríguez and Osorio, (2016), ONU (2009), Delgado et al (2015).
	Economic pillar	Delgado et al (2015), Molina (2008), Badí and Abreu (2006), Velázquez (2012).
	Environmental pillar	UNESCO (2015), ONU (2009), Rodríguez and Osorio (2016), Martínez, Guevara and Escamilla (2018), Hinrichs (2014), López (2017).

**Table 2** Constructs of the Entrepreneurship and Sustainability instrument

Source: Own elaboration.

A stratified non-probabilistic sampling was carried out, resulting in a sample size  $n = 122$ , which was selected according to the stratification criteria by company size and radius of influence of economic activities in the State of Sinaloa, Mexico, mainly in Guasave and Culiacán.

For the application of the instrument, an implementation plan was drawn up for the companies that were the subjects of the study. Subsequently, there was coordination with the managers of each of them to inform them of the purpose of the research and to agree on dates for visits or sending via email, with the corresponding follow-up. The data collected from the selected subjects were analysed using the Statistical Package for the Social Sciences (SPSS v.25).

The content validation of the instrument was carried out based on the theoretical review and the operationalisation of the variables according to relevance, measurement representation and technical quality; this allowed for the evaluation (Stake, 1999). To determine the construct validity and reliability, the reliability of the instrument was determined using Cronbach's Alpha method, to show that the items of the dimensions have internal consistency with values between .80 and .90 (Hall, 1963) and subsequently the factor analysis technique was used for construct validity and to determine the degree of explanation of the dimensions and construct according to the behaviour of the variance.



### Analysis of data behaviour

A univariate analysis was performed for each of the items based on the kurtosis and skewness coefficient according to Haidar (2013), with acceptable values for each item and where the values should not be greater than 3.00 for skewness and 8 for kurtosis, regardless of whether they are negative. The data present values less than 3 for skewness and less than 8 for kurtosis in the two constructs with their corresponding dimensions, indicators and their observation items of the behaviour of the entrepreneurial phenomenon Entrepreneurial traits and Sustainability with the research subject, which is why the values obtained are within the expected parameters.

The goodness-of-fit test was used to measure the degree of agreement between the theoretical distribution and the data proposed with Kolmogorov, Smirnov and Shapiro, which reports a level of significance of the sample with values that present normality as they are less than .05, in accordance with the criteria of normality for multivariate kurtosis (Mardia, 1970) in each of the items for the two constructs under study.

To determine the relevance of the factor analysis and check whether it is significant, the percentage of variance explained by Bartlett's test of sphericity, which assesses the applicability of the factor analysis of the variables studied, and the Kaiser Meyer-Olkin measure of sampling sufficiency (De los Santos, 2016) were used to assess the relevance of conducting a factor analysis to validate the principal components and their factor loadings. The rotation method used was Varimax (Gürbüz and Mert, 2009) with the aim of identifying the redistribution of variance by the establishment of factors with highly related components and eliminating clusters with intermediate relationships (Lozares and López, 1991).

### Results

#### *Descriptive analysis of the sample*

With the purpose of describing the categorical stratification variables according to selection criteria by company size and the managerial participation of the research subject.

The stratification of the Ministry of Economy was taken as a basis and civil associations and universities were separated as they have different characteristics. When asked about the number of employees, it stands out that 70% have between 11 and 50 workers.

Type of organisation	
Number of employees	Percentage
Large company	17
SME	70
Civil Association	3
Universities	5
Other	5
Total	100

**Table 3** Types of organisation  
Source: Own elaboration

Regarding the position held by the study personnel, 42% are owners or managers of the company, another 42% work as middle management and 16% have another position.

Post	Percentage
General manager owner	42
Middle management	42
Other	16
Total	100

**Table 4** Workplace  
Source: Own elaboration

Regarding the position held by the study personnel, 42% of them are owners or managers of the company, another 42% are middle management and 16% hold another position. Validation of the data collection instrument

For the validation of the instrument, according to the reliability analysis, it was considered whether the internal consistency of the indicators, of which there are 40, are rigorously measuring the variable they intend to measure, using the criterion of Cronbach's Alpha Coefficient. The value obtained in the total validation of the instrument is .961 for the Alpha value of the instrument considering entrepreneurship and sustainability. The categorical variables are not included in this analysis since the validity of the instrument was carried out with each of the indicators.

The entrepreneurial traits dimension according to its indicators presents an Alpha of .948 and the sustainability dimension of .944 and its dimensions social sustainability .948, economic pillar .910 of sustainability and environmental pillar .895.

The values obtained for both the overall Cronbach's Alpha coefficient and for each of the indicators and their corresponding items of the instrument, which exceed the minimum value of 0.80 to determine the reliability of the test (Devellis, 2003) and the criteria determined for research in social and economic-administrative sciences. For this reason, it can be established that it is within the appropriate levels of reliability for each construct and has internal consistency.

Construct	Dimension	Indicator	Alpha Cronbach
Entrepreneurship Alpha.948	Entrepreneurship traits	I consider partners for decision making I take the initiative I can lead a team I keep my commitments Fresh ideas I am not risk averse I like to take risks I am adaptable to change Defined values I respect and respect myself I look for solutions to problems I consider myself happy I fight for what I want I am hardworking I have healthy self-esteem I value the efforts of others I analyse alternatives I am economically solvent I accept criticism I ask for help if I need it	.948
Sustainability Alpha.944	Social pillar	In favour of social inclusion Support for social projects Focus on improving the lives of employees Our salaries are above the industry average Salaries are based on competencies and performance We privilege occupational health and safety We promote training and development Flexibility at work Support for social projects Promotion of dialogue and communication	.910
	Economic pillar	High quality products and services Extensive information on products and service Respect for consumer rights Win-win relationships with responsible responsible	.915
	Pillar environmental	We use fuels with a lower environmental impact environmental impact Optimisation of energy use We favour the use of alternative energy We protect the environment by minimising the impact of activities We invest to reduce the environmental impact In favour of recycling and emission reduction emissions and waste In favour of the use of recyclable packaging	.895

**Table 5** Validation of the entrepreneurship and sustainability instrument  
*Source: Own elaboration*

Another test that determined construct validity was the Kaiser-Meyer-Olkin (KMO) test of sampling adequacy which reports values for the entrepreneur traits of .925 with a significance level for Bartlett's test of sphericity. Of .000.

KMO and Bartlett Entrepreneurship test		
Kaiser-Meyer-Olkin measure of sampling adequacy		.925
Bartlett's test of sphericity	Approx. Chi-square	1880.709
	G1	190
	Sig.	.000

**Table 6** KMO and Bartlett Entrepreneurship and Sustainability Test  
*Source: Own elaboration*

According to the explanatory power of each of the items in the 3 components of the entrepreneurial traits, they explain 67% of the total variance. The results allow us to continue with the factor analysis, so the selected method was the principal component analysis, as a tool of multivariate analysis used for data reduction and determination of the correlated factors that explain most of the total variance, which was obtained through the Varimax method for factorial rotation.

The results are analysed according to the degree of explanation of the data for the total variance with 3 common factors or the regression coefficient (factor loading only with values above .5 considering the minimum acceptable correlation index) of one of the observed variables per factor, at a value of 1, to establish a scale for the components that explain 66 % of the data according to the total variance and to avoid the problem of indeterminacy between variance and factor loadings.

	Rotating component matrix entrepreneurship		
	Component		
	1	2	3
I value the efforts of others	.853		
I fight for what I want	.824		
I have well-defined values	.793		
I respect and make myself respected	.790		
I have healthy self-esteem	.769		
I am hard-working	.755		
I consider myself happy	.709		
I keep my commitments	.643		
I analyse alternatives	.604		
I ask for help if I need it	.509		
I am financially solvent		.813	
I look for solutions to problems		.681	
I accept criticism		.624	
I can lead a team		.528	
I take initiative		Lower values a .5	
I like to take risks			.766
I am not risk averse			.676
I am adaptable to change	.541		.615
I have fresh ideas			.562
I consider collaborations to make decisions		Valores inferiores a .5	

Note: Extraction method: Principal Component Analysis.  
Rotation method: Varimax with Kaiser normalization<sup>a</sup>.  
a. Rotation has converged in 5 iterations

**Table 7** Matrix of rotated components of entrepreneurialism

The principal components determined for entrepreneurship were measured with only one; however, the factor loadings of the data behaviour indicate 3 components, according to the state of the art are identified firstly as indicators of Leadership inherent to the research subject in managerial positions, secondly to the perception of the manager in his administrative - employee - company relationship according to his managerial position and thirdly to his risk aversion, which will be submitted for consideration in this research.

Regarding the sustainability dimension, the construct validity according to the Kaiser-Meyer-Olkin (KMO) sample adequacy test reports values for sustainability of .897 with a significance level for the Bartlett's test of sphericity of .000, used as a hypothesis test, on the relationship of the indicators for the measurement of the sustainability construct showing an explanation between each of the items, this statistic can have values of 0 and 1, indicating values less than 0.5 that factor analysis should not be used with the sample data being analysed, because the correlations between pairs of variables cannot be explained by other variables.

KMO and Bartlett's test		
Kaiser-Meyer-Olkin measure of sampling adequacy		.897
Bartlett's test of sphericity	Approx. Chi-square	1778.738
	Gf	190
	Sig.	.000

**Table 8** KMO and Bartlett's test  
*Source: Own elaboration.*

Continuing with the factor analysis, the Varimax rotation method (orthogonal transformation) was used, based on the analytical method used to summarise a group of empirical indicators into a smaller set of composite factors or variables, with minimal loss of information (Hair, Anderson, Tatham and Black, 1999). According to the factor weights the data are grouped into 3 components according to the explanatory dimensions of the sustainability construct.

