

STUDY ON THE ECONOMIC IMPACT OF INTERNATIONALISATION ACTIVITIES AT UC₃M

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EXECUTIVE SUMMARY

The fundamental objective of this Study is to comprehensively assess the impact of the various internationalisation activities carried out during the 2018/2019 academic year by the Carlos III University of Madrid on the economy and society of the Community of Madrid. As a pioneering approach, the impact generated on the economies of the countries where University students made international stays during the 2018/2019 academic year will also be analysed. All the information provided (based on data) aims to contribute to highlighting the internationalisation of the University beyond the usual student exchange analysis.

During the 2018/2019 academic year, the number of students enrolled at UC3M totalled 22,861. Undergraduate students accounted for 69.6% (15,923 students), 19.4% (4434) were Master's students, 5.4% (1232) were PhD students and the remaining 5.6% (1,272) were students at the Carlos III International School. The percentage of international students studying at the Carlos III University of Madrid (UC3M) in 2018/2019 represents around 20% of undergraduate students, a figure that rises to 35% in the case of Master's students and to above 40% for PhD students.

UC3M's internationalisation activities carried out in different fields, such as institutional, teaching, research, transfer and social commitment, are an attractive driving force for other agents that generate spending in the Community of Madrid, such as international undergraduate students and postgraduate students (degree-seeking, incoming exchange and Carlos III International School students), their

visitors (family and friends who visit them) and people attending scientific/technical events organised by the University. The UC3M students enrolled in 2018/2019 considered in this Study are:

- 1) the 1,533 international students seeking a degree at UC3M (degree-seeking),
- 2) the 2,019 students who completed a stay at UC3M (incoming) through an exchange programme (Erasmus+ or non-European exchange),
- 3) the 1,272 students from the Carlos III International School (C3IS), and
- 4) the 1,556 students who completed a stay abroad (outgoing) through an exchange programme (Erasmus+ or non-European exchange).

Expenditure on internationalisation during the 2018/2019 academic year by UC3M and its agents involved.

The expenditure made by UC3M and its agents involved (spending agents) on the acquisition of goods and services for the implementation of the internationalisation projects/activities totals **€97,179,163**, and the distribution by spending agent is shown in Table 1.

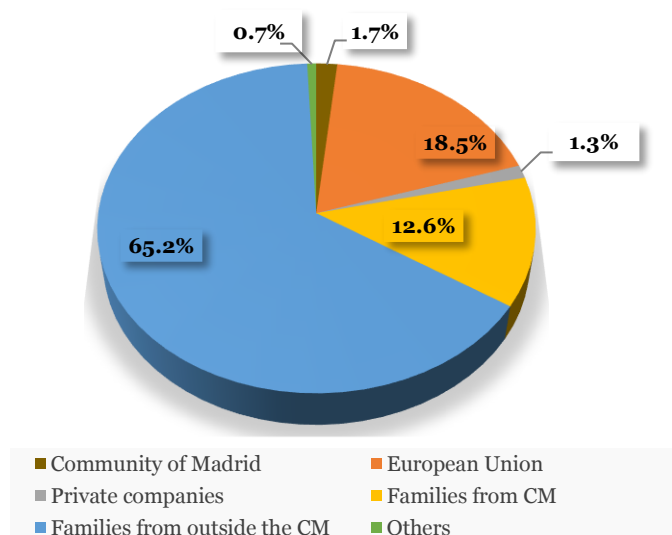
International students and their visitors are responsible for 64% of the total expenditure made by UC3M and its agents involved on their internationalisation activities in 2018/2019. Of this spending, 20.5% of the total was made by UC3M.

Table 1. Expenditure on internationalisation activities promoted by UC3M during the 2018/2019 academic year by spending agent.

Spending Agent	Internationalisation Activities	Expenditure
UC3M	Chairs of Excellence	
	CONEX Institutional Project	
	PDI/PAS Exchange	
	International research projects	
	UC3M Staff - Scientific Policy and HR	
	International Relations and Cooperation Service (SERIC)	
	ERASMUS+ programme	
	International Projection and Cooperation	
	Alliance4Universities	
	Office for Development Cooperation (OCUD)	
OCUD-MOOC MAKER E+2015 Project		
Erasmus Mundus Action-OCUD		
		€19,965,684
Students	Degree-seeking students	€21,742,877
	Students enrolled in the Carlos III International School	€14,759,869
	Incoming exchange students	€10,640,000
	Outgoing exchange students	€13,618,305
International students' visitors	Visitors of degree-seeking students, incoming exchange students and Carlos III International School students	€15,047,678
		€75,808,729
Conference attendees	International seminars organised by the departments and institutes	€423,725
	Attendees to international seminars/workshops organised by UC3M departments and institutes	€981,025
		€1,404,750
TOTAL		€97,179,163

Considering the source of the funds that cover the expenses of internationalisation activities of UC3M and its agents involved, 77.8% of the expense is contributed by the students' families, 18.5% comes from the European Union, 1.7% is provided by the Community of Madrid, and 1.3% is paid for by private companies. That is, of every 10 euros spent on internationalisation by UC3M and its agents involved, 7.50 euros are contributed by families (6.50 euros corresponds to families outside the Community of Madrid and 1 euro to families from the Community of Madrid), 1.50 euros are paid by the European Union, and the remaining amount is paid by the Community of Madrid and private companies.

Figure 1. Distribution of expenditure on internationalisation activities by source of funds.



Impacts of the internationalisation activities carried out during the 2018/2019 academic year by UC3M and its agents involved on the regional economy.

The total expenditure on goods and services for the implementation of the internationalisation projects/activities by UC3M and its agents involved in the region totals €76,098,134 (Table 2).

Given that part of the goods and services demanded by UC3M and its agents is covered by imports, of the €76,098,134 spent, once corrected by the Community of Madrid import margin, we find that the expenditure that generates an economic impact in the Community of Madrid is €68,631,337.

All this economic activity associated with the University and its agents involved represents a strong injection of demand in other activity sectors of the Community of Madrid that generated increases in regional income (GVA) and employment. The impacts generated have been accounted for using the Input-Output methodology and 2015 Input-Output tables of the regional accounting for the Community of

Madrid. The impacts considered in this Study are direct (generated by the purchase of goods and services), indirect (generated by indirect transactions in other economic sectors providing the goods and services necessary to provide those initially demanded) and induced (generated as a result of direct and indirect effects, which raise the income level of households in the region by increasing the employment required to produce this increase in demanded goods and services. Part of these increases in household income is again destined to expenditure on goods and services, thus generating a chain of multiplicative effects of increases in income and employment in the region called induced effects). Table 3 shows the impacts generated by spending agent.

Overall, the internationalisation activities carried out by UC3M and its agents involved during the 2018/2019 academic year increased the GVA of the Community of Madrid by **€84,663,065 (income)** and generated **1,139 jobs (FTE)**.

Table 2. Expenditure in the Community of Madrid, in other regions of Spain and abroad (international) by spending agent. 2018/2019 academic year.

AGENT	Community of Madrid	Other Autonomous Communities	International	Total
UC3M	€12,502,960	€1,565,787	€5,896,937	€19,965,684
Degree-seeking students	€21,742,877			€21,742,877
Students enrolled in the Carlos III International School (C3IS)	€14,759,869			€14,759,869
Incoming exchange students	€10,640,000			€10,640,000
Outgoing exchange students			€13,618,305	€13,618,305
International students' visitors	€15,047,678			€15,047,678
Conference attendees	€1,404,750			€1,404,750
Total	€76,098,134	€1,565,787	€19,515,242	€97,179,163

Table 3. Economic impacts generated in the Community of Madrid by spending agent in 2018/2019.

	UC3M	International students	International students' visitors	Conference attendees	TOTAL
Gross Value Added (GVA)	€16,598,438	€49,121,813	€17,504,400	€1,438,414	€84,663,065
Direct	€6,881,706	€27,536,122	€9,069,359	€629,203	€44,116,390
Indirect	€1,707,716	€5,610,382	€2,446,408	€277,246	€10,041,752
Induced	€8,009,016	€15,975,309	€5,988,633	€531,965	€30,504,923
Employment (FTE)	242	615	261	21	1,139
Direct	100	364	166	9	639
Indirect	25	18	7	4	54
Induced	117	233	88	8	446

International students were responsible for 58% of the total increase in income generated in the Madrid economy by UC3M and its agents in 2018/2019. Of every additional 10 euros in income generated by the expenses of international students, 5 euros come from degree-seeking students, 3 euros from C3IS students and the remaining 2 euros from incoming students.

In terms of employment, international students have created 615 full-time jobs in the Community of Madrid. This represents 54% of the total employment created in the Community of Madrid by the University and its agents in 2018/2019. Of every 10 jobs created by international students, 5 come from degree-seeking students, 3 from C3IS students and the remaining 2 from incoming students.

In both income and employment, the impact generated by degree-seeking students is close to 26.9% of the total impact generated by the internationalisation activities of UC3M and its agents. For C3IS students and incoming exchange students, the impact in terms of income on the

economy of the region is estimated at 19.6% and 11.5%, respectively.

International students and their visitors were responsible for 78.7% of the total increase in income generated in the Madrid economy by UC3M and its agents in 2018/2019. They were also responsible for the creation of 876 full-time jobs, 76.9% of the total employment generated in the Community of Madrid by UC3M and its agents in 2018/2019.

UC3M was responsible for 19.6% of the total increase in income and 21.2% of the total employment (242 full-time jobs) generated in the Madrid economy by the internationalisation activities of UC3M and its agents in 2018/2019.

