

## **Summer University courses: economic impact, economic perspectives**

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### **Abstract**

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, workshops or scientific meetings.

The main objective of all these university events is, often, the scientific exchange, the meeting of specialists in a particular topic for discussion or analysis or to enlarge global knowledge. Like any other event, an economic impact is generated where it takes place. The whole point of this study is to assess the economic impact of these activities organized by a Spanish middle-sized university such as the Universitat de Lleida (UdL). We will focus on the summer courses organized by this university because most of them are concentrated in a specific place, far from the headquarters of the university and that, therefore, requires participants to move to this place.

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. During year 2009 it received about half of all the summer courses organized by the UdL, where 60% of the people attending them was not from the University and 83% of them came from Catalonia.

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.

This paper quantifies the economic impact generated by the summer courses organized by the UdL during summer of 2009 in La Seu d'Urgell (input – output methodology is used). We conclude that these summer courses play a vital role in the promotion of tourism events in the city that hosts them.

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

## **1. Introduction**

Usually any event has by itself a considerable importance. On the one hand, because it makes the location that hosts the event more appealing and, consequently, an increase in the influx of tourists is experienced. On the other hand, event organization generates notable 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.

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; Béliveau and Ritchie (1974, quoted in Getz, 2008) examined the impact of the Quebec Carnival; Lee and Taylor (2005), Chalip (2002), Haynes (2000), Madden (1999), and Brunet (1995) researched into the economic impact achieved by some Olympic Games or a number of Football World Cup editions; Maudos (2007) research subject was the organization of the 32nd America's Cup in Valencia, while Amorós (2004) focussed on the economic profit related to golf tourism in the Costa del Sol, in Spain, among others.

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 such as symposia, conferences, workshops, or scientific meetings. 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, an economic impact is created where it takes place.

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, however, some studies on the economic impact generated by establishing a university in a determined geographic area<sup>1</sup>. In this regard, a university hosting workshops, conferences, seminars, symposia and scientific meetings is an appeal for

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<sup>1</sup> See, for instance, studies of Garrido and Gallo (2007); Llop (2002); Enciso, Farré, Sala and Torres (2001) for various Spanish universities.

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), have analyzed the events organized by a Spanish, medium-sized university, like University of Lleida (UdL)<sup>2</sup>. In order to hold events, organizers normally receive income from registration fees. They may also receive contributions from private companies. Typically, these revenues do not cover the expenses, so that public funding is needed. Generally, it is impossible to hold workshops, conferences, symposia, and scientific meetings without this funding. There is a large variety of social benefits generated by hosting events, for instance: the fact that organizers and the event location may enjoy a good reputation; presented articles, posters, and papers will contribute to enlarge global knowledge; or a new influx of tourists will go there for professional reasons. Martín and Sardà (2010) analyzed the economic profit generated by organizing scientific and academic events at UdL, to prove whether these benefits compensated the investment made by public institutions. They demonstrated that public investment in the events of UdL is economically feasible, generating a high yield of 250%.

Following this study, the whole point is to assess the economic impact of these activities organized by UdL, focusing on the summer courses organized by this university because most of them are concentrated in a specific place, far from the headquarters of the university and that, therefore, requires participants to move to this place.

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.

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.

This paper quantifies the economic impact generated by the summer courses organized by the UdL during summer of 2009 in La Seu d'Urgell and summarizes the importance of other implications, both for the host city to the university that organizes them.

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<sup>2</sup> The UdL is located in northeastern Spain, and currently has about 8,000 students spread among seven centers (Faculties)

In addition to this introduction, the paper is organized as follows: section two provides some topics about business tourism and economic cycle; section three provides some facts about the events organized by UdL; section four provides the methodology; section five is focused in economic impact of these events; and section six concludes.

## **2. Events and economic cycle**

This section focuses on data from the Spain Convention Bureau (SCB). The SCB is an institution that brings together the main Spanish cities, 49 today, which organize events. Since 1990, the SCB collects statistics on the meetings that take place in the different cities. These statistics represent a significant sample of the meetings market in Spain because the data correspond to cities such as Madrid, Barcelona, Valencia, Seville, Bilbao, and Zaragoza, among many others.