The first component corresponds according to the measurement of sustainability in the components of the environmental pillar, where in the item we optimise the use of energy, the model shows a better explanation.

The second refers to the social pillar where it is excluded, in favour of social inclusion and it is proposed to change support for social projects within the environmental pillar. The third is made up of the economic pillar where the degree of explanation of the proposed indicators with their corresponding items is confirmed.

Rotated factor matrix <sup>a</sup>			
Sustainability	1	2	3
We protect the environment by minimising the impact of our activities.	.738		
We invest to reduce our environmental impact	.727		
We favour the use of alternative energies	.713		
We are in favour of recycling and the reduction of gas emissions and waste.	.685		
We are in favour of the use of recyclable packaging	.671		
We optimise the use of energy	.653	Corresponds to economic	
We support social projects	.619	Corresponds to social	
We use consumables with a lower environmental impact	.580		
We are in favour of social inclusion		Values below .5	
Our salaries are above average for the sector		.724	
We promote training and development		.720	
We prioritise occupational health and safety		.659	
Salaries are based on competencies and performance		.651	
We have flexibility labour		.633	
We focus on improving the lives of employees		.574	.517
We encourage dialogue and communication	.521	.533	
We respect consumer rights			.859
Our products and services are of high quality			.789
We seek win-win relationships with responsible suppliers			.765
Our customers receive comprehensive information on products and services.			.755
Extraction method: maximum likelihood.			
Rotation method: Varimax with Kaiser normalization. <sup>a</sup>			
a. Rotation has converged in 5 iterations.			

**Table 9** Rotated factor matrix  
*Source: Own elaboration.*

With regard to the transformation of the factors, the Varimax rotation method (orthogonal transformation) is used. This is based on the analytical method of summarising a group of empirical indicators into a smaller set of composite factors or latent variables, with minimal loss of information (Hair, Anderson, Tatham and Black, 1999).

Goodness-of-fit test		
Sustainability Chi-square	G1	Sig.
290.866	133	.000

**Table 10** Goodness-of-fit test*Source: Own elaboration***Acknowledgement**

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**Conclusions**

According to the review of the state of the art, background and development of sustainability, where it is highlighted that the maximisation of company profits was considered until before the 1980s as the most important element for the continuity and permanence of businesses, although it is highlighted in these findings that the features of entrepreneurship are associated not only with the creation of economic value but also show an awareness within its management towards a projection into the future, considering the factors that impact on the environment, and therefore on the individual, under a scheme in which economic, environmental and social resources are as important as economic-financial resources in order to build an international society with a sense of valuing the quality of life of society and the community of influence of the company.

This shift in perspective is in line with Hinrichs (2014) who points to a transition from an economic focus to a stakeholder focus, building bridges to sustainability. The need to address climate change requires a transition from companies implementing only social responsibility actions (sometimes for purely economic purposes) to a sincere concern for sustainability on the part of the leaders of organisations and entrepreneurs.

Mexico currently assumes sustainability commitments for the development of the regional economy in the 2030 Agenda for Sustainable Development, with regulation towards the reorientation of processes towards sustainable development, seeking to make economic agents bear the costs of environmental impacts and the promotion of productive activity through efficiency.

However, according to the review of the scientific state of the art, as well as international institutions and organisations, sustainability shows a time horizon not only to the regulation of the damage caused, but also a sincere valuation of the individual in his or her environment, as well as the institutional and business commitment to consider sustainability as the guiding axis of their management activities for the responsible use of human, material and natural resources. In order not to compromise the satisfaction of current and future needs regardless of their line of business or activity, in order to increase the quality of life of the society in which they participate.

In such a way that this research found coincidences between the scientific literature with the foundation and measurement of the results presented, in addition to the fact that it fulfils the objective and hypothesis set out, since the components for measuring the traits of entrepreneurs and the variables explaining sustainability in the business context were determined as an approach to its measurement and subsequent promotion in organisations.

It should be emphasised that these aspects could help to direct the lines of action and strategies for implementing sustainability in companies, as well as training and the development of management skills that contribute to the generation of sustainability, and most importantly, by identifying the wealth of entrepreneurial traits, precedents for sustainability actions in a direct way.

Therefore, the contributions of this study frame an approach to the entrepreneurial definition of sustainability, as well as the methodology that was validated from a theoretical and empirical perspective, developed for the measurement and projection of the entrepreneurial traits necessary to generate organisational sustainability, as well as to show the importance of the traits and ethical aspects of the leader in the management of organisations and their precedent towards sustainability in the business environment.

**References**

- Alegre, B. (2013). El emprendedor, responsabilidad de todos. *Revista de la Asociación Española de Contabilidad y Administración de Empresas*. AECA congreso XVII Pamplona, España, Septiembre 2013. PAG. 37-38. Disponible en: <http://www.aeca1.org/revistaeca/revista103/103>
- Alhaddi, H. (2015). Triple bottom line and sustainability: A literature review. *Business and Management Studies*, Vol 1(No.2), 6-10. s September 2015 ISSN 2374-5916 E-ISSN 2374-5924 Published by Redfame Publishing Disponible en: URL: <http://bms.redfame.com>.
- Badii, M. H., & Abreu, J. L. (2006). Metapoblación, conservación de recursos y Sustentabilidad. *Daena International J. of Good Conscience*, 1(1), 37-51. Disponible en: <http://bms.redfame.com>. [www.daenajournal.org](http://www.daenajournal.org).
- Bell, S., & Morse, S. (2000). Sustainability Indicators: measuring the inmeasurable. *Journal of Rural Studies*, 16 (3). Disponible en: *Journal of Rural Studies* | Vol 16, Issue 3, Pages 269-406 (July 2000) | ScienceDirect.com by Elsevier. Consultado el 13/08/2020.
- Bell, S., & Morse, S. (2018). Sustainability Indicators Past and Present: What Next? *Sustainability*, 10(5), 1688. Consultado eldo el 07/07/2017 doi: 10.3390/su10051688 Disponible en: <https://www.mdpi.com/2071-1050/10/5/1688#cite>. Consultado el 14/11/2019.
- Bueno, E. (2013). Valores y ética del emprendedor innovador. *Revista de la Asociación Española de Contabilidad y Administración de Empresas*, XVII. Disponible en: <https://dialnet.unirioja.es/ejemplar/343858>.
- Cajiga, J. F. (s. f.). El concepto de responsabilidad social empresarial. Centro Mexicano para la Filantropía (CEMEFI). Disponible en [https://www.cemefi.org/esr/images/stories/pdf/esr/concepto\\_esr.pdf](https://www.cemefi.org/esr/images/stories/pdf/esr/concepto_esr.pdf).
- Cervantes R. M. y Aldeanueva F. I., (2016). Las Instituciones de Educación Superior y el Desarrollo Sustentable: Estudio Exploratorio desde la Perspectiva del Alumno. *Ra Ximhai*, vol. 12, núm. 6, julio-diciembre, pp. 259-267. México. Disponible en <http://www.redalyc.org/articulo.oa?id=46148194017>.
- Delfín, F., & Acosta, M. (2016). Importancia y análisis del desarrollo empresarial. *Revista Pensamiento y gestión*, No. 40. 184-202. Importancia y análisis del desarrollo. Disponible en <http://rcientificas.uninorte.edu.co/index.php/pensamiento/article/view/8810>.
- Delgado, G., Imaz, M., & Beristain, A. (2015). La sustentabilidad en el Siglo XXI. *Interdisciplina*, 3 (7). 9-21.UNAM. Disponible en <http://www.revistas.unam.mx/index.php/inter/article/view/52357/46759>
- DeVellis, R.F. (2003). *Scale development: theory and applications* (2nd ed. Vol. 26). Thousand Oaks, CA: Sage Publications.
- Escobedo, G. & M. Andrade, García, C. (2018). Responsabilidad Social Empresarial. En *Desarrollo Sustentable. Estrategias en las empresas para un futuro mejor* (347-378). ISBN 9786078229712 México: Alfaomega
- Friedman, M. (1970). The social responsibility of business is to increase its profits. *New York Times Magazine*. 32-33. 122 y 126 Disponible en: <https://www.nytimes.com/1970/09/13/archives/a-friedman-doctrine-the-social-responsibility-of-business-is-to.html>.
- Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (1999). *Análisis multivariante* (Vol. 491). Madrid: Prentice Hall.
- García, C., Martínez, A., & Fernández, R. (2008). Características del emprendedor influyentes en el proceso de creación empresarial y en el éxito esperado. *Revista Europea de Dirección y Economía de la Empresa*, Vol. 19. No. 2. Pp. 31-48. Disponible en [file:///C:/Users/USUARIO/Downloads/Dialnet- CaracteristicasDelEmprendedorInfluyentesEnElProces-3185118%20\(6\).pdf](file:///C:/Users/USUARIO/Downloads/Dialnet- CaracteristicasDelEmprendedorInfluyentesEnElProces-3185118%20(6).pdf).

