



Research Article

Analysis of the Room Supply in the Hotel Zone of Cancun, Mexico: EMU 9

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Abstract

The area known as the Hotel Zone of Cancun, sun and beach destination located in the State of Quintana Roo and considered to be of the highest importance to Mexico, is the central focal point of this article. It starts with a description of the behavior of tourism and its influence on the generation of public resources through tax collection. It then outlines regulation and legislation relating to the maximum amount permitted by the number of rooms at the *Environmental Management Unit (EMU-9)* which includes the hotel zone. The central analysis is based on census results obtained in the month of November 2011. The main findings were grouped into the three main operation types: All Inclusive, European Plan and Mixed Plan. Criteria are formulated by scales according to the area in square meters, including frequencies with the type of operation, grouped by number of bathrooms and beds.

Environmental Management Unit (EMU-9) = Unidad de Gestión Ambiental (UGA-9)

The conclusions demonstrate the need to establish policies and clear boundaries to avoid an uncertain future for the most important sun and beach destination of the Mexican Caribbean.

Keywords

Tourist offer; Hotel rooms; Room offer description; Cancun México

Introduction

Cancun is framed in the municipality of Benito Juárez, Quintana Roo State, Mexico. It includes the area known as the Hotel Zone, the marina called Puerto Cancun, Puerto Morelos and the center of the city with the surrounding areas of Cancun. According to tourism indicators from the Quintana Roo Secretary of Tourism [1], the number of rooms in this state in 1999 was 44,025 from 542 hotels. For the close of 2010 figures were 885 hotels and 81,702 rooms. In other words, in a little more than ten years the number of hotels increased approximately 63% and, with regard to the number of rooms, there was an increase close to 86%. For the year 2009 an economic overflow of \$ 2,358 million was recorded and by the end of 2010 it had reached the amount of \$ 2,780 million dollars, indicating that despite a strong increase in the offer of hotels and rooms, the economic overflow did not behave in a similar way. Tourism is undoubtedly substantive

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in Mexico as well as in all developing countries [2,3] as it generates significant resources to enable the poorest to benefit [4].

The sector with greater significance in economic activity in the State of Quintana Roo, during the years 2003 to 2009 corresponds to temporary accommodation, food and beverages preparation with 18% [5]. Previous studies [6], in which the variable of occupied rooms was integrated, concluded that there is a high correlation with the tax collection, around the 0.87 regarding lodging tax and around the 0.92 on payroll tax, revealing that tourism as a generator of resources is of high impact in Quintana Roo, since 90% of all tax revenues depend on the lodging tax and payroll tax. Acknowledging the Hotel Zone as a generator of economic resources and considering the strong correlation with the occupied rooms, the need for the development of this work becomes evident, integrating a descriptive analysis, providing basic elements to be integrated into planning and specific regulation strategies, adapting guidelines in a destination created in 1972 that seems to be reaching maturity level and pressing conditions of the territory.

Behavior of the Tourist Area

General evolution of room offer

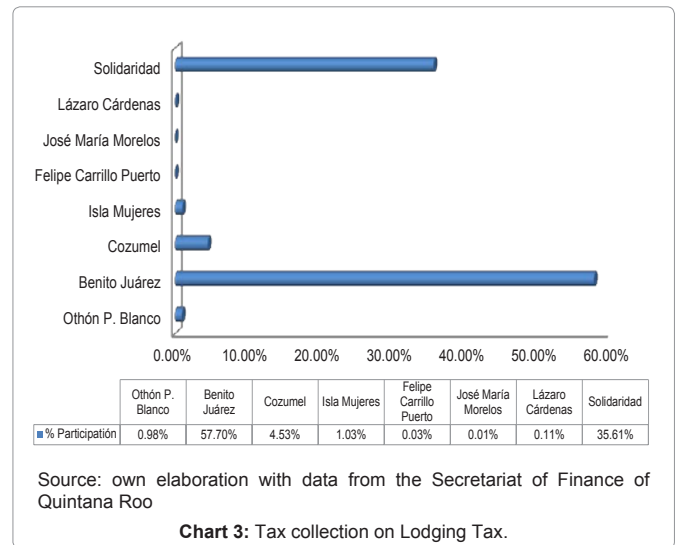
The tourist zone had its birth in 1972 and forms part of a State with territorial space and privileged natural wealth [7]. When in 1976 only 2,023 rooms were registered, the number of registered rooms in 1989 was 15,310. For the year 1999 their number was 24,610 and in 2008 their total amount was 28,214 [8] which then included the Hotel Zone, Puerto Morelos and the city center. This shows that during the Decade of the eighties a steady growth was maintained. However, despite the existence of data corresponding to the tourist center altogether even before the census carried out by the Universidad del Caribe [9], no information was available on the particular area with greater tourist significance called the Zona Hotelera or Hotel Zone, located in the Environmental Management Unit (EMU-9). This is the reason why the behavior described below corresponds to the total recorded in the Hotel Zone, Puerto Morelos, marina and city centre.