Conference attendees contributed 1.7% of the total increase in income generated in the Madrid economy by UC3M and its agents in 2018/2019 and were responsible for the creation of 21 full-time jobs.

Economic impacts abroad of the internationalisation activities carried out during the 2018/2019 academic year by UC3M.

European exchange represents 61.6% of the stays completed by the 1,556 outgoing exchange students

during the 2018/2019 academic year: 16.4% of European exchange stays were made in Italy, 13.5% in France, 11.4% in the United Kingdom, 10.3% in Germany and 6.9% in the Netherlands.

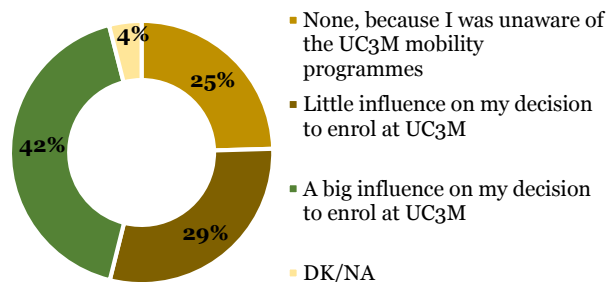
Non-European exchanges represent 38.4% of the stays made by the 1,556 outgoing exchange students during the 2018/2019 academic year. The US accounts for 50.5% of these, followed by Australia with 12.3% and Canada with 9.2%. Elsewhere, 3.2% of non-European exchange took place in South Korea.

The Input-Output tables of the 53 countries where the host universities of these students are located have been used to quantify the economic impact of the expenditure made by the 1,556 outgoing exchange students (Table 4).

Overall, the expenses of outgoing exchange students during the 2018/2019 academic year represent an increase in gross value added (GVA) abroad of **€18,478,441**. By type of exchange, €9,619,613 were generated by European exchange students and €8,858,828 by non-European exchange students.

Influence of knowledge of UC3M exchange programmes on the decisions of students.

Rate the influence of UC3M exchange programmes on your decision to enrol at UC3M



Of the students who carried out an *outgoing* exchange stay during the 2018/2019 academic year surveyed, to the question "Rate the influence of UC3M exchange programmes on your decision to enrol at UC3M", 42% answered "High influence", 29% answered "Low influence", 25% answered "No influence because I did not know about the UC3M exchange programmes" and 4% answered "DK/NA".

Table 4. Expenditure and economic impact generated abroad in terms of income (GVA) by outgoing exchange students during the 2018/2019 academic year by type of exchange.

	European Exchange	Non-European Exchange	Total
No. of students	959	597	1,556
Expenditure	€7,981,570	€5,636,735	€13,618,305
Gross Value Added (GVA)	€9,619,613	€8,858,828	€18,478,441

Conclusions

This pioneering study, carried out for the first time at the Carlos III University of Madrid, presents a comprehensive analysis of the economic and social impact generated by all the internationalisation actions carried out by UC3M and its agents involved during the 2018/2019 academic year, which goes far beyond the usual impact assessment of international students.

Due to their mobilisation capacity, the internationalisation activities that UC3M has carried out in different institutional, teaching, research or university extension fields have been an attractive driving force for other agents that generate expenditure in the Community of Madrid, such as UC3M international undergraduate and postgraduate students (degree-seeking students, incoming exchange students and students enrolled in the Carlos III International School), visitors of international students and those attending international seminars/workshops organised by UC3M departments and institutes.

Regarding expenses, 77.8% of the internationalisation expenditure of UC3M and its agents involved is contributed by the families of students; 18.5% of all expenditure comes from the European Union (€17,901,230.80); 1.7% of the total funds come from the Community of Madrid (€1,642,183.90); private companies contribute 1.3% of the total expenditure made (€1,229,395.10).

THAT IS, OF EVERY 10 EUROS SPENT ON INTERNATIONALISATION BY THE UNIVERSITY AND ITS AGENTS INVOLVED, 7.50 EUROS ARE CONTRIBUTED BY FAMILIES (6.50 EUROS CORRESPOND TO FAMILIES OUTSIDE THE COMMUNITY OF MADRID AND 1 EURO TO FAMILIES FROM THE COMMUNITY OF MADRID), 1.50 EUROS ARE PAID BY THE EUROPEAN UNION, AND THE

REMAINING AMOUNT IS PAID BY THE COMMUNITY OF MADRID AND PRIVATE COMPANIES.

Overall, in terms of economic impact, the internationalisation activities carried out by UC3M and its agents involved during the 2018/2019 academic year have increased the Community of Madrid GVA by **€84,663,065 (income)** and generated **1,139 jobs** (full-time jobs).

The ratio between the total income generated in the Community of Madrid by UC3M and its agents involved (€84,663,065) and the expenditure made by UC3M and its agents in internationalisation activities in the Community of Madrid (€76,098,134) translates into a multiplier of **1.11**.

THAT IS, FOR EACH EURO SPENT BY UC3M AND ITS AGENTS INVOLVED IN THE COMMUNITY OF MADRID, THE INCOME (GVA) OF THE COMMUNITY OF MADRID IS INCREASED BY **€1.11**.

UC3M ITSELF WAS RESPONSIBLE FOR **19.6% OF THE TOTAL INCREASE IN INCOME AND 21.2% OF THE TOTAL EMPLOYMENT (242 FULL-TIME JOBS)** CREATED IN THE MADRID ECONOMY BY THE INTERNATIONALISATION ACTIVITIES OF UC3M AND ITS AGENTS DURING 2018/2019.

The ratio between the total income generated in the Community of Madrid by UC3M and its agents involved (€84,663,065) and the expenditure made by UC3M itself on internationalisation activities (€19,965,684) translates into a multiplier of **4.24**.

THAT IS, FOR EACH EURO SPENT BY UC3M ITSELF ON INTERNATIONALISATION ACTIVITIES, THE INCOME (GVA) OF THE COMMUNITY OF MADRID INCREASED BY **€4.24**, DUE TO THE EXCHANGE CAPACITY OF THE

UNIVERSITY AND ITS INVOLVED AGENTS.

The ratio between the income generated in the Community of Madrid attributable to UC3M (€16,598,438) and the expenditure made by the university in the region (€12,502,960) translates into a multiplier of **1.33**.

THAT IS, FOR EACH EURO SPENT BY UC3M IN THE COMMUNITY OF MADRID, UC3M GENERATES **1.33 EUROS** OF INCOME IN THE REGION.

INTERNATIONAL STUDENTS ARE RESPONSIBLE FOR **58% OF THE TOTAL INCREASE IN INCOME AND 54% OF THE EMPLOYMENT (615 FULL-TIME JOBS)** CREATED IN THE MADRID ECONOMY BY THE INTERNATIONALISATION ACTIVITIES OF UC3M AND ITS AGENTS DURING 2018/2019.

The ratio between the income generated in the Community of Madrid by international students (€49,121,813) and the expenditure made by international students in the Community of Madrid (€47,142,746) translates into a multiplier of **1.04**.

THAT IS, FOR EACH EURO SPENT BY INTERNATIONAL STUDENTS IN THE COMMUNITY OF MADRID, **1.04 EUROS** OF INCOME ARE GENERATED IN THE REGION.

Of every additional 10 euros in income generated by the expenses of international students, 5 euros come from degree-seeking students, 3 euros from C3IS students and the remaining 2 euros from incoming students.

Of every 10 jobs generated by the expenses incurred by international students, 5 come from degree-seeking students, 3 from C3IS students and the remaining 2 from incoming students.

INTERNATIONAL STUDENTS AND THEIR VISITORS WERE

RESPONSIBLE FOR **78.7% OF THE TOTAL INCREASE IN INCOME** GENERATED IN THE MADRID ECONOMY BY UC3M AND ITS AGENTS IN 2018/2019. THEY WERE, IN ADDITION, RESPONSIBLE FOR THE CREATION OF **876 FULL-TIME JOBS**, 77% OF THE TOTAL EMPLOYMENT CREATED IN THE COMMUNITY OF MADRID BY UC3M AND ITS AGENTS DURING 2018/2019.

Outgoing exchange students spent money in the countries where they completed their exchange stays, representing an increase in gross value added (GVA) abroad of **€18,478,441**. By type of exchange, **€9,619,613** (52% of the total) were generated by European exchange students and **€8,858,828** (the remaining 48%) by non-European exchange students.

The ratio between the economic impact generated in terms of income abroad by outgoing European exchange students (€9,619,613) compared to the value of the Erasmus+ scholarships they receive from the European Union (€1,517,677) translates into a multiplier of **6.34**.

THAT IS, EACH EURO SPENT BY THE EUROPEAN UNION TO FINANCE UC3M EXCHANGE PROGRAMMES TRANSLATES INTO AN INCREASE IN INCOME (GVA) OF **€6.34** IN THE EUROPEAN ECONOMY.

Regarding non-European exchange, 50.5% of non-European exchange stays were made in the USA. The ratio between the economic impact generated abroad (€8,858,825) and the funding received by students from UC3M's own funds and Santander Iberoamérica scholarships (€285,990 and €72,540, respectively) translates into a multiplier of €24.70.

THAT IS, EACH EURO ALLOCATED TO NON-EUROPEAN EXCHANGE SCHOLARSHIPS BY UC3M (IN CO-FINANCING WITH SANTANDER BANK) TRANSLATES INTO AN INCREASE IN INCOME (GVA)

OF €24.70 IN THE NON-EUROPEAN COUNTRIES WITH WHICH UC3M MAINTAINS EXCHANGE AGREEMENTS.

