

CHIAPANECA HANDICRAFT AS A DRIVER OF SUSTAINABLE LOCAL DEVELOPMENT

Karla Liliana Haro-Zea, Benemérita Universidad Autónoma de Puebla
Yadira Rosbinelly Haro-Zea, Benemérita Universidad Autónoma de Puebla
Gudiel Roblero-Mazariegos, Universidad Linda Vista
Samanta Sánchez Sánchez, Benemérita Universidad Autónoma de Puebla

ABSTRACT

This research examines Chiapaneca handicraft as a driver of sustainable local development by artisans. Chiapaneca handicraft sale contributes to the Gross Domestic Product of Chiapa. Chiapaneca handicraft includes a wide variety of products, styles, and designs which represent the art and culture of Chiapas. In this research we study the perception of artisans regarding handicraft contributions to sustainable local development. This is quantitative, descriptive, and cross-sectional research. Selection of the sample was done for convenience to meet certain criteria. Forty artisans were surveyed within their work area of which twenty are located in Chiapa de Corzo and twenty are located in San Cristobal de las Casas. Both municipalities are in the State of Chiapas, Mexico. For data collection, an instrument based on the ESTEMPLE model was used. The instrument consisted of 11 items and 9 constructs. The study showed that artisans consider no use for technology in their craft work. They determine the product cost to establish the price of their products. The study also shows that artisanal activity has a positive impact in environmental, social and economic terms.

JEL: M21, O180, R11

KEYWORDS: Sustainable Development, Handicraft, Strategy

INTRODUCTION

In Mexico, artisanal activity is important, according to the National Survey of Cultural Consumption in Mexico (Instituto Nacional de Estadística, Geografía e Informática y Consejo Nacional para la Cultura y las Artes, 2012). The number of people aged 12 and over, who responded that they had made a craft was 11,791,856. Traditional craftsmanship means the creation of unique pieces, based on traditional knowledge and technologies, using hand tools and natural products (Lukić et al., 2015). Mexico is the third most important country in artisan activity, because of its quality, its variety, and its beauty (Romero Medina, 2017). Handicrafts improve the economy of the country in general. The Satellite Account of the Culture of Mexico (CSCM) states that handicrafts generate 20.3% of the Gross Domestic Product of the culture sector. Also, handicrafts and traditional toys are the largest productive activity in the cultural sector. In 2012, these activities generated 339,349 jobs (Instituto Nacional de Estadística, Geografía e Informática y Consejo Nacional para la Cultura y las artes, 2012). This research study aims to identify Chiapanecan artisan's perceptions towards their products, as far as being a driver of sustainable local development. This research is organized as follows: In the first section, a literature review is carried out that allows us to contextualize the richness of Chiapas, emphasizing craftsmanship and its role in the local development. Later the methodology is revealed and the results and conclusions are presented.

LITERATURE FRAMEWORK

Handicraft Paper in Chiapas, Mexico

Chiapas is among the top states in the production of handicrafts in Mexico, for a plethora reasons. The first and most important reason is its cultural diversity which is reflected in towns proud of their origins, their aesthetic sense and an identity that is reaffirmed in handmade products which are known worldwide. Fundamental parts of the heritage of Chiapas, Mexico include knowledge, techniques, and life experiences of the artisans of Chiapas. Master Artisans have contributed to the enrichment and development of people and are a role model for the next generation. For centuries, the people of Chiapas have developed a great ability to create products used in their daily lives (Instituto Casa de las Artesanías de Chiapas, 2017). Therefore, artisan, handicraft and Chiapanecans activities not only helps economic activity, which generates direct and indirect jobs, but represents the culture and pride of being from Chiapas. The artisanal activity in Chiapas is diverse, rich in colors, textures, designs, styles, and materials.

The Instituto Casa de las Artesanías de Chiapas (2017) classifies this activity into two groups: 1) artisan branches and 2) handicraft products. Handicraft branches include: pottery, basket weaving, weaving, toy making, chiseling, Mexican lacquerware, wood instrument making, mask making, metalworking, saddlery, wood and textile carving; Artisanal products include: jewelry, amber, and edible products. Artisanal activity in the State of Chiapas is an invaluable treasure, as well as being a fundamental element in enhancing tourism. It generates direct and indirect jobs, mainly in the tourist areas. Receptive tourism consumption in the first quarter of 2017 in Mexico was 16.2 (Instituto Nacional de Estadística, Geografía e Informática, 2017); and Chiapas in 2015 had 620,214 visitors (DATATUR, 2017). Therefore, the Instituto Casa de las Artesanías de Chiapas affirms that this entity is one of the largest varieties of handicrafts in Mexico, and variety is influenced by the diverse culture (Instituto de las Artesanias, 2007-2012). The handicrafts created in this entity give life to the daily life. It preserves the heritage of original cultures and religious symbolism, which translates into true works of art.

