



Update of the Cadastral Values in Two Neighborhoods in Ciudad Madero, Tamaulipas

Oscar Daniel Lara Ruiz, Rafael Ángel Godard Santander, Laura Del Carmen Moreno Chimely, Edgardo Jonathan Suárez Domínguez

Abstract: *Since ancient times, various forms of real estate control and the payment of taxes for various activities carried out by humanity have been recognized. Mexico has not been exempted in its history since the Spanish Colonization, and that permeated various social strata in the country, who give forced value to existing buildings, land and various properties that are taxed at a percentage that allows the Government's economic collection. In the present investigation, the results derived from the analysis of land in terms of price are exposed through the application of a valuation method and contrast of the commercial value with the cadastral value or assigned in the government. It is found that the increase can be greater than 100% when the economic activities are adequate, and the Government's development is carried out with the characteristics of the increase of the Economic Development and Progress of the City, specifically in Organized Commerce and Urban Development in related services and equipment.*

Keywords : *Commercial value at cadastre Ciudad Madero, Change of values, building cost.*

I. INTRODUCTION

Between 5,000 and 3,000 BC, the cultural formation of humanity begins in Mesopotamia and Egypt. In the Arabian desert, a mud table from Caldea with a coded plane has been found among thousands of objects: it represents the city of Dungui and dates from about 4,000 BC. This testimony shows the plots (rectangles, trapezoids, and triangles) with measures of its sides and surfaces, expressed in cuneiform writing (writing made by wedge or clear signs and should be read from right to left). In the year 3,000 BC there was already a cadastre in Egypt, mainly in the Nile River valley, where the cultivation plots were flooded with an annual periodicity. This forced repeated surveys to restore the boundaries of these plots. Egyptian land surveying (the art of measuring land) is consequently the age of Egyptian agriculture. A stone called "Palermo stone" has been found dating back to 3,000 BC in which the elbows and their divisions had a. The elbow is a measure of the length of the sides of the plots that were also used to measure the water level of the Nile River.

The Greeks got to know the Egyptian land surveyors and

called them "artedonaptos" (those who stretch the rope) because they used for their work twine with equidistant knots, a real elbow (52 cm). In Rome, the first cadastre was made in the 6th century BC, in which the plot was built and the income that could be produced according to the type of soil, quality and productivity were calculated. At the time of the middle ages, records began to be created for tax purposes, in Italy, England, and France. Later in the modern era, uprisings began in several countries and cities such as Spain, the Vatican, Milan, and France, with the cadastre developed by the latter country being the basis for most of the world's cadastres. In September 1807 the law "Instructions Relating to the Cadastre" is published, which contains the basis for its execution. An Egyptian document, the Rina Papyrus in which the basic rules of Egyptian surveying are described, is displayed in the British Museum in London. This document is the first known topographic instruction that has been developed for topographic surveys. In 1898 a new law regarding the technical cadastre was published, and in 1930 an update program was initiated in which the aerial photogrammetry method used for the first time. In the year of 1991, the Mexican government analyzed the cadastral values in some states of the Republic, later this study was carried out with national coverage. In the state of Tamaulipas, this study began in the year of 1996, when it authorized that the City Councils collect economic resources for the payment of taxes for the possession and use of the real estate. They were the various movements that later moved from the unions (Azuela, HS 2018). This cause the municipal cadastre board to be formed in Ciudad Madero, to update cadastral values to current market values, and economically strengthen the municipality. Actually in Tamaulipas exists a cadastral Law for the state, establishing the characteristics of cost determination. Although there are ways of managing municipal finances (currently Farvacque-Vitkovic, C. D., & Kopanyi, M. (Eds.) 2015), and in the city of Ciudad Madero, Tamaulipas, the passing years have presented a series of irregularities in relation to the payment of taxes for land tenure and the use and permanence of residential, commercial, industrial and recreation constructions. This has caused the City Council does not collect the fair or convincing economic resources to be able to be applied in works of priority municipal services for the benefit of citizenship in general. Equity and justice are important in the payment of property taxes, since the owner who has a greater territorial extension and uses more square meters of construction, must pay taxes (Jimenez, JP 2017).