- García, O., Martínez, J., & Andrade, M. (2016). Economía, Desarrollo Sustentable y la Información Financiera dentro de una empresa mediana. En M. (. Andrade, Enfoque holístico de la competitividad de las pequeñas y medianas empresas con enfoque sustentable (págs. 93-134). México: Gernika.
- González, E. (2007). La construcción de la sustentabilidad. *Trayectorias*, No. 24. 5-6. Disponible en <http://trayectorias.uanl.mx/24/index.htm>.
- Gürbüz, S., & Mert, I. S. (2009). Validity and reliability testing of organizational justice scale: An empirical study in a public organization. *Review of Public Administration*, 42(3), 117-139. [https://www.academia.edu/2044420/Validity\\_and\\_Reliability\\_Testing\\_of\\_Organizational\\_Justice\\_Scale\\_An\\_Empirical\\_Study\\_in\\_a\\_Public\\_Organization?auto=download](https://www.academia.edu/2044420/Validity_and_Reliability_Testing_of_Organizational_Justice_Scale_An_Empirical_Study_in_a_Public_Organization?auto=download) Consultado el 05/09/2020.
- Hinrichs, C. (2014). Transition to sustainability: a change in thinking about food system change. *Agric Hum Values*, 31. 143-155. [doi.org/10.1007/s10460-014-9479-5](https://doi.org/10.1007/s10460-014-9479-5).
- Leite, E. (2015). Caracterização do empreendedorismo e a Lei de inovação. En E. Leite, Empreendedorismo, Inovação e incubação de empresas e startups (págs. 673-695). Brasil: Recife, Bagaço.
- LGEEPA. (2015). Ley General del Equilibrio Ecológico y la Protección al Ambiente. México: Cámara de Diputados del H. Congreso de la Unión. Disponible en [http://www.diputados.gob.mx/LeyesBiblio/ref/lgeepa/LGEEPA\\_ref36\\_09ene15.pdf](http://www.diputados.gob.mx/LeyesBiblio/ref/lgeepa/LGEEPA_ref36_09ene15.pdf).
- López, A., Calle, D., & Molina, A. (2017). Análisis del uso de herramientas de gestión ambiental en las empresas comerciales del Cantón de Morona. *Revista Killkana Sociales* Vol. 1. No. 3. Pp. 45-52. [doi.org/10.26871/killkana\\_social.v1i3.62](https://doi.org/10.26871/killkana_social.v1i3.62).
- Namakforoosh M, 2010, Metodología de la Investigación, 2e. Editorial Limusa S.A de C. V., México D.F.
- Narváez, M. J. (Junio - Noviembre de 2012). Dimensiones del emprendedurismo desde una visión universitaria. *Ing-novación*, 2(4), 1-7. Disponible en <http://redicces.org.sv/jspui/bitstream/10972/1969/1/0-editorial-dimensiones-del-emprendedurismo-desde-una-vision-universitaria.pdf>.
- Northouse, P. (2010). Authentic Leadership. En P. Northouse, *Leadership. Theory and practice* (págs. 205-240). USA: SAGE. 5 EDICION
- Paternoster, A. (2011). Herramientas para medir la sostenibilidad corporativa. Un análisis compartativo de las memorias de sostenibilidad. Disponible en: [https://upcommons.upc.edu/bitstream/handle/2099.1/13644/PFM\\_Agustin\\_Paternoster.pd](https://upcommons.upc.edu/bitstream/handle/2099.1/13644/PFM_Agustin_Paternoster.pd).
- Prado, J. (2016). México y la Agenda 2030 de Desarrollo Sostenible. México: Benemérita Universidad Autónoma de Puebla. Editorial: El Errante. Año: 2016. Autor: Juan Pablo Prado Lallende. 170 páginas. Benemérita Universidad de Puebla. México y la Agenda 2030 de Desarrollo Sostenible. Acciones, contribuciones y propuestas | Revista Internacional de Cooperación y Desarrollo.
- Tinoco R. (2017). México y la Agenda 2030 de Desarrollo Sostenible. Acciones, contribuciones y propuestas. *Revista Internacional De Cooperación Y Desarrollo*, 4(1), 213-216. [doi.org/10.21500/23825014.3127](https://doi.org/10.21500/23825014.3127)
- Rodríguez, C., & Prieto, F. (2009). La sensibilidad al emprendimiento en los estudiantes universitarios. Estudio comparativo Colombia-Francia. *Innovar. Edición especial en educación* 19, 73-89. Disponible en: <https://www.redalyc.org/pdf/818/81819025007.pdf>.
- Rodríguez R. & Ricárdez, J. (2020) Aproximación a la gestión ambiental proactiva como capacidad dinámica en el sector turístico hotelero mexicano. *Elementos determinantes para su desarrollo. El Periplo Sustentable*, (38). (194 – 218), ISSN 1870-9036. Consultado el 12/01/2020. [doi.org/10.36677/elperiplo.v0i38.7029](https://doi.org/10.36677/elperiplo.v0i38.7029).

Rodríguez, L., & Ríos, L. (2016). Evaluación de sostenibilidad con metodología GRI. *Dimensión Empresarial*, 14 (2). (73-89). ISSN 1692-8563. Consultado el 03 de agosto de 2020. doi.org/10.15665/rde.v14i2.659.

Suárez, T. (2014). La poesía como medio para hacer elegante lo relevante de la gestión. En R. Molina, R. Contreras, & A. López, *Emprendimiento y MIPYMES* (págs. 15-22). México: Pearson.

UNESCO. (2016). Introduction to Sustainability. New York: UN. Published in 2017 by the United Nations Educational, Scientific and Cultural Organization (UNESCO). 7, place de Fontenoy, 75352 Paris 07 SP, France. Available in <https://unesdoc.unesco.org/ark:/48223/pf0000261971>.

Velázquez, L., & Vargas, J. (2012). La sustentabilidad como modelo de desarrollo. *Ingeniería de recursos naturales y del ambiente*. Num. 11. 97-107. Available in <http://www.unesco.org/open-access/terms-use-ccbysa-enable> y competitivo.

World Commission on Environment and Development. (1987). *Our Common Future/Brundtland Report*. United Nations. Available in <https://sustainabledevelopment.un.org/content/documents/5987our-common-future.pdf>.

## Economic impact of teleworking on teaching activities of professors at the Universidad de Guanajuato, Mexico

### Impacto económico por teletrabajo en actividades docentes en los profesores de la Universidad de Guanajuato, México

REYES-MONTUFAR, Claudia Libeth†, ORTIZ-GIL, Miguel Ángel, ARENAS-FLORES, Maribel and GUZMÁN-CABRERA, Rafael

*Universidad de Guanajuato, México.*

ID 1<sup>st</sup> Author: *Claudia Lizbeth, Reyes-Montufar* / ORC ID: 0000-0003-1826-703X, Scopus ID Author: 50262737900, CVU CONACYT ID: 272891

ID 1<sup>st</sup> Co-author: *Miguel Ángel, Ortiz-Gil*

ID 2<sup>nd</sup> Co-author: *Maribel, Arenas-Flores* / ORC ID: 0000-0002-5953-8126, CVU CONACYT ID: 957134

ID 3<sup>rd</sup> Co-author: *Rafael, Guzmán-Cabrera* / ORC ID: 0000-0002-9320-7021, Researcher ID Thomson: L-1158-2013, Scopus ID Author: 56002744300, CVU CONACYT ID: 88306

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#### Abstract

Teleworking, one of the measures adopted to control the COVID-19 pandemic and at the same time maintain employment, has increased in several countries. This research analyzed the expenditure of teachers at the University of Guanajuato for teleworking to develop their academic activities. For this purpose, a survey was developed for the ASPAAUG community, in order to know the economic situation during the COVID-19 health contingency. Of the population analyzed, 50.93% considered that their economic situation was not affected by the sanitary contingency, while 49.07% considered that their economic situation was affected. The development of teaching activities meant that 57.48% did have a work area at home to carry out their work activities, while 42.52% did not have a space at home to carry out their teaching activities. On the other hand, teleworking represented an increase in electricity and internet expenses in teachers' homes. The pandemic is not over yet, and may not be over until we have enough vaccines available for everyone, so it is difficult to conclude which of the changes introduced by the pandemic will be sustained and which will be temporary. What we can foresee is that the need for telework as a containment (or mitigation) strategy will still last. And we can hypothesize that a substantial portion of telework will continue once the pandemic has fully passed.

Leachate, Groundwater, Landfill, Landfill, Risk, Garbage+

#### Resumen

El teletrabajo, una de las medidas adoptadas para controlar la pandemia de COVID-19 y al mismo tiempo mantener el empleo, se ha incrementado en diversos países. Esta investigación analizó el gasto de los docentes de la Universidad de Guanajuato por realizar teletrabajo para desarrollar sus actividades académicas. Para ello se desarrolló una encuesta para la comunidad de la ASPAAUG, que permitiera conocer la situación económica durante la contingencia sanitaria de COVID-19. El 50.93% de la población analizada consideró que su situación económica no fue afectada por la contingencia sanitaria, mientras que el 49.07% sí consideró afectada su economía. El desarrollo de las actividades docentes conllevó que el 57.48% sí contara con un área de trabajo en su hogar para realizar sus actividades laborales, frente a un 42,52% que no contó con un espacio en su hogar para realizar sus actividades de docencia. Por otra parte, el teletrabajo representó un aumento en los gastos de luz e internet en los hogares de los docentes. La pandemia no ha acabado aún, y posiblemente no lo haga hasta que no tengamos vacunas suficientes disponibles para todos, por lo que es difícil concluir sobre cuáles de los cambios introducidos por la pandemia se mantendrán y cuáles serán pasajeros. Lo que sí podemos prever es que la necesidad de teletrabajo como estrategia de contención (o mitigación) durará aún. Y podemos plantear como hipótesis que una parte sustantiva del teletrabajo continuará una vez haya pasado totalmente la pandemia.

Lixiviados, Manto Freático, Relleno sanitario, Riesgo, Basura

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\* Correspondence to Author (Email: ramurray@uan.edu.mx,)

† Researcher contributing first author.