The SBC, with its statistics and reports, also highlights the economic importance of these meetings represent in the overall economy. Thus, for the year 2008, the direct economic impact of participants recorded by the SCB meetings amounted to 4.560 billion euro, representing 0.42% of all Spain's GDP for that year.

From 1995 to 2008 both the number of meetings and the number of participants have experienced a steady growth. This growth is almost exponential at the beginning and then stabilizes and consolidates, as can be seen in Table 1 and Figure 1.

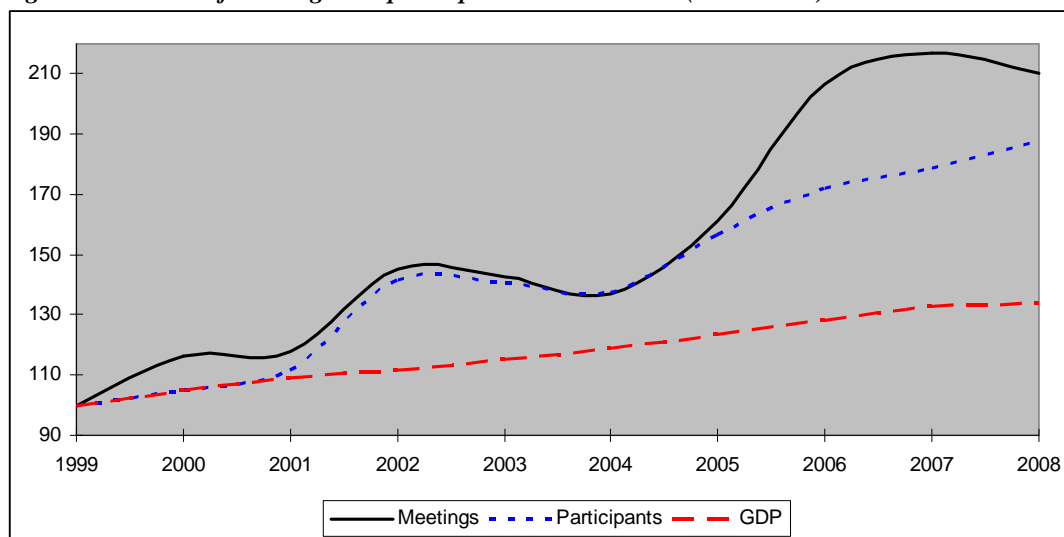
In addition, Figure 1 provides a comparison between the number of meetings and participants with the real GDP of Spain. We can see how both the number of meetings and the participants experienced a change much greater than the GDP. Thus, while GDP grew 34% between 1999 and 2008, the number of participants grew by 87.5% and meetings in more than 110%. These two variables show a growth subject to large fluctuations as shown in Figure 1 in contrast to the steady behavior of GDP.

**Table 1. Number of meetings and participants (SCB).**

<i>Year</i>	<i>Meetings</i>	<i>Participants</i>
1995	3,102	770,942
1996	3,695	982,954
1997	4,289	1,012,095
1998	6,497	1,568,112
1999	8,655	1,789,634
2000	10,073	1,874,841
2001	10,183	2,002,741
2002	12,563	2,534,225
2003	12,336	2,514,211
2004	11,859	2,457,195
2005	13,969	2,798,388
2006	17,876	3,081,742
2007	18,790	3,201,171
2008	18,204	3,356,432

