Tourism multipliers in the Mexican economy

Antonio Kido-Cruz
University Michoacana de San Nicolas de Hidalgo, Mexico

Abstract: *This paper presents an analysis of the multiplier impact generated by the tourism sector in Mexico in the year 2013. The importance of studying this sector, in particular, lies in its contribution to the National GDP of over 8% and in its promising development based on services' quality and the preferred destination of the developed countries. In addition, it is proposed to simulate the multiplier impact that will generate two current events, as they are, the construction of the new International Airport of Mexico and the increase of the investment in Fibers. The results were very punctual, a better distribution of the investment is generated, it is invested in the tourism sector, mainly in variables such as value added and remuneration.*

Keywords: Multiplier effect, production, employment, value added, tourism

JEL Classification: *L83, M1, O1*

Biographical note: Antonio Kido-Cruz is professor at the Faculty of Accounting and Administrative Sciences, University Michoacana de San Nicolas de Hidalgo, Mexico. Corresponding author: Antonio Kido-Cruz, e-mail: akido@colpos.mx

1 INTRODUCTION

Dywer et al. (2010) report that an economic impact analysis represents a measure in which tourist spending affects the various sectors of the economy, through an increase in inputs, income, and expenses. Production, income, and employment will be affected to the extent that the different productive sectors in a country are interrelated.

According to the information on the methodological criteria for the preparation of the National Account System of Mexico (SNCM) and the Tourism Satellite Account (CST) for the years 2007-2011, it is known that, in Mexico, the symmetric input-output matrices began in the 1950s, to date with the matrices corresponding to the years 1950, 1960, 1970, 1975, 1978, 1980, (these last three were updates of the Matrix of input-output of 1970), 2003, 2008 and 2012.

The base years for the calculation of the value of the productive transactions of the most recent matrices correspond to the year 2003 and 2008. For the base year change in 2008, the Input-Output Matrix of Mexico was compiled into two versions product by product and industry by industry. (INEGI, 2013).

The starting point of the input-output model in the economic analysis is the transformation of the Tableau Economique into an instrument that allows us to know the productive structure of the country and economic projection. The main assumptions of the model are: a) each sector produces a single good or service, under the same technique; that is, it is assumed that each input is provided by a single production sector, which implies that the same production technology is used, so that substitution between intermediate inputs is not possible, while each sector has a single primary production; ie there is no joint production (sectoral homogeneity hypothesis); b) there are no changes in the short term of the productive structure of each sector, so that the proportion of inputs required by each one will be fixed; c) in the short term, the inputs required by each sector in the production of a product vary in the same proportion as the sectoral production is modified, thus determining a function of production of fixed linear coefficient, which presents constant returns to scale (strict proportionality hypothesis); d) when the model is used to carry out price projections, it must be taken into account that the relative price ratio present in the year in which the matrix is elaborated (relative price invariance hypothesis) is maintained.

The model for the supply and use Charts (COU) and the IPM is the so-called open model in which both the Final Demand and the Gross Value Added (GVA) are separated from the intersectoral transactions of goods, so that these are presented separately from the inputs, if analyzed with respect to the final demands of all sectors is called the open model of Leontief that is a model of demand, on the other hand if it relates the production with the GVA, is called model of Gosh which is essentially a supply model (INEGI, 2013, p.2; Valeri, 2016).

ISSN: 2529-1947. UDC: 658.8+338.48+339.1+640(05)
http://doi.org/10.5281/zenodo.376342
Published online: 12 December 2016

2 METHODOLOGY

Although there are innumerable formal representations of the input-output model, in our case we will use the representation of Miller and Blair (2009). Considering a system of n linear equations, with n unknowns. It can be written using matrix notation. To solve these equations can use the operations with matrices. The solution for such a system is known as the inverse of Leontief (1986). The matrix representation can be written as:

$$Z \cdot i + f = x \ (1)$$

Where i is the column vector with ones in each of its components. Note that the aggregation of productions by row is achieved by multiplying Z • i. Column aggregation is achieved by doing a similar operation with the line vector it = (1,1, ..., 1). By doing it • Z we obtain the aggregation of intermediate inputs.
On the other hand, we have that the sum of columns with the values added can be written as:

$$it \cdot Z + v$$

The structural coefficient matrix is constructed using:

$$a_{ij} = Z_{ij}/x_j \ \ (2)$$

This conforms to the matrix of structural coefficients:

$$a = \begin{bmatrix} a_{11} + & a_{12} + & \dots & a_{1n} \\ a_{21} + & a_{22} + & \dots & a_{2n} \\ a_{31} + & a_{32} + & \dots & a_{3n} \\ a_{n1} + & a_{n2} + & \dots & a_{nn} \end{bmatrix}$$

We can rewrite the system of n linear equations with n unknowns:

$$\begin{matrix} a_{11}X_1 & a_{12}X_2 & \dots & a_{1n}X_n & f_1 = & X_1 \\ a_{21}X_1 & a_{22}X_2 & \dots & a_{2n}X_n & f_2 = & X_2 \\ \vdots & \vdots & \ddots & \vdots & \vdots \ = & \vdots \\ a_{n1}X_1 & a_{n1}X_2 & \dots & a_{nn}X_n & f_n = & X_n \end{matrix} \quad (3)$$