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* Correspondence Author

Edgardo J. Suárez Domínguez*, Facultad de Arquitectura, Diseño y Urbanismo. Universidad Autónoma de Tamaulipas.

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There is a great problem regarding the payment of property taxes for land tenure in different areas, sectors, colonies, apples, and land in the municipality of Ciudad Madero. Currently there are lots that being in the same neighborhood and block with very similar land and buildings in areas per square meter, pay taxes up to 100% and 200% higher or lower than the reality of real values for not having done the analysis and market studies in relation to supply and demand (data provided by the Directorate of Cadastre of the Municipality of Cd. Madero).

This reflects inequality and injustice in property tax collections that may have consequences for the municipality of political, economic, and social types (Zilvety Derpic, R. et al. 2015). This impacts even more when talking about companies and establishments that are generated in the same buildings (Macís, AGC, et al. 2015)

It is necessary and important a study of the updating of the cadastral values of real estate in the municipality of Ciudad Madero, Tamaulipas ., So that property taxes are paid in a fair and equitable manner, depending on their location, land use and its surface per square meter of land and buildings

The general objective of carrying out a contrast of cadastral values to commercial values, in the cadastral sectors of the municipality in relation to its location, land use, and its surface.

A. Historical origins of the conurbation area.

The first thing we know about the population of the Conurbated Zone is from the year 713, the year in which the first Nahuas tribes appeared that came from the north, arriving by mistake at the mouth of the Pánuco to enter this territory. It is believed that among these tribes there were Cuxtecos or Huastecos, belonging to the Mayan race, the area that inhabited these tribes is called Huasteca, which included the states of Veracruz, the southern tip of Tamaulipas, the north of Hidalgo and the west of San Luis Potosi.

In the year of 1523 Hernán Cortes, after having made a raid on these lands founded the town of Santiesteban del Puerto (Pánuco). At the request of Fray Andrés de Olmos, on April 26, permission is granted to found a house and monastery of the order of San Francisco and permission is given to populate the site that they say Tampico. Later Villa de Altamira was founded on May 2, 1749, had a good number of cattle, its inhabitants were engaged in fishing, on April 12, 1823, the residents of Villa Altamira repopulated Tampico.

Subsequently, since the end of the last century, foreign oil refineries began to be installed on the banks of the Pánuco River, and the construction of the railroad to the beach began, this gave rise to and consolidation of the progress of the region, the city grew towards Villa Cecilia and The neighboring population soon acquired the category of municipal seat with the name of Ciudad Madero.

B. Or historical origins of the municipality of Ciudad Madero, Tamaulipas.

To talk about the history of Ciudad Madero, today an important capital of Mexico is to recognize a courageous and beautiful woman who, in her own right, is considered the first people and founder of this municipality: Cecilia Villarreal. The place where it was established from 1807, from his marriage until his death, became famous with the name of the

Doña Cecilia Pass. Her first husband was murdered in mansalva in the year 1815, becoming a widow. But he took courage from his courage, rested at work all his grief and pain. With his vision and effort, he knew how to dominate the Pánuco River, mighty, fierce, and high waves.

Through the passage it transported people, cargo and animals from one side of the river, communicating to the two sister states of Tamaulipas and Veracruz, and to the people who, coming from all regions and latitudes, found no other place safer than the one called He passed. People who feel the pleasant weather and friendly people gradually gathered around them. The house where Cecilia lived, called the Casa de la Teja, spacious and comfortable, became an inn for the tired muleteers and travelers; later, in the Sunday recreation center, and in the year of 1829, it was the direct scene of combats of Mexican troops that, in defense of the integrity and sovereignty of the nation, defeated and led the invading troops of the King of Spain, who they intended to subdue our principles of freedom; That is why Mrs. Cecilia and El Paso de Doña Cecilia passed into history.