Of every **10 outgoing exchange students surveyed during the 2018/2019 academic year**, **7 of them** affirmed that knowledge of UC3M exchange programmes **had some degree of influence** on their decision to enrol at UC3M, and **4 out of 10 rate the influence on this decision as high**. **One out of every 4** students surveyed **had no knowledge of the UC3M exchange programmes** before enrolling.

1. INTRODUCTION

Internationalisation, mass participation and the emergence of tertiary education can be found among the key transformations of tertiary education (post-secondary education) that have taken place in industrialised countries since the late 1980s (see [OECD¹](#)). Tertiary education and intercultural skills have been gaining importance over the last three decades. Students and employers are increasingly demanding tertiary education degrees with a strong international component, both in terms of curriculum content and exposure to different cultures that facilitate the development of intercultural skills and competencies. While student and teacher exchanges are clearly the most observable aspects of internationalisation, the internationalisation of tertiary education can be seen in a variety of forms such as the convergence of tertiary education systems or international recognition agreements through the establishment of partnerships and consortia. In the last 15 years, new forms of internationalisation have emerged, including mobility and export of programmes or institutions. While these new forms of cross-border/international tertiary education remain limited, they constitute an innovation that may mark the beginning of a profound transformation of tertiary education in the long term. In addition, tertiary education institutions use these new forms of international participation as platforms for other marketing activities, international student recruitment and collaboration on and establishment of research and inter-institutional agreements. Furthermore, tertiary education institutions are increasingly incorporating intercultural and international dimensions into their curriculums, teaching, research and extracurricular activities to help students develop international and intercultural skills without having to leave their country, which it is called "internationalisation at home".

The recent pandemic caused by COVID-19 has produced a drastic decline in international students in 2020, estimated at 60%. However, economic experts, such as Nobel laureate Paul Krugman, believe that the economy will "roar again" from 2021 onwards, which will enable universities to regain their momentum for internationalisation projects in the short term.

At the European level, the European Higher Education Area (EHEA) led 47 Bologna Process countries to agree on a *Strategy for the External Dimension of the EHEA* in 2007 and on a *2020 Mobility Strategy* in 2012. For its part, the European Commission approved an *internationalisation strategy for the EU* in 2013. These strategies propose specific measures and objectives that promote the international exchange of students and staff, as well as the internationalisation of higher education systems and institutions. It is up to the EHEA members to

¹ <https://gpseducation.oecd.org/revieweducationpolicies/#!node=41769&filter=all>

develop national strategies and objectives through the establishment of concrete measures and measurable indicators. In Spain, the Working Group on the Internationalisation of Universities, coordinated by the General Secretariat for Universities (SGU) of the Ministry of Education, Culture and Sport (MECD), began its activity in 2015. In the design and promotion of the Strategy for the Internationalisation of Universities, this Group has benefited from the broad participation of other ministerial departments, universities and different players in the university system, including companies and civil society organisations. The strategy proposes a general objective for the 2020 horizon:

To consolidate a strong and internationally attractive university system that promotes the incoming and outgoing mobility of the best students, professors, researchers and administrative and service staff; quality education; the potential of Spanish as a language for higher education; the internationalisation of training programmes; and R&D&I activities, contributing to the improvement of Spain's international attractiveness and competitiveness, as well as to the socio-economic development of its immediate environment based on knowledge.

In light of the above, the Carlos III University of Madrid has made its hallmark the internationalisation of all its activities since its beginnings. The different governing programmes and strategic plans attest to this. As a result of all this work, the university is currently carrying out a huge and diverse number of internationalisation actions in the institutional, teaching, research, service and university extension spheres, which have impacts on the economy and society where the University operates.

The current Vice-Rectorate for Internationalisation and European University and the Social Council, at the initiative of the latter, jointly promote this Study in order to highlight the internationalisation activities carried out by the Carlos III University of Madrid.

Among the best known economic impact reports focused on international students, it is worth mentioning those regularly published by NAFSA (International student economic value tool) in the USA and the IIE Institute (Economic impact of international students). Of the countries that publish relevant reports on their international students, Australia², Canada³ and New Zealand⁴ stand out.

²<https://ministers.dese.gov.au/tehan/international-education-makes-significant-economic-contribution>

³[Assessing the Economic Impact of International Education in Canada | Economic Impact of International Education in Canada](#)

⁴<https://www.educationcounts.govt.nz/publications/international/35324>

The fundamental objective of this Study is to comprehensively assess—beyond the economic impact of international students—the impact that the various internationalisation activities generate on the economy and society of the Community Madrid, the region where the university is located (Section 4). Additionally, the Study incorporates a pioneering analysis that has not been contemplated in studies with a similar purpose, consisting of highlighting the economic value of the internationalisation actions of our outgoing students (students who complete exchange programmes at international universities/institutions) in other countries (Section 5).

Finally, this Study proposes another objective. Its aim is to analyse the attraction power that knowledge of the exchange programmes offered by the University has for the national and international students who enrol at UC3M (Section 6).

During the course of this Study, we identified another added value component of the work carried out: jointly shed light on all the assets that, from different spheres (institutional, teaching, research, administrative services, university extension, etc.), are players involved in UC3M's internationalisation activities.

We would like to sincerely thank the various UC3M Vice-Rectors/Services/Units/Departments/Institutes, as well as the Carlos III International School, for their collaboration and for providing us with all the information we requested. Likewise, we wish to thank the General Direction of Economic Policy of the Ministry of Economy, Finance and Employment of the Community of Madrid for providing us with economic data on Madrid.

2. METHODOLOGY AND DATA

Usually, measuring the relevance of an institution or sector of activity involves using economic instruments, such as the level of resources they manage or the short-term impacts that this activity has on the production system or on the economic balance of a given territory. There is a broad consensus that most short-term economic impact studies require an Input-Output analysis⁵. This same methodology has been widely used by the economic impact studies of various university systems analysed by the Valencian Institute of Economic Research (IVIE).

To evaluate the short-term economic impact of UC3M's internationalisation activities during the 2018/2019 academic year in the Community of Madrid in terms of income and employment, this Study applies this Input-Output methodology based on the 2015 Input-Output tables of the regional accounting

⁵ Input-Output Analysis, Foundations and Extensions (2009). Ronald E. Miller and Peter D. Blair. Cambridge University Press. The Input-Output model was the achievement of Wassily Leontief, winner of the 1973 Nobel Prize in Economics.

for the Community of Madrid⁶. Specifically, and using the same methodology, this Study makes use of the Input Output tables of the countries where UC3M outgoing exchange students make their stays (students who carry out stays/activities at an international university or institution) to evaluate the economic impact generated abroad.

Considering the Carlos III University of Madrid as another productive sector in the context of the regional economy, it purchases goods and services to carry out its activities (internationalisation in this case) and employs a group of workers who receive a salary. Because the University produces income and employment, the economic impacts it generates can be evaluated in terms of Gross Value Added (GVA)⁷ and employment in the region.

In addition to the University itself and its institutional internationalisation activities, there are other groups and agents involved, called spending agents, who spend part of their budget on goods and services that generate a demand in the various sectors of activity in the Community of Madrid. The first group identified is international students, that is, non-Spanish students who were not residents of Spain before starting their studies at UC3M. This group includes students seeking to complete an undergraduate or postgraduate degree (degree-seeking) at UC3M, exchange students studying at UC3M (incoming) through available exchange programmes (Erasmus+ and non-European exchange, among others) and students enrolled at the Carlos III International School (C3IS). International students' visitors (family and friends) and people attending international conferences and/or seminars organised by the university are also considered.

All this activity associated with the university represents a strong injection of demand in other activity sectors in the Community of Madrid that generate increases in regional income (GVA) and employment. Three types of impacts derived from the activity of UC3M and its agents involved are considered in this Study: direct, indirect and induced.

Direct impacts are the result of spending by the University, international students, visitors and conference attendees which, if there were no such internationalisation context at UC3M, would not have been made in the activity sectors where the demand for goods and services was met. These purchases generate, in turn, indirect transactions in other economic sectors providing the goods and services necessary to provide those initially demanded by UC3M and its associated agents. The so-called indirect impacts are thus generated by the

⁶ The 2015 Input-Output tables have been provided by the General Directorate of Economy, Statistics and Technological Innovation of the Ministry of Economy, Employment and Competitiveness of the Community of Madrid. These tables are produced every 5 years.

⁷ Gross value added (GVA) or income is a macroeconomic magnitude that measures the total net value created by a region or country. Unlike output or production, which is the set of goods and services obtained after a production process, GVA is the final production value (output) minus the value of the inputs that have been used in production.

sum of all the increases in demand resulting from this iterative process. As a result of the direct and indirect effects, the level of household income in the economy increases due to the increase in employment that is generated to produce this increase in goods and services demanded. A proportion of these increases in household income will again be spent on goods and services, thus generating a chain of multiplicative effects called induced effects.