We have that the unknowns are (*X1, X2, ..., Xn*) is the total production vector, a vector ft = (*f1, f2, ..., fn*) is considered as a data of the problem, as well as the matrix of structural coefficients. This problem can be written as follows:

$$A \cdot x + f = x$$

Then we have that the solution of our system comes by multiplying the left-hand side by (I - A) $^{-1}$:

$$x = (I - A)^{-1} \cdot f \ (4)$$

Now, assuming that the sector of final demand (households) is disturbed by some phenomenon f → fo + δf:

$$f_0 + \delta f = \begin{bmatrix} f_1 + & \delta f_1 \\ f_2 + & \delta f_2 \\ \vdots & \vdots \\ f_n + & \delta f_n \end{bmatrix} = \begin{bmatrix} f_1 \\ f_2 \\ \vdots \\ f_n \end{bmatrix} + \begin{bmatrix} \delta f_1 \\ \delta f_1 \\ \vdots \\ \delta f_n \end{bmatrix}$$

In a compact way, we have to:

$$x = (I - A)^{-1}(fo + \delta f\ ) = (I - A)^{-1}fo + (I - A)^{-1}\delta f$$
$$= x_0 + (I - A)^{-1}\delta f$$

Which tells us that we can track changes in final total output due to a change in the final demand sector δf as:

$$\delta x \ = \ x - x_0 = (I - A)^{-1}\delta f \ (5)$$

3 DATA

As a case of analysis, the comparison of the impact of the tourist activity in Mexico is presented using the results of the Tourism Input-Output Matrix of 2013. The main limitation of presenting the results for 2013 is to update the most recent matrix provided by INEGI for the year 2012. This update was based on the simple RAS method. Likewise, the direct coefficients of the different tourist sectors were obtained from the data of the value of the goods and services generated by the economic census that is only available for the year 2014 that present data for the year 2013. The process followed the procedure of Marquina (2006), which consists of the following stages: a) updating of the input-output matrix of the year 2012 to 2013 by the RAS simple method; B) aggregation of the updated matrix to 43 subsectors; C) estimation of the tourist input-product matrix taking into account the Tourism Satellite Account 2013 and the Economic Census of 2014. Table 1 shows the aggregation in 43 subsectors of the economy and the aggregation of 29 more representative subsectors corresponding to the tourism activities to form a tourist matrix of 72 by 72 subsectors of the economy.

4 MULTIPLIERS AND ECONOMIC SIMULATION

In the economic literature, two types of multipliers are distinguished. Type I models that do not consider the remuneration and private consumption sector within the analysis matrix (these multipliers are also referred to as simple or open economy multipliers) and the type II multipliers that if taken into account as a sector of the economy the remunerations and the private consumption. These multipliers are also known as total or closed economy multipliers (Miller and Blair, 2009).
The simplest notion of the type I multiplier of any variable implies to describe it as the total change in the variables of interest before a change in the final demand and considers the direct and indirect effects, as shown by the following relation (Hara, 2008):
A) Multiplier type I = (direct impact + indirect impact / direct impact).
The type II multiplier adds the impact or induced effect:
B) Multiplier type II = (direct impact + indirect impact + induced impact / direct impact).

Table1: Aggregation of the updated matrix to 43 subsectors

	Table 1. Aggregation of the updated matrix to 43 subsectors Sector	CODE SCIA	CODE SCIA ADDED
1	Agriculture, cattle raising, forestry, hunt and fishing.	111	111-114
2	extraction of oil and gas	112	211
3	Metal Ore Mining,except Oil and Gas	113	212
4	Services related to mining	114	213
5	Electric Power Generation, Transmission and Distribution	211	221
6	Natural Gas Distribution and water distribution	212	222
7	Edification	213	236
8	Specialized works for construction	221	237
9	Industrial Building Construction	222	238
10	Food Manufacturing	236	311
11	Beverage and Tobacco Product Manufacturing	237	312
12	Textile manufacturing inputs and finished textiles, manufacture of produc	238	313-316
13	Manufacture of wood	311	321
14	Manufacture of paper	312	322
15	Printing industry and related industries	313	323
16	Petroleum and Coal Products Manufacturing	314	324
17	Chemical Manufacturing, Plastics and Rubber Products Manufacturing, I	315	325-327
18	Primary Metal Manufacturing	316	331
19	Fabricated Metal Product Manufacturing	321	332
20	Manufacture of machinery and equipment	322	333
21	Computer, Communications Equipment and Electronic Product Manufac	323	334
22	Manufacture of accessories, electrical appliances and equipment electricit	324	335
23	Transportation Equipment Manufacturing	325	336
24	Furniture and Related Product Manufacturing	326	337
25	All Other manufacturing	327	339
26	Retail Trade	331	431
27	Air, rail ad water Transportation,, Pipeline, Tourist transport, Truck Transpo	332	481-488
28	Postal services, package delivery, storage,	333	91-493,511-51
29	Central banking	334	521
30	Institutions of non-stock exchange credit and financial intermediation,	335	522
31	Stock exchange activities, exchange rate and financial investment	336	523
32	Bond companies, insurance and pensions	337	524
33	Real estate, rental of personal property	339	531.532
34	Trademarks, patents and franchises	431	533
35	Professional, scientific and technical services, Management of companies	481	541,551,561
36	Waste management and remediation services	482	562
37	educational Services	483	611
38	Health Care and Social Assistence	484	621-624
39	Arts, Entertainment and Recreation, Museums, historic sites, zoos and sim	485	711-713
40	Accommodation Preparation services food and beverage, Repair and mair	486	721.722
41	Repair and maintenance	487	811
42	Personal services	488	812
43	Associations and organizations	491	813
44	crafts	492	
45	beachwear and swimwear	493	
46	baggage	511	
47	Hotel	512	
48	Others accommodation services	515	
49	airline industry	517	
50	Bus	518	
51	All Other transport services	519	
52	travel agency	521	
53	Foods, beverages and tobacco	522	
54	Clothes and shoes	523	
55	Newspapers, magazines and books	524	
56	Pharmaceuticals and personal care products	531	
57	Photography Studios, Portrait	532	
58	Others transport services	533	
59	Restaurant and bars	541	
60	commerce	551	
61	transport	561	
62	movie theater, shows and others	562	
63	toiletries and personal hygiene	611	
64	Photo service	621	
65	rental cars	622	
66	Financial and insurance	623	
67	Others goods and service N.C.O.P.	624	
68	Others tourist market industries	711	
69	Tourist managemet and promotion	712	
70	teaching service	713	
71	recretion service	721	
72	Others services	722	
73		811	
74		812	
75		813	