Chiapaneca Handicraft as a Driver of Sustainable Local Development

Craftsmanship is an intangible heritage of the State of Chiapas because of its colors, texture, variety of textiles, designs, embroidery styles, which represent the traditions and customs of Chiapas. Therefore, craftsmanship can be considered an art from the perspective of Tartarkiewicz (1987). Tartarkiewicz (1987) affirms that art, like human creation, can be an artistic creation. Therefore, all art is an artistic creation that provokes delight, emotion or shock. The craft tradition is an expressive representation of regional creativity. Its richness and singularity is expressed through techniques, materials, and formal systems used. It is a result of the region's history and culture, revealing its positive features. In this process between the local and global communities, previously unimaginable connections and possibilities emerge. The term "glocal" is applied extolls the capacity of the "local/traditional" to compete on a global level. This affirmation exposes a vast range of opportunities for traditional craft production (Giulio, 2008).

Ahamad and Yasmin (2012) argue the handicraft sector has an enormous potential to generate profitable employment opportunities for the unemployed, and has an unlimited potential for economic development of a country/region. Kappus (2012) contributes to the debate on poverty-reducing potential, by noting that, through handicraft cooperative membership, crafters access livelihood assets, primarily economic, social and human capital. The relevance of artisanal activity in Chiapas is justified because currently there is a greater awareness of the use of traditional textiles, more spaces for marketing, an increase of educational programs related to textile production and more development alternatives for producers (Martinez Miranda 2017, cited by Amanoarte, 2017). In addition, artisan groups (mainly women) have risen, because the government has promoted the creation of organizations for granting financial resources (Pérez Mérimo, 2017, cited by Amanoarte, 2017). Craftsmanship is transcendent for many families of artisans. Ramos

Muñoz, Pablos Tuñon and Calderon Cisneros, (2000) found this allows the existence of the peasant economy and the payment of agricultural inputs. It is also essential for the organization of family work (Ramos Maza, 2004).

Artisanal production in Chiapas has a high participation by women. A study carried out in the highlands of Chiapas found a traditional feminine production (Ramos Muñoz, Pablos Tuñon and Calderon Cisneros 2000). The foregoing is consistent with that reported by Bartra (1998) who affirms that women often dedicate themselves to art while men work in the field, trading or as employees. In the same sense, embroidery weaving on the backstrap loom has been an activity that defines the role in the history of Mayan culture (Gil Corredor, 2016). Chiapas handicrafts are the product of sensitivity, dedication, and the talent of women and men who, within the cultural plurality, reflect their emotion before life and the search for beauty.

For Chiapas, handicrafts such as lacquer, possess the strength of an integrating symbol beyond the local sphere from which it comes or of textiles whose symbolism goes beyond the need for attire (Instituto Casa de las Artesanías de Chiapas, 2017). Starting from the benefits of the artisanal sector, the activity itself and the materials they use to produce the products are sustainable. From this point of view, sustainability is defined as a permanent process towards higher stages of human development (Serrano-Barquín, Serrano-Barquin and Osorio-Garcia, 2011, cited by Korstanje, 2013). It involves sustainable tourism and must sustain local economies, without harming the environment on which they depend. It must give people economic opportunities, without negatively affecting the structure of economic activity and must not interfere with existing forms of social organization (Payne, 1993, cited by Arroyo 2012).

Sustainable development is a new model for development, a model for resource conservation, intergenerational and intergeneric equity. In addition, it is a model for distribution of power and wealth. Sustainable development stresses the importance of local and regional actions towards sustainability as it refers to the capacity of local or regional organizations to promote activities for the empowerment and reproduction of their members. This is done while considering conservation of resources such as: human, cultural, economic, material, social, environmental and the sustainability of the organizational process itself.