In this Study, spending by the Carlos III University of Madrid, as well as its spending pattern (i.e. how much and which sector(s) of economic activity the acquisition of goods and services affects) is determined from the budgets executed in 2018 and from the information provided by University's different Vice-Rectors/services/units involved in internationalisation activities during the 2018/2019 academic year. The expenditure made by visitors and those attending international seminars/conferences has been calculated from the data provided by UC3M departments and institutes and official statistics institutes (Spanish National Institute of Statistics, Spain Convention Bureau and the Ministry of Industry, Energy and Tourism EGATUR survey of tourism expenditure). To determine the expenditure made by students, a survey was carried out in collaboration with the Undergraduate Service and the UC3M Corporate Data Management Unit in October 2020. The survey was given to students enrolled in undergraduate and postgraduate degrees during the 2018/2019 academic year belonging to the following groups:

- (1) international students seeking a degree (degree-seeking),
- (2) international students who completed an exchange stay at UC3M (incoming),
- (3) students from the Carlos III International School (C3IS), and
- (4) students who did an exchange stay at international universities/institutions (outgoing).

The influence of knowledge of UC3M exchange programmes on the decision to study at UC3M has been evaluated from the responses to the survey of outgoing students.

UC3M facts and figures during the 2018/2019 academic year

During the 2018/2019 academic year, the number of students enrolled at UC3M totalled 22,861⁸. Undergraduate students⁹ accounted for 69.6% (15,923 students), 19.4% (4,434) were Master's students (of them, 990 were students enrolled in UC3M Master's programmes), 5.4% (1232) were PhD students and the remaining 5.6% (1272) were enrolled at the Carlos III International School. The percentage of international students studying at the Carlos III University of

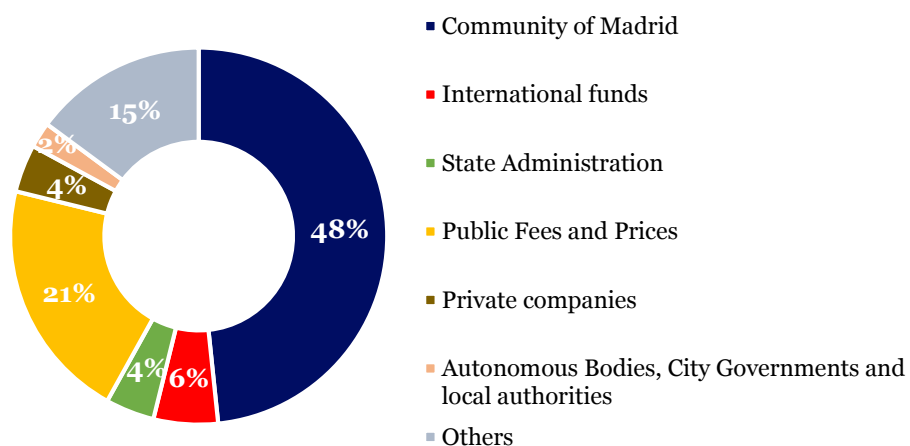
⁸ Sources: The University in Figures 2018 and the UC3M Corporate Data Management Unit.

⁹ First and second year students have also been included.

Madrid (UC3M) during 2018/2019 represents around 20% of the undergraduate student body, a figure that rises to 35% for Master's degrees and above 40% for PhD students.

Regarding hired staff, the university employed a total of 2,716 people during the 2018/2019 academic year: 74% (2009) of the employees are academic staff and the remaining 26% (707) are administrative staff. Figure 1 shows the breakdown of UC3M's income budget in 2018 by source of funds¹⁰. It amounts to €190,196,914.39.

Figure 1. UC3M income in 2018, by source of funds.



¹⁰ Source: 2018 Economic and Management Report, Volume III Annual Accounts.

3. UC3M INTERNATIONALISATION ACTIVITIES

With the motto **30 years younger**, the Carlos III University of Madrid celebrated its 30-year anniversary during the 2019/2020 academic year. Some of the most relevant milestones in internationalisation carried out by the university since its beginnings in the 1989/1990 academic year are presented below.

Since its inception, UC3M has had two distinguishing features. One of them has been the integration of the Humanities into curriculums. The other feature has been **language training**, which began by requiring students to pass a series of credits in a foreign language in any chosen course of study. This requirements was complemented by offering advanced courses and preparation for official exams.

Without a doubt, one of the most notable milestones in the internationalisation of UC3M has been the **introduction of the first bilingual degrees in the 1994/1995 academic year** in Law and Economics. Currently, 70% of the subjects at UC3M are also taught in English. There is no public university in Spain with a similar offer at the undergraduate level.

The year 1999 saw the so-called Bologna Declaration, which led to the creation of the European Higher Education Area, requiring a profound transformation of Spanish university education. UC3M, which opted for this profound renovation from the beginning, was **the first university in Spain to adapt all its degrees to the EHEA in the 2008/2009 academic year**.

In 2008, the Alliance4universities (A4U) was established, a strategic association between four of the main Spanish public universities: the Autonomous University of Barcelona (UAB), the Autonomous University of Madrid (UAM), Carlos III University of Madrid (UC3M) and Pompeu Fabra University in Barcelona (UPF). Among the objectives of the A4U are the further promotion of research activities of the partner universities, mainly in Europe; the improvement of their international profile and projection, fostering contacts in countries and areas of strategic priority; the improvement of mobility options for students, academics and researchers; and the promotion of quality teaching, with a clear commitment to inter-university degrees, learning in English and online training.

UC3M's 20th anniversary in the 2009/2010 academic year highlighted the **significant increase in the number of students participating in the European Union Erasmus programme** created in 1987. In the 2008-2009 academic year, 447 UC3M students studied in other countries, and the university received 423 students from other European universities. **The increase in non-European exchanges was very significant:** 66 students from the University studied at American universities and universities in other continents as part of the 686 agreements reached for student and teacher exchange.

In 2010 the University was designated as **one of the top five Spanish campuses of international excellence** by the Ministry of Education and the Ministry of Science and Innovation, awarded by an international jury.

The **creation of the Carlos III International School (C3IS) in 2015** represented an unprecedented institutional innovation in Spanish public universities and served as a boost to international initiatives in the university community, the promotion of special programmes for foreign students and the organisation of training activities aimed at students on the language and culture of other countries and on current international issues. In turn, the C3IS is in charge of attracting international students (*degree-seeking*) through the international COMMON APPLICATION, without the need to do the EvAU, and organises the International Foundation Programme (IFP) that prepares these international students to successfully study an undergraduate degree at UC3M and at Spanish universities in general.

In January 2015, the **Young European Research Universities Network (YERUN) was created, of which UC3M is a founding member.** It was established in Brussels, where 17 European universities affirmed their willingness to promote joint initiatives in the field of research and teaching, in addition to encouraging international exchanges.

The most recent milestone in UC3M's internationalisation is due to the success achieved in a European initiative promoted by the European Commission devised by French President Emmanuel Macron. As part of the Erasmus+ 2014-2020 programme, the European Commission appointed the first 17 alliances of *European Universities* following an open competitive call in 2019. These partnerships promote European values and identity, and are set to transform the quality and competitiveness of European higher education while making it more diverse and inclusive. **UC3M has been part of YUFE (Young Universities for the Future of Europe)**, one of these 17 first alliances, since 2019. YUFE is an alliance of 10 young and cutting-edge universities in research and teaching, formed with the aim of building a truly student-centred, open, non-elitist and inclusive European university. This alliance, which is based on cooperation between higher education institutions and the public and private sectors, seeks to contribute to achieving a more diverse, effective and fair educational system on a European and global level.

UC3M Internationalisation during the 2018/2019 academic year.

The active internationalisation activities at UC3M respond to the 2016-2022 Strategic Plan, which represents a path of advancement for the University that seeks to position it among the best European universities. The Plan is configured around four axes: research, education, relationship with society and good governance. In relation to research, one of UC3M's objectives is to prioritise excellent, international and interdisciplinary research, and specific actions have been proposed such as participation in international networks and programmes and promoting the exchange programmes for teaching staff. In education, and its

intersection with internationalisation, the Plan proposes opening the campus to the world by creating quality exchange programmes and training programmes for international students. With regard to the relationship with society and good governance, in the international sphere, the Plan proposes strengthening the university's corporate image by improving its presence in international rankings, establishing new strategic alliances and developing existing ones such as YERUN (Young European Research University Network) and A4U (Alliance4universities).

Regarding the evolution of the internationalisation indicators included in the 2016-2022 Strategic Plan, Table 1 shows a very positive evolution between 2015 and 2019 in achieving the objectives proposed for the student mobility indicators.

Table 1. Internationalisation indicators in the 2016-2022 Strategic Plan

CARLOS III INTERNATIONAL SCHOOL		31/12/2015	31/12/2016	31/12/2017	31/12/2018	31/12/2019
EDU 19	Increase the number of students at Carlos III International School (C3IS) by 30% in the Hispanic Studies Courses (HSC), Study Abroad Programme (SAP), Visiting Students, Summer Courses - STEM and international students in Engineering (ISIE).	548	766	1024	1174	1204
EDU 19a	Increase the number of students at Carlos III International School (C3IS) by 30% in other special programmes (Global Bachelor Dauphine, etc.).	0	29	64	66	68
EDU 19b	Increase international students in Spanish language courses and workshops by 30%.	793	905	860	1216	1504
EDU 20	Increase the number of students at Carlos III International School (C3IS) in the International Foundation Programme (IFP), (University Induction Programme), by 200%	0	10	90	111	92
EDU 21	Increase the number of international students entering an undergraduate programme (early admission) without the National University Admission Exam by 200%.	38	89	131	174	177
VICE-RECTORATE OF INTERNATIONAL RELATIONS						
EDU 12	Reach 50% of graduates with a stay abroad.	39%	42%	43%	51%	54%
EDU 13	Increase the number of international students at UC3M by 30%.	18.50%	19.60%	20.10%	22%	23%
EDU 14	Implement three new joint programmes with YERUN network universities	0	0	0	2	2

Taking the lines of the 2016-2022 Strategic Plan as a reference to frame the active internationalisation programmes/activities at UC3M during the 2018/2019 academic year, we have obtained the relationship shown in Table 2.