*Source: Own calculations, based on Spain Convention Bureau data,*

**Figure 1. Number of meetings and participants and GDP real (1999 = 100).**

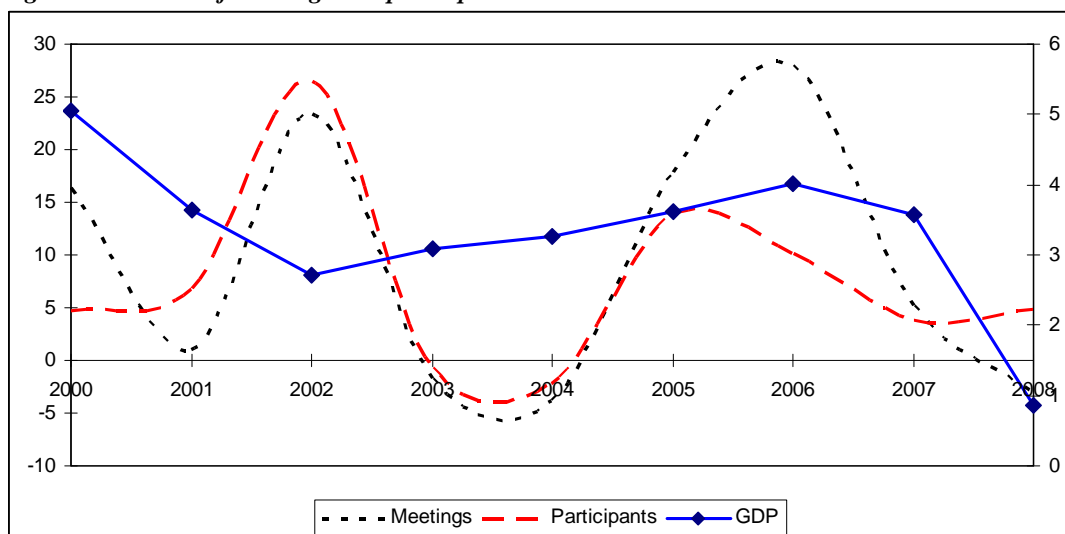


*Source: Own calculations, based on Spain Convention Bureau and National Institute of Statistics data.*

Figure 2 shows the same variables in variation rate. From the figure we can see that both changes, in the number of participants and the number meetings, are not or are poorly related to the development cycle<sup>3</sup>. That is, when we observe the variables number of meetings, participants and GDP, we conclude that attendance at events is independent of the economic cycle and, therefore, tourism events a priori are not affected by crises.

<sup>3</sup> The coefficients of determination were 0.19 when analyzing the change in GDP and the number of meetings and 0.00 for GDP and the number of participants.

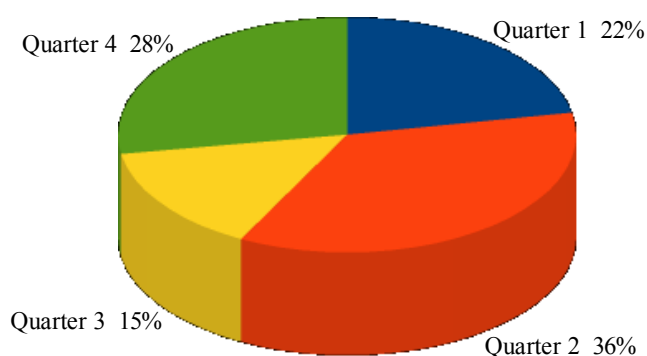
**Figure 2. Number of meetings and participants and GDP real. Variation rates.**



Source: Own calculations, based on Spain Convention Bureau and National Institute of Statistics data. On the left side of the figure are shown the meetings and participants variations while on the right axis is the change in GDP.

As can be seen in Figure 3, another feature of meetings, as reported by the SCB, is that they play a key role in helping to the deseasonalisation of tourism. We can see that most of the meetings took place, in 2008, during second and fourth quarter and not during the third, which is the quarter that tourism assumes greater importance in Spain. In addition to helping the deseasonalisation, meeting tourism is also attractive because the expenses of participants are significantly higher than those of other tourists. Table 2 shows the data from the SCB and the one from the Institute for Tourism Studies (IET). IET data have been divided by the total, which includes living expenses regardless of the reason for travel, and those that the purpose of the trip was business or meetings.

**Figure 3. Number of meetings. Quarterly distribution.**



Source: Own calculations, based on Spain Convention Bureau data.

**Table 2. Average length of meetings and average daily spending of participants.**

Year	Average length (days)			Average expenditure		
	SCB	IET		SBC	IET	
		Total	Business		Total	Business
1999	2.7			264.1 €		
2000	2.6			274.2 €		
2001	2.5			285.3 €		
2002	2.8			333.3 €		
2003	2.5			350.8 €		
2004	2.5	9.9	8.8	297.5 €	86.9 €	133.0 €
2005	2.5	9.7	7.1	373.2 €	88.1 €	153.5 €
2006	2.4	9.5	8.0	294.6 €	90.5 €	134.5 €
2007	2.4	9.3	8.8	282.5 €	94.5 €	128.1 €
2008	2.4	9.5	8.6	304.6 €	95.1 €	125.5 €