At the beginning of their establishment, twenty years before the population of Tampico, these territories were almost wild, abundant wild beasts, but little by little, with tenacity and perseverance they were inhabited until they built villages, among others that of Doña Cecilia, which later It reached the name of Villa Cecilia.

The municipality of Ciudad Madero originated in the establishment, in 1921. In 1924 the Tree Grande refinery was built, with this increase the population in this town and was called "Villa Cecilia," which reminded the character that already It has been mentioned. In 1930 he was given a city category, with the name of Madero, in memory of the revolutionary, Francisco I. Madero. After 1950 there was a massiver growth of the city and new neighborhoods were established.

II. METHOD

A. Methodology for mass appraisal

1) Appraisals individual and collective assessment

An individual assessment requires the following fundamental activities such as defining the valuation problem and carrying out a preliminary study, the elaboration of a data program, the classification of the data. is Based on the above, the correlation of the value indications was established to obtain the final value (Tafoya, JMS 2016).

The practice of individual appraisals has in its favor the circumstances that the properties to be valued are few and dispersed, the owners provide the required information, and are carried out by expert appraisers with sufficient time to carry out their work and that they receive fees relatively high

When the valuation phase begins in a cadastral system, other situations and needs such as the following are present:

There are few experts and limited funds, which requires the payment of modest salaries, thus slowing the stimulus of professionalism of employees.

In a limited time, you have to observe and analyze the existing values in a whole area or entity.

Update of the Cadastral Values in Two Neighborhoods in Ciudad Madero, Tamaulipas

When applying the same criteria to meet the fundamental requirement of equity, it is necessary to perform the valuation of a large number of properties.

The work is made even more difficult by the lack of frank and voluntary collaboration of property taxpayers in providing the requested information.

According to this, a review of the spaces detailed below was carried out.

Cartography

2) *Photography AREIA*

The aerial is vertical or oblique, it is the reproduction of the terrain, and as such, it represents the perfect image of the earth's surface to a greater or lesser extent. It is an orthogonal or central projection, and the photographic image of a particular object is formed on a plane when passing through a target the rays reflected by the points of the object and impact on a plane, forming a central projection, the set of lines is a flame beam of perspective rays.

The beam of perspective rays is the beam of lines, which, starting from the points of an object, converge to a point called the center of perspective or center of the station. The perspective image of the earth's surface causes two important effects:

That differences in terrain relief appear on the aerial with planimetric image displacement.

Vertical aerial photographs provide the most appropriate method for obtaining data and allows the terrain to be raised planimetrically on topographic scales.

It is important to note that this process was selected due to the following advantages:

The aerophoto represents a lot of details that no card can match.

The images represented in the aerial photo have superior accuracy in their forms.

Through the aerial photographs, you can obtain representations of the terrain that are inaccessible for physical reasons.

Aerophoto is up to date with regard to field information.

The color and infrared aerial photographs allow the detection of characteristic elements and phenomena with great ease

3) *Faces of the Urbana Valuation process*

The mass appraisal is a production line where different personnel is appointed to execute each phase of the valuation process. The phases of the process were :

Development of standards and valuation procedures, including manual and instructional forms.

Delimitation of homogeneous urban colonies.

Collection of influence factors in value.

Background value analysis (by cost, income, and market methods).

Determination of unit values.

Data collection of each property.

Calculation of land and construction values.

Review and quality control.