Table 2. Internationalisation programmes/activities at UC3M during the 2018/2019 academic year.

Areas	Programme/Activities
Research	Chairs of Excellence
	CONEX Institutional Project
	Exchange programmes for Academic Staff and Administration Staff
	International research projects
	UC3M Staff - Scientific Policy and Human Resources
	International Seminars/Conferences/Workshops organised by Departments and Institutes
Education	Attraction of International Undergraduate and Postgraduate students seeking a UC3M degree (degree-seeking)
	Programmes for International students of the Carlos III International School
	Incoming Exchange Programmes for undergraduate and Master's students
	Outgoing Exchange Programmes for undergraduate and Master's students
Relationship with Society and Good Governance	Activities of the International Relations and Cooperation Service (SERIC)
	Strategic Alliances

It is important to note that, from a technical point of view, these internationalisation programmes/activities are relevant for this Study insofar as they represent a source of demand for goods and services in the region that can be quantified. The sources used to find data on expenditure on goods and services, associated with the identified internationalisation activities, are the 2018 University budget, student surveys and economic databases.

This section describes the different internationalisation activities which were active at UC3M during the 2018/2019 academic year by area, as well as the corresponding expenditure incurred for their execution.

3.1 Internationalisation Activities in the Field of Research

3.1.1 Chairs of Excellence

The UC3M-Santander Chairs of Excellence programme was signed by UC3M and Santander Bank in 2007 with the aim of promoting research excellence by attracting world-class researchers to the University to help UC3M departments, institutes and research groups to increase and improve their international links, as well as to improve their scientific-technical capabilities, develop stable collaborations and share teaching and research experience with these renowned researchers.

To date there have been twelve public calls for proposals, each of which has been allocated between 950,000 and 1,200,000 euros, co-financed by the two institutions. This has allowed the incorporation of between 10 and 20 researchers of recognised prestige into the University for periods of six months or a year with an allocation of 60,000 or 120,000 euros depending on the period.

During the 2018/2019 academic year, 12 researchers joined UC3M, 10 of them for 6 months and 2 for 3 months. The cost of this call to UC3M was **€1,051,521¹¹**.

3.1.2 CONEX Institutional Project

CONEX is an exchange and training programme that aims to promote the career development of a cohort of experienced international researchers at the Carlos III University of Madrid¹².

The 2018 CONEX Institutional Project budget amounted to **€1,228,671**.

3.1.3 Exchange of Academic Staff and Administrative Staff

During the 2018/2019 academic year, 88 members of the Academic Staff completed a research exchange stay in an international country (68% men and 32% women). The average length of stays was 5.9 months¹³.

In relation to the exchange stays completed by the Administrative Staff at the university, 26 people completed a stay at an international institution/university. The total funding received was **€21,440**.

Other relevant exchange stays to consider are those completed by PhD students who have a contractual relationship with the University. During the 2018/2019

¹¹ 2018 UC3M Economic Report, Volume II.

¹² CONEX-Plus is funded by UC3M, the European Commission through the Marie-Sklodowska Curie COFUND action (*Grant Agreement No. 801538*) and Santander Bank.

¹³ It has not been possible to reliably determine the funding received by this group to carry out their stays/activities at international universities/institutions, so it has not been included in the Study.

academic year, 64 PhD students completed a research exchange stay at an international university. The funding received by PhD students comes from the UC3M Vice-Rectorate for Research's own programme and from Ministry of Education grants through its FPI/FPU scholarships. In total, UC3M's funding amounts to €117,180, and the Ministry of Education's to €128,209, totalling **€245,389**.

3.1.4 International Research Projects

In 2018, the total volume of funding raised by the university from research activities carried out as part of international projects amounted to **€8,179,970**¹⁴. The funding raised was distributed among 23 research activities, of which two were coordinated by UC3M. Five of them were led by women. Regarding collaboration with international companies, the 23 projects together involve 80 companies from different countries.

On the other hand, UC3M gave **€7,086,083**¹⁵ to national and international partners from the various research consortia in which the university participates.

The total expenditure on international research projects carried out by UC3M amounts to **€15,266,053**.

3.1.5 UC3M Academic and Administrative Staff Employed in Activities Related to Internationalisation

During the 2018/2019 academic year, UC3M employed 14 people (FTE) in the Research Service, Science Park and Entrepreneurship Service whose functions were directly related to internationalisation activities. The total cost of this group (salary plus social cost) amounted to €661,144.

For its part, the Human Resources Service employed 7 people whose functions were directly related to internationalisation activities during the 2018/2019 academic year. The total cost of this group was €337,008.

The total remuneration for UC3M staff in the Research, Entrepreneurship, Science Park and Human Resources services employed in activities related to internationalisation amounted to **€998,152** in 2018/2019.

¹⁴ Source: 2018 UC3M Research Report.

¹⁵ These transfers to national and international partners do not represent income for the Community of Madrid.

3.1.6 International Seminars/Conferences/Workshops Organised by UC3M Research Institutes and Departments

Finally, among the internationalisation activities in the field of research, seminars, conferences and workshops organised by departments and institutes at the University have also been taken into account.

Expenditure on the organisation of internal international seminars at UC3M amounted to **€176,547** during the 2018/2019 academic year, according to the data provided by the 27 departments at the university.

In relation to the UC3M Research Institutes, and taking into account the information provided by 12 of the 27 existing ones, expenditure on international seminars/conferences/workshops by the UC3M Institutes, including the expenses generated by their visitors, amounted to €1,228,203. There were a total of 3,124 attendees at the 66 international seminars/conferences/workshops organised who spent **€981,025** in the region¹⁶. The average duration of each event was 1.88 days. Thirteen per cent of the 3,124 attendees come from outside Spain, 27% from other autonomous communities and the remaining 60% reside in the Community of Madrid. In 2018, the estimated average expenditure was €320 on transport, €127 on accommodation and the daily personal budget was €101. On the other hand, organising these international seminars/conferences/workshops cost the Research Institutes **€247,178**.

In total, the expenditure made by UC3M's Research Institutes and Departments on organising international seminars/conferences/workshops and their attendees amounted to **€1,404,750**.

3.2 Internationalisation Activities in the Field of Education

3.2.1 Attracting International Undergraduate and Postgraduate Students Seeking a UC3M degree

The number of international students enrolled in undergraduate and postgraduate studies seeking a UC3M degree amounted to 1,533 during the 2018/2019 academic year¹⁷. Of this total, 11.42% were enrolled in undergraduate degrees, 65.42% in Master's degrees (64% of them in university Master's programmes) and the remaining 23.16% in PhDs.

¹⁶ The expenditure made by people attending the international seminars/conferences/workshops has been calculated based on the Tourist Expenditure Survey (Egatur) on spending for business tourism published by the Ministry of Industry, Energy and Tourism. For attendees who came from the Community of Madrid, only the cost of registration has been counted as an expense incurred.

¹⁷ The average stay of this group in the Community of Madrid during the academic year is 10 months.

The expenses incurred by these international students during the 2018/2019 academic year (academic fees, transport, housing, food, leisure and culture, etc.), have been obtained from UC3M data and the student survey conducted. The survey was sent to the students electronically during the month of October 2020, and 143 valid surveys were collected¹⁸. From the answers obtained, it has been estimated that the average monthly expenditure per student was €1,090. The total expenditure made in the Community of Madrid by this group amounted to **€21,742,877**¹⁹.

3.2.2 Programmes for International Students at the Carlos III International School (C3IS)

The Carlos III International School (C3IS) was created in 2015 with the purpose of promoting international initiatives within the university community, publicising the new international access to undergraduate degrees for international students (Early Admission and the International Foundation Programme), promoting special programmes for international students and facilitating the organisation of training activities aimed at students on the language and culture of other countries and on current international issues.

The Carlos III International School employs staff to perform its functions and spends €1,571,537.89 on goods and services²⁰.

The number of international students enrolled at the Carlos III International School amounted to 1,272 during the 2018/2019 academic year. The average stay is estimated at 5.6 months. Table 3 shows the distribution of students throughout the different programmes offered at C3IS.

¹⁸ With the sample obtained, the sampling error is 7.7% for a 95% confidence interval and the worst-case population variance situation $p=q=50\%$.

¹⁹ Total of academic fees amount to €5,036,904.

²⁰ Source: 2018 UC3M budget.

Table 3. Students enrolled at the Carlos III International School during the 2018/2019 academic year.

Programme	Students
Hispanic Studies Courses	332
Dauphine Licence Madrid	66
George Mason Global Gateway	25
International Foundation Programme in Social Sciences and Humanities	72
International Foundation Programme in Engineering	39
Engineering Programme for International Students	122
Short tailor-made courses	44
SAP - Study Abroad Programme	268
Visitors by agreement	109
Undergraduate visitors (free movers)	192
Postgraduate Visitors (free movers)	3
Total	1,272

The average monthly spending by Carlos III International School students, €1,522, has been estimated based on the surveys sent to the coordinators of the programmes at the School. In total, expenditure incurred by students enrolled in the Carlos III International School during the 2018/2019 academic year amounted to **€14,759,869²¹**.

