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# Measuring the tourism economic impact of Summer University courses

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**Abstract**

This study assesses the economic impact of summer courses organized far away from the headquarters of a Spanish middle-sized university. This academic activity contributes to the revitalization of the tourism in the city with the arrival of new tourists for academic and professional purposes who generate revenues in the city with their consumption. Furthermore, this economic impact is increased by the expenditure undertaken by the organizers themselves to carry out the summer courses (input - output methodology is used). Finally, we conclude that these summer courses play a significant role in revitalizing tourism in the city that hosts the Summer University.

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**Keywords:** Economic impact; input output analysis; tourism; policy implications

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## 1. Introduction

Many cities and territories have decided to attract tourists' attention by focussing on event organization. This fact has a double standpoint, on the one hand, because it makes the event location more appealing and, consequently, an increase in the influx of tourists is experienced and, on the other, event organization generates economic benefits, infrastructure development and a considerable social impact.

Each event has different characteristics, both for its consequences, as well as for the kind of audience attending, the duration of the event, or the economic impact on the event location. Therefore, the study on events has been carried out over time regarding different points of view, such as Anthropology, Economics or Geography.

There are many studies that refer to the economic impact generated by any type of event. However, there are very few studies focused on events organized by universities such as symposia, conferences, summer courses or scientific meetings.

Like any other event that brings non-residents to the destination, an economic impact is generated where it takes place. In this context, this paper analyses the economic impact of these activities organized by University of Lleida (UdL)<sup>1</sup>, focusing on the summer courses organized by this university because most of them are concentrated

in a specific place, far away from the headquarters of the university and that, therefore, requires attendants and teaching staff to move to this place, and they contribute to generate new tourism in the destination.

The city that hosts these summer courses is La Seu d'Urgell, a city of about 13,000 inhabitants, located in the heart of the Catalan Pyrenees, Spain.

This academic activity contributes to the revitalization of the tourism in the city with the arrival of new tourists for academic and professional purposes who generate revenues in the city with their consumption. Furthermore, this economic impact is increased by the expenditure undertaken by the organizers themselves to carry out the summer courses.

The paper is organised as follows: the second section introduces the international literature on the economic impact of events; the third section provides some facts about the events organized by UdL; the fourth section is focused in the methodology; the fifth section presents the results in economic impact of these events; and the final section conclude.

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<sup>1</sup> The UdL is located in northeastern Spain, and currently has about 10,000 students spread among seven centers (Faculties).

## 2. Theoretical background

The impact achieved by event organization has been widely examined both from an economic and a social standpoint. Thus, Vaughan (1979, quoted in Getz, 2008) focused on the impact caused by the Edinburgh Festival, Scotland; Béliveau and Ritchie (1974, quoted in Getz, 2008) examined the impact of the Quebec Carnival, Canada; Lee and Taylor (2005), Chalip (2002), Haynes (2000), Madden (1999), and Brunet (1995) researched into the economic impact achieved by some Olympic Games and Football World Cup editions; Ryan (1998) analysed seven different events held in Palmerston North, New Zealand; Maudos (2007) research subject was the organization of the 32nd America's Cup in Valencia, Spain; while Amorós (2004) focused on the economic profit related to golf tourism in the Costa del Sol, Spain or Saayman and Rossouw (2011) estimated the economic value of South Africa's longest running national arts festival, the Grahamstown National Arts Festival; among others.

Other authors have studied the events as a mechanism to increase the number of tourists to the destination (Getz 1989, 1991; Hall 1992; Light 1996 quoted in Sherwood 2007); the role of events in attracting tourist flows (Bos, 1994; Ritchie & Beliveau, 1974; Ryan, Smee, Murphy, & Getz, 1998; Yoon, Spencer, Holecek, and Kim, 2000 quoted in Della Lucia, 2013); economic benefits and job creation (Herrero 2004; Plaza 2000), cost-benefit analysis of events (Burgan and Mules, 2001), infrastructure development (Brunet, 1995) and

relation with social benefits (Fredline, Jago and Deery, 2003 quoted in Sherwood, 2007; Hiller, 1995).

Several studies on the enormous significance of business tourism on the economies holding the events have been carried out. They focus on tourism demand, expenses, equipment and infrastructure facilities and significance of business events (Torrego, 1995; Weber, 2001; Binimelis and Ordinas, 2003; Beulah and Davidson 2003; Ladkin, 2006).