The ability of an individual or group to sustain and promote social, political and economic development opportunities is an important component of sustainability (Martínez, 2016). Despite the importance of handicrafts, they are still poorly valued and sold at a very low price. Bartra (1998) reports that the economy of popular artists of Mexico is precarious and their products are sold inexpensively. There is no doubt that Chiapas handicraft has the potential to become an engine of sustainable local development in Chiapas. Within the framework of sustainable development objectives, objective 12 notes that sustainable consumption and production modalities must be guaranteed. Individuals must understand that consumption and sustainable production consists of promoting the efficient use of resources and energy, the construction of infrastructures that do not harm the environment, the improvement of access to basic services, and the creation of environmentally friendly jobs with fair wages and good labor conditions. This translates into a better quality of life and helps to achieve general development plans with reduced economic, environmental, and social costs along with increased competitiveness, and reduced poverty (Naciones Unidas, 2017).

METHODOLOGICAL ASPECTS

This research is quantitative, descriptive, and transversal. For this research a convenience sample was selected to meet certain criteria. For data collection, an instrument based on the ESTEMPLE (Economic, Social, Technological, Environmental, Media, Political, Legal, Ethical) model was used. The target group for the current study consisted of forty artisans who were surveyed in their work areas. Twenty artisans

were located in Chiapa de Corzo, and twenty were located in San Cristobal de las Casas. Both municipalities are in the State of Chiapas, Mexico. The survey was conducted from August 30 to September 02, 2017. We experienced a 100 percent response rate. Sample participants include 80% women and 20% men. The average age of the artisans is 32 years and 100% are from indigenous origins. Table 1 shows definitions of the research variables.

Table 1: Operational Definition of Research Variables

Variables	Definition	Item	Unit of Measurement
Dependent	Sustainable local development	1). Economic 2). Social 3). Technological 4). Ecological 5). Media 6). Political 7). Legal 8). Ethical 9). Cultural	Instrument designed on the basis of 11 items
Independent	Chiapaneca handcraft as a driver of sustainable local development	Analysis of the sustainability of handicrafts from the perspective of artisans	

For data collection an instrument consisting of 11 items and 9 constructs was used.

RESULTS

We start with an analysis of economic, social and Technological indicators presented in Table 2. Table 2 shows, that artisans consider economic indicators and calculate the cost of their product to determine the final price. Specifically, 2.5% responded rarely, 37.5% occasionally, 25% sometimes and 35% always. All of the artisans indicate that the segment to which their products are directed is not defined. They indicate that most people who visit Chiapa de Corzo and San Cristóbal de las Casas, in Chiapas, buy at least one product. On the other hand all of the artisans affirm that potential buyers are domestic tourists. This explains the Mexican custom of always taking souvenirs from places visited to family, friends and coworkers. In addition, 95% of artisans are convinced that the craftsmanship of the municipalities in Chiapas is clearly differentiated by their type of embroidery, colors, designs, materials, shapes and styles. There is no consensus among craftsmen about the usefulness of technology in the artisanal market. The results show 25% never use technology and 15% express that it is rarely use. But on the contrary other people indicate they earn more money selling through the internet. Furthermore, 42.5% indicate that occasionally it has used it. Only 17.5% indicate frequently or always using the internet.

The analysis continues with an analysis of ecological, political and media advertising indicators. Table 3 shows that when evaluating the sustainability of artisanal activity, 55% of artisans consider their products always to be environmentally friendly, 32.5% almost always and 12.5% said never. We observe that 100% of artisans believe that media does not have an influence on the general aspects of their activities, such as the production, distribution, and commercialization of their product. Some 62% of artisans respond that the political environment does not influence the development and sale of artisan products, 20% indicate occasionally, 12.5% indicate often always and 5% indicate always.

Table 2: Economic, Social and Technological Indicators

Variable		Frequency	Percentage	Valid Percentage	Accumulated Percentage
a) Economic					
Economic indicators - Product Price	Rarely	1	2.5	2.5	2.5
	Occasionally	15	37.5	37.5	40.0
	Often	10	25.0	25.0	65.0
	Always	14	35.0	35.0	100.0
b) Social					
Product segmentation	Never	40	100.0	100.0	100.0
Potential buyers	Occasionally	3	7.5	7.5	7.5
	Often	1	2.5	2.5	10.0
	Always	36	90.0	90.0	100.0
Product differentiation	Occasionally	2	5.0	5.0	5.0
	Often	9	22.5	22.5	27.5
	Always	29	72.5	72.5	100.0
C) Technological					
Utility of technology	Never	10	25.0	25.0	25.0
	Rarely	6	15.0	15.0	40.0
	Occasionally	17	42.5	42.5	82.5
	Often	3	7.5	7.5	90.0
	Always	4	10.0	10.0	100.0

Table 2 shows, survey responses to sections A-C of the survey.