The mass appraisal offers well-marked advantages over the individual, in terms of time, cost, and personnel. In addition, when the information flow is mechanized, the detailed

process of the individual appraisal is eliminated, and the separation of the land and the construction is made possible, as well as the use of the optimal valuation method for each one. The collective appraisal (it is also known as Social Appraisal, it is the methodological instrument for valuing the Patrimony of Families in a city), on the other hand, it has a disadvantage, which is the one that is most frequently indicated and it is the Lack of individual treatment of real estate, as it is carried out based on the manual and unit values. However, it is not considered a serious limitation, since it is reduced to a matter of precision and depends a lot, both on the detail of the manual, as on the method and procedure used. Occasionally, the same lack of individual treatment can be advantageous, since more comparable information is used, it is better guided to the bad appraiser, and the subjectivity is eliminated or reduced, as long as the rules, tables and formulas used in it have been made from a single technical point of view and with sufficient detail to ensure desirable accuracy.

III. RESULTS AND DISCUSSION

The collection of valuable records is carried out through various sources of sales data, such as: proof of movements made in notaries or government agencies, advertisements in newspapers or magazines, as well as on the premises themselves; the information of banking credit institutions; records of real estate brokers, fractionators and other professionals in the field, offers to buy or sell, demand prices, and so on.

For its part, the analysis of the values consists of studying the type of information or documentation available, the date, the circumstances of the sale, etc., in order to verify the validity, certainty, and reliability of the observed values.

The sources of income data are the rental contracts that cover the amount of the annual rent, the duration, and the conditions of the contract.

And as regards the analysis of this data, it is necessary to study the date, price, conditions, and duration of the contract, to verify the reliability of the information.

To estimate the value of the property, the annual income is capitalized and the expenses covered by the owner of administration, maintenance, surveillance, taxes, insurance, etc. are reduced.

Table 1.-

Determinants of urban land value	
External	Internal

Update of the Cadastral Values in Two Neighborhoods in Ciudad Madero, Tamaulipas

<ul style="list-style-type: none"> • Land use • Location • Urban functions • Distance to center s work and city • Public services • Transport • Construction percentage • Predominant types of construction • Population • Pollution • Road • Urban equipment • Zone Classification • Socio-economic • Vehicular traffic • Economy 	<ul style="list-style-type: none"> • Land use • Property regime • Front • Depth • Surface • Shape • Location • Street width • Orientation • Topography • Public services installed • Own services • Easements • Vegetation • Panorama • Usufruct • Electric towers • Soil or subsoil 	<table border="1"> <tr> <td>S</td> <td>SOIL USE</td> <td>ROOM COMMERCIAL INDUSTRIAL EQUIPMENT</td> </tr> <tr> <td>T</td> <td rowspan="2">LOTIFICATION</td> <td rowspan="2">TYPE LOT (FRONT-DEPTH-AREA)</td> </tr> <tr> <td>R</td> </tr> <tr> <td>E</td> <td rowspan="4">SERVICES</td> <td>DRINKING WATER SANITARY DRAINAGE STORM DRAIN ELECTRICITY (AIR OR GROUND) INCREASED GAS FITTINGS PAVEMENTS</td> </tr> <tr> <td>E</td> </tr> <tr> <td>T</td> </tr> <tr> <td>V</td> </tr> <tr> <td>A</td> <td>URBAN</td> <td>LANDSCAPE OR IDENTITY OF THE AREA POPULATION DENSITY SATURATION AND CONSTRUCTION TYPE</td> </tr> <tr> <td>L</td> <td>URBAN EQUIPMENT</td> <td>HOSPITAL CENTERS CULTURAL CENTERS SCHOOLS RECREATION CENTERS SHOW ROOMS, OTHERS</td> </tr> <tr> <td>U</td> <td rowspan="2">ROAD</td> <td rowspan="2">STREET WIDTH AND RAIL NUMBER TRAFFIC INTENSITY COLLECTIVE TRANSPORTATION LINES TRUCKS,TRUCKS,SUBWAY LINE, ETC.</td> </tr> <tr> <td>E</td> </tr> <tr> <td></td> <td>ECONOMIC</td> <td>Socioeconomic level (astes and preferences economic situation of the country boom, stability, recession, depression.</td> </tr> </table>	S	SOIL USE	ROOM COMMERCIAL INDUSTRIAL EQUIPMENT	T	LOTIFICATION	TYPE LOT (FRONT-DEPTH-AREA)	R	E	SERVICES	DRINKING WATER SANITARY DRAINAGE STORM DRAIN ELECTRICITY (AIR OR GROUND) INCREASED GAS FITTINGS PAVEMENTS	E	T	V	A	URBAN	LANDSCAPE OR IDENTITY OF THE AREA POPULATION DENSITY SATURATION AND CONSTRUCTION TYPE	L	URBAN EQUIPMENT	HOSPITAL CENTERS CULTURAL CENTERS SCHOOLS RECREATION CENTERS SHOW ROOMS, OTHERS	U	ROAD	STREET WIDTH AND RAIL NUMBER TRAFFIC INTENSITY COLLECTIVE TRANSPORTATION LINES TRUCKS,TRUCKS,SUBWAY LINE, ETC.	E		ECONOMIC	Socioeconomic level (astes and preferences economic situation of the country boom, stability, recession, depression.
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Figure 1.-