4.1 Comparative analysis of direct and indirect effects on changes in hotels and construction

Following the economic exposure, in this section we will simulate the effect of a change in the final demand on the different sectors of the economy under development under the same scenario, but with the units not standardized. The first refers to investment in newly created real estate investment trusts, particularly in hotels, known as FIBRA. The second impact is represented by the investment in the new airport in Mexico City. It is also important to emphasize that only type I multipliers will be obtained for the macroeconomic variables of employment, remuneration, value added and production value.

FIBRAS are Investment Trusts in Real Estate, which offer periodic payments and, at the same time, obtain gains from the capital gains of the respective properties. They are defined in article 187 and 188 of the LISR as: "trusts that are dedicated to the acquisition or construction of real estate that is destined to the lease or to the acquisition of the right to receive income from the lease of said assets, as well as to grant Financing for these purposes. "

FIBRAS have become an option to invest and generate attractive returns. Fibra Uno, was the first fiber that traded on the Mexican Stock Exchange in 2011 with a portfolio of 13 properties; at the end of the third quarter of this year, the trust manages 440 properties. Three years later, the market has nine fibers specialized in hotels, malls, and industrial goods. In those that goes off 2014, the fibras with greater yield have been Danhos and Terra with 50.61 and 32.6% respectively (BANORTE-IXE, 2013).

According to the same analysis of BANORTE-IXE, for the year 2014, the inventory of establishments in the country yields a total of 1,495 hotels with 210,141 rooms, of which 1,154 are hotels that are geared to serve business travelers in 40 selected markets from the country. Of those 1,154 hotels, 690 hotels are independent and 464 hotels are brand-name hotels. Mexico has 30 hotel groups, international and national, as well as more than 60 recognized brands. The most important group by a number of hotels is Hotel Group Intercontinental with a 25% market share, followed by Grupo Posadas (22%) and City Express (14%).

The urban hotel industry in Mexico is characterized by a high participation of independent hotels (60%) throughout the country, except certain cities including Mexico and Monterrey that have a smaller participation. The foregoing represents an opportunity for the fidecomisos to grow selectively, taking into account that in other markets as in the United States it is estimated that branded hotels represent about 65% of the industry.

In addition to the above, the expectation of growth of the energy sector has driven the increase of placements of the certificates of capital (CKDs) and, to a lesser extent, the placements in the FIBRAS program. In the year 2015, they placed 5 CKDs for 5,989 million pesos, while only HD Fibra, which obtained only 1,500 million pesos, was released to the market. Even though this figure only represents an approximate impact of the investment in construction, acquisition, expansion and/or remodeling of hotels, it is the figure that will be used to simulate an impact on the final demand. In addition, the figure that will affect the construction of the new international airport of Mexico (NAICM) is based on the budget report for 2015, estimating a total of 12,500 million pesos (Secretary of the Treasury, 2015).

Tables 2, 3, 4 and 5 capture these multiplier effects. Recalling that the first shock applies to the hotel sector in an amount of 1,500 million pesos and the second shock applies to the construction sector for a total of 12.5 billion pesos, are presented below some results relevant to the analysis.

Table 2 shows the results of simulation of the direct and indirect effects that would have an increase of 1.5 billion in the subsector of hotels and an increase of 12.5 billion pesos in the construction sector, as an indicator of changes in the final demand. The first visible result is that the variation in the hotel subsector generates a multiplier of 1.10 against a multiplier of 1.23 of the construction sub-sector in the value added. However, it is important not to forget that the magnitude of the variation in the final demand is less in the hotel activity than in the construction activity. The value added, is affected in terms of the same subsector of construction in 0.31 billion pesos in value added. The economy, in general, reacts with an increase of 0.3833 billion pesos in value added, adding both direct and indirect impacts. Therefore, an investment of 12.5 million in the construction sector will bring to the economy a total of 1.23 billion pesos in value added.