## Introduction

The World Health Organisation (WHO) declared an international public health emergency due to the new outbreak of COVID-19. Coronavirus (Breslin et al., 2020). This pandemic is causing a series of transformations in the different spheres of social, political, labour and economic life worldwide. Consequently, international governments in Latin America have implemented emergency public policies based on the suspension of certain activities to mitigate the spread of the virus in their countries, including in the education sector (Aquino-Canchari & Medina-Quispe, 2020).

Emphasis was placed on ensuring learning and extending the school year remotely to mitigate the educational situation. In order to continue teaching-learning activities, academic strategies were designed where teachers from their homes and in an ethical and telematic way, resorting to the use of information and communication technologies, have carried out their classes remotely. In this sense, higher education institutions have opted for telework as a strategy for sustainability (Escobedo, Macías, & Garza, 2020).

In this sense, (Cortés-Pérez, Escobar-Sierra, & Galindo-Monsalve, 2020), express that the etymological interpretation of the word "Telework" is found in the Greek root of the word: The prefix tele - which comes from the Greek word "telos" (at a distance) - indicates that it is performed outside the usual physical centre of work, where the employer is located, thus meaning to break with the traditional schemes of work that were generally developed in different countries.

In this sense, (Escobedo et al., 2020), point out some key aspects for telework to occur in university organisations: (a) The space where it takes place can be anywhere, as long as there are adequate means; (b) The presence of ICT - Information and Communication Technologies - stands out as a direct means of work (for example, application of computer tools) and as a communication system between the teleworker and the organisation; (c) The usual is the non-presence in the physical plant of the organisation; and, (d) A renewed model of work organisation is exhibited, based on ICT, in this model are fundamental axes information processing and communications structure.

Telework, through new information and communication technologies (ICT), has changed the way of working and daily life in the 21st century, but its use for off-site work has not yet become a necessary praxis for all workers (ILO and Eurofound, 2019); However, today, due to the COVID - 19 pandemic that has untimely burst the normality of work, generating a global health crisis, institutions have recently found it imperative to implement telework, in order to continue providing services quickly, decentralised and in remote work environments.

However, it is necessary to recognise the limitations of the Mexican educational system, with the closure of educational spaces it has been necessary to incorporate virtual environments to give continuity to the processes of distance learning and to complement the absence of face-to-face education. These environments are defined "...as resources that complement the management and teaching work, given that they improve the teaching-learning processes and establish the generation of training activities aimed at the acquisition of new knowledge and appropriation of content" (Vargas & Rondero, 2020). Therefore, those who interact in the development of educational processes must adopt these digital tools to give continuity to the curricula implemented by the educational authorities.

Within the Educational Model for Mexico, it is considered important to bring together the contributions and experiences that contribute to the development of the national education system; in this way, the health emergency situation provides a guideline to strengthen infrastructure and equipment to build environments conducive to learning (Pública, 2017).

Armouring the Mexican education system with the necessary elements to face the medium and long-term effects of COVID-19 is fundamental, as well as having options to overcome the crisis. The truth is that, to date, the education system does not have the necessary infrastructure to offer distance education, digitalised materials have not been sufficiently prepared, and the Mexican state has not invested in strengthening the education system (Vargas & Rondero, 2020).

Given this situation, it is a long way from achieving Sustainable Development Goal (SDG) number 4 on quality education, which is part of the 2030 Agenda (Bárcena & Prado, 2017), which aims to ensure inclusive, equitable and quality education, with the intention of promoting lifelong learning opportunities; when ICTs, far from being an alternative to address the problems generated by this pandemic in educational processes, become an obstacle for those who have neither the infrastructure nor the knowledge to move towards a digital education.

### *Health contingency*

In recent times, events have occurred that have had a considerable impact on natural resources and people's health, forcing a rethinking of social dynamics. The fires in the Amazon in August 2019, floods in southeastern Spain in September 2019, the fires in Australia in early 2020 and the disease caused by the new SARS-CoV2 coronavirus (with the first cases reported in Wuhan, China, and given the spread of the disease around the world, it was declared a pandemic by the World Health Organization (WHO) in March of this year (WHO, 2020) show or ratify this. These events are some events to question the role of the human species in the socio-environmental dynamics of the planet.

In the case of COVID-19, it is a global problem, which has not only had an impact on people's health and the latent risk of infection, but has also destabilised the global economy and forms of social interaction (for example, how to develop teaching-learning processes in this situation), among other effects. Vulnerable social groups become even more defenceless, not only because of the risk of contracting the disease, but also because of the repercussions caused by isolation and the difficulties in carrying out economic activities, which drastically affect people's quality of life.

In Mexico, according to Federal Government data, the first infection occurred on 27 February 2020, by 26 April, 14,667 confirmed cases were reported (57.79% men, 42.21% women), 7,612 suspected cases, and of the number of infected, 1,351 deaths were recorded.

By 15 June, the figure had risen to 146,837 infected persons (55.51% men, 44.49% women); in other words, in 50 days the number of infections increased tenfold, and the number of people who died from this pandemic was 17,141, a figure that was increasing, and to avoid further infections, phase 3 of the contingency was continued (Government of Mexico, n.d.). It is a public health problem that has created a challenge for the Federal Government and civil society in terms of prevention, detection, control and/or eradication, since, as mentioned above, it has not only affected people's physical health, but has also had an impact on various aspects of daily life that affect now and will do so in the future, such as the issue of education in Mexico. With the COVID-19 pandemic, new circumstances have arisen in working relationships with multiple repercussions, some of which are here to stay, making activities that were previously aimed only at a segment of the population, such as distance education, suddenly become completely normal and necessary.

Just to mention some of the effects caused by the pandemic, we have to mention that around 5 million jobs were temporarily lost, of which 46% are workers subject to an employment relationship and 53% are self-employed workers (Teruel Belismelis & Pérez Hernández, 2021).

The impact was also measured in households with a population aged 18 years and over that have a fixed telephone service, with the result that in 30% of cases, a member of the household lost his or her job and in 65% of the households surveyed, income decreased (Moctezuma Pérez & Murguía Salas, 2021).

Some authors date the birth of the so-called industrial revolution 4.0 to just over 20 years ago (TEPE & MUCAN ÖZCAN, 2021). This revolution is mainly based on the use of information and communication technologies in many business, education and health sectors, among others, where technological changes related to automation, mechatronics and robotics; the internet, wireless networks, software development, which have been incorporated almost daily in our lives (Basco, Beliz, Coatz, & Garnero, 2018).

*Job losses in Mexico*

In Mexico millions of working staff stayed at home in teleworking or had to face the crisis derived from the pandemic, such as salary decreases or layoffs since the end of March 2020 as a consequence of the COVID-19 epidemic (Feix, 2020).

"At the height of the pandemic in the region", in June 2020, there was a "14% drop in total employment". In Mexico, according to the National Institute of Statistics and Geography (INEGI), more than 12 million people stopped earning income from their work (Rodríguez & Torres). However, many of those who kept their jobs did so at the cost of reduced working hours and wages. Mexico had a 6% decrease in working time and a 7% decrease in wages (Feix, 2020).

From one moment to the next, COVID-19 is a major concern for various sectors worldwide, sectors such as the economic and health sectors, but they were not the only ones, the education sector was also affected; while in first world countries there was a rapid adaptation, migrating their educational activities to virtual classrooms; in Mexico, the first strategy considered was to send staff on holiday, due to the lack of digital infrastructure or the lack of training for teachers to continue their activities virtually (Iturria, 2020).

Teachers had to reorganise their strategies so that students could join via internet or whatsapp, "they had to respond to a series of emerging demands of various kinds", notes the Economic Commission for Latin America and the Caribbean (ECLAC). This crisis generally took them with insufficient training and availability of resources, but teachers had to face this situation in order to keep their jobs (Lion, 2020).

Advantages and disadvantages of teleworking in teaching

Working from home is very convenient for some teachers, but for others it is a big problem. The pandemic has undoubtedly led to the introduction of virtual working or teleworking, due to the social distancing decreed by the government with the aim of reducing the number of cases of the coronavirus.

This means that working remotely is part of the normality imposed by the confinement, which has meant that the spaces intended for rest at home are now improvised offices (Cifuentes-Leiton & Londoño-Cardozo, 2020).

The change in daily dynamics due to the presence of the SARS-CoV2 coronavirus generated an unexpected restructuring in various political-economic sectors in society at a global level. Given the circumstances of the COVID-19 pandemic, it is important to consider that social distancing from the analysis of educational activities affects: 1) the emotional health of individuals, derived from the actions of shelter and isolation in their homes as a preventive measure to avoid contagion. Changing the paradigm of interpersonal relationships, the negative socio-economic impact with greater repercussions on vulnerable groups (indigenous peoples, agricultural labourers, rural women, migrants, older adults, young people, among others) and the conceptualisation of humanity-environment; 2) in the field of education, it has set a precedent in student-teacher interaction and vice versa, changing the paradigm of the way knowledge is acquired, the role that the teaching professional must assume to transmit the contents in the learning process, the concrete actions that the Mexican government must implement to comply with the Third Constitutional Article; and of course, the need to make use of ICTs as the main tool in the development of educational processes. According to the Autonomous University of Mexico [UNAM] (2020), Information and Communication Technologies (ICTs) are all those resources, tools and programmes that are used to process, manage and share information through various technological supports, such as: computers, mobile phones, televisions, portable audio and video players or game consoles.

During the pandemic caused by the coronavirus, the context demands and teleworking becomes a fundamental modality for the continuity of institutional activities, in the different sectors during the state of health emergency, this way of working improved from 4% to 88% in the institutions or non-essential sectors and that do not require in an indispensable way the face-to-face mode.