3.2.3 Exchange Programmes for Incoming Students

The UC3M International Relations and Cooperation Service (SERIC), integrated into the Vice-Rectorate for Internationalisation and European University, manages collaboration relationships with prestigious universities around the world. As it stands, it has negotiated and signed current student exchange agreements with 500 universities in more than 50 countries.

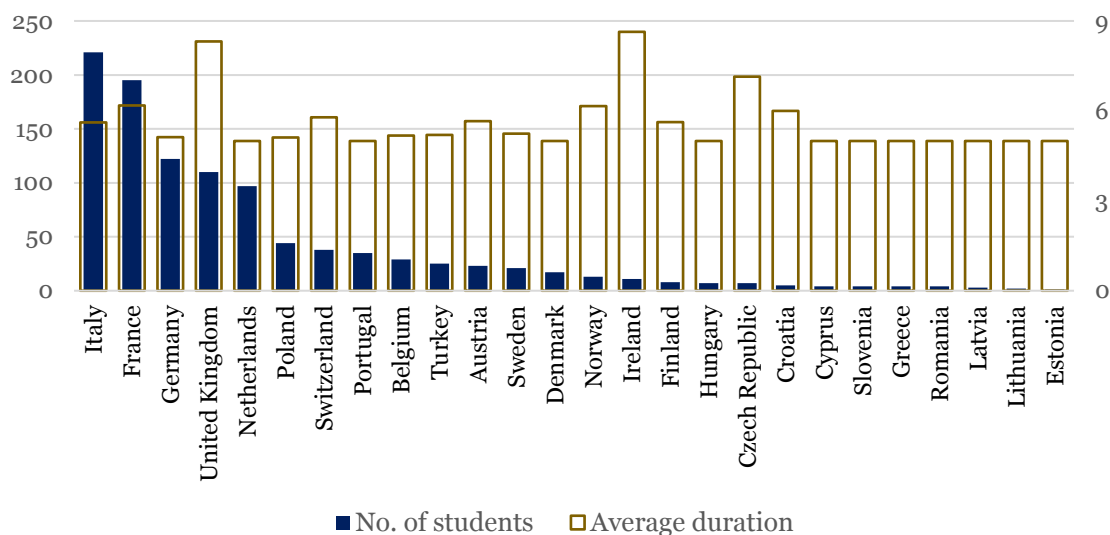
During the 2018/2019 academic year, UC3M welcomed 2,019 incoming exchange students from partner universities, 1,050 under the Erasmus+ programme (1,004 undergraduate and 46 Master's) and 969 through the non-European exchange programme. The average length of stays is 5.88 months for the Erasmus+ programme²² and 5.2 months for non-European exchange programmes. Figures 2 and 3 show the countries of origin of the

²¹ Student spending on tuition fees have been obtained from the budget and amount to €3,931,511.54. This income received by the university is used to cover the expenses of the International School, and, ultimately, for the purposes of the Study, the expenses of the International School are charged to the expenses of students.

²² Of the 1,050 incoming Erasmus+ exchange students, 872 stayed for one semester and 178 stayed for a full academic year. A semester is equal to 5 months and a full year is equal to 10 months.

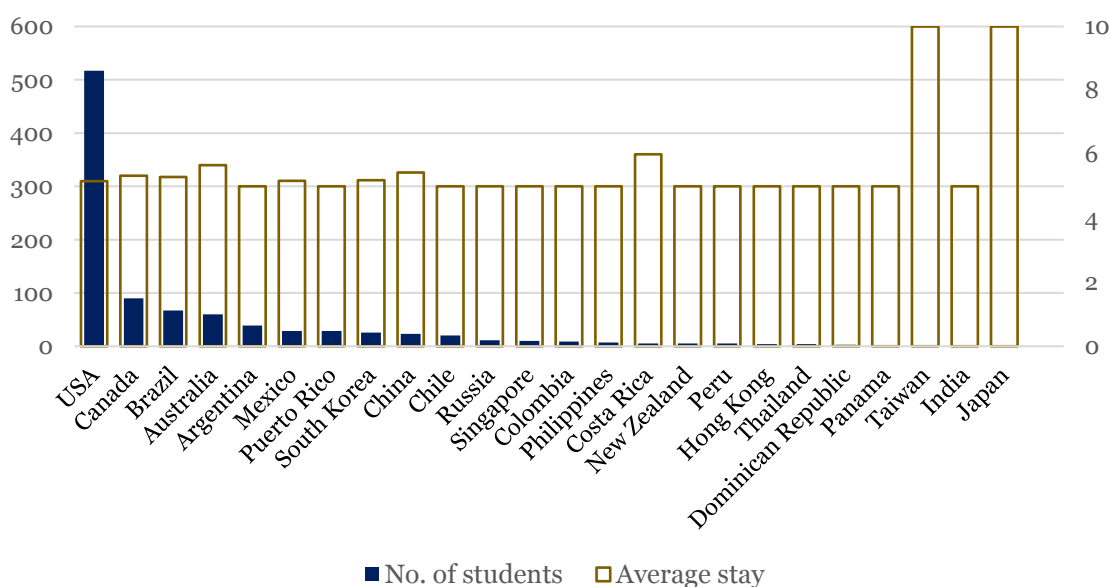
European and non-European exchange students, as well as their average stay at UC3M.

Figure 2. Number of students (left axis) and average stay (right axis) of the Erasmus+ programme by country of origin during the 2018/2019 academic year.



The most frequent countries of origin of Erasmus+ students are Italy (more than 20%) and France (around 20%). They are followed by Germany, the United Kingdom and the Netherlands. In relation to the length of stays, they are significantly higher than the average value for the United Kingdom, Ireland and the Czech Republic.

Figure 3. Number of students (left axis) and average stay (right axis) on the non-European exchange programme by country of origin during the 2018/2019 academic year.



More than 50% of non-European exchange students come from the USA. The percentages of students from Canada, Brazil and Australia are less than 10% in all cases.

Due to the limited responses to the survey by incoming students who completed exchange stays at UC3M during the 2018/2019 academic year, the expenditure made by this group has been estimated based on the spending habits of international degree-seeking students. Taking into account that 89% of international degree-seeking students are postgraduate students and that their expenditure is greater than that of undergraduate students, after the appropriate correction, the average monthly expenditure of an incoming student amounted to €950. The average stay for incoming students is 5.88 months.

The total expenditure made by the 2,019 incoming exchange students during their stay at UC3M during the 2018/2019 academic year amounted to **€10,640,000**.

3.2.4 Exchange Programmes for Outgoing Students

The Carlos III University of Madrid, in its firm commitment to internationalisation, annually announces exchange openings and scholarships for international students under the following programmes and conditions²³:

- 1) Erasmus+ European exchange programmes (undergraduate and Master's). The Erasmus+ undergraduate and Erasmus+ Master's programmes allow UC3M undergraduate and Master's students to complete a period of study (a semester or a full year) at a university in another European country.
- 2) Non-European exchange programmes (NEE)²⁴. In recent years, SERIC has developed its own non-European exchange Programme, through which UC3M students can study a semester or a full course at universities in places such as the US, China, Japan, Canada, South Korea, South America, the United Arab Emirates, the Philippines, Hong Kong, New Zealand, Thailand, Taiwan or Singapore.

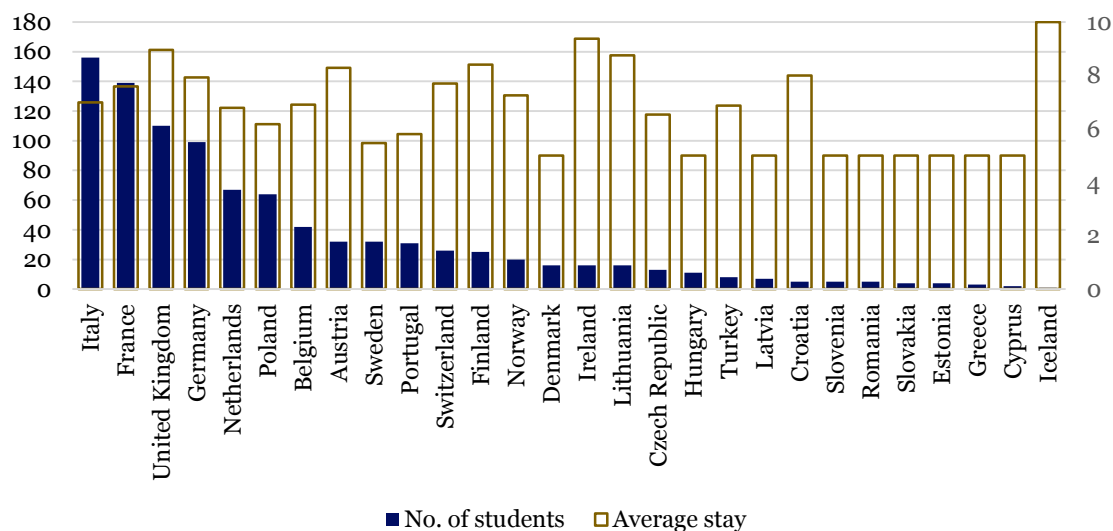
During the 2018/2019 academic year, 1,556 UC3M students completed a stay in another country: 959 on European exchange programmes (924 for undergraduate degrees and 35 for Master's degrees) and 597 on non-European exchange programmes. Figures 4 and 5 show the distribution of outgoing exchange students by country of destination. The average length of

²³ For more information, see the website of the UC3M International Relations and Cooperation Service (SERIC): <https://www.UC3M.es/ss/Satellite/UC3MInstitucional/ESP/TextoDosColumnas/1371221493950/>

²⁴ The Carlos III International School (C3IS) makes an important contribution to international exchange at UC3M, which can be seen in the increase in the number UC3M outgoing students completing stays in US universities. This contribution is interpreted as income that the C3IS ceases to receive in exchange for increasing the number of outgoing students who can study for a year in the US.