One of the valuation methods consists in comparing properties of known value with other properties whose value is required, for their calculation, certain adjustment factors are applied due to the different characteristics of the different properties, that is, that the values are reduced known to the common denominator called unit value.

In areas where the lot size is the most important factor in determining its value, the most convenient measure is a unit area; and in those where size and shape influence, the unit can be determined by the surface or by a linear dimension, generally with reference to the front of the property. As regards the surface unit, this represents the most common case, since the value of a property is usually increased when it's surface area increases.

However, the representation of unit values can be done numerically and/or graphically.

In numerical form a computer list is produced with the unit value of each colony identified by a key, or of each street identified by a key, its name and the names of the streets between which the subject matter of the examination is located. In graphical forsssssm, the unit values are presented in a plane of values that must be shown; all the streets of each colony, the cadastral key of each colony and apple, the keys and names of each street, as well as each unit value per square meter or per linear meter in front. Similarly, these visualizations and results are similar to those obtained by Valiñas, MG (2017).

1) Factors involved in the determination of street value.

About data collection, the researcher will move to the colonies under study and will reach the lands for sale and consummate sales and will be constituted in batch by a lot already classified with an auxiliary to support the data collection. It is important and essential that the deeds and the property manifest be at hand to verify that the measures and adjacencies specified in the documents physically coincide, if there is any doubt, each of the adjoining dimensions will be measured with a tape measure. Subsequently, the field format will be filled out, and the observational scale will be carried out, immediately afterward with a digital camera the necessary photographs will be taken (minimum three) by the front or side if it is a corner, so that it is clear Graphical representation of the existing reality, it is important that part of the street is taken to observe the material with which the road is constructed (if any).

2) finances by form

In general, the value of an irregular plot of urban land is less than the value of a regular lot of land in the same area, since the area cannot be fully utilized.

It is common to consider regular properties to quadrilaterals with a single front whose angles do not differ more than 10° from the right angle, triangles with two or three fronts, and pentagons with two fronts. Irregular entries are not considered incoming or outgoing (ancones), whose maximum dimension, measured on the perpendicular to the respective boundary, does not exceed one meter.

Sufficiency by topography

In most cases, a flat surface lot is a more desirable lot, since topographic variations cause expenses in excavations, landfills, drains and other works that are directly reflected in the decrease in land value.

Deficiencies by size

Front

The front is the most important feature of a lot of urban land, since it gives access and service to the lot. Therefore, in some entities a front dimension is used as a unit of value. In this regard, it should be noted that, where there are smaller fronts than the type front, a demerit factor must be applied, since it reduces access and, consequently, the possibility or use of a property.

Background

The influence of the bottom of the urban land lot is based on the theory that its fraction closest to the street has greater value than the farthest.