In this year, telework in the entities, is accentuated with more intensity and is one of the modalities of work necessary and priority to prevent contagions, as well as, an alternative and opportunity for the deconcentration of the work and the development of competences with the commitment to become digital institutions; since, telework significantly increased the use of Internet, digital media, virtual work and the use of technological platforms, in 324%, the Zoom service or Google Meets in 75%, as indicated (Roncal, 2021). Telles and Spanier (2018), indicated as an advantage the flexibility of working hours and as a disadvantage the lack of integration and physical presence with the entity. Therefore, Ulate (2020), proposed that entities that implement teleworking should have regulations on ethics and quality, allowing them to adequately control people in this modality. In this line, Estévez and Solano (2021), considered telework as positive, due to the improvement of institutional efficiency, reduction of time, reduction of mobility expenses, environmental protection and free hours; as negative, isolation at work, damage in the career and training line, long working hours, physical and psychological risks due to stress and digital disconnection, the impact of the coronavirus, the aggressive change in the development of education due to the closure of educational facilities as measures to prevent contagion, the importance of Information and Communication Technology (ICT) and its relationship with the educational model to address the school backwardness.

#### *Reform to telework in Mexico.*

It is clear that these technological changes require changes in the labour regulations that govern us in Mexico. They must now cover aspects that involve the use of these technologies in labour activities and the necessary regulation of these, always seeking to preserve and preserve both labour and human rights. The regulation of these activities has led to labour reforms in Mexico, for example the reform of 2012, in which some of these aspects were considered, albeit incipiently (Bensusán Areous, 2013). It was not until 11 January 2021 that the amendment to Article 311 and the addition of Chapter XII bis of the Federal Labour Law on teleworking was published in the Official Journal of the Federation.

This modification in the law seeks to clarify, largely motivated by the need to carry out remote work due to the pandemic due to COVID-19, the brevity of the wording of the previous law in relation to telework from the current context. The pandemic has become a watershed in labour relations, as the industrial revolution and mass production models were in their time, as the whole world has had to adapt to the new normal and as far as possible the population has moved into telework.

The International Labour Organisation produced a practical guide entitled: Teleworking during the COVID-19 pandemic (Santillan, 2020), as a result of the confinement directives issued by governments.

#### *Implementation of telework at the Universidad de Guanajuato.*

The Universidad de Guanajuato has the Institutional Catalogue of Distance Learning Courses (CICUS), which contains a total of 812 educational experiences distributed as follows: 442 courses, 364 learning units and 6 diploma educational programmes. This represents an increase of 25%, 164 new educational experiences, with respect to 2020. Reaching more than 51 thousand users, which represents an increase of more than 5 thousand per cent, going from the order of one thousand users to nearly 52 thousand. In this context, it has been possible to consolidate two institutional platforms in record time: the UG Digital Campus (<https://campusdigital.ugto.mx>) and the UG University Node (<https://nodo.ugto.mx/>), both of which have seen a significant increase in users during the contingency. Specifically, during the August-December 2020 semester, there was an increase of 174.4 percent, from 20,194 to 55,406 users, with respect to the same period of the previous year. While in the period January-June 2021, an increase of 11.6 percent was reported, registering 61,825 users.

**Methodology**

This research analysed the expenditure of teachers at the University of Guanajuato for teleworking to develop their academic activities. To this end, a survey was developed for the community of the Academic and Administrative Staff Union Association of the Universidad de Guanajuato (ASPAAUG), to ascertain the economic situation during the COVID-19 health contingency. The population was stratified by academics affiliated to ASPAAUG, of which there are N: 2300 affiliates. A simple random sampling formula was applied in order to identify how many people should be surveyed (n: 214 people). The data collection was carried out with a digitally prepared questionnaire sent by e-mail. The data collection period was from January to March 2021, to analyse information on expenditure during 2020. The digital survey was anonymous, sent by email to the 2300 academics who are members of ASPAAUG. Each participant was sent a digital informed consent form to participate in the research. The objective of the study and the guarantee of confidentiality were explained. This instrument was developed on the LimeSurvey platform where workers responded to each item using a Likert scale response format. The information collected was captured in a database and Minitab software was used for statistical processing.

**Results**

The participants who completed the survey had an average of 26.43 definite hours, with a standard deviation of 13.65 definite hours. In terms of work characteristics during telework, participants reported the following as shown in Table 1 below

	I have benefited from working at home	I feel at ease to carry out my academic work.	I have adapted to the change in work activities	I have the appropriate training for online work.
I fully agree	18.22%	23.36%	22.43%	18.22%
Agree	38.32%	41.59%	57.48%	52.34%
Don't know	13.55%	9.35%	6.07%	11.68%
Disagree	21.50%	22.90%	11.68%	15.42%
Strongly disagree	8.41%	2.80%	2.34%	2.34%

**Table 1** Teacher's appreciation of teleworking during the COVID-19 contingency

50.93% of the population analysed considered that their economic situation was not affected by the health contingency, while 49.07% considered that their economic situation was affected. With regard to the use of technology during the confinement, 70.56% considered that it had not, while 29.44% considered that it had worsened their working practices.

The development of teaching activities meant that 57.48% did have a work area at home to carry out their work activities, compared to 42.52% who did not have a space at home to carry out their teaching activities. However, 63.08% of the area where teleworking took place stated that it was not equipped with the inputs to carry out its substantive functions, compared to 36.92% who considered that it was well equipped to carry out teleworking. This led the academics to make extra expenses to adapt their work spaces in terms of infrastructure, furniture and supplies, as shown in Table 2.

Spending range for home workspace adequacy	Percentage
Less than \$4000	15.89%
From \$4001 to \$8000	24.77%
From \$8001 to \$12000	14.95%
From \$12001 to \$16000	12.62%
More than \$16000	16.36%
I did not account for your spending	15.42%

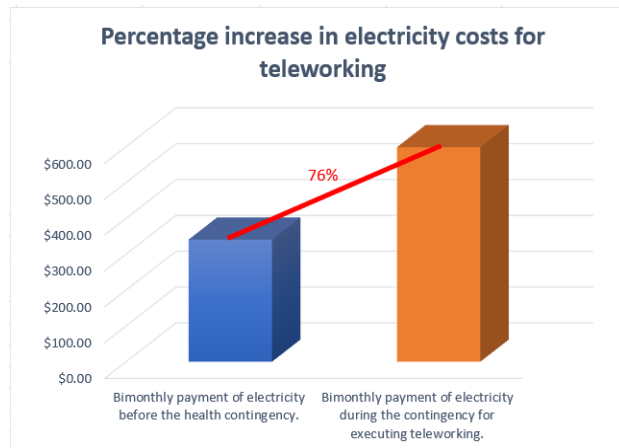
**Table 2** Expenditure made by teaching staff to adapt their workspaces at home

On the other hand, teleworking represented an increase in electricity and internet expenses in teachers' homes, as shown in Table 3.

Household	Household size (number of people)	Monthly electricity expenditure (in USD)		Monthly internet expenditure (in USD)		Monthly water expense before the health contingency (in USD)		Monthly water expense during the health contingency (in USD)	
		Value in USD	Value in USD per person	Value in USD	Value in USD per person	Value in USD	Value in USD per person	Value in USD	Value in USD per person
1	2	327.11	163.55	349.12	174.56	337.41	168.70	329.44	164.72
2	3	345.00	115.00	325.00	108.33	325.00	108.33	325.00	108.33
3	4	325.00	81.25	325.00	81.25	325.00	81.25	325.00	81.25
4	5	325.00	65.00	325.00	65.00	325.00	65.00	325.00	65.00
5	6	325.00	54.17	325.00	54.17	325.00	54.17	325.00	54.17
6	7	325.00	46.43	325.00	46.43	325.00	46.43	325.00	46.43
7	8	325.00	40.62	325.00	40.62	325.00	40.62	325.00	40.62
8	9	325.00	36.11	325.00	36.11	325.00	36.11	325.00	36.11
9	10	325.00	32.50	325.00	32.50	325.00	32.50	325.00	32.50

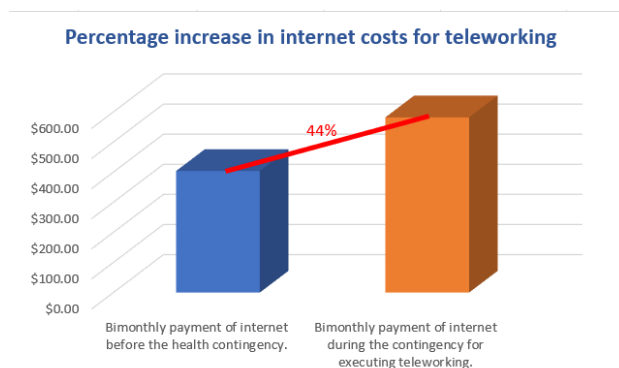
**Table 3** Expenditure on electricity and internet by teachers during the health contingency

There is a percentage increase of 76% in electricity costs, compared to when teleworking was not carried out, as shown in graph 1.



**Graphic 1** Increase in electricity costs for teleworking while teaching

Finally, the use of internet plans to teach classes from the academics' homes resulted in an economic increase of 44% on average, as shown in graphic 2.



**Graphic 2** Increased internet expenditure for teleworking while teaching classes

## Conclusions

In conclusion, the current federal labor law already includes payment by the employer for telecommuting, specifically related to the cost of electricity and internet usage. However, the legislation does not specify the amount or method for calculating these expenses, resulting in some private companies making payments on their own while others do not. In the case of the University of Guanajuato, a one-time extraordinary payment was made for telecommuting in 2021. Based on the research conducted in this study, it has been observed that these expenses can increase by up to 76% for electricity and up to 44% for internet. Therefore, it is important to establish clear criteria in the federal labor law for the calculation and payment of these expenses, in order to provide greater clarity to both public and private companies on how to calculate and apply these expenses in the payroll of their employees.