Table 3: Ecological, Political and Media Advertising Indicators

Variable		Frequency	Percentage	Valid Percentage	Accumulated Percentage
d) Ecological					
Environmental sustainability	Never	5	12.5	12.5	12.5
	Occasionally	13	32.5	32.5	45.0
	Often	16	40.0	40.0	85.0
	Always	6	15.0	15.0	100.0
e) Media					
Influence of media	Never	40	100.0	100.0	100.0
f) Political					
Influence of the political environment	Never	21	52.5	52.5	52.5
	Rarely	4	10.0	10.0	62.5
	Occasionally	8	20.0	20.0	82.5
	Often	5	12.5	12.5	95.0
	Always	2	5.0	5.0	100.0

This table shows results of analysis on ecological, political and media advertising indicators.

Chiapas craftsmanship is diverse, ranging from ceramics, textiles, pottery, basket weaving, wood carving, metalworking, stonework, quarrying, glass, “cerería”, cardboard and paper, Saddlery, Furrier's, as well as traditional sweets. These activities have very little impact on the environment. Most importantly we note that Chiapas craftsmanship is primarily done by indigenous women. About 1.9 million people in Chiapas consider themselves indigenous, representing 36.1% of the state's population (National Institute of

Statistics, Geography and Informatics, 2015). Handicrafts have a positive social and economic impact since it represents the main source of income for Chiapas artisanal families. As of 2012, three out ten jobs occupied in the cultural sector were held by artisans (National Institute of Statistics and Geography & National Council for Culture and the Arts, 2012).

Next, we present results related to legal, ethical and cultural indicators. Table 4 shows the results. Some 70% of survey participants responded that laws do not influence the decisions to produce and market their product, 10% said occasionally and 15% said always. However, they believe work ethic influences artisanal activity. They note that designs are constantly copied and there is unfair competition. Specific responses regarding the importance of ethics indicated 22.5% said occasionally, 40% said frequently, 12.5% said always. Results show that 92.5% of artisans consider the handicrafts to not only reflect their culture but also traditions and feelings. These elements can be seen in the type of embroidery, designs, textiles, colors, and different materials with which the pieces are made.

Table 4: Legal, Ethical and Cultural Indicators

Variable		Frequency	Percentage	Valid Percentage	Accumulated Percentage
g) Legal					
Influence of legislation	Never	26	65.0	65.0	65.0
	Rarely	4	10.0	10.0	75.0
	Occasionally	4	10.0	10.0	85.0
	Often	6	15.0	15.0	100.0
h) Ethical					
Labor ethics	Never	7	17.5	17.5	17.5
	Rarely	3	7.5	7.5	25.0
	Occasionally	9	22.5	22.5	47.5
	Often	16	40.0	40.0	87.5
	Always	5	12.5	12.5	100.0
i) Cultural					
Cultural influence	Never	3	7.5	7.5	7.5
	Often	3	7.5	7.5	15.0
	Always	34	85.0	85.0	100.0

This table presents survey results related to legal, ethical and cultural indicators.

CONCLUSIONS

This research examines the perception of Chiapaneca handicraft as a driver of sustainable local development by artisans. We survey forty Chiapas artisans from two areas with greater artisan concentrations: Chiapa de Corzo and San Cristóbal de las Casas. Craft work of the municipalities in Chiapas is clearly differentiated by its type of embroidery, colors, designs, materials, shapes, styles, so they can be identified by regions, municipalities, or ethnic groups. Most artisans find little use for technology to market their products. On the contrary, they view it as providing an opportunity for others to copy their designs and generate greater profits from their work. However, incorporating additional technology represents an opportunity for artisans to promote their products in other markets. Technology may become a sustainable marketing medium. They also consider that the media does not influence the general aspects of their activity.