Table 2: Direct and indirect impact on hotel subsector

	Gross value added (million)	Value Production(million)	A/B	HOTELS 47	OP MULTI DIV.	Direct Impact	Indirect impact	Construction	OP MULTI DIV.	Direct Impact	Indirect impact
1	479097	337993	1,42	0,0000	0	0	0,00	0,00	0	0	0,00
2	999693	927091	1,08	0,0002	0	0	0,00	0,00	0	0	0,00
3	218174	408626	0,53	0,0003	0	0	0,00	0,00	0	0	0,00
4	106588	186180	0,57	0,0000	0	0	0,00	0,00	0	0	0,00
5	192123	641456	0,30	0,0024	0	0	0,00	0,00	0	0	0,00
6	57024	1526800	0,04	0,0000	0	0	0,00	0,00	0	0	0,00
7	840756	1452530	0,58	0,0000	0	0	0,00	0,00	0	0	0,00
8	300255	$\boxed{964838}$	0,31	0,0004	0	0	0,00	0,21	1	0,311197	0,07
9	130593	1395603	0,09	0,0001	0	0	0,00	0,00	0	0	0,00
10	624908	3302003	0,19	0,0002	0	0	0,00	0,00	0	0	0,00
11	121291	801496	0,15	0,0047	0	0	0,00	0,00	0	0	0,00
12	128797	459534	0,28	0,0029	0	0	0,00	0,00	0	0	0,00
13	27163	49995	0,54	0,0012	0	0	0,00	0,00	0	0	0,00
14	49811	435977	0,11	0,0009	0	0	0,00	0,00	0	0	0,00
15	19109	522759	0,04	0,0006	0	0	0,00	0,00	0	0	0,00
16	119138	3052004	0,04	0,0005	0	0	0,00	0,00	0	0	0,00
17	511474	3472782	0,15	0,0005	0	0	0,00	0,00	0	0	0,00
18	169190	1090761	0,16	0,0010	0	0	0,00	0,00	0	0	0,00
19	81746	744976	0,11	0,0017	0	0	0,00	0,00	0	0	0,00
20	111453	649722	0,17	0,0000	0	0	0,00	0,00	0	0	0,00
21	114029	510039	0,22	0,0004	0	0	0,00	0,00	0	0	0,00
22	83984	735544	0,11	0,0044	0	0	0,00	0,00	0	0	0,00
23	402196	4733983	0,08	0,0001	0	0	0,00	0,00	0	0	0,00
24	31261	266844	0,12	0,0169	0	0	0,00	0,00	0	0	0,00
25	59953	321017	0,19	0,0041	0	0	0,00	0,00	0	0	0,00
26	2410203	2570833	0,94	0,0001	0	0	0,00	0,00	0	0	0,00
27	902576	1258821	0,72	0,0004	0	0	0,00	0,00	0	0	0,00
28	371459	1616853	0,23	0,0038	0	0	0,00	0,00	0	0	0,00
29	22494	4141	5,43	0,0002	0	0	0,00	0,00	0	0	0,00
30	354543	187241	1,89	0,0008	0	0	0,00	0,00	0	0	0,00
31	17136	39536	0,43	0,0121	0	0	0,01	0,00	0	0	0,00
32	77785	197992	0,39	0,0001	0	0	0,00	0,00	0	0	0,00
33	1738434	195783	8,88	0,0020	0	0	0,02	0,00	0	0	0,00
34	45539	44944	1,01	0,0000	0	0	0,00	0,00	0	0	0,00
35	904912	957625	0,94	0,0069	0	0	0,01	0,00	0	0	0,00
36	4195	718428	0,01	0,0000	0	0	0,00	0,00	0	0	0,00
37	624767	928359	0,67	0,0001	0	0	0,00	0,00	0	0	0,00
38	332551	486128	0,68	0,0000	0	0	0,00	0,00	0	0	0,00
39	66473	512004	0,13	0,0009	0	0	0,00	0,00	0	0	0,00
40	315870	1078857	0,29	0,0010	0	0	0,00	0,00	0	0	0,00
41	74499	221553	0,34	0,0010	0	0	0,00	0,00	0	0	0,00
42	123309	163280	0,76	0,0944	0	0	0,07	0,00	0	0	0,00
43	37365	76998	0,49	0,0025	0	0	0,00	0,00	0	0	0,00
44	86984	68912	1,26	0,0000	0	0	0,00	0,00	0	0	0,00
45	5435	4605	1,18	0,0000	0	0	0,00	0,00	0	0	0,00
46	134	107	1,26	0,0000	0	0	0,00	0,00	0	0	0,00
47	158649	$\boxed{134799}$	1,18	0,0000	1	1,17693	0,00	0,00	0	0	0,00
48	1464	1250	1,17	0,0017	0	0	0,00	0,00	0	0	0,00
49	77384	74423	1,04	0,0000	0	0	0,00	0,00	0	0	0,00
50	5807	4366	1,33	0,0012	0	0	0,00	0,00	0	0	0,00
51	417	17378	0,02	0,0000	0	0	0,00	0,00	0	0	0,00
52	19988	16822	1,19	0,0000	0	0	0,00	0,00	0	0	0,00
53	100437	79459	1,26	0,0000	0	0	0,00	0,00	0	0	0,00
54	19847	16114	1,23	0,0000	0	0	0,00	0,00	0	0	0,00
55	1884	1635	1,15	0,0000	0	0	0,00	0,00	0	0	0,00
56	44710	37631	1,19	0,0000	0	0	0,00	0,00	0	0	0,00
57	1444	1038	1,39	0,0000	0	0	0,00	0,00	0	0	0,00
58	207510	139149	1,49	0,0000	0	0	0,00	0,00	0	0	0,00
59	109225	86627	1,26	0,0000	0	0	0,00	0,00	0	0	0,00
60	147147	113062	1,30	0,0000	0	0	0,00	0,00	0	0	0,00
61	63496	49798	1,28	0,0000	0	0	0,00	0,00	0	0	0,00
62	9460	7736	1,22	0,0003	0	0	0,00	0,00	0	0	0,00
63	5319	4431	1,20	0,0001	0	0	0,00	0,00	0	0	0,00
64	1409	1236	1,14	0,0012	0	0	0,00	0,00	0	0	0,00
65	17796	244	73,01	0,0000	0	0	0,00	0,00	0	0	0,00
66	347819	306075	1,14	0,0000	0	0	0,00	0,00	0	0	0,00
67	52112	44246	1,18	0,0000	0	0	0,00	0,00	0	0	0,00
68	8652	8652	1,00	0,0000	0	0	0,00	0,00	0	0	0,00
69	10026	10026	1,00	0,0000	0	0	0,00	0,00	0	0	0,00
70	461	461	1,00	0,0000	0	0	0,00	0,00	0	0	0,00
71	2100	2100	1,00	0,0000	0	0	0,00	0,00	0	0	0,00
72	141160	141160	1,00	0,0000	0	0	0,00	0,00	0	0	0,00
						1,18	0,12			0,3112	0,0722
	SUM				**1,10**					**1,23**	

In the case of the Hotels subsector, with an investment of 1.5 million, initially 1.18 billion pesos are generated in value added. The economy as a whole generates 1.3 billion pesos in added value when both direct and indirect impacts are added. Therefore, an investment of 1.5 million in the hotel sub-sector will have a multiplier effect type I of the value added of 1.10.