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## References

- Aquino-Canchari, C. R., & Medina-Quispe, C. I. (2020). COVID-19 y la educación en estudiantes de medicina. *Revista cubana de investigaciones biomédicas*, 39(2), 1-4.
- Bárcena, A., & Prado, A. (2017). *Agenda 2030 y los objetivos de desarrollo sostenible: D-CEPAL*.
- Basco, A. I., Beliz, G., Coatz, D., & Garnero, P. (2018). *Industria 4.0: fabricando el futuro* (Vol. 647): Inter-American Development Bank.
- Bensusán Areous, G. (2013). Reforma laboral, desarrollo incluyente e igualdad en México.
- Cifuentes-Leiton, D. M., & Londoño-Cardozo, J. (2020). Teletrabajo: el problema de la institucionalización. *Aibi revista de investigación, administración e ingeniería*, 8(1), 12-20.
- Cortés-Pérez, H. D., Escobar-Sierra, M., & Galindo-Monsalve, R. (2020). Influence of lifestyle and cultural traits on the willingness to telework: A case study in the Aburrá Valley, Medellín, Colombia. *Global Business Review*, 0972150920916072.
- Escobedo, J. M. C., Macías, J. G. M., & Garza, R. D. (2020). Educación a Distancia y Teletrabajo Distance Education and Teleworking. *Daena: International Journal of Good Conscience*, 15(1), 264-277.
- Feix, N. (2020). México y la crisis de covid-19 en el mundo del trabajo: respuestas y desafíos. *Panorama Laboral de tiempos de la COVID-19*.

Iturria, J. (2020). La educación en tiempos de pandemia; Un problema para México. *Voces UNIVA.. Obtenido de Universidad Católica. UNIVA: <https://www.univa.mx/blog/la-educacion-en-tiempos-de-pandemia-un-problema-para-mexico>.*

Lion, C. (2020). Enseñar y aprender en tiempos de pandemia: presente y horizontes. *Saberes y prácticas. Revista de Filosofía y Educación*, 5(1), 1-8.

Moctezuma Pérez, S., & Murguía Salas, V. (2021). Una aproximación hacia el contexto del mercado laboral de la población joven en contextos de pandemia (Covid-19). *Intersticios sociales*(21), 399-424.

Pública, S. d. E. (2017). Modelo educativo para la educación obligatoria: Autor México.

Rodríguez, H. C., & Torres, M. V. Los efectos del COVID-19 en el mercado de trabajo de México. *Temas Emergentes del COVID-19*, 81.

Santillan, W. (2020). El teletrabajo en el COVID-19. *CienciAmérica: Revista de divulgación científica de la Universidad Tecnológica Indoamérica*, 9(2), 65-76.

TEPE, G., & MUCAN ÖZCAN, B. (2021). REVIEW AND BIBLIOMETRIC ANALYSIS OF INDUSTRY 4.0 IN SOCIAL SCIENCES. *Dumlupınar University Journal of Social Science/Dumlupınar Üniversitesi Sosyal Bilimler Dergisi*(67).

Teruel Belismelis, G., & Pérez Hernández, V. H. (2021). Estudiando el bienestar durante la pandemia de Covid-19: la Encovid-19. *Revista mexicana de sociología*, 83(SPE), 125-167.

Vargas, L. R. I. A., & Rondero, E. O. O. (2020). Análisis documental: importancia de los entornos virtuales en los procesos educativos en el nivel superior. *Revista Tecnología, Ciencia y Educación*(17), 57-77.

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It was concluded that the municipal landfill of Xalisco Nayarit is a type B landfill (by the number of inhabitants and the generation of RS) according to NOM-083-SEMARNAT as stated in the standard (SEMARNAT, 2019).

It was also observed that society is focused on satisfying the production needs of capital, falling into the tendency to discard everything that is not useful without any type of waste separation or recycling (since the average waste generation per person is 920 g to 1.2 kg per day "If we took advantage of all organic waste and all inorganic waste that is recyclable, we would only produce 17% of the waste that we currently generate", which is in agreement with (Aguilar, 2008).

Our behaviour not only has repercussions in the environmental field, but also in the field of public health, since an open-air landfill like the one in Xalisco allows for easy reproduction of harmful fauna or sanitary vectors, which are responsible for transferring infections to nearby communities; CO<sub>2</sub> and methane, which are the two main gases responsible for the greenhouse effect and fires in landfills based on (Tchobanoglous. et al., 1994).

Dioxins and carcinogenic compounds; leachates, which pollute surface and ground water bodies; and, among other things, landscape deterioration (SEDESOL, 2001).

We must react and do something to solve this problem, attack the root of the problem, reduce the generation of solid waste and separate it from storage at source, follow up after collection and integrate systems of separation, transformation and recovery of waste as an intermediate point before transferring it for final transportation to a landfill or sanitary landfill.

## Conclusions

The location of an adequate site for the final disposal of solid waste must comply with the guidelines set out in NOM-083-SEMARNAT-2003 for the correct disposal of solid waste with an infrastructure that avoids leachate runoff into the water table.

The municipal government must apply the regulations that correspond to the management of urban solid waste as specified in the Official Mexican Norm 083 of SEMARNAT.

The City Council should use the different means of dissemination to raise public awareness of the culture of reduction, recycling, reuse and recovery of solid waste in order to reduce the volume that enters the final disposal sites on a daily basis.

Having an adequate infrastructure in the municipal sanitary landfill will prevent contamination of the water table and public health problems due to the consumption of water contaminated with leachates.

## References

Aguilar, J, A. (2008). El mejor residuo es el que no se genera. *Consumidor*, pp 42-53.

Asociación Interamericana de Ingeniería Sanitaria y Ambiental - AIDIS, *Directrices para la Gestión Integrada y Sostenible de Residuos Sólidos Urbanos en América Latina y el Caribe*/Asociación Interamericana de Ingeniería Sanitaria y Ambiental - AIDIS y Centro Internacional de Investigaciones para el Desarrollo - IDRC, São Paulo (2006).

Careaga, J. (2000). Residuos sólidos: Propuesta para una Política Nacional. *Gaceta Ecológica* Num 36 septiembre de 1995.

Chen, X., y Geng, T. (2010). *An overview of municipal solid waste management in China*, *Waste Management*: 30, 716-724.

De Valle, G. (2005). *La Gestión Integral Sustentable de residuos sólidos urbanos: Diagnóstico y evaluación para la ciudad de Saltillo, Coahuila*. El Colegio de México, México, D.F. DOI: 10.35429/JMME.2019.5.3.14.25

GTZ, (2003). *La Basura en el Limbo: Desempeño de Gobiernos Locales y Participación Privada en el Manejo de Residuos Urbanos*, México, D.F., Comisión Mexicana de Infraestructura Ambiental/ Agencia de Cooperación Técnica Alemana (GTZ).

Gutiérrez, V. (2013). *Diagnóstico Básico para la gestión integral de residuos*.

INE, *Generación y composición de los residuos sólidos municipales*, En Reporte del estado ambiental y de los recursos naturales en la frontera norte de México por SEMARNAT, pp 191-199, México, D.F., (2010), <http://www2.inecc.gob.mx/publicaciones/download/109.pdf>.

INEGI, (2010). *Residuos: Recolección y disposición final de residuos sólidos urbanos, 1998 a 2010* [http://app1.semarnat.gob.mx/dgeia/informe\\_04/pdf/cap8.pdf](http://app1.semarnat.gob.mx/dgeia/informe_04/pdf/cap8.pdf).

Kanat, G. (2010). *Municipal solid-waste management in Istanbul*, Waste Management: 30, 1737-1745.

Leao, E (2010). El sol de Nayarit: Teme síndico de Xalisco Incendios en Basurero Municipal. Obtenido del El sol de Nayarit: <http://www.elsoldenayarut.mx/política/407-teme-sindico-de-xalisco-incendios-en-basurero-municipal>.

Murray Núñez, R. M., Nájera González, O., Orozco Benítez, M.G., Marceleño Flores, S. y Flores Vílchez, F. (2013). Sitios adecuados para la implantación de vertederos de residuos sólidos urbanos, 6<sup>o</sup> Encuentro Nacional de Expertos en Residuos Sólidos

Murray Núñez, R. (2005). Evaluación de sitios para la implantación de un relleno sanitario de residuos sólidos urbanos para la costa norte de Nayarit. tesis de maestría. UAN: México.

Murray-Núñez, R., Orozco-Benítez, M.G. and Nájera-González, Oyolsi. (2019). The role of the pepenadores and their relationship to sustainable development: A proposal for municipalities. *Journal-Macroeconomics and Monetary Economy*. Vol.3 No.5 14-25

Okot-Okumu, J., Nyenje, R. (2011). *Municipal solid waste management under descentrlisation in Uganda*, Habitat International: 35, 537-543.

SEDESOL. (2011). Problemática del tiradero a cielo abierto. En SEDESOL, *Manual Técnico-Administrativo para el Servicio de Limpia Municipal* (págs. 33-41) D.F.

SEDESOL. (2001). Problemática del tiradero a cielo abierto. En SEDESOL, *Manual Técnico – Administrativo para el Servicio de Limpia Municipal* (págs. 33-41). D.F.

SEMARNAT. (2019). Norma Oficial Mexicana NOM-083-SEMARNAT-2003. Especificaciones de protección ambiental para la selección del sitio, diseño, construcción, operación, monitoreo, clausura y obras complementarias de un sitio de disposición final de residuos sólidos urbanos y de manejo especial. Secretaría de Medio Ambiente y Recursos Naturales.