Artisans indicate that political and legal aspects do not influence the development and commercialization of their products. Work ethic influences artisan activity from the perspective of the artisan. They believe

that their designs are constantly being copied and there is unfair competition. Income received by artisans directly impacts their family income, but unfortunately artisanal work is not valued and not well paid. Therefore, in Chiapas, sustainable strategies must be created to strengthen the artisanal sector, where spaces are created for commercialization. There is a need for an increase in educational programs related to textile production, and more development of alternatives for artisans, as well as design programs that grant financial support for the purchase of inputs and distribution of products. The results here show that 80% the artisans are women. Artisans are fully aware that their potential buyers are tourists. However, they emphasize that national tourists consume their products the most. This consumption is associated with the Mexican custom of always bringing a souvenir to family, friends, colleagues. Alternatively, domestic tourists may be more aware of the origin and way in which pieces were made. It is necessary to promote and disseminate the cultural wealth that exists in this activity through campaigns that seek to make consumers aware of the impact of valued artisan pieces and make a fair payment to the artisans, both at the national and international level.

This study confirms the high participation of women in this activity, which corresponds to traditional female production found by Ramos Muñoz, Pablos Tuñón and Calderón Cisneros in 2000. These results open new lines of research ranging from studies of gender in artisanal activity. We note that artisanal production in Chiapas is an activity of low impact for the environment and has the potential to become a generator of local development in the State. The richness of Chiapas and its craftsmanship can be seen in different ways in its products, which go beyond a piece made by hand. These pieces represent traditions, cultural heritage, customs, religious symbolism, ethnic diversity, nature, talent, creativity, imagination, dedication and sensitivity of its people. Textiles reveal colors, types of embroidery, designs, shapes and different materials with which the pieces are made. In spite of this, it is necessary to implement actions that guarantee the improvement of access to basic services to their producers. Artisans should be fairly remunerated and experience good working conditions. These improvements translate to a better quality of life, greater competitiveness and local development. In turn artisans reduce economic, environmental and social costs and have a positive impact on poverty indicators.

This study has limitations. Despite the richness of Chiapas craftsmanship, little has been documented in the literature. During the field work, we experience resistance from the artisans to answer our questions. Some reasons for their resistance were: they are shy, speak little Spanish, have concerns about the use of the information they provide, have not seen the impact of research work on their activity and in their environment. Thus, they find no reason to collaborate in these efforts. Further development of the artisan trades may reduce this reluctance.

REFERENCIAS

Ahamad, F., & Yasmin, E. (2012). Impact of turmoil on the handicraft sector of Jammu and Kashmir: An economic analysis. *International NGO Journal* V7(5), pp. 76-83.

Amanoarte (2017). Retrieved from <http://amanoarte.org/amanoarte-asistio-al-festival-anual-de-textiles-en-xalapa-veracruz/>

Arroyo Cavazos, J. (2012). El Turismo Orientado a Los Pobres: Una Alternativa Estratégica Para Los Países En Desarrollo Olimpia Jiménez López. *Pasos: Revista de Turismo Y Patrimonio Cultural* 10(5), pp. 451–65.

Bartra, E. (1998). Neozapatismo, Arte Popular Y Género: De Humildes Muñecas de Trapo a Zapatistas. Retrieved from <http://lasa.international.pitt.edu/LASA98/Bartra.pdf>.

Gil Corredor, C. (2016). Ecología del saber: el conocer poetizado en los pueblos originarios mayas de Los Altos de Chiapas, México.

DATATUR (2017). Sistema nacional de información estadística del sector turismo en México. Retrieved from. http://www.datatur.sectur.gob.mx/ITxEF/ITxEF_CHIS.aspx

El Instituto Casa de las Artesanías de Chiapas (19 de 11 de 2017). Retrieved from Artesanías: <http://casadelasartesaniaschiapas.gob.mx/alfareria>

Gil Corredor, C. (2016). La Estética Textil Como Intersubjetividad de Los Pueblos Originarios : Caso de Las Tejedoras Mayas. *Revista San Gregorio* 1 (11): 58–69.

Giulio, V. (2008). Artesanía + Innovación la herramienta del futuro. *Craft and Design, Accomplices in Local Development* (pág. 91). Toledo, España: Fundación Española para la Innovación de la Artesanía.

Instituto de las Artesanías. (2007-2012). Programa Institucional . Chiapas: Gobierno del Estado.

Instituto Nacional de Estadística, Geografía e Informática y Consejo Nacional para la Cultura y las artes (2017). Encuesta Nacional de Consumo Cultural en México. México: SEDESOL, FONART, INEGI.