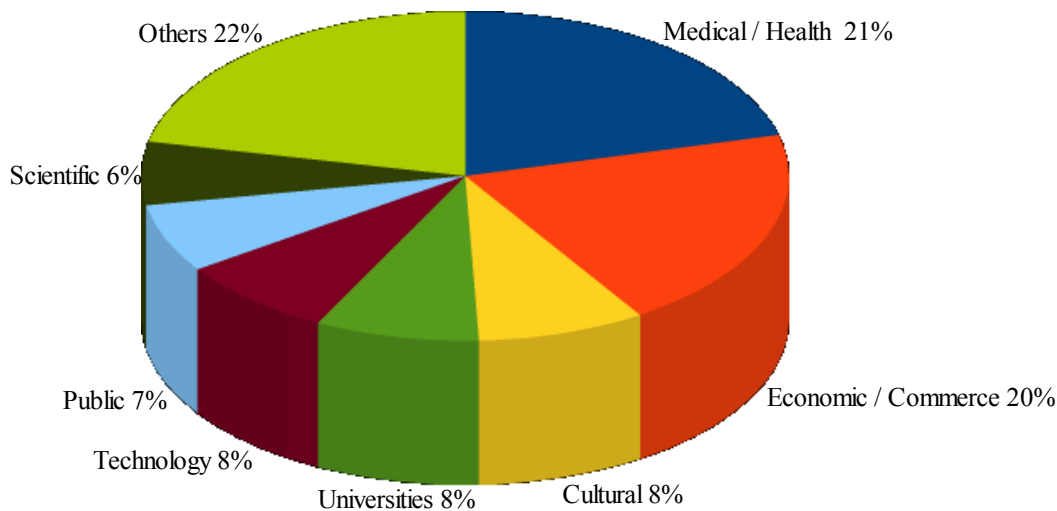
Source: Own calculations. based on Spain Convention Bureau and National Institute of Statistics data.

According to the SCB data, length of most of the meetings is usually between two and four days which on average is considerably lower than data provided by the IET. However, the average daily cost per participant is significantly higher than both for tourism as a whole and for business tourism. In particular, for the year 2008, daily cost from SBC data was 3.2 times higher than tourism as a whole and 2.42 times than business tourism from IET data.

Finally, the SCB data also shows, see Figure 4, that the Medical / Health sector organized 20.97% of the meetings, followed by Economic / Commerce with 19.95%. At

this point, we stress the importance of meetings carried out by universities which account for 8.18% of the total. This kind of meetings are precisely those that we consider in our study.

*Figure 4. Number of meetings. Sectoral distribution (2008).*



Source: Own calculations, based on Spain Convention Bureau data.

### **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, symposias and scientific meetings, Lleida attracts people from all over Catalonia, Spains and the entire globe, who will later consume in the city and will bring in economic profits.

Martín and Sardà (2010) have analyzed the events organized by UdL during years 2006 and 2007 collecting data about the characteristics of these events. In order to hold events, organizers normally receive income from registration fees. They may also receive contributions from private companies. Typically, these revenues do not cover the expenses, so that public funding is needed. Generally, it is impossible to hold

workshops, conferences, symposia, and scientific meetings without this funding. If this is the case, then a question remains: why should the public institutions fund the events organized by University of Lleida?

Of course, there is a large variety of social benefits generated by hosting events, for instance, the fact that organizers and the event location may enjoy a good reputation; presented articles, posters and papers will contribute to enlarge global knowledge; or a new influx of tourists will go there for professional reasons. Martín and Sardà (2010) analyzed 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%.

Also, the University of Lleida plays an important role in the development of business tourism in the city with the organization of this kind of events. In particular, the events organized directly by UdL represent 10% of total events in the city and between 11 and 13% of attendees at meetings of Lleida have participated in events organized by UdL.

Related to the economic impact, the volume of business generated as a result of the events of the UdL represents between 16% and 18% of the total economic impact of business tourism generated in the city.

Since 1993, UdL organizes summer courses open both to university students and to the society. During our year of study, 2009, the UdL conducted 39 courses in different parts of the province of Lleida. 16 courses, 41% of the total, were held in La Seu d'Urgell during two weeks in July. These courses enrolled 385 people, and 63 teachers 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).