According to the 5th Federal Government Report [5], on average, 18% of the Gross Domestic Product of Quintana Roo originates from the industry of temporary accommodation, food and beverage preparation (related to tourism). However, comparison between the recorded GDP in 2003 and 2009 shows a decline in the proportion of this sector of the economy, from the 21.82% to 16.56%.

The chart 1 demonstrates that the sector related to tourism, decreased by the growth of other sectors which has been studied previously in both Latin American as well as European cities [10]. In Quintana Roo, the growths of the construction industry and business support services are specific cases that reflect the representativeness of tourism for economic development and the generation of public resources. The World Tourism Organization [4] is convinced that tourism can be used as an important force in reducing poverty and protecting the environment, since it confers an economic value to the cultural heritage, creates employment and produces income

in foreign currency. Spanish studies point out that tourism and hostel and catering sectors generate significant employment [11]. Nonetheless, the creation of employment and the generation of income is not always equitable, neither on province or state level nor in the municipalities. The official information relating to the tax revenues for the years 2000 to 2009, in regards to the State of Quintana Roo, distinguish a marked difference in some municipalities. For example, in the case of payroll tax, the levy corresponding to the resort of Cancun, municipality of Benito Juarez, represents 62.09% of the payroll tax (Chart 2) and 57.70% in the case of the lodging tax (Chart 3). It is important to mention that, although the municipality of Solidaridad is second in importance, its tax collection represents less than half of the collection originated in Cancun.

When analyzing closely related variables such as the registration of visitors, the years 1999 to 2010 do not reflect growth. On the contrary, the number of visitors registered decreased from 2,818, 000 people in 1999, to a little more than 2,510, 000 visitors registered in the year 2010, representing a drop of 11 per cent. There also exists a decrease with regard to the percentage of occupation during the years



1999 to 2010, starting with a registration of 73.43%, but dropping to only 43.90% [1].

Regulation and decree

Urban policies play an important role, both in the United States and in Europe, for the development of a destination that's on a quest of achieving an internationally attractive position [10]. In Mexico, Territorial Ecological Regulation Programs, commonly known by the abbreviation of POET and sustained by the General Law of Ecological Balance and Protection of Environment [12], constitute legislation in environmental matters which is used as a guideline in plans and development programs at municipal level. One of the first programs of this type corresponded to the tourist corridor from Cancun to Tulum, including the Nichupté Lagoon system, established in the year 1994.