Area

The modification of the unit value by the influence of the rit is riterio the theory that, a lot with a smaller riteri rit ri the type lot, is more desired and more riterio ri the type lot itself, and a lot bigger ri the type riter ri riterio, since there is riter demand for sale.

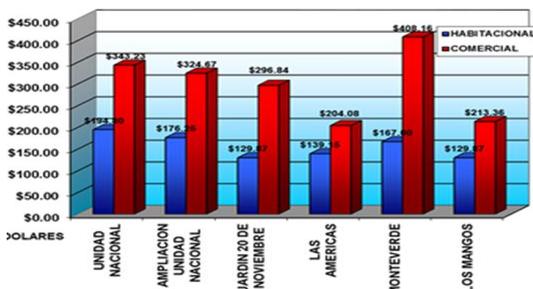
Determination Efficiency

When planning a valuation system, there is usually insufficient background to develop its standards. And, on the other hand, it happens that not a few of the existing ones are not riterio in an entity, and many others do not know if they are or not.

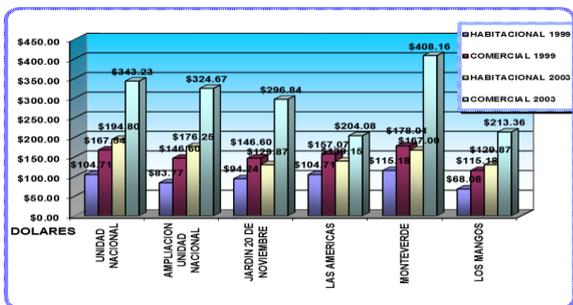
Update of the Cadastral Values in Two Neighborhoods in Ciudad Madero, Tamaulipas

For this reason, it is advisable to use, for a time, some commonly used standards and test them by comparing the results with values that are already properly valued.

Another possibility is to invite people from different sectors related to real estate valuation, such as valuation institutes, banking institutions, real estate brokers, etc., in order to know, analyze and regulate the basic riterio used in practice of the valuation of the entity itself.



Graph 1 Results for neighborhoods selected



Graph 2.- Price of neighborhoods selected in 1999 and 2003

Comparison of the values for 1999 and 2003

COLONY	1999		2003		INCREASE%	
	ROOM NAL 1999 IN DOLLARS	COMMERCIAL 1999 IN DOLLARS	ROOM NAL 2003 IN DOLLARS	COMMERCIAL 2003 IN DOLLARS	ROOM	COMMERCIAL
NATIONAL UNITY	\$ 104.71	\$ 167.54	\$ 194.80	\$ 343.23	210%	231%
NATIONAL UNIT EXTENSION	\$ 83.77	\$ 146.60	\$ 176.25	\$ 324.67	238%	250%
GARDEN NOVEMBER 20	\$ 94.24	\$ 146.60	\$ 129.87	\$ 296.84	156%	229%
THE AMERICAS	\$ 104.71	\$ 157.07	\$ 139.15	\$ 204.08	150%	147%
GREEN MOUNT	\$ 115.18	\$ 178.01	\$ 167.00	\$ 408.16	164%	259%
THE HANDS	\$ 68.08	\$ 115.18	\$ 129.87	\$ 213.36	215%	209%

* The amount of land value from 2003 to 2018 has not increased significantly, because from the beginning the values per square meter in dollars were raised

IV. CONCLUSIONS:

The National Unit colony showed an increase of 210% housing and 231% commercial. The Expansion National Unit colony presented an increase of 238% housing and 250% commercial. The Jardín 20 de Noviembre neighborhood presented an increase of 156% housing and 229% commercial. Las Américas colony presented an increase of 150% housing and 147% commercial. The Monteverde neighborhood presented a 164% increase in housing and 259% commercial. Los Mangos neighborhood presented an increase of 215% housing and 209% commercial.