Most of the studies estimate the expenditures through surveys, but difference lies in the choice of target to answer (Burgan and Mules, 1992). Crompton (1999) quoted in Gelan (2003: pp. 408) states that the integrity of economic impact studies is measured by the way different expenditure items are treated. There are three broad categories of expenditure: spending by tourists, residents, and local authorities. Crompton argues that only those tourists who reside outside the community and whose primary motivation for the visit is to attend the event should be surveyed. The reason is that economic impact attributable to a sporting tournament relates only to "new money" injected into the local economy. As Grado, Strauss and Lord (1998) say, expenses by local attendants do not represent new money flow for the region.

Summing up, there are many studies that refer to the economic importance generated by any type of event. Despite this extensive literature, there are very few studies that focus on events organized by universities. The main objective of all these university events is

the scientific exchange, the meeting of specialists in a particular topic for discussion or analysis or to enlarge global knowledge. Like any other event that brings non-residents to the destination, an economic impact is generated where it takes place.

On the other hand, public institutions, such as universities or hospitals, are usually seen as places that generate expenditure. However, these institutions generate wealth by the consumption of their staff and their users, and by the investments and purchases of goods and services performed. There are some studies on the economic impact generated by establishing a university in a determined geographic area studies (among others Garrido and Gallo, 2007; Llop, 2002; Enciso, Farré, Sala and Torres, 2001). In this regard, a university hosting workshops, conferences, seminars, symposia and scientific meetings is an appeal for foreign people, who will spend some days in the university location. Visitors yield revenues for the organizing place with their consumption: they will stay at local accommodation, will eat and dine in restaurants in city, will buy gifts, and will use public transportation or taxi services.

In this line of work, Martín and Sardà (2010), analysed the economic profit generated by organizing scientific and academic events at UdL, and proved whether these benefits compensated the investment made by public institutions. They demonstrated that public investment in the events of UdL, was economically feasible, generating a high yield of 250%.

### 3. Events organized by UdL

The University of Lleida, like any other university, supports knowledge transfer within its ordinary activity in the fields of teaching and research. UdL publishes scientific material, starts projects with several companies, contributes to the creation of new companies, and organizes academic and scientific events. Thanks to the organization of conferences, conventions, workshops, symposia, courses, and scientific meetings, UdL attracts people from all over Catalonia, Spain and the entire globe, who will later consume in the city and will bring in economic profits where they take place.

This study assesses the economic impact of these activities organized by UdL, focusing on the summer courses organized by this university because most of them are concentrated 150 km away from the headquarters of the university, that means that attendants have to move to La Seu d'Urgell.

This academic activity contributes to the revitalization of the tourism in the city with the arrival of new tourists for academic and professional purposes who generate revenues in the city with their consumption. Furthermore, this economic impact is increased by the expenditure undertaken by the organizers themselves to carry out the summer courses.

Since 1993, UdL organizes summer courses open both to university students and to the society. During the studied period (summers from 2009 to 2012) the UdL conducted 144 courses and 1 congress in different parts of the province of Lleida, 56 of them, 38.62%

of the total, were held in La Seu d'Urgell, as shown in Table 1. These courses and congress enrolled 1,174 people in there, and 206 professors and staff were required to carry them out.

Of those who enrolled in these courses, 33% were students of the own UdL, 7% came from other Spanish universities and 60% came from the professional field. As regard to their origin, 71% were from the province of Lleida, 12% of the rest of Catalonia, Andorra 3%, Valencia 3%, Aragon 2%, Balearic Islands 1%, and the rest came from different points of both the rest of Spain and Europe (Andalusia, Madrid, Basque Country, Germany, Finland and Italy).

In the four summers analyzed, 29% of the attendees were the first time they visited La Seu d'Urgell, and 10% of teaching staff was their first visit to this city. A 98% of the visitors, students and teaching staff, replied that they intended to come back to the Seu d'Urgell on upcoming opportunities.

Besides the economic benefits that represent for a city like La Seu d'Urgell to host the Summer University of the UdL, we must also remember that during the 20 years that the summer courses have taken place in this city, several personalities such as actors, writers, journalists, professors, businessmen, and politicians have been involved in public events (opening and closing speeches, conferences, and lectures). These personalities have come to La Seu d'Urgell and have promoted the city through the media that has echoed their visit.

## 4. Methodology

There are different models to analyze the economic impact of the events. Input-Output methodology (I-O) (Guy, 1993; Leontief, 1967; among others) is the oldest and widely used. The basic model is centered on a transaction matrix that captures inter-sector flows and the final demand of each sector.