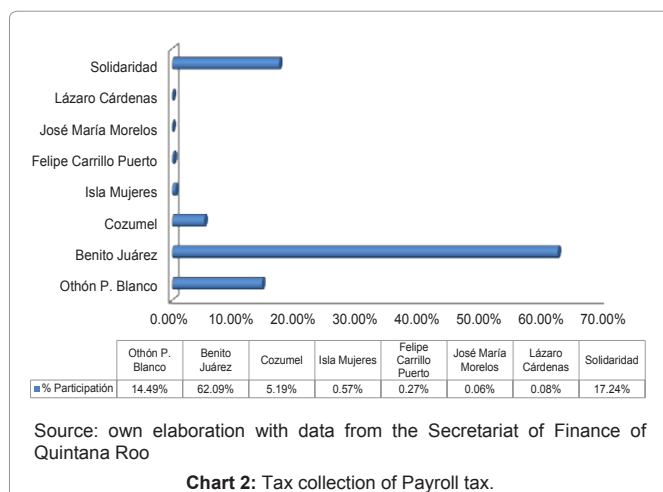
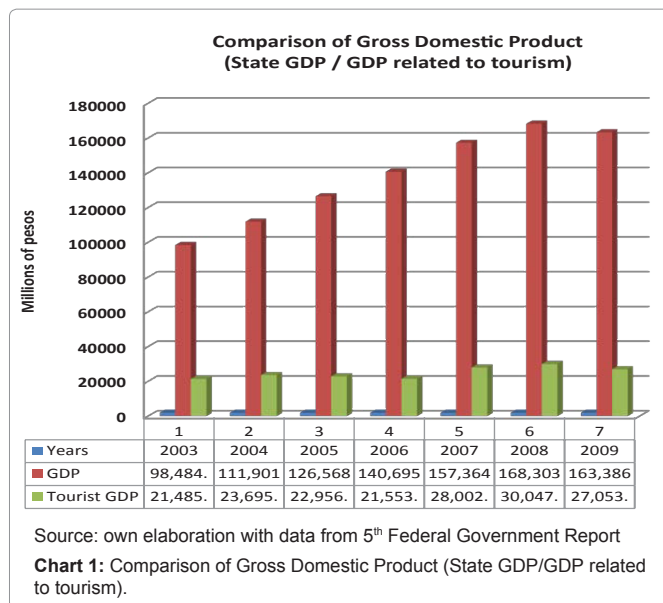
On 28th September, 2001 an agreement for the elaboration of a new ecological decree for the Benito Juarez municipality (including the tourist center of Cancun) was signed. In the year 2002 a technical committee was installed, responsible for formulating and issuing the program. This final document, dated February 10, 2005, includes conversion factors or equivalencies for some types of units of tourist occupation within the general approach CG-08.

That same document also included the criteria of ecological regulation for the protection, preservation, restoration and sustainable use of natural resources within the population centers of the township, validated through public consultations, thus repealing the previous regulations.

43 Environmental Management Units (EMUs) were established from this previous document with 22 different land uses, with their criteria and applicable conversion factors described in the official document.

In addition there is the Urban Development Program (municipality of Benito Juarez, 2005) which states that the total number of rooms in the Hotel Zone of Cancun UGA 9 is 30,900 quarters.

Due to the importance and the established limits, it was by jurisdiction and interest that the Federal Attorney for Environment



Protection (Profepa) and the Secretariat of Environment and Natural Resources (Semarnat) considered it necessary to carry out a physical count that would grant elements for the formulation of programs and for future development plans and thus requested the Universidad del Caribe to realize a census to the EMU-9 elements.

Development of the Analysis

Methodology applied to the census

Since a census is the collection of data from each of the members of a population of interest [13], the decision was made to gather information for the whole of the hotel rooms, condominiums and single-family tourist residences of EMU 9, using a format containing information on elements such as location, type of operation, meal plan, dimension, surface, restrooms and beds (Figure 1).

It was especially important to obtain data corresponding to the surface in square meters, number of bathrooms, number and type

of beds, categorizing the information of the hotels in three types: European Plan, All Inclusive and Mixed Plan.

Maps were prepared; dividing the area of interest in 20 zones. To each zone a team of 3 people was assigned, consisting of previously recruited students of the degree in sustainable tourism and hotel management all selected and trained in the use of the format and in the use of equipment such as digital measuring tapes, digital cameras and reference maps.

The leader of the census, Mtro. Ricardo Sonda de la Rosa, research professor in the field of tourism, first performed a tryout for the adjustment of procedures and handling of the equipment.

Information regarding the units of condominium (in operation, in development, under construction) and houses were also included in the count, in separately identified information, registering visits, data collection and filling out of the official formats with date, time and signature of a representative of the property and the verifier.