The calculations in Table 3 show the direct and indirect impact on the personnel employed. The main results show that an increase of 12.5 million pesos in the construction subsector generated 0.2244 thousand new jobs in the same subsector. The economy as a whole (considering direct and indirect effect) adds 0.284 thousands of new jobs. The largest effects occur in the same subsector and the type I multiplier of employment is 1.28.

Table 3: Direct and indirect impact on personnel

	People working (million)	Value Production (millon)	A/B	HOTELS 47	OP MULTI DIV.	Direct Impact	Indirect impact	Construction	OP MULTI DIV.	Direct Impact	Indirect impact
1	181122	337993	0.5359	0.0000	0	0.00	0.00	0.00	0	0.00	0.00
2	53581	927091	0.0578	0.0002	0	0.00	0.00	0.00	0	0.00	0.00
3	105724	408626	0.2587	0.0003	0	0.00	0.00	0.00	0	0.00	0.00
4	7243	186180	0.0389	0.0000	0	0.00	0.00	0.00	0	0.00	0.00
5	96693	641456	0.1507	0.0024	0	0.00	0.00	0.00	0	0.00	0.00
6	124236	1526800	0.0814	0.0000	0	0.00	0.00	0.00	0	0.00	0.00
7	291558	1452530	0.2007	0.0000	0	0.00	0.00	0.00	0	0.00	0.00
8	216515	$\boxed{964838}$	0.2244	0.0004	0	0.00	0.00	0.21	1	0.22441	0.05
9	61783	1395603	0.0443	0.0001	0	0.00	0.00	0.00	0	0.00	0.00
10	878695	3302003	0.2661	0.0002	0	0.00	0.00	0.00	0	0.00	0.00
11	168532	801496	0.2103	0.0047	0	0.00	0.00	0.00	0	0.00	0.00
12	628712	459534	1.3682	0.0029	0	0.00	0.00	0.00	0	0.00	0.00
13	76860	49995	1.5374	0.0012	0	0.00	0.00	0.00	0	0.00	0.00
14	109102	435977	0.2502	0.0009	0	0.00	0.00	0.00	0	0.00	0.00
15	127332	522759	0.2436	0.0006	0	0.00	0.00	0.00	0	0.00	0.00
16	37356	3052004	0.0122	0.0005	0	0.00	0.00	0.00	0	0.00	0.00
17	769554	3472782	0.2216	0.0005	0	0.00	0.00	0.00	0	0.00	0.00
18	98945	1090761	0.0907	0.0010	0	0.00	0.00	0.00	0	0.00	0.00
19	391526	744976	0.5256	0.0017	0	0.00	0.00	0.00	0	0.00	0.00
20	127829	649722	0.1967	0.0000	0	0.00	0.00	0.00	0	0.00	0.00
21	300544	510039	0.5893	0.0004	0	0.00	0.00	0.00	0	0.00	0.00
22	195387	735544	0.2656	0.0044	0	0.00	0.00	0.00	0	0.00	0.00
23	777900	4733983	0.1643	0.0001	0	0.00	0.00	0.00	0	0.00	0.00
24	159611	266844	0.5981	0.0169	0	0.00	0.01	0.00	0	0.00	0.00
25	225547	321017	0.7026	0.0041	0	0.00	0.00	0.00	0	0.00	0.00
26	503483	2570833	0.1958	0.0001	0	0.00	0.00	0.00	0	0.00	0.00
27	687398	1258821	0.5461	0.0004	0	0.00	0.00	0.00	0	0.00	0.00
28	372552	1616853	0.2304	0.0038	0	0.00	0.00	0.00	0	0.00	0.00
29	3302	4141	0.7973	0.0002	0	0.00	0.00	0.00	0	0.00	0.00
30	370319	187241	1.9778	0.0008	0	0.00	0.00	0.00	0	0.00	0.00
31	18333	39536	0.4637	0.0121	0	0.00	0.01	0.00	0	0.00	0.00