### 4.1. Input – Output Model

The Input - Output technique analyses the effects of the domestic expenditures on the economy. The demand version of the framework is defined as follow (in matrix format):

$$X = (I - A)^{-1} * Y \quad (1)$$

or

$$\begin{matrix} \text{Total} & = & \text{Total} & * & \text{Final} \\ \text{Output} & & \text{Requirements} & & \text{Demand} \end{matrix}$$

where: X is the production vector of the economy, I is the identity matrix, A is the matrix of technical coefficients, Y is the total final demand vector of the economy and  $(I - A)^{-1}$  is the Leontief inverse matrix. Assuming that the Leontief inverse matrix remains constant over time and transforming equation (1) in terms of variations yields the following expression:

$$\Delta X = (I - A)^{-1} * \Delta Y \quad (2)$$

where  $\Delta$  is the difference operator. The last equation indicates that a change in total output is the product of



a change in total final demand multiplied by  $(I-A)^{-1}$ . The Leontief matrix is the result of a matrix transformation through which multiplier coefficients can be calculated.

Equation (2) may be explained in the following way: if an increase is produced in final demand in one sector (or final demand in aggregated sectors), such an increase will require a corresponding increase in another sector's output because that sector's intermediate goods and services are required to produce final goods and services in the first sector. The increase in final demand is called the direct effect (or initial impact), and the increase in output in response to the initial impact is called the indirect effect. These two effects are summed up and called the "Type I multiplier." Once we expand the I-O to include household and other factors (labour, capital etc), that would create a matrix with highly useful information. Any increase in output produced by the Type I multiplier (= direct effect + indirect effect) will induce a corresponding increase in income for households in the region or in La Seu d'Urgell in our case. This increase in household income is regarded as increasing regional expenditures in proportion to the increase in household income. In other words, once the output of an industry increases, household income will increase along with expenditures in the region. This increased expenditure effect induced by the increase in household income is called the induced effect, and the addition of the induced effect to the Type I multiplier (direct effect + indirect effect) is called the

Type II multiplier (direct effect + indirect effect + induced effect).

The model assumes that all the final demand items are exogenous. This assumption, that consumption demand is exogenous, however, is contrary to the basic economic theory. Consumers earn income in payments for their endowments of labor supply and capital and, in the role of consumers, spend income in final goods and services. To take into account the channel from the income increase to the increase in the final consumption, we can extend the model by moving the household from the final demand to the input-output matrix, that is, make the consumption endogenous. This extension leads to the following expression:

$$\Delta \bar{X} = (I - \bar{A})^{-1} \Delta \bar{Y} \quad (3)$$

$\bar{X}$  is the vector of final output and has  $n+1$  elements ( $n$  production activities and 1 household sector). Similarly,  $\bar{Y}$  is the vector of final demand for the  $n+1$  elements ( $n$  remaining final demand for sectors and 1 final demand for the output of households). Finally, matrix  $\bar{A}$  has the following structure:

$$\bar{A} = \begin{bmatrix} A & u \\ v & 0 \end{bmatrix}$$

where  $u$  is a column vector of sectorial consumption coefficients, calculated by dividing the sectorial consumption by the total value added of the economy, and  $v$  is a row vector of value added coefficients, calculated by dividing the sectorial value added by the sectorial output.

In this study, the economic impact is defined as the difference between the economic activity in La Seu d'Urgell



given the presence of summer courses, and the level of economic activity there would be if these courses did not exist. This impact can be measured by taking into account the amount of expenditure that is directly associated with the summer courses.

To empirically implement the model we need to reflect the amount of summer courses expenditures. Specifically, we have considered the expenditures by the students attending the courses, professors and personal associated to the organization. All these categories of expenditure define one vector that contains all the demand for the productive activities due to the summer courses.

As we have just pointed out the total impact is the sum of direct effect ( $I * \Delta Y$ ), indirect effect  $\{[(I - A)^{-1} - I] * \Delta Y\}$  and induced effect  $\{[(I - \bar{A})^{-1} - (I - A)^{-1}] * \Delta Y\}$ .

#### 4.2. Data collection

To know the precise expenditures of the attendance to these courses, both professors and students answered a survey on the distribution and amount of their expenses during the stay in the summer courses. A total of 95 professors of 206 (46.12%) answered the survey. About 36% of these teaching staff brought their families to La Seu d'Urgell, and their family expenses were also included.