Cédula de llenado CONCENTRADO												CLAVE ZONA:		
						Actual		Proyecto		Construcción				
Nombre del inmueble:						Fecha y hora:								
Razón Social														
Ubicación para georeferenciación:														
Operación y categoría:		Hotel	()	Tiempo compartido	()	Mixto	()	Condominio	()	Villas	()			
Modalidad:	Todo incluido	Tipo Europeo			Otro									
Dirección:														
Nombre del responsable:														
Nombre del verificador:														
Número de pisos:														
CUARTO T1		CUARTO T2		CUARTO T3		CUARTO T4		CUARTO T5		CUARTO T6				
Censados		Censados		Censados		Censados		Censados		Censados				
Registro fotográfico		Registro fotográfico		Registro fotográfico		Registro fotográfico		Registro fotográfico		Registro fotográfico				
CAMAS		CAMAS		CAMAS		CAMAS		CAMAS		CAMAS				
M		M		M		M		M		M				
Q		Q		Q		Q		Q		Q				
K		K		K		K		K		K				
BAÑOS		BAÑOS		BAÑOS		BAÑOS		BAÑOS		BAÑOS				
ÁREA		ÁREA		ÁREA		ÁREA		ÁREA		ÁREA				
OTROS		OTROS		OTROS		OTROS		OTROS		OTROS				
TOTAL ESPACIOS CENSADOS														

Source: Universidad del Caribe

Figure 1: Information form.

A recount of a random 10% of the registered facilities was done for validation purposes.

For the processing of the data obtained, firstly a format was developed followed by the recruitment, selection and training of data-entry operators to create the database.

Descriptive analysis of hotel rooms

The hub to set the analysis parameter consisted of planned

methods to obtain data, to organize them, to summarize them to be analyzed and to manifest the findings of the Census [14]. For this reason, the information obtained and concentrated in a database, was subdivided by the type of operation, grouping it by meal plan: Mixed, European Plan and All Inclusive. The criteria for the number of beds of the tourist offer of the EMU 9 was established by categorizing each unit according to the number of beds, starting with one, two, ..., nine beds and a last group of ten or more beds, summing up to a total of 22,843 hotel rooms of which 87.99% consists of one or two beds.

Table 1: Descriptive statistics and frequency distribution in rooms by number of bathrooms vs type of operation.

Number of beds per room (category)	Mixed	European Plan	All Inclusive	Total	Percentage frequency	Cumulative percentage frequency
	Number of rooms					
One	1,403	2,091	5,378	8,872	38.84%	38.84%
Two	1,915	3,024	6,289	11,228	49.15%	87.99%
Three	167	254	819	1,240	5.43%	93.42%
Four	32	232	221	485	2.12%	95.54%
Five	16	526	63	605	2.65%	98.19%
Six	-	208	-	208	0.91%	99.10%
Seven	-	198	-	198	0.87%	99.97%
Eight	-	4	-	4	0.02%	99.99%
Nine	-	-	-	-	0.00%	99.99%
Ten or more	1	2	-	3	0.01%	100.00%
				22,843	100.00%	

Source: own elaboration with data from the census carried out by the University of Caribbean

Table 2: Descriptive statistics and frequency distribution of the rooms by area in square meters vs type of operation.

Scales (category)	Category	Mixed	EuropeanPlan	All Inclusive	Total	Percentage frequency	Cumulative percentage frequency
	Number of rooms						
0 - 33.82	1	1,444	2,089	4,670	8,203	35.91%	35.91%
33.83 - 44.76	2	1,352	1,717	4,658	7,727	33.83%	69.74%
44.77 - 73.89	3	347	954	2,630	3,931	17.21%	86.95%
73.9 - 1,257.65	4	391	1,779	812	2,982	13.05%	100.00%
					22,843	100.00%	

Source: own elaboration with data from the Universidad del Caribe

Table 3: Average and dispersion measures in the rooms by square meters area and type of operation.