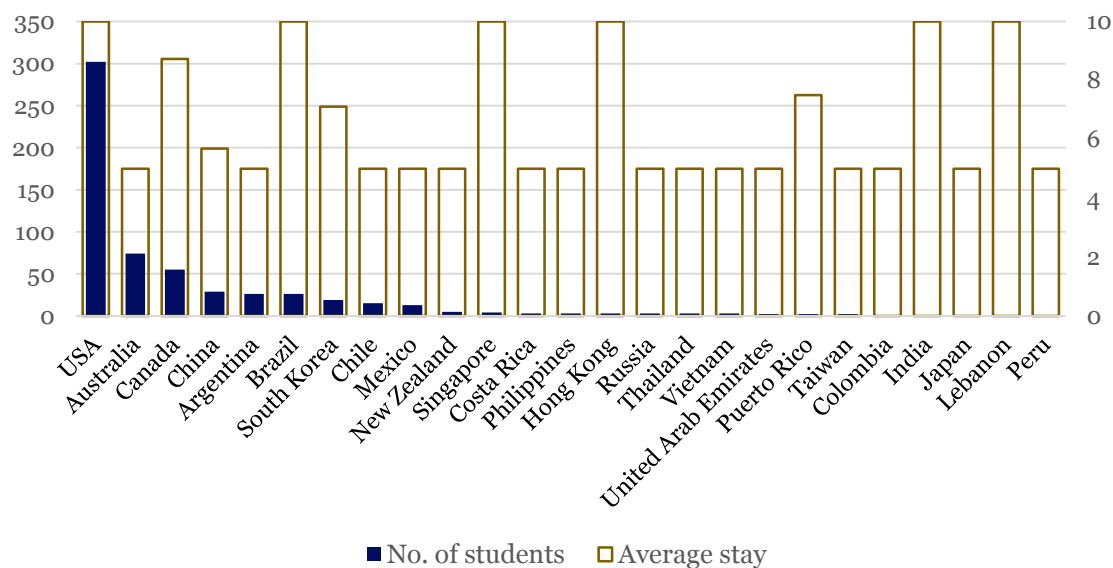
stay for Erasmus+ students was 7.29 months, compared to 8.27 months for non-European exchange stays.

Figure 4. Number of students (left axis) and average stay (right axis) on the Erasmus+ programme by destination country during the 2018/2019 academic year.



Corresponding to the destination countries of incoming students, the most frequent receiving countries of outgoing exchange students on the Erasmus+ programme are Italy, France, the United Kingdom, Germany and the Netherlands. In the case of non-European exchange, the USA accounts for 50% of outgoing students.

Figure 5. Number of students (left axis) and average stay (right axis) on the non-European exchange programme by destination country during the 2018/2019 academic year.



The European outgoing exchange scholarships are funded by the Erasmus+ programme together with the Ministry of Education, Culture and Sport. Erasmus scholarships amounted to €1,517,676 during the 2018/2019 academic year. The non-European exchange programme has its own funding from the UC3M (€285,990) and the Santander Iberoamerican Scholarship programme, which amounted to €72,540.

The survey sent to outgoing students returned 504 valid surveys²⁵. The average monthly expenditure per student amounted to €1,141. Taking into account an average stay of 7.29 months for the 959 European exchange students and 8.27 months for the 597 non-European exchange students, the total expenditure made by the 1,556 outgoing students in the countries where they completed their stay during the 2018/2019 academic year amounts to **€13,618,305** (58.6%, or €7,981,570, corresponds to European exchange and €5,636,735 to non-European).

3.2.5 Visitors of International Degree-Seeking, of C3IS Students and of Incoming Exchange Students

Based on the surveys received and using information from public bodies (see Annex), it has been estimated that the expenditure made by people visiting UC3M international students totalled **€15,047,678**. Of these, €4,781,942 correspond to visitors of international students seeking a UC3M degree, €3,967,796 to visitors of students enrolled at the Carlos III International School and €6,297,940 to visitors of incoming exchange students.

3.3 Internationalisation Activities in the Area of Relations with Society and Good Governance. International Relations and Cooperation Service (SERIC)

This section includes the rest of the institutional activities managed by the International Relations and Cooperation Service, which is integrated into the Vice-Rectorate for Internationalisation and the European University.

The main mission of SERIC is to promote the internationalisation of the Carlos III University of Madrid and the University Development Cooperation as part of its social commitment. The activities of the service revolve around the following axes: International exchange, university cooperation for development, aid for exchange and international cooperation, networks and international promotion, and international projects. To exercise its functions, SERIC employs staff and has an operating expense amounting to **€863,954**. On the other hand, in 2018, the

²⁵ With the sample obtained, the sampling error is 3.6% for a 95% confidence interval and the worst-case population variance situation $p=q=50\%$.

activities managed by SERIC that are detailed in Table 4 incurred an expense totalling **€290,504**.

Table 4. International Activities of the International Relations and Cooperation Service (SERIC).

Activities	Expenditure in 2018
ERASMUS+ programme	€67,415
International Projection and Cooperation	€34,704
Alliance4universities	€10,899
Office of University Cooperation for Development (OCUD)	€39,885
OCUD-MOOC MAKER E+2015 Project	€100,631
ERASMUS MUNDUS ACTION 2	€36,970
Total	€290,504

It is worth clarifying that UC3M allocated **€1,585,092** to the ERASMUS+ programme²⁶ during the 2018/2019 academic year. Of this, €1,517,677 was transferred to outgoing exchange students in the form of scholarships. For this reason, and in order to avoid duplication in the accounting of expenses, this scholarship item is accounted for in the expenses incurred by outgoing students (Section 5), and the expenditure finally attributed to the ERASMUS+ programme amounted to **€67,415**.

In the expenses attributable to the internationalisation activities as part of the alliances between universities signed by UC3M during the 2018/2019 academic year, the expenses for activities of the Alliance4universities (A4U) amounted to **€10,899**. The expenditure attributable to activities related to the Young European Research Universities (YERUN) have not been included in the Study due difficulty identifying their amount within the budget lines of the Rectorate/Governing Council/Management.

The A4U is the strategic association established in 2008 between four Spanish public universities: UC3M, UAB, UAM, and UPF, all of which have the "Campus of International Excellence" accreditation. This university alliance aims to improve the international exchange of students, researchers and academics; collaborate on research projects with universities around the world; promote English in its centres; and promote the international image of the universities that comprise it. The A4U has jointly managed two European projects: PARTICIPIA (EDULINK II) and, since 2015, different editions of the Erasmus+ programme International Credit Mobility (KA107).

For its part, the Young European Research Universities Network (YERUN) is currently made up of 17 universities under the age of fifty located in twelve countries and with an accredited presence in different internationally recognised rankings (Times Higher Education and QS). It has a strong interdisciplinary and

²⁶ These funds come from the EU ERASMUS+ programme

research-oriented character, with a resolute commitment to innovation and mobility among the students, researchers and administrative staff of its universities.

3.4. Expenditure on Internationalisation Activities

After identifying the different internationalisation activities carried out in the 2018/2019 academic year and in the 2018 financial year by UC3M and its agents involved, the next step in this analysis is to associate each agent with the expenses attributable to its internationalisation activities.

Table 5 shows the distribution by spending agent of the **€97,179,163**, representing the total expenditure made by UC3M and its agents. International students (degree-seeking, incoming exchange and C3IS students) and their visitors are responsible for 64% of the total expenditure. The group of degree-seeking students contributed 22.4% of the total expenditure; 20.5% of the total expenditure was made by UC3M.

Considering the source of the funds that cover the expenses of the internationalisation activities carried out by UC3M and its agents involved in 2018/2019²⁷, as shown in Figure 6, 65.2% of the total funds comes from families outside the Community of Madrid²⁸ (€63,149,455.2) and 12.6% from families in the Community of Madrid (€12,209,520.5). That is, 77.8% of expenditure on internationalisation was contributed by the families of students. 18.5% of all expenditure comes from the European Union (€17,901,230.80); 1.7% of the total funds come from the Community of Madrid (€ 1,642,183.90). Private companies contribute 1.3% of the total expenditure made (€1,229,395.10). That is, 7.50 out of every 10 euros spent on internationalisation was contributed by families (6.50 euros corresponds to families outside the Community of Madrid and 1 euro to families in the Community of Madrid), 1.50 euros was contributed by the European Union, and the remaining amount was contributed by the Community of Madrid and private companies.

²⁷ The distribution presented has been estimated based on the executed income. Source: 2018 UC3M Economic Report, Volume III.

²⁸ There is no information available on what proportion of these funds contributed by families were subsidised in their countries of origin, so all funds have been allocated under this heading.

Table 5. Expenditure on internationalisation activities promoted by UC3M during the 2018/2019 academic year by spending agent.