The length of stay of attendants was 4.46 days on average and professors and organization staff also move to this city and their length of stay was 3.65 days on average, as shown in Table 1.

Of the 1,174 students, 953 (the 81.18%) answered the survey. Of these

1,174 there were 309 that came from the same area where the summer courses took place or from neighboring districts, and were not taken into account as generators of economic impact.

The organization of the summer courses provided us also the expenditure done in La Seu d'Urgell, this expenses where taken into account because it represents new money flow for the destination, as mentioned, the University of Lleida is located in a different region.

Table 2 shows the distribution of expenditures made by students and by teaching staff and organization itself. The hospitality expenses include cost of accommodation, meals and entertainment and represent a 76.68% of total; purchases, included as commerce, represent 17.18%; entrepreneurial services 4.17% and transports account 1.97%.

On the other hand, the expenditure of students is 62% of total expenditure while the teachers and organization spending represent the remaining 38%.

#### 5. Economic Impact. Results

We analysed the economic impact caused by the activity of UdL in their summer courses that took place in La Seu d'Urgell from 2009 to 2012. To avoid changes in prices we value all the monetary quantities to the prices of 2011.

The input-output database is the latest available: Input-Output Tables 2005 that follow the general methodology of the European system

of accounts<sup>2</sup> and are an update of the information collected in the Input-Output Tables for Catalonia 2001. We also use the data collected in the survey mentioned above.

We apply the same sectoral distribution that it is reflected in the Catalan input-output database.

The Table 3 summarizes the results obtained after the application of the methodology proposed above.

The direct effect reflects the demand generated directly during the celebration of the summer courses. The Table 3 shows that the direct demand amounts to 537,001 euros in 2011, representing approximately 36.2% of the total economic impact.

The indirect effect incorporates the effects of drag on productive activity following the initial shock of demand. Thus, the expense associated with the celebration of the summer courses requires the target economic sectors of this spending to produce more and therefore to demand more inputs and intermediate consumption of other sectors. These, in turn, should produce more to meet this new demand so that production levels will, eventually, also be increased. In quantitative terms, the above table shows that this indirect effect on sectoral production amounts to 248,586 euros, representing approximately 16.8% of the overall economic impact.

The induced effect reflects the feedback on the levels of production that is channeled through the increase in private consumption. More specifically,

the impact on sectoral output by increased demand implies hiring new workers to meet this growing demand, leading to an increase in wages. In turn, higher wages will also increase private consumption, which again generates sectoral output increases. The induced effect of the summer courses is quantified in 697,516 euros, representing about 47.0% of the total economic impact. That is, the induced effect accounts for nearly half of global income creation associated with the celebration of the summer courses.

At a sectoral level, the biggest impact received, as expected, is the hospitality sector with 33.2% of the total, followed by the entrepreneurial sector (basically leisure activities) with 17.6% and manufacturing with 13.4% of the total. The remaining sectors have a very small relative importance as can be seen in Figure 1 where it has represented the sectoral distribution of each sector as a percentage of the total.

The overall economic impact can also be divided into direct, indirect and induced effects (Table 4). The last column in this Table indicates that the global impact in production was 2.76 times larger than the initial demand generated by UdL summer courses.

The Table 5 lists the effects of the summer courses during the period 2009-2012 in global terms, i.e., shows the economic impact occurred during the studied period. Now we divide the overall economic impact in reference to a time perspective. Specifically, Table 5, below, quantifies the annual income creation over the analyzed period.

The greatest impact on income and economic activity has occurred in the early years studied, especially in 2011.

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<sup>2</sup> <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31996R2223:ES:HTML>

The lower value in 2012 is due, undoubtedly, to the deep economic recession that Spain is experiencing throughout the period considered.

The second worst year in the number of attendees was 2010 but the economic impact was higher than the previous year, although 2009 had more attendees. This is because, in 2010 along with the summer courses, a congress was held in La Seu d'Urgell, and the organization spent much more money in the congress than in a summer course, moreover, the congress attendees, many of whom come from further afield, consumed more and stayed longer because they decided to complement their business trip with leisure activities.

The economic recession, that translated into a reduction of university budget, provoked that the Summer University organizers scheduled fewer courses in La Seu d'Urgell where the organizing cost is higher than in Lleida, the same city where the university is located. Also in 2012 there was an increase of 50% in course enrolment prices, which also contributed to reducing the demand for summer courses.