32	86822	197992	0.4385	0.0001	0	0.00	0.00	0.00	0	0.00	0.00
33	251034	195783	1.2822	0.0020	0	0.00	0.00	0.00	0	0.00	0.00
34	936	44944	0.0208	0.0000	0	0.00	0.00	0.00	0	0.00	0.00
35	2341347	957625	2.4450	0.0069	0	0.00	0.02	0.00	0	0.00	0.00
36	22192	718428	0.0309	0.0000	0	0.00	0.00	0.00	0	0.00	0.00
37	759871	928359	0.8185	0.0001	0	0.00	0.00	0.00	0	0.00	0.00
38	614147	486128	1.2633	0.0000	0	0.00	0.00	0.00	0	0.00	0.00
39	231579	512004	0.4523	0.0009	0	0.00	0.00	0.00	0	0.00	0.00
40	1943437	1078857	1.8014	0.0010	0	0.00	0.00	0.00	0	0.00	0.00
41	768006	221553	3.4665	0.0010	0	0.00	0.00	0.00	0	0.00	0.00
42	381975	163280	2.3394	0.0944	0	0.00	0.22	0.00	0	0.00	0.00
43	114129	76998	1.4822	0.0025	0	0.00	0.00	0.00	0	0.00	0.00
44	221703	68912	3.2172	0.0000	0	0.00	0.00	0.00	0	0.00	0.00
45	651797	4605	141.5325	0.0000	0	0.00	0.00	0.00	0	0.00	0.00
46	230	107	2.1522	0.0000	0	0.00	0.00	0.00	0	0.00	0.00
47	133858	$\boxed{134799}$	0.9930	0.0000	1	0.99302	0.00	0.00	0	0.00	0.00
48	4829	1250	3.8632	0.0017	0	0.00	0.01	0.00	0	0.00	0.01
49	21627	74423	0.2906	0.0000	0	0.00	0.00	0.00	0	0.00	0.00
50	11945	4366	2.7359	0.0012	0	0.00	0.00	0.00	0	0.00	0.00
51	3892	17378	0.2240	0.0000	0	0.00	0.00	0.00	0	0.00	0.00
52	19224	16822	1.1428	0.0000	0	0.00	0.00	0.00	0	0.00	0.00
53	405784	79459	5.1068	0.0000	0	0.00	0.00	0.00	0	0.00	0.00
54	50149	16114	3.1122	0.0000	0	0.00	0.00	0.00	0	0.00	0.00
55	2061	1635	1.2605	0.0000	0	0.00	0.00	0.00	0	0.00	0.00
56	21216	37631	0.5638	0.0000	0	0.00	0.00	0.00	0	0.00	0.00
57	288	1038	0.2775	0.0000	0	0.00	0.00	0.00	0	0.00	0.00
58	7507	139149	0.0539	0.0000	0	0.00	0.00	0.00	0	0.00	0.00
59	433594	86627	5.0053	0.0000	0	0.00	0.00	0.00	0	0.00	0.00
60	253893	113062	2.2456	0.0000	0	0.00	0.00	0.00	0	0.00	0.00
61	173211	49798	3.4783	0.0000	0	0.00	0.00	0.00	0	0.00	0.00
62	53908	7736	6.9681	0.0003	0	0.00	0.00	0.00	0	0.00	0.00
63	5803	4431	1.3097	0.0001	0	0.00	0.00	0.00	0	0.00	0.00
64	3679	1236	2.9765	0.0012	0	0.00	0.00	0.00	0	0.00	0.00
65	880	244	3.6102	0.0000	0	0.00	0.00	0.00	0	0.00	0.00
66	89091	306075	0.2911	0.0000	0	0.00	0.00	0.00	0	0.00	0.00
67	0	44246	0.0000	0.0000	0	0.00	0.00	0.00	0	0.00	0.00
68	8848	8652	1.0226	0.0000	0	0.00	0.00	0.00	0	0.00	0.00
69	55084	10026	5.4939	0.0000	0	0.00	0.00	0.00	0	0.00	0.00
70	2612	461	5.6658	0.0000	0	0.00	0.00	0.00	0	0.00	0.00
71	2650	2100	1.2620	0.0000	0	0.00	0.00	0.00	0	0.00	0.00
72	46400	141160	0.3287	0.0000	0	0.00	0.00	0.00	0	0.00	0.00
						0.99302	0.29772			0.2244	0.06
	SUM					**1.2998**			**1.2844333**		