Scale per area	Meal plan	$\bar{x} = \frac{\sum x}{n}$	$S^2 = \frac{\sum (x - \bar{x})^2}{n - 1}$	$S = \sqrt{\frac{\sum (x - \bar{x})^2}{n - 1}}$	$CV = \frac{S}{\bar{x}}$
0 - 33.82	Mixed	28.89	17.74	4.21	14.58%
33.83 - 44.76	Mixed	39.07	12.99	3.60	9.22%
44.77 - 73.89	Mixed	54.25	54.96	7.41	13.67%
73.9 - 1257.65	Mixed	134.54	11,852.43	108.87	80.92%
0 - 33.82	EuropeanPlan	28.53	13.08	3.62	12.67%
33.83 - 44.76	EuropeanPlan	36.86	10.97	3.31	8.98%
44.77 - 73.89	EuropeanPlan	59.61	60.04	7.75	13.00%
73.9 - 1257.65	EuropeanPlan	159.40	35,359.72	188.04	118.00%
0 - 33.82	All Inclusive	28.86	11.14	3.34	11.56%
33.83 - 44.76	All Inclusive	37.73	7.59	2.76	7.30%
44.77 - 73.89	All Inclusive	56.47	83.38	9.13	16.17%
73.9 - 1257.65	All Inclusive	137.92	18,122.85	134.62	97.61%

Source: own elaboration with data from the Universidad del Caribe

Table 4: Number of rooms by number of bathrooms.

Number of bathrooms	Category
20,697.50	up to 1.5
4,218.50	up to 2.5
235.00	up to 3.5
41.00	more than 3.5

25,192.00	

Source: own elaboration with data from the Universidad del Caribe

The offer of rooms with three beds or more is still incipient. The total supply of hotel beds was 42,709 (Table 1).

The information of the rooms categorized by area in square meters was another important element. Therefore all registered units were measured, discarding the administrative or commercial areas of

each hotel or condominium. In other words, the essential element was the result obtained by the digital measuring tapes with laser beam.

In order to set criteria for scales that were effective and easy to use, and in which all rooms were included, the information was grouped into four categories. The first scale started from 0 with its limit to the first quartile. The second to the fourth scale were .01 more than the previous scale limit, up to the last quartile (Table 2).

Statistical estimates of arithmetic mean, variance, standard deviation and coefficient of variation were performed to establish the variability of the areas of the rooms, categorized in each of the scales (Table 3).

The number of baths established in 22,843 hotel rooms was particularly important for the purpose of providing an important input to establish requirements or limits of health services, drinking

Table 5: Descriptive statistics and frequency distribution of the rooms according to the area in square meters.

Scale	Category according to the surface	Mixed	EuropeanPlan	All Inclusive	Total	Percentage frequency	Cumulative percentage frequency
		Number of rooms					
Up to 33.82m ²	1	1,444	2,089	4,670	8,203	32.56%	32.56%
Up to 44.76m ²	2	1,352	1,717	4,664	7,733	30.70%	63.26%
Up to 73.89m ²	3	446	1,027	3,306	4,778	18.97%	82.22%
Up to 1,257.65m ²	4	581	2,993	905	4,478	17.78%	100.00%
					-----	-----	
					25,192	100.00%	

Source: own elaboration with data from the Universidad del Caribe

Table 6: Descriptive statistics and frequency distribution of condo rooms by number of beds.

Number of condominium rooms	Number of beds in each room	Percentage frequency	Cumulative percentage frequency
461	One	16.02%	16.02%
833	Two	28.95%	44.98%
1,145	Three	39.80%	84.78%
347	Four	12.06%	96.84%
78	Five	2.71%	99.55%
13	Six	0.45%	100.00%
-	Seven	0.00%	100.00%
-	Eight	0.00%	100.00%
-	Nine	0.00%	100.00%
-	Ten or more	0.00%	100.00%
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2,877		100.00%	

Source: own elaboration with data from the Universidad del Caribe

Table 7: Descriptive statistics and frequency distribution of condo rooms by number of bathrooms vs. type of operation.