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REFERENCES

- Abidoye, R. B., & Chan, A. P. (2017). Critical review of hedonic pricing model application in property price appraisal: A case of Nigeria. *International Journal of Sustainable Built Environment*, 6(1), 250-259.
- Alberquerque, E. (2018). The NZ Transport Agency's transport appraisal framework. *Policy Quarterly*, 9(4).
- Almanza Rodríguez, A. F., & Mora Contreras, J. F. (2017). Estudio y Diseño del Paso a Desnivel entre la Intersección de la Av. Circunvalar y la Calle 22.
- Bennett, L. (2016). The Community Infrastructure Levy and the implications for surveyors. *Journal of Building Survey, Appraisal & Valuation*, 4(4), 206-211.
- Chagolla Farías, M. A., Campos Delgado, P., & Villazan Olivares, J. F. Las amortizaciones de activo, un elemento fundamental en la toma de decisiones de las PYMES. *Ciencias Empresariales*, 21.
- Connolly, P. (2015). Promoción inmobiliaria en la ciudad de México (1920-1940) El caso de la colonia Anzures. *Sociológica México*, (9).
- García, I. G., & Mendoza, N. F. (2014). Sistema de valuación catastral/ Cadastral valuation system. *RECI Revista Iberoamericana de las Ciencias Computacionales e Informática*, 2(3), 1-26.
- Gilbert, D. (2013). Diminution valuations for building surveyors. *Journal of Building Survey, Appraisal & Valuation*, 2(2), 99-106.
- Gobierno de Tamaulipas 2003. Periódico Oficial de fecha martes 14 de Enero del 2003, Cd. Victoria Tam.: acuerdo mediante el cual se prueba el Plan de Ordenamiento Territorial y Desarrollo Urbano de Tampico, Tamaulipas.
- Gobierno de Tamaulipas 2001. Periódico Oficial de fecha jueves 25 de Octubre del 2001, Cd. Victoria, Tam.: Decreto N° 498, mediante el cual se expide la Ley para el Ordenamiento Territorial y Desarrollo Urbano del Estado de Tamaulipas
- Hinojosa Campos, A. D. (2014). Análisis comparativo del impacto de valor por capitalización de rentas generado por un paso a desnivel superior y un paso a desnivel inferior.
- Leslie, A. (2016). CDM and the implications of a step change for small projects. *Journal of Building Survey, Appraisal & Valuation*, 5(1), 65-69.
- Molinas, G. E. S. (2016). Análisis de optimización de uso como proyectos de inversión para inmuebles patrimoniales subutilizados. *Estudios sobre conservación, restauración y museología*, 3.
- Muhammad, B. A., Adamu, T., & Ladi, B. D. (2015). Appraisal of construction project procurement policies in Nigeria. *American Journal of Engineering Research*, 4(3), 19-24.
- Ojeda-Cabral, M., & Chorus, C. G. (2016). Value of travel time changes: theory and simulation to understand the connection between random valuation and random utility methods. *Transport Policy*, 48, 139-145.
- Salas Tafuya, J. M. (2015). El Modelo de Valuación Inmobiliaria en México. *RIDE Revista Iberoamericana para la Investigación y el Desarrollo Educativo*, 5(10).
- Tafuya, J. M. S. (2014). La valuación inmobiliaria tradicional: un modelo para repensar. *PAKAT: Revista de Tecnología y Sociedad*, (6).
- Tafuya, J. M. S. (2016). El Modelo de Valuación Inmobiliaria en México/The Real Estate Valuation Model in Mexico. *RIDE Revista Iberoamericana para la Investigación y el Desarrollo Educativo*, 5(10), 31-54.
- Tafuya, J. M. S. (2018). Transdisciplinaria valuatoria. Hacia una construcción sistémica para la valuación inmobiliaria/Valuable transdisciplinarity. Towards a systemic construction for real estate valuation. *RICEA Revista Iberoamericana de Contaduría, Economía y Administración*, 6(12), 348-369.