For the subsector of hotels, with an investment of 1.5 billion pesos, initially, 0.99 thousand new jobs are generated in the same subsector. The greatest impacts on employment generation are concentrated in the subsectors of stock market activities with 0.012 thousand new jobs; in the subsector of other accommodation services with 0.0017 thousand new jobs and in the subsector of foreign buses with 0.0012 thousand new jobs. The economy, as a whole, generates 1.29 thousand new jobs, adding both direct and indirect impacts. Finally, the simple employment multiplier was estimated at 1.29.

Table 4 reports the direct and indirect impact on the level of income or wages. Given the 12.5 billion pesos increase in the construction subsector, it initially generates 0.0118 billion pesos in revenues for the same construction sub-sector. The economy, as a whole, generates 0.01 billion pesos in compensation adding both the direct and indirect impacts. Therefore, an investment of 12.5 billion pesos in the construction sub-sector will have a multiplier effect of 1.21.

In the hotel's subsector, it is identified that with an investment of 1.5 billion pesos in the final demand can generate up to 0.0806 billion pesos in remunerations. The economy, as a whole, participates with 0.09 billion pesos in wages when considering direct and indirect impacts together. Therefore, an investment of 1.5 million calculates an income multiplier of 1.12.

Table 4: Direct and indirect impact on wages

	Remuneration (million)	Value Production (millon)	A/B	HOTELS 47	OP MULTI DIV.	Direct Impact	Indirect impact	Construction	OP MULTI DIV.	Direct Impact	Indirect impact
1	2778	337993	0.0082	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	38685	927091	0.0417	0.0002	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	9328	408626	0.0228	0.0003	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	471	186180	0.0025	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	46884	641456	0.0731	0.0024	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	15606	1526800	0.0102	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	16484	1452530	0.0113	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	11418	964825	0.0118	0.0004	0.00	0.00	0.00	0.21	1.00	0.01	0.00
9	3156	1395603	0.0023	0.0001	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	53047	3302003	0.0161	0.0002	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	14397	801496	0.0180	0.0047	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	33177	459534	0.0722	0.0029	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	2692	49995	0.0538	0.0012	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	12199	435977	0.0280	0.0009	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	7788	522759	0.0149	0.0006	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	25610	3052004	0.0084	0.0005	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	87820	3472782	0.0253	0.0005	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	15577	1090761	0.0143	0.0010	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	27754	744976	0.0373	0.0017	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	17369	649722	0.0267	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	35658	510039	0.0699	0.0004	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	20652	735544	0.0281	0.0044	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	87672	4733983	0.0185	0.0001	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	9061	266844	0.0340	0.0169	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	21881	321017	0.0682	0.0041	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26	38041	2570833	0.0148	0.0001	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	76195	1258821	0.0605	0.0004	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	61884	1616853	0.0383	0.0038	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29	2257	4141	0.5451	0.0002	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	74102	187241	0.3958	0.0008	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	5843	39536	0.1478	0.0121	0.00	0.00	0.00	0.00	0.00	0.00	0.00
32	13794	197992	0.0697	0.0001	0.00	0.00	0.00	0.00	0.00	0.00	0.00
33	8868	195783	0.0453	0.0020	0.00	0.00	0.00	0.00	0.00	0.00	0.00
34	78	44944	0.0017	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
35	185659	957625	0.1939	0.0069	0.00	0.00	0.00	0.00	0.00	0.00	0.00
36	1407	718428	0.0020	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
37	47631	928359	0.0513	0.0001	0.00	0.00	0.00	0.00	0.00	0.00	0.00
38	21261	486128	0.0437	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
39	10453	512004	0.0204	0.0009	0.00	0.00	0.00	0.00	0.00	0.00	0.00
40	42405	1078857	0.0393	0.0010	0.00	0.00	0.00	0.00	0.00	0.00	0.00
41	17440	221553	0.0787	0.0010	0.00	0.00	0.00	0.00	0.00	0.00	0.00
42	5282	163280	0.0324	0.0944	0.00	0.00	0.00	0.00	0.00	0.00	0.00
43	5057	76998	0.0657	0.0025	0.00	0.00	0.00	0.00	0.00	0.00	0.00
44	9073	68912	0.1317	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
45	712	4605	0.1546	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
46	15	107	0.1435	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
47	10859	134798	0.0806	0.0000	1.00	0.08	0.00	0.00	0.00	0.00	0.00
48	271	1250	0.2166	0.0017	0.00	0.00	0.00	0.00	0.00	0.00	0.00
49	13029	74423	0.1751	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
50	1012	4366	0.2319	0.0012	0.00	0.00	0.00	0.00	0.00	0.00	0.00
51	78	17378	0.0045	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
52	1990	16822	0.1183	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
53	29111	79459	0.3664	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
54	3162	16114	0.1962	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
55	173	1635	0.1059	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
56	4038	37631	0.1073	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
57	67	1038	0.0647	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
58	5214	139149	0.0375	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
59	25149	86627	0.2903	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60	18735	113062	0.1657	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
61	20647	49798	0.4146	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
62	833	7736	0.1076	0.0003	0.00	0.00	0.00	0.00	0.00	0.00	0.00
63		4431	0.0000	0.0001	0.00	0.00	0.00	0.00	0.00	0.00	0.00
64	0	1236	0.0000	0.0012	0.00	0.00	0.00	0.00	0.00	0.00	0.00
65	7787	244	31.9479	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
66	197	306075	0.0006	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
67	3972	44246	0.0898	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
68	3068	8652	0.3545	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
69	12215	10026	1.2183	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
70	566	461	1.2274	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
71	649	2100	0.3091	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
72	23060	141160	0.1634	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
						0.08	0.01			0.01	0.00
	SUM				**1.12**				**1.21**		

The estimation of Table 5, regarding the direct and indirect impact on production in Mexico, shows the following results. An increase of 12.5 billion pesos in construction will initially generate 0.48 billion pesos in new production within the same subsector. The total economy is affected by 0.60 billion pesos in new productions adding both direct and indirect impacts. The production multiplier is estimated at 1.24.

The calculation for the subsector of hotels comprising an initial investment of 1.5 billion pesos, produces the equivalent of 1.47 billion pesos in the same subsector of hotels. The impact on the national economy is equivalent to 1.67 billion pesos in production, adding both direct and indirect impacts. Finally, the simple multiplier of the economy, in the item of the level of production was calculated in 1.14.