Number of beds (category)	Mixed	European Plan	All Inclusive	Total	Percentage frequency	Cumulative percentage frequency
	Number of rooms					
One	-	461	-	461	16.02%	16.02%
Two	236	494	103	833	28.95%	44.98%
Three	321	824	-	1,145	39.80%	84.78%
Four	-	347	-	347	12.06%	96.84%
Five	-	78	-	78	2.71%	99.55%
Six	-	13	-	13	0.45%	100.00%
Seven	-	-	-	-	0.00%	100.00%
Eight	-	-	-	-	0.00%	100.00%
Nine	-	-	-	-	0.00%	100.00%
Ten or more	-	-	-	-	0.00%	100.00%
				-----	-----	
				2,877	100.00%	

Source: own elaboration with data from the Universidad del Caribe

Table 8: Descriptive statistics and frequency distribution of condo rooms by area in square meters vs. type of operation.

Scales	Category according to surface	Mixed	European Plan	All Inclusive	Total	Percentage frequency	Cumulative percentage frequency
		Number of rooms					
0.00– 120.00	1	243	1,204	103	1,550	53.88%	53.88%
120.01 - 207.03	2	178	526	-	704	24.47%	78.35%
207.04 – 350.00	3	104	321	-	425	14.77%	93.12%
350.01 – 1,490.21	4	32	166	-	198	6.88%	100.00%
					-----	-----	
					2,877	100.00%	

Source: own elaboration with data from the Universidad del Caribe

Table 9: Average and dispersion measures in the condominiums by area in square meters and type of operation.

Scale per surface	$\bar{x} = \frac{\sum x}{n}$	$S^2 = \frac{\sum (x - \bar{x})^2}{n - 1}$	$S = \sqrt{\frac{\sum (x - \bar{x})^2}{n - 1}}$	$cv = \frac{S}{\bar{x}}$
0 – 120.00	77.61	753.08	27.44	35.36%
120.01 – 207.03	169.50	485.26	22.03	13.00%
207.04 – 350.00	289.43	2,091.36	45.73	15.80%
350.01 – 1490.21	522.63	47,221.60	217.31	41.58%

Source: own elaboration with data from the Universidad del Caribe

Table 10: Number of bathrooms in condominium rooms.

Number of bathrooms in condominium rooms	Categories
1,566.50	hasta 1.5
610.00	hasta 2.5
1,983.00	hasta 3.5
2,006.50	más de 3.5

6,166.50	

Source: own elaboration with data from the Universidad del Caribe

Table 11: Descriptive statistics and distribution of the number of bathrooms in condominium rooms vs. type of operation.

Scales	Category according to surface	Mixed	European Plan	All Inclusive	Total	Percentage frequency	Cumulative percentage frequency
		Number of rooms					
Up to 120.00 m ²	1	243	1,390	103	1,736	28.15%	28.15%
Up to 207.03 m ²	2	634	1,549	-	2,183	35.40%	63.55%
Up to 350.00 m ²	3	386	1,124	-	1,510	24.49%	88.04%
Up to 1,490.21m ²	4	113	625	-	738	11.96%	100.00%
					-----	-----	
					6,166	100.00%	

Source: own elaboration with data from the Universidad del Caribe

water, drainage and sewerage. Due to the existence of half bathrooms in several rooms, it was decided to establish categories of 1 bath up to 1.5, up to 2.5, up to 3.5 bathrooms and more than 3.5 bathrooms (Table 4).

Because of the impact of the bathrooms, a specific analysis of the number of these was also added. They were grouped with two cross-categories, the surface scale and the operation category (Table 5).

Statistical analysis of condominiums

In the analysis of the condominiums, as was the case in the analysis of the hotels, it was of special interest to know the frequency, using tables that would clearly reflect the number of values in each variable [13].

According to the census report, despite not being properly constituted as a hotel, the total number of rooms in condominium was 2,877, some serving food and beverages (all inclusive), others serving breakfast (European Plan) and others representing a Mixed Plan.

The number of rooms with mixed service was 557, or 19%. The number of rooms with European plan was 2,217 representing 77%. Finally the total number of condominium rooms with what can be considered a form of all inclusive was 103 with 4%. The total supply of condominium beds was 7,418 (Table 6).