As there were fewer people than expected enrolled to these courses, this caused that there were fewer attendees and therefore less spending, basically on hospitality, commerce, and leisure. This lower enrolment even meant that the organizers had to cancel 4 courses in this city for lack of attendees.

As previously mentioned, during the studied period, 29% of the attendees and 10% of teaching staff were the first time they visited La Seu d'Urgell, it represents a great opportunity to promote the city itself, encouraging

repeated visits either in new summer courses or private visits at other times with friends or family, and moreover, if we consider that 98% of respondents said they wanted to come back to La Seu d'Urgell.

## 6. Conclusions

Within its activity and like any other university, University of Lleida has as a main goal to support knowledge transfer in the fields of teaching and research. For this purpose, UdL organizes conferences, conventions, workshops, symposia, and scientific meetings that attract people from the entire globe to Lleida. In the same way we focus on the summer courses organized by this university because most of them are concentrated in a specific place, the Pyrenees, far from the headquarters of the university, where there is no possibility of university studies.

This academic activity contributes to the revitalization of the tourism in the city with the arrival of new tourists for academic and professional purposes who generate revenues in the city with its consumption. Furthermore, this economic impact is increased by the expenditure undertaken by the organizers themselves to carry out the summer courses.

In this paper we have quantified the economic impact generated by the summer courses organized by the UdL during the summer from 2009 to 2012 in La Seu d'Urgell using input – output framework. Thus, the global impact in production was 2.76 times larger than the initial demand generated by UdL summer courses. It means, for every euro spent at the summer courses either

by tourists (students, teachers, staff and their companions) and by the organization itself, becomes 2.76 euros of total spending on the city that has hosted the Summer University of UdL.

We conclude that these summer courses play a significant role in revitalizing tourism in the city that hosts them. On the one hand there are some social benefits by hosting this event such as the promotion of the city through the media that cover the visit of several personalities that take part in this event and there is a positive economic impact on the other because it helps to increase tourism revenue generation, specially because the spending of the visitors is basically on hospitality, leisure, and commerce.

Moreover, the arrival of visitors on the occasion of the summer courses, of which a significant percentage is their first time visiting the city, causes they know La Seu d'Urgell and therefore can be translated in future visits to re-engage in summer courses or leisure activities with their family or friends.

Finally, this paper may serve as a decision tool for city councils in order to try to host summer courses in their cities organized by any University.

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Table 1

*Participants (students and teaching staff), average stay length and courses*

	Students	Average stay length students	Teaching Staff	Average stay length staff & professors	Courses
<b>2009</b>	385	4.03	63	3.36	16
<b>2010</b>	294	4.50	45	3.82	14
<b>2011</b>	339	4.86	71	3.58	18
<b>2012</b>	156	4.60	27	4.21	8
<b>TOTAL</b>	1,174	4.46	206	3.65	56

Source: Own calculations



Table 2

*Expenditure distribution during Summer University (2009-2012) in euros 2011*

	<i>Organization and Teaching Staff</i>	<i>Students</i>	<i>Total</i>
Commerce	36,984.45	55,282.44	92,266.89
Hospitality	145,892.83	265,854.84	411,747.67
Transports	10,590.51	0.00	10,590.51
Entrepreneurial Services	10,896.23	11,499.72	22,395.96
<b>Total</b>	<b>204,070.63</b>	<b>332,930.39</b>	<b>537,001.02</b>

Source: Own calculations

Table 3

*Total Economic Impact*

	<i>Direct</i>	<i>Indirect</i>	<i>Induced</i>	<i>Total</i>
Agriculture		6,452.53	9,845.41	16,297.94
Minerals		252.12	451.61	703.73
Manufactures		76,862.25	122,040.54	198,902.79
Energy		14,463.77	27,309.60	41,773.37
Construction		9,868.77	22,909.55	32,778.33
Commerce	92,266.89	32,876.26	100,718.36	225,861.51
Hotels	411,747.67	1,230.06	79,250.02	492,227.75
Transports	10,590.51	23,915.61	65,809.47	100,315.58
Banks		10,880.87	36,674.25	47,555.12
Entrepreneurial Services	22,395.96	66,437.05	172,276.62	261,109.63
Public Administration		0.00	0.00	0.00
Education		645.59	11,174.60	11,820.18
Sanitary and social services		156.94	12,010.81	12,167.75
Other services		4,544.44	37,045.48	41,589.92
<b>Total</b>	<b>537,001.02</b>	<b>248,586.26</b>	<b>697,516.31</b>	<b>1,483,103.59</b>