Tchobanoglous, G., Theisen, H. y Virgil, S.A. (1994). Elementos funcionales de un sistema de gestión de residuos. *Gestión integral de residuos sólidos* (págs., 10-16). McGraw-Hill Interamericana de España SL.

UNEP. (2012). *Emerging issues in our global environment* (en línea), Nairobi, Kenya, United Nations Environment Programme.

Vij, D. (2012). *Urbanization and solid waste management in India: present practices and future challenges*, *Procedia Social and Behavioral Sciences*: 37,437-447.

Zaman, A.U. and Lehmann, S. (2011). *Urban growth and waste management optimization towards 'zero waste city'*, *City, Culture and Society*: 2, 177-187.

Zaman, A.U. (2014). *Measuring waste management performance using "Zero Waste Index": the case of Adelaide, Australia*, *Journal of Cleaner Production*: 66, 407-419.

## Perception of students and teachers of English on the use of didactic materials in Nayarit

## Percepción de alumnos y docentes de inglés sobre el uso de los materiales didácticos en Nayarit

CARRILLO-BELTRÁN, Julio César Cuauhtémoc†\*, FLORES-VILCHEZ, Fernando, RAMIREZ-JIMÉNEZ, Armando and ARVIZU-LÓPEZ, Bertha Alicia

*Universidad Autónoma de Nayarit, México.*

ID 1<sup>st</sup> Author: *Julio César Cuauhtémoc, Carrillo-Beltrán*

ID 1<sup>st</sup> Co-author: *Fernando, Flores-Vilchez* / ORC ID: 0000-0001-5472-255X

ID 2<sup>nd</sup> Co-author: *Armando, Ramirez-Jiménez* / ORC ID: 0000-0001-9903-384

ID 3<sup>rd</sup> Co-author: *Bertha Alicia, Arvizu-López* / ORC ID: 0000-0003-1163-5477

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### Abstract

This document describes the organizational culture factor of the human resource that works in a Mexican hotel organization. The theoretical path was made from the inputs of Barney, Hill, Pérez Mayo, Gordon, Thévenet, Golden, Stoner, Serna, Koontz y Cooke y Lafferty; as a explanatory framework which distinguishes the importance of identifying through an inventory of organizational culture, as it builds and defines such organization, it's relations and it's processes. The methodology is empirical, descriptive and quantitative. The instrument used for the collection of data was the questionnaire generated by Cooke and Lafferty, called Inventory of Organizational Culture. This instrument allowed to identify the Organizational Culture starting from the methodological categorical criteria proposed by themselves, meaning, they measured the dimensions: realization, auto-update, humanistic-encouraging, affiliate, conventional, approval, dependent, of evasion, antagonistic, power, competitive and perfectionist; defined by the instrument.

**Investigación, Actitud, Educación, Inglés, Didáctico**

### Resumen

La obsolescencia programada surgió de la necesidad de mantener una El artículo revisa la cultura organizacional del recurso humano que trabaja en una organización hotelera de México; la ruta teórica realizada es bajo la mirada de Barney, Hill, Pérez Mayo, Gordon, Thévenet, Golden, Stoner, Serna, Koontz y Cooke y Lafferty (1989) como marco explicativo que destaca la importancia de identificar a través de un inventario de cultura organizacional del cómo se construye y define dicha organización, sus relaciones y procesos. La metodología es empírica, descriptiva y cuantitativa. El instrumento utilizado para la recolección de datos fue el cuestionario generado por el Cooke y Lafferty, denominado Inventario de Cultura Organizacional. Este instrumento permitió identificar la cultura organizacional a partir de los criterios categoriales metodológicos propuestos por ellos mismos, es decir se midieron la dimensión: realización, auto-actualización, humanístico-alentador, afiliativo, convencional, aprobación, dependiente, de evasión, antagonístico, poder, competitivo y perfeccionista

**Investigación, Actitud, Educación, Inglés, Didáctico**

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\* Correspondence to Author (Email: doctorjuliocesarcarrillobeltran@uan.edu.mx)

† Researcher contributing first author.

**Introduction**

The purpose of this study is to find out the perception that English teachers have of the use of educational materials. The research was focused on teachers of the three levels of basic education (Pre-school, Primary and Secondary) in the State of Nayarit.

The interest in studying this subject arises from the need to apply more and better tools to help achieve meaningful learning in the classroom. In order to carry out this diagnosis, it was proposed to identify the educational materials used by the teacher in the classroom in order to subsequently ascertain the perception that teachers and students have of their relevance and suitability.

The study was carried out in the twenty municipalities of the State of Nayarit.

The evaluation instrument covers three dimensions: teaching practice, teaching-learning process and use of authentic material. All dimensions focused their attention on three main variables of practical performance: 1) the perception that students and teachers have of teachers' work planning, 2) the learning activities in which student-teachers participate, and 3) the use of educational materials.

**Aims of the research**

- To explore the meaning that practising teachers assign to the use, benefits, limitations and impact of didactic materials for teaching English (foreign language) at the three levels of Basic Education in the state of Nayarit.
- To identify the attitudes of Basic Education students in the state of Nayarit towards teaching materials for the subject of English.

**Some specific objectives**

- To identify, by means of natural semantic networks, the meaning that teachers of the three different levels of basic education assign to the importance of the use of didactic materials in the classroom.

- To determine the meaning that teachers assign to the use of teaching materials in the subject of English.
- To identify the benefits that English teaching materials have according to teachers in schools at different levels of education in Nayarit.
- Some research questions
- What is the meaning that teachers in Basic Education schools assign to the use of didactic material for the subject of English?
- What are the benefits that teachers of Basic Education schools assign to the use of didactic material for the subject of English?

**Justification of the research**

Knowing the meaning of the use, benefits and limitations of the didactic material assigned by the teachers and students of the subject will allow us to determine indirectly what impact it has on the learning of the students of the three different levels of Basic Education in the State of Nayarit. The results obtained through this research strategy will allow the state education authorities to make decisions about the relevance of the resources currently used for teaching English, with the intention of improving academic performance in this important subject. The local education authority itself will be able to use the results to identify areas of opportunity to strengthen the dissemination, evaluation and monitoring of the use of educational materials for both students and teachers to ensure their relevance. For teachers who are responsible for teaching English, the results obtained could be a reference to identify areas of opportunity in the use of teaching materials, benefits and limitations. In a tangential way, in the light of the reflection of the results obtained, better teaching strategies can be adopted to guarantee educational success.

**Literature review (theoretical framework)***Brief background on the National Programme for English in Basic Education*

In accordance with Article 3. Constitutional, the General Education Law and the National Development Plan 2007-2012, the Ministry of Public Education (SEP) established as the main objective of the Sectoral Education Programme (Prosedu) "to raise the quality of education so that students improve their level of educational achievement, have the means to have access to greater well-being and contribute to national development" (SEP, 2007, 11).

Within this framework, and based on the powers granted to it by the General Education Law, the Ministry of Public Education (SEP) established as a fundamental objective to be achieved in 2012: "To raise the quality of education so that students improve their level of educational achievement, have the means to have access to greater well-being and contribute to national development" (SEP, 2007, 11). To achieve this objective in Basic Education, the following strategy is available: "to carry out a Comprehensive Reform of Basic Education, centred on the adoption of a competency-based educational model that responds to Mexico's development needs in the 21st century, with a view to achieving greater articulation and efficiency between the preschool, primary and secondary levels" (SEP: 2010). (SEP: 2010)

In order to consolidate a proper and pertinent route for reforming Basic Education in our country, favouring the articulation in the design and development of the curriculum for the education of pre-school, primary and secondary students, places the student at the centre of the educational act, the achievement of learning, the Curricular Standards established for school periods, and favouring the development of competencies that will allow them to reach the Basic Education exit profile.

The SEP through Agreement 592 establishes the Articulation of Basic Education, published on 19 August 2011, and determines in the student's exit profile that the student will possess basic tools to communicate in English.

It also states that the Ministry of Public Education of the Federal Government and local education authorities agreed on the gradual generalisation of the subject Second Language: English in all basic education schools, over a maximum period of seven years, to conclude the process in 2018. Therefore, there is a need to incorporate the subject of English into preschool and primary education curricula and to adjust the content of secondary education so that, by the end of this level, students will have developed the plurilingual and pluricultural skills necessary to face communicative challenges, build a broad vision of the linguistic and cultural diversity of the globalised world, and respect their own culture and that of others.

Internationally, one of the fundamental objectives of language education is to foster the favourable development of the learner's personality and feelings of identity, as a response to the experience of facing the different in the fields of language and culture. Mexico, as a member country of international organisations related to education, such as UNESCO (United Nations Educational, Scientific and Cultural Organization) and the OEI (Organisation of Ibero-American States), has assumed its commitments and their fulfilment is reflected in the Comprehensive Reform of Basic Education (RIEB), the reform (RIEB) of 2004-2011, the Basic Education Curriculum 2011 and the National Programme of English in Basic Education (PNIEB).

The PNIEB is organised in four cycles: Cycle 1 consists of a language awareness raising programme, which seeks to introduce students to the foreign language through participation in play activities that will lay the foundations for future learning. Cycle 2, 3 and 4 programmes correspond to a formal programme for teaching English as a foreign language, through which students acquire the skills to use English effectively in a range of social and academic situations. The expected levels of language acquisition are: Basic User: Level A1, with 200 hours of study and A2, with 200 hours of study and B1 with 360 hours of study.