To know the precise expenditures of the attendees to these courses, both professors and students answered a questionnaire on the distribution and amount of their expenses during the stay in the summer courses. A total of 38 university professors of 63 (60.3%) answered the survey. About 32% of these teaching staff brought their families to La Seu d'Urgell, and their family expenses were also included.

Of the 385 students, 344 (the 89.35%) answered the survey. Of these 385 there were 108 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. As Grado, Strauss and Lord (1998) say, expenses by local attendants do not represent new money flow for the region.

The organization of the summer courses provided us also the expenditure done in La Seu d'Urgell.

Table 3 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 an 83.4% of total; purchases, included as commerce, represent 11.9%; and transport and business services account much lower rates.

On the other hand, the expenditure of students is 60.3% of total expenditure while the teachers and organization spendings represent the remaining 39.7%.

*Table 3. Expenditure distribution during Summer University*

	<i>Organization and Teaching Staff</i>	<i>Students</i>	<i>Total</i>
Commerce	3,550.00 €	9,968.29 €	13,518.29 €
Hospitality	37,995.70 €	57,091.49 €	95,087.19 €
Transports	2,815.20 €	0.00 €	2,815.20 €
Entrepreneurial Services	937.20 €	1,660.94 €	2,598.14 €
<b>Total</b>	<b>45,298.10 €</b>	<b>68,720.72 €</b>	<b>114,018.82 €</b>

*Source: Own calculations.*

Besides the economic benefits that represent for a city like La Seu d'Urgell to host the Summer University of UdL, we must also point out that during the 17 years that the summer courses have been taken place in this city, several personalities such as actors, writers, journalists, professors, businessmen, and politicians have been involved in academic ceremonies (opening and closing sessions, keynote speakers, conferences, and lectures) and sometimes in social events. These personalities have come to La Seu d'Urgell and not only have promoted the city through the media that has echoed their visit, but also the University of Lleida.

For example, we can cite that during 2009, a total of 63 news about the Summer University of UdL appeared in the press. This news amounted to an equivalent

advertising space of 381 modules, that if had been bought, would have cost 16,132 euros, according to the average rates of each newspaper or journal.

In addition, it is important to note that the organization of summer courses in a university helps test new methodologies that can be implemented in later regular subjects during the academic year. Summer courses can also be used to verify the acceptance of different topics that, subsequently, can be converted into specialization courses. That is, universities can use summer courses as test laboratories when planning new future actions.

Likewise, as most of the summer courses organized by UdL are concentrated in a specific place, far from the headquarters, the University Summer School contributes to the development of tourism in La Seu d'Urgell, but also brings studies to a city where there are no university branches.

#### **4. Economic Impact. Methodology**

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 (labor, 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 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 labour 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:

$$\bar{A} = \begin{bmatrix} A & p \\ q & 0 \end{bmatrix}$$

where  $p$  is a column vector of sectorial consumption coefficients, calculated by dividing the sectorial consumption by the total value added of the economy, and  $q$  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  $\{[(I - \bar{A})^{-1} - (I - A)^{-1}] * \Delta Y\}$ .

## 5. Economic Impact. Results

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

The input-output database is the latest available: Input-Output Tables 2005 that follow the general methodology of the European system of accounts 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 sectorial distribution that it is reflected in the Catalan input-output database.

The following table summarizes the results obtained after the application of the methodology proposed above.