*Source: Own calculations in euros 2011*

Table 4

*Economic impact of Summer Courses.*

	Production	Multiplier effects
Direct Effect	537,001.02	1.00
Indirect Effect	248,586.26	0.46
Induced Effect	697,516.31	1.30
<b>Total Effect</b>	<b>1,483,103.59</b>	<b>2.76</b>

*Source: Own calculations.*

Table 5

*Economic Impact of Summer Courses: annual effects.*

	2009	2010	2011	2012	Total
Agriculture	3,868.07	4,122.62	5,146.06	3,162.20	16,297.94
Minerals	167.29	176.02	223.04	137.22	703.73
Manufactures	47,432.15	50,030.58	62,955.54	38,484.43	198,902.79
Energy	9,616.41	9,974.67	13,274.78	8,907.38	41,773.37
Construction	7,596.46	7,940.78	10,447.71	6,793.44	32,778.33
Commerce	55,410.37	50,695.65	73,766.91	45,988.57	225,861.51
Hotels	116,940.41	125,572.96	155,126.26	94,588.02	492,227.75
Transports	24,762.07	24,193.44	31,790.82	19,569.86	100,315.58
Banks	11,144.87	11,479.42	15,178.04	9,753.91	47,555.12
Entrepreneurial Services	58,168.61	63,058.21	82,921.56	56,961.27	261,109.63
Public Administration	0.00	0.00	0.00	0.00	0.00
Education	2,769.25	2,857.48	3,765.66	2,427.94	11,820.18
Sanitary and social services	2,679.76	2,774.94	3,874.59	2,838.54	12,167.75
Other services	9,854.97	10,154.91	13,252.83	8,327.27	41,589.92
<b>Total</b>	<b>350,410.68</b>	<b>363,031.68</b>	<b>471,723.79</b>	<b>297,940.04</b>	<b>1,483,103.59</b>

Source: Own calculations. All figures in euros of 2011

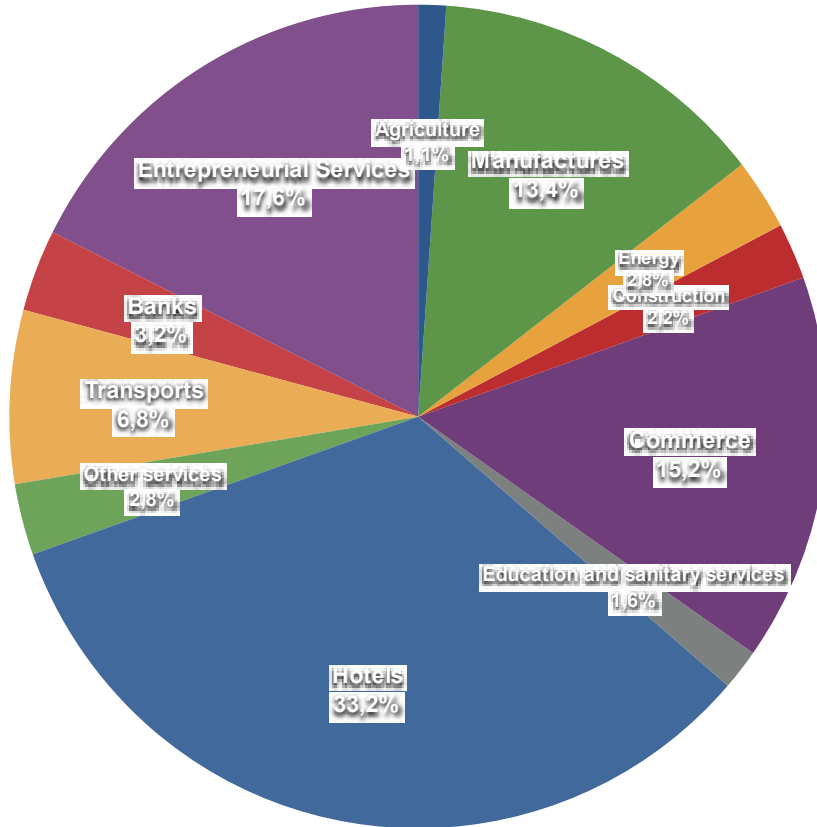


Figure 1. Economic Impact. Sectoral distribution. Source: Own calculations.