**Methodology***Type and design of research*

The present study is of a mixed nature, since at the same time as quantitative data were obtained, the results are interpreted qualitatively in order to achieve a comprehensive view of the object of study. Due to its scope, it is a descriptive study because its purpose is to specify the properties, characteristics or features that the object of study possesses (meaning and attitudes towards the use of English teaching materials used in the three levels of Basic Education in the State of Nayarit. 2015 - 2016).

Due to its design, the study is also characterised as non-experimental and transectional in nature, as there is no manipulation of variables and the data are collected at a single point in time. In accordance with the objectives of the study, the methodology and fieldwork have two perfectly differentiated aspects: the first related to the meaning that teachers attribute to the teaching materials, and the second related to the students' attitude towards them.

*Population and sample*

From this population, 58 teachers who teach English at preschool (2), primary (7) and secondary (49) levels were selected purposively, not randomly.

The student population in the three levels of Basic Education (Pre-school, Primary and Secondary) in the State of Nayarit is 74,92 thousand students, distributed among 329 schools. From the total universe of students in basic education in the state, a purposive sample of 371 students was selected. Both students and teachers surveyed were randomly selected.

*Data collection methods and techniques*

Two instruments were designed for data collection, one to identify the meanings (natural semantic networks) and the other to assess the attitude (Likert-type scale) of the students towards the didactic resources used in the subject of English.

*Data analysis techniques*

Once the fieldwork had been carried out, the data were processed in the following way:

For the natural semantic networks:

1. The surveys answered by the teachers were analysed and those that showed inconsistencies or that had not been completely resolved were discarded.
2. The data was captured in Excel for better handling. This stage was very important and laborious as it involved the literal capture of the answers (each respondent could have written ten words for each of the three proposed items), as well as a thorough review of the answers to avoid erroneous captures or unnecessary repetitions.
3. Once the defining words had been refined, pivot tables were created in the same programme, allowing the SAM sets (core of the ten main defining words) to be identified and finally their graphical representation to be drawn up.
4. The interpretation of the networks was carried out with reference to the following lines of reflection: How do semantic networks allow us to represent reality (particularly in the central theme of the research), what is the structure of the semantic network, how much semantic richness exists in the networks, how close are the respondents to what is defined in the theory (in this case what is stated in the normative documents of English language teaching), how close are the respondents to what is defined in the theory (in this case what is stated in the normative documents of English language teaching) and how close are they to what is defined in the theory (in this case what is stated in the normative documents of English language teaching)?

In the case of the attitude questionnaire, we proceeded as follows:

Responses were captured in an Excel data sheet in a previously designed format and response frequencies were identified for each of the items and percentages were obtained, with which finally illustrative graphs of the information were created.

### **Results and conclusions**

The fieldwork was also carried out thanks to the support of a team of interviewers who were selected to carry out this noble task of talking to and requesting permission from the educational authorities of each of the schools to which the present instruments were applied and with which the information necessary for this project was collected.

The profile of the teaching staff consulted is characterised as follows:

It was a total of 58 teachers who teach in preschool (2), primary (7) and secondary (49). On average, the teachers are 38 years old and have 12.9 years of service. In terms of gender, 42 are female and 16 are male.

In terms of academic background, 2 teachers have only completed high school, 3 are technicians, 37 have a bachelor's degree, 1 has a master's degree, 7 have a master's degree, 1 has a doctorate. Seven did not indicate their academic degree.

### **General conclusions**

The main conclusions reached in the present research were the following:

With respect to the main objectives of the research, the meaning that practising teachers assign to the use, benefits, limitations and impact of teaching materials for the teaching of English (foreign language), in the three levels of Basic Education, in the state of Nayarit has been explored in which the teachers state that it indicates that they associate the concept of teaching materials to the resources that are usually available for the teaching of the foreign language. For them, the first and most valuable of the materials is the book (both reading and activities) as it presents an appropriate theoretical and practical sequence for tackling the contents of the subject.

In addition, in their classroom practice they are supported by different teaching resources such as posters, dictionary, projector, films, computer, photos, audios and games.

The teachers also mention that with respect to the limitations they have detected in reference to teaching materials, it indicates that the teachers associate the concept of limitations of teaching materials to the insufficiency mainly of the resources they usually have available for teaching the foreign language. It should be noted that the teachers say that the teaching material they use is incomplete, so there is a lack of interest, some say that it is necessary and others argue that there is zero or no progress in learning on the part of the pupils.

Regarding the attitudes of Basic Education students in the state of Nayarit regarding the teaching materials for the subject of English, their perception is striking in the four areas that have been consulted, which cover student satisfaction with regard to the teaching materials, the evaluation of the contents, the work methodology and general aspects. Most of the students mentioned that the didactic resources available to them are useful, attractive, visually pleasant, easy to use, easy to use, if they achieve the objectives set with them, as they are of good quality, and with regard to the content, they mentioned that they favour reflection, critical capacity and the creation of new ideas, as well as helping them to solve tasks and problems they face in their daily lives.

In general terms, a considerable percentage of the students surveyed consider that the physical characteristics (size, font, illustrations, etc.) of the resources are adequate and that the teaching resources are well organised. After having carried out the analysis of the application of these instruments on the meaning and attitude towards teaching materials for the subject of English, a few brief suggestions can be made.

The most appropriate teaching resource should be chosen for the group of students with whom we are working, so that they can be used in a novel, visual, auditory and more attractive way for the students. Encourage English teachers to be motivated to train or update themselves in language teaching methodologies, either by taking a diploma course or a postgraduate course, in order to professionalise their performance in the classroom. Learning a new language is a slow process that requires effort and commitment, both from the teacher and the students in Nayarit, in which parents should be included.

### References

- Crystal, D. (2010) *The Cambridge Encyclopedia of the English Language*. Cambridge University Press . (Páginas 428-432) Linguistics.
- Daniels, H. (2003), *Vygotsky y la pedagogía*, Barcelona, Paidós.
- Delors, J. (2016), *La educación encierra un tesoro. Informe a la Unesco de la Comisión internacional sobre la educación para el siglo XXI*, Madrid, Santillana/Unesco.
- Foros de Consulta Nacional para la Revisión del Modelo Educativo, Plan integral de diagnóstico, rediseño y fortalecimiento para el sistema de normales públicas. Documento base de educación normal, México, SEP, 2014. Consultado el 11 de abril de 2017 en: [http://www.forosdeconsulta2014.sep.gob.mx/files/base\\_educacion\\_normal.pdf](http://www.forosdeconsulta2014.sep.gob.mx/files/base_educacion_normal.pdf)
- Harmer, J. (2019). *The practice of English language teaching*. Harlow: Pearson Education Limited.
- Heredia, Blanca. “Apuntes para una definición sobre los alumnos que queremos formar” en *Educación Futura*, núm. 2, febrero de 2016
- Kaufman, A. M. y M. Ventura (2002), *Organización del currículum por proyectos de trabajo. El conocimiento es un caleidoscopio*, Barcelona, Universidad de Barcelona.
- Kern, R. (2000), *Literacy and Language Teaching*, Oxford, Oxford University Press.
- LEY GENERAL DE EDUCACIÓN, México, 1993 (Última modificación: 22 de marzo de 2017). Consultado el 11 de febrero de 2017 en: [https://www.sep.gob.mx/work/models/sep1/Resource/558c2c24-0b12-4676-ad90-8ab78086b184/ley\\_general\\_educacion.pdf](https://www.sep.gob.mx/work/models/sep1/Resource/558c2c24-0b12-4676-ad90-8ab78086b184/ley_general_educacion.pdf)
- Mitchell, R. y F. Myles (2018), *Second Language Learning Theories*, Londres, Arnold Publishers. Moon, J. (2010), *Children Learning English*, Oxford, Macmillan Publishers Limited.
- Novoa, P. (2017). Rosamond Mitchell y Florence Myles. *Second language learning theories*. Londres: Arnold. 2008. *Lenguas Modernas*, (26-27), 271 - 276. Consultado de <https://lenguasmodernas.uchile.cl/index.php/LM/article/view/45495/>
- Newport, E. L. (2002), “Critical periods in language development”, en L. Nadel (ed.), *Encyclopedia of Cognitive Science*, Londres, Macmillan Publishers Limited.
- SEP, Acuerdo número 706 por el que se emiten las Reglas de Operación del Programa de Fortalecimiento de la Calidad en Educación Básica, México, Diario Oficial de la Federación, 2013.

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**Abstract (In English, 150-200 words)**

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\* Correspondence to Author (example@example.org)

† Researcher contributing as first author.

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## Introduction

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General explanation of the subject and explain why it is important.

What is your added value with respect to other techniques?

Clearly focus each of its features

Clearly explain the problem to be solved and the central hypothesis.

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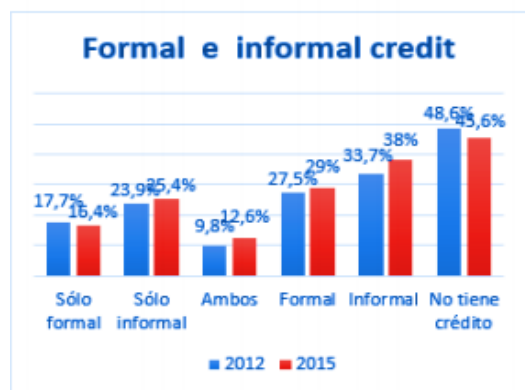
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	Cultural tourism	Commercial chocolate (national and international brands)
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$$Y_{ij} = \alpha + \sum_{h=1}^r \beta_h X_{hij} + u_j + e_{ij} \quad (1)$$

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## Methodology

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Explain clearly the results and possibilities of improvement.

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