Instituto Nacional de Estadística y Geografía , & Consejo Nacional para la Cultura y las Artes. (2012). Las artesanías en la Encuesta Nacional de Consumo Cultural de México: https://www.gob.mx/cms/uploads/attachment/file/201779/Las_artesani_as_en_la_ENCCUM_con_image_n.pdf

Instituto Nacional de Estadística, Geografía e Inf. (2015). Principales resultados de la Encuesta Intercensal 2015. Chiapas: INEGI.

Instituto Nacional de Estadística, Geografía e Informática (INEGI, 2017). PIB y Cuentas Nacionales de México. Indicadores trimestrales de actividad turística. Retrieved from: <http://www.inegi.org.mx/est/contenidos/proyectos/cn/itat/default.aspx>

Kappus, M. (2012). Understanding the Impact of Handicraft Cooperative Participation on Livelihood Strategy (Asset Accumulation and Resiliency) among Women: A Qualitative Case Study From Kigali, Rwanda. Unpublished Master's thesis. Lund University.

Korstanje, Maximiliano E. (2013). Turismo, Desarrollo Y Sustentabilidad. Reflexiones Teórico-Metodológicas. Pasos: *Revista de Turismo y Patrimonio Cultural*, 11 (1), pp. 247–50.

Lukić, T., T. Stojanović, B Đerčan, M. Živković, and J. Živković. (2015). “The Geographical Aspects of Traditional Handicrafts in Serbia.” *European Researcher*, V100 (11), pp.747–59. doi:10.13187/er.2015.100.747.

Martínez, C. B. (2016). Género, empoderamiento y sustentabilidad: una experiencia de microempresa artesanal de mujeres indígenas. En V. Vázquez García, M. Castañeda Salgado, N. Cárcamo Toalá, & A. Santos Tapia, *Género y medio ambiente en México: una antología* (pág. 308). México: Universidad Nacional Autónoma de México.

Naciones Unidas (19 de noviembre de 2017). Retrieved from Objetivos de Desarrollo Sostenible: <http://www.un.org/sustainabledevelopment/es/sustainable-consumption-production/>

Ramos Maza, T. (2004). Artesanas y Artesanías: Indígenas y Mestizas de Chiapas Construyendo Espacios de Cambio. *LiminaR Estudios Sociales Y Humanísticos* II (1): 50–71.

Ramos Muñoz, D, E Pablos Tuñón, and A Calderon Cisneros. (2000). Artesanía, Una Producción Local Para Mercados Globales. El Caso de Amatenango Del Valle, Chiapas México. Pontificia Universidad Javeriana.

Romero Medina, L. (2017). ¿Por qué festejamos a los artesanos en México? Retrieved from <https://fonart.gob.mx/web/index.php/sala-de-prensa/comunicados?id=189&Itemid=15>

Secretaría de Turismo. (2009). Plan de estrategia y Competitividad Turística para los Clústers de Tuxtla Gutiérrez, San Cristóbal de las Casas, Palenque, Comitán de Domínguez y Chiapa de Corzo. Chiapas: SECTUR.

Tatarkiewicz, W. (1987). Historia de las seis ideas. Madrid: Tecnos.

ACKNOWLEDGMENT

Thank you to the Program for the Professional Development of Teachers (PRODEP), for supporting the publication of this research. Also, to the Vice-rectory of Research and Postgraduate Studies of the BUAP, for financing the presentation results, as well as the Public Accounting Faculty of the BUAP for granting their facilities in order to develop this study.

BIOGRAPHY

Karla Liliana Haro-Zea. Research Professor of the Benemérita Universidad Autónoma de Puebla (BUAP), Phd in Strategic Planning and Technology Management by the Universidad Popular Autónoma del Estado de Puebla (UPAEP). Candidate for National Researcher. Postdoc in Sustainable Development.

Yadira Rosbinelly Haro-Zea holds a Licenciada Law Degree and is an independent research

Gudiel Roblero-Mazariegos, holds a Doctoral Degree in Education, a Master Degree in physics and mathematics education. Dr. Roblero-Mazariegos is also the Director of Research and Postgraduate at University Linda Vista, Chiapas, Mexico

Samanta Sánchez Sánchez is a public accounting licenciatura student at Benemérita Universidad Autónoma de Puebla.