**Tabla 4. Economic Impact.**

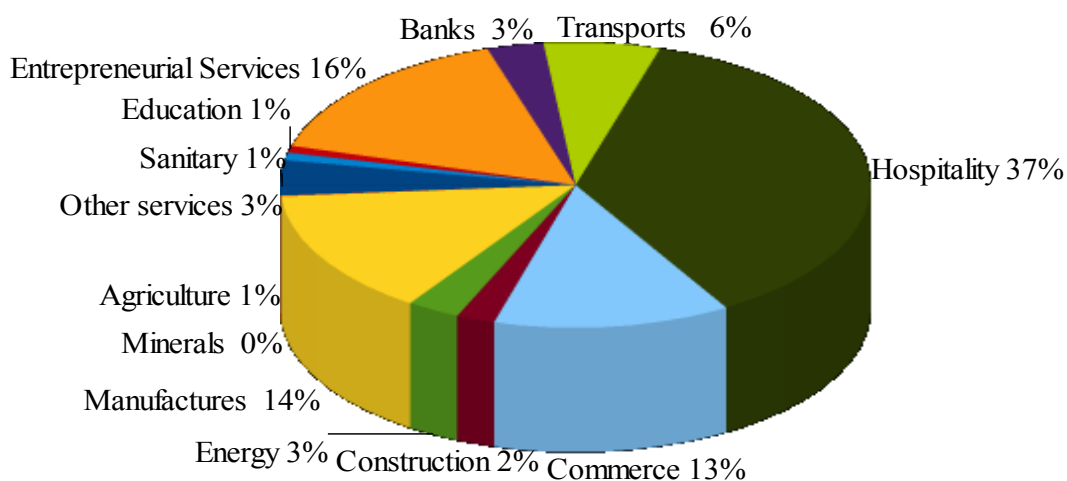
	<i>Direct</i>	<i>Indirect</i>	<i>Induced</i>	<i>Total</i>
Agriculture	0.00	1,475.96	2,179.08	3,655.03
Minerals	0.00	57.37	100.26	157.62
Manufactures	0.00	17,039.37	26,335.05	43,374.42
Energy	0.00	3,122.23	5,774.65	8,896.88
Construction	0.00	1,869.03	4,536.54	6,405.57
Commerce	13,518.28	6,580.76	19,417.41	39,516.45
Hotels	95,087.22	263.28	16,701.44	112,051.94
Transports	2,815.19	4,227.74	12,289.38	19,332.31
Banks	0.00	2,074.10	7,350.17	9,424.27
Entrepreneurial Services	2,598.10	12,299.00	32,924.10	47,821.20
Public Administration	0.00	0.00	0.00	0.00
Education	0.00	119.87	2,211.16	2,331.03
Sanitary and social services	0.00	35.48	2,659.12	2,694.60
Other services	0.00	916.34	7,578.01	8,494.34
<b>Total</b>	<b>114,018.79</b>	<b>50,080.52</b>	<b>140,056.36</b>	<b>304,155.66</b>

Source: Own calculations.

At a sectoral level, the biggest impact received, as expected, is the hospitality sector with 36.8% of the total, followed by the leisure sector with 15.7% and manufacturing with 14.3% of the total. The remaining sectors have a very small relative importance as can be seen in Figure 5 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 5). The last column in this table indicates that the global impact in production was 2.67 times larger than the initial demand generated by UdL summer courses.

**Figure 5. Economic Impact. Sectoral distribution**



Source: Own calculations.

**Table 5. Economic impact of Summer Courses.**

	Production	Multiplier effects
Direct Effect	114,018.8	1.00
Indirect Effect	50,080.5	0.44
Induced Effect	140,056.4	1.23
<b>Total Effect</b>	<b>304,155.7</b>	<b>2.67</b>

Source: Own calculations. All figures in euros of 2009.

The decomposition of the total effect shows how the direct effect accounts for 37.48%, the indirect effect of the 16.48% and the induced effect 46.04% of the total.

## 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, far from the headquarters of the university and that, therefore, requires participants to move to this place.

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 of 2009 in La Seu d'Urgell using input – output framework. Thus, the global impact in production was 2.67 times larger than the initial demand generated by UdL summer courses. It means, for every euro spent at the summer courses either by students, teachers or their carers or by the organization itself, becomes 2.67 euros of total spending on the city that has hosted the Summer University of UdL.

Although in absolute final economic impact is not very large, should be noted that the organization of these courses help increase hotel occupancy in the city and as well as its restaurants and the final economic impact of the summer courses represents just over 3.4% of GDP at 2006 prices of the city during these fifteen days.

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 covers the visit of several personalities that take part in this event or the possibility of bringing studies to a city where there is no university and, on the other, there is a positive economic impact because it helps to increase tourism revenues.

Universities can also take advantage of their summer courses to advertise themselves through the news in the press, and the summer courses can be used as test laboratories when planning new future actions.

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

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