In order to present analyses corresponding to the statistics of hotels information as shown below, the number of rooms was analyzed, using the beds and the operation category as a basis (Table 7).

The condominium rooms were measured in square meters, again not including the administrative and commercial areas, as was the case with the hotel rooms.

In this case there were 4 different scales as well. And the limits of the scales were the same as with the hotel rooms, the first scale starting from 0 with its limit to the first quartile, the second to the fourth scale starting with .01 more than the previous scale limit, up to the last quartile (Table 8).

The evaluation of the scale criteria by surface in square meters was explained through statistical means, variance, standard deviation and coefficient of variation as shown in Table 9.

Finally, the numbers of bathrooms was analyzed and, as was the case in the hotel rooms, it was decided to establish categories of 1 bath up to 1.5, up to 2.5, up to 3.5 bathrooms and more than 3.5 bathrooms (Tables 10 and 11).

Conclusions and Recommendations

After evaluating the criteria through surface scales it can be said that the offer of hotel and condominium rooms does not have a specific standard, making the lack of criteria that has prevailed in the tourist destination evident.

It is clear that the offer of rooms in Cancun is mostly represented

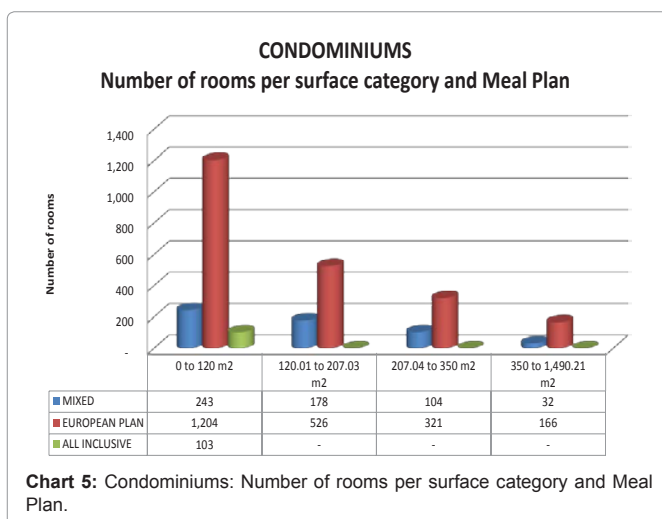
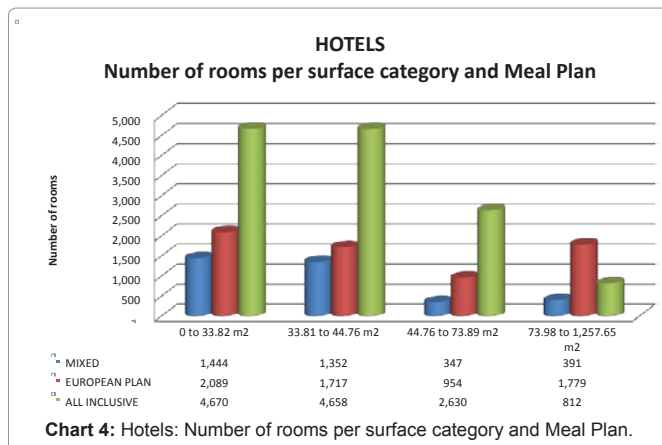


Table 12: Conversion Factors.

Motel	Conversion Factor
Junior suite	1
Suite	1.5
Apartment	2
Studio	2
Studio	2
Simple camper	2
Clinic room	2
Rustic cabin	2
Residential housing	2
Tourist Residences	2.5

Source: own elaboration with data from the Local Ecological Program of Benito Juarez Municipality

Table 13: Number of rooms when applying conversion factor.

Denomination	Counted Figures	Applicable Factor	Total
Rooms	16,304	1	16,304.00
Jr. Suites	2,959	1.5	4,438.50
Other	3,580	2	7,160.00

		Total in hotels	27,902.50

Source: own elaboration

Table 14: Number of built units or units in process of construction when applying conversion factor.