Table 5: Direct and indirect impact on production

	Total Production (million)	Value Production (millon)	A/B	HOTELS 47	OP MULTI DIV.	Direct Impact	Indirect impact	Construction	OP MULTI DIV.	Direct Impact	Indirect impact
1	14391246	337993	42.58	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	1003117	927091	1.08	0.0002	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	225922	408626	0.55	0.0003	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	107375	186180	0.58	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	332543	641456	0.52	0.0024	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	131935	1526800	0.09	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	847513	1452530	0.58	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	467534	964825	0.48	0.0004	0.00	0.00	0.00	0.21	1.00	0.48	0.10
9	157915	1395603	0.11	0.0001	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	734909	3302003	0.22	0.0002	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	237471	801496	0.30	0.0047	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	1011330	459534	2.20	0.0029	0.00	0.00	0.01	0.00	0.00	0.00	0.00
13	38457	49995	0.77	0.0012	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	106337	435977	0.24	0.0009	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	58718	522759	0.11	0.0006	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	132262	3052004	0.04	0.0005	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	1573476	3472782	0.45	0.0005	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	782667	1090761	0.72	0.0010	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	268463	744976	0.36	0.0017	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	262272	649722	0.40	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	424949	510039	0.83	0.0004	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	274036	735544	0.37	0.0044	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	506143	4733983	0.11	0.0001	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	96002	266844	0.36	0.0169	0.00	0.00	0.01	0.00	0.00	0.00	0.00
25	199033	321017	0.62	0.0041	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26	3529321	2570833	1.37	0.0001	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	1250186	1258821	0.99	0.0004	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	521342	1616853	0.32	0.0038	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29	301782	4141	72.87	0.0002	0.00	0.00	0.01	0.00	0.00	0.00	0.00
30	357621	187241	1.91	0.0008	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	18828	39536	0.48	0.0121	0.00	0.00	0.01	0.00	0.00	0.00	0.00
32	79321	197992	0.40	0.0001	0.00	0.00	0.00	0.00	0.00	0.00	0.00
33	1963061	195783	10.03	0.0020	0.00	0.00	0.02	0.00	0.00	0.00	0.00
34	87376	44944	1.94	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
35	955580	957625	1.00	0.0069	0.00	0.00	0.01	0.00	0.00	0.00	0.00
36	91502	718428	0.13	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
37	709501	928359	0.76	0.0001	0.00	0.00	0.00	0.00	0.00	0.00	0.00
38	519130	486128	1.07	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
39	101223	512004	0.20	0.0009	0.00	0.00	0.00	0.00	0.00	0.00	0.00
40	325255	1078857	0.30	0.0010	0.00	0.00	0.00	0.00	0.00	0.00	0.00
41	103095	221553	0.47	0.0010	0.00	0.00	0.00	0.00	0.00	0.00	0.00
42	192878	163280	1.18	0.0944	0.00	0.00	0.11	0.00	0.00	0.00	0.00
43	37365	76998	0.49	0.0025	0.00	0.00	0.00	0.00	0.00	0.00	0.00
44	111266	68912	1.61	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
45	8292	4605	1.80	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
46	194	107	1.82	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
47	198569	134798	1.47	0.0000	1.00	1.47	0.00	0.00	0.00	0.00	0.00
48	1464	1250	1.17	0.0017	0.00	0.00	0.00	0.00	0.00	0.00	0.00
49	77440	74423	1.04	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
50	20375	4366	4.67	0.0012	0.00	0.00	0.01	0.00	0.00	0.00	0.01
51	4436	17378	0.26	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
52	26710	16822	1.59	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
53	132013	79459	1.66	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
54	29697	16114	1.84	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
55	2946	1635	1.80	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
56	60887	37631	1.62	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
57	2269	1038	2.19	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
58	269974	139149	1.94	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
59	139573	86627	1.61	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60	173881	113062	1.54	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
61	65594	49798	1.32	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
62	30262	7736	3.91	0.0003	0.00	0.00	0.00	0.00	0.00	0.00	0.00
63	6950	4431	1.57	0.0001	0.00	0.00	0.00	0.00	0.00	0.00	0.00
64	1967	1236	1.59	0.0012	0.00	0.00	0.00	0.00	0.00	0.00	0.00
65	17895	244	73.41	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
66	552585	306075	1.81	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
67	52175	44246	1.18	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
68	8652	8652	1.00	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
69	10026	10026	1.00	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
70	461	461	1.00	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
71	2100	2100	1.00	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
72	141160	141160	1.00	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
						1.47	0.20			0.48	0.12
	SUM				**1.14**				**1.24**		

5 CONCLUSIONS

Through this work, the interactions of economic sectors were modeled through input-output matrices, emphasizing the participation of the characteristic and non-characteristic goods and services of tourism in Mexico and generating different scenarios to observe the behavior of these sectors.

The first thing that was done was to update the input-output matrix of 2012 presented by INEGI, through the simple RAS method, to an input-output matrix for the year 2014. Based on information from the Satellite Account Tourism and the Economic Censuses 2014, generated the input-output matrix for Mexico 2013. It is important to note that both the data from the Tourism Satellite Account and the Economic Census are reported for 2013, That, in fact, the updated matrix also corresponds to the year 2013. However, since the economic census information publishes its data in 2013, it was decided to use the name of a matrix of input product tourism for Mexico 2013.

Finally, we developed probable scenarios of changes in final demand in 2015 and assuming that a potential increase of 12.5 billion in the construction sub-sector and 1.5 billion in the hotel sub-sector could be estimated, the direct effects and indirect in the Mexican economy. The results of these simulations indicate that in the case of the macroeconomic variables of remuneration and employed personnel there is a greater direct and indirect effect on the economy when investing in hotels, while in value added and construction there is the greater impact when investing in the construction sector.

But on average with the sum of remunerations, personnel employed, production and value added there is a greater impact when the investment is in the Hotel sector with an average growth of 1.26 billion pesos, while investment in construction generates 1.24 billion of pesos. In addition, it must be considered that the investment in hotels is smaller on a scale of 3 to 1.

REFERENCES

BANORTE IXE, (2013). Análisis y estrategia bursátil. Reporte del 19 de julio de 2013.

INEGI Sistema de Cuentas Nacionales, (2013). Cuadros de Oferta y Utilización. Fuentes y metodologías.

Dwyer, L., P. Forsyth and W. Dwyer, (2010). Tourism economics and policy. Channel View Publications.

Hara, T. (2008). *Quantitative tourism industry analysis*. Elsevier. First Edition.

Leontief, W. (1986). *Input-Output economics*. First Edition. Oxford University Press.

Miller. R and Blair, P, (2009). *Input-Output analysis*. Foundations and extensions. Second Edition. Cambridge University Press.

Marquina, S. (2006). Comparación y articulación interna de la actividad económica del sector turístico a partir de la Matriz de Insumo-Producto de México 2003 basada en el enfoque de la Cuenta Satélite de Turismo. PhD. Dissertation. University of Barcelona.

Secretaría de Hacienda y Crédito Público de México (2015). Presupuesto de la Federación 2015. Versión ciudadana, 2008.

Valeri, M. (2016). Networking and cooperation practices in the Italian tourism business. Journal of Tourism, Heritage & Services Marketing, 2(1), 30–35. http://doi.org/10.5281/zenodo.376333

SUBMITTED: AUG 2016
REVISION SUBMITTED: NOV 2016
ACCEPTED: DEC 2016
REFEREED ANONYMOUSLY

PUBLISHED ONLINE: 12 DECEMBER 2016