Concept	Counted Units	Converted Units
Hotel rooms	22,843.00	27,902.50
Condominium rooms	2,877.00	5,754.00
Single-family houses	991.00	2,478.00
Rooms under construction	784.00	784.00
Jr. Suites under construction	158.00	237.00
Suites, etc. under construction	184.00	368.00
Condominiums under construction	208.00	416.00
	-----	-----
	28,045.00	37,939.50

Source: own elaboration

by the type of operation known as All Inclusive, representing 56% of the total number of the hotel rooms (Chart 4).

This situation is worthy of a more in-depth research as, according to state tax laws, these hotels calculate the tax considering only the amount corresponding to lodging as taxable income. This has only two conditions; services must be identified in accounting and can in no case be less than 50% of the total amount of services included in this system [15].

Obviously, even condominium rooms presented data showing a commercial use and not just a single-family use (Chart 5). Categorization was therefore necessary in a manner similar to the hotels. Verification by the authorities and regulation of the operation

in the supply of this type of rooms is recommended. Not correcting this makes it possible for the government to stop collecting taxes that are generated by commercial operations.

When considering a hotel room or its variants, it is essential to analyze the laws and regulations regarding the concepts and limitations, as the Urban Development Program of the Cancun Population Center establishes that the maximum number of rooms for the Hotel Zone (EMU9) cannot exceed 30,990. There are, however, two differently marked criteria by which conversions to the specific number can be established. On the one hand the Urban Development Plan 1993 and its update in the year 2005, argued that every unit is considered equivalent to a hotel room. The POEL for the Benito Juarez Municipality on the other hand indicates that certain dimensions are required for a room to be considered a hotel room. However, as a result of a coordination act from November 2005, the criterion agreed upon is to consider every unit equivalent to a hotel room. Meanwhile, the Local Ecological Program of Benito Juarez [16], defined a hotel room as an accommodation intended for nightly rental which areas offer the guest sanitary services, a bedroom area fitted for 2 people, storage for luggage and a sitting area. Areas for the preparation or storage of food and beverages are not included. The quantification of the total tourist rooms includes those rooms needed for service personnel without increasing the total number. The POEL does establish conversion standards, as shown in Table 12.

According to information gleaned from the census, the obtained data is integrated for hotel rooms that will have a conversion of 1 on 1, but there are also different denominations, specifically Jr. Suites, Suites, Master Suites, Presidential Suites, Honeymoon Suites, Studios, Imperial Suites, Governor Suites, Ambassador Suites, Penthouse and Villas. Because many of these types are not explicitly in POEL, for this document all those categories that are different to the rooms are considered subject to conversion; for junior suites the factor was 1 to 1.5 and all the counted spaces that were not directly identified with rooms or junior suites were subject to a conversion factor of 1 to 2. The conclusion with these criteria is that, when from the original census the number of hotel rooms obtained is 22,843 total, the data obtained when applying the conversion factors is shown in Table 13.

The conversion factor for the 2.877 condominium rooms was estimated to be 1 to 2, resulting in a total of 5.754 rooms. When added to the amount of hotel rooms with conversion factor, the total sums up to 33.656 rooms. Additionally it was revealed that the number of residential houses is 991. After applying a conversion factor of 1 to 2.5, this resulted in a total of 2.478. The final total of rooms after applying the conversion factors is 34.648, making it clear that, according to the criteria established by POEL, the buildings existing at the time of the census clearly exceed the maximum limit of 30.900 as established in 2005. It is worth taking into consideration that, besides the obvious surpassing of the maximum limit, there are units that are currently under construction which will evidently increase the outcome as shown in Table 14.

The above calculations indicate that permits and licenses granted by the various departments need to be verified and registered with updated data.

Finally we can conclude that, based on the analyzed statistics, new research articles can be integrated that provide continuity to the behavior of tourism being an example of goodness-of-fit measurement and adjustment including skewness and kurtosis coefficients [17], thus establishing whether the conduct of the offer may be considered normal or not through more specific statistical tests [18].

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