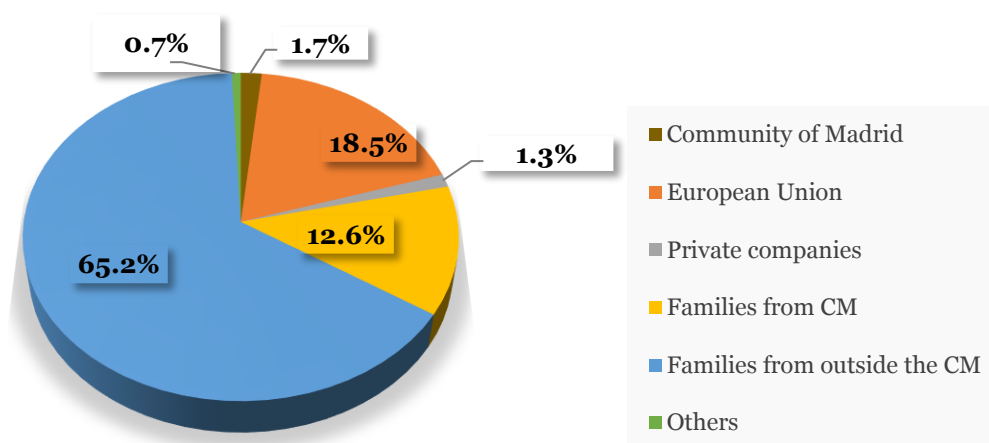
Spending Agent	Internationalisation Activities	Expenditure
UC3M ²⁹	Chairs of Excellence	€1,051,521
	CONEX Institutional Project	€1,228,671
	Academic and Administrative Staff Exchange	€266,829
	International research projects	€15,266,053
	UC3M Staff - Scientific Policy and HR	€998,152
	International Relations and Cooperation Service (SERIC)	€863,954 ³⁰
	ERASMUS+ programme	€67,415 ³¹
	International Projection and Cooperation	€34,704
	Alliance4universities	€10,899
	Office for Development Cooperation (OCUD)	€39,885
	OCUD-MOOC MAKER E+2015 Project	€100,631
	Erasmus Mundus Action-OCUD	€36,970
		€19,965,684
Students	Degree-seeking students	€21,742,877
	Students enrolled in the Carlos III International School	€14,759,869
	Incoming exchange students	€10,640,000
	Outgoing exchange students	€13,618,305
International students' visitors	Visitors of degree-seeking, incoming exchange students and C3IS students	€15,047,678
		€75,808,729
Conference attendees	International seminars organised by the departments and institutes	€423,725
	Attendees to international seminars/workshops organised by UC3M departments and institutes	€981,025
		€1,404,750
TOTAL		€97,179,163

²⁹ The expenditure made by the C3IS International School have not been included in the UC3M section. Said expenses are covered with the income from the tuition fees of C3IS students, and have been charged to the C3IS students expenses, thus avoiding accounting duplications.

³⁰ Non-European exchange scholarships have been excluded since these funds are used to cover part of the expenditure made by outgoing exchange students and are accounted for in the outgoing exchange students section, thus avoiding accounting duplications.

³¹ European exchange scholarships have been excluded since these funds are used to cover part of the expenditure made by outgoing exchange students and are accounted for in the outgoing exchange students section, thus avoiding accounting duplications.

Figure 6. Distribution of expenditure on internationalisation activities by source of funds.



4. ECONOMIC IMPACT OF THE INTERNATIONAL ACTIVITIES OF UC3M AND ITS AGENTS IN THE COMMUNITY OF MADRID

To quantify the real impact on income and employment in the Madrid economy, the Input-Output methodology used in this analysis considers only the part of the expenditure made by each agent that has an economic impact on the Community of Madrid. It must be taken into account that not all expenditure on goods and services has been made in the region. For example, due to the presence of UC3M in international consortia, the University makes financial transfers to its international partners that have no impact on regional economic activity. Furthermore, PhD students, Academic and Administrative staff and outgoing exchange students incur expenses that generate an economic impact on the countries where the universities/institutions they are visiting are located. Table 6 presents the expenditure made by each agent in the Community of Madrid, in other autonomous communities and abroad (international). It can be seen that, of the **€97,179,163** of expenditure made by UC3M and its agents involved, **€76,098,134** is allocated to purchasing goods and services in the Community of Madrid, **€1,565,787** in other autonomous communities and **€19,515,242** abroad (international).

Table 6. Expenditure in the Community of Madrid, in other autonomous communities and abroad (international) by spending agent. 2018/2019 academic year.

AGENT	Community of Madrid	Other Autonomous Communities	International	Total
UC3M	€12,502,960	€1,565,787 ³²	€5,896,937 ³³	€19,965,684
Degree-seeking students	€21,742,877			€21,742,877
Students enrolled in the Carlos III International School (C3IS)	€14,759,869			€14,759,869
Incoming exchange students	€10,640,000			€10,640,000
Outgoing exchange students ³⁴			€13,618,305	€13,618,305
International students' visitors	€15,047,678			€15,047,678
Conference attendees	€1,404,750			€1,404,750
Total	€76,098,134	€1,565,787	€19,515,242	€97,179,163

Furthermore, it is important to note that not all the expenditure made in the Community of Madrid has an economic impact on the region. It must be taken into account that part of the goods and services demanded by UC3M and its agents is covered by imports, so it is necessary to correct the expenditure using the Community of Madrid's import margin. Furthermore, to convert expenditure vectors into demand vectors, different margins have been applied (net tax margin, trade margin and transport margin)³⁵.

As a whole, the expenditure that generates an economic impact in the Community of Madrid amounted to **€68,631,337**, with **€11,459,691** corresponding to UC3M, **€41,074,302** corresponding to international students (€18,418,413 of expenditure made by degree-seeking students, €13,681,083 of expenditure made by students enrolled at the Carlos III International School and €8,974,806 for incoming exchange students), **€14,827,318** corresponding to visitors of international students and **€1,270,026** corresponding to conference attendees (€382,676 for the organisation of international seminars and €887,350 corresponds to those attending international seminars/workshops).

³² Transfers to national partners.

³³ Expenditure made by UC3M that has an impact abroad: UC3M scholarships and FPI-FPU grants for PhD student exchanges; PLACEMENT grants; UC3M PAS Exchange scholarships; Erasmus PDI grants, Erasmus training grants, UC3M Dual Degree scholarships; and transfers to foreign partners. For all these activities, with the exception of the UC3M scholarships and FPI-FPU grants for PhD student exchanges, it has not been possible to estimate the economic impact generated abroad due to the insufficient information. Section 5 contains an assessment of the economic impact generated abroad by the exchange of PhD students.

³⁴ Section 5 contains an assessment of the economic impact generated abroad by this group.

³⁵ Transport and trade margins, as well as the tax margin, have been allocated to the corresponding sectors according to their contribution to the GVA.

The economic and social impact of each of the spending agents has been measured in terms of income or gross value added (GVA) and full-time equivalent employment (FTE). Overall, the international activities carried out by UC3M and its agents during the 2018/2019 academic year increased the income (GVA) of the Community of Madrid by **€84,663,065** and generated **1,139 jobs** (FTE). Table 7 summarises the total impact generated in the Community of Madrid by UC3M and its agents during the 2018/2019 academic year in terms of income and employment.

Table 7. Economic impact generated in the Community of Madrid by UC3M and its agents, 2018/2019 academic year.

	UC3M	International students³⁶	International students' visitors³⁷	Conference attendees³⁸	TOTAL
Gross Value Added (GVA)	€16,598,438	€49,121,813	€17,504,400	€1,438,414	€84,663,065
Direct	€6,881,706	€27,536,122	€9,069,359	€629,203	€44,116,390
Indirect	€1,707,716	€5,610,382	€2,446,408	€277,246	€10,041,752
Induced	€8,009,016	€15,975,309	€5,988,633	€531,965	€30,504,923
Employment (FTE)	242	615	261	21	1,139
Direct	100	364	166	9	639
Indirect	25	18	7	4	54
Induced	117	233	88	8	446

It is worth noting the weight of the expenditure made by international students and their visitors on the impact generated on the region's economy. In percentage terms, international students are responsible for 58% of the total increase in income (GVA) generated. Visitors of international students generated 20.7% of the total increase in income. Together, these groups are responsible for 78.7% of the total increase in income in the region due to the internationalisation activities of UC3M and its agents.

Regarding employment, international students are responsible for 54% of the total employment generated in the region, and their visitors are responsible for 23%. UC3M generates 21% of the total 1,139 jobs created.

In terms of the type of impacts produced in the region, it is worth highlighting the case of the induced impacts generated by UC3M, which exceed the direct impacts in terms of both income and employment. This is due to the increase in household spending, which is produced not only by increases in income generated by direct and indirect impacts, but also by the demand for goods and services of the UC3M

³⁶ Degree-seeking students, Carlos III International School students and incoming exchange students.

³⁷ Visitors of degree-seeking students, Carlos III International School students and incoming exchange students.

³⁸ Seminars and attendees to international seminars/workshops organised by UC3M.

staff. This chain of multiplicative demand effects produces increases in income and employment called induced effects. This is not the case for the rest of the spending agents, where the direct impacts are those with the highest volume.

A disaggregated analysis of the different impacts generated by each of the spending agents is shown below.

4.1. Economic Impact of UC3M Activities

The expenditure made by UC3M on international activities in the Community of Madrid produced an increase of **€16,598,438** in the Community of Madrid's Gross Value Added (GVA), of which 41% (€6,881,706) has been generated directly, 11% (€1,707,716) indirectly and the remaining 48% (€8,009,016) induced. In terms of employment, **242 jobs** (FTE) have been created in the Community of Madrid (see Table 8 and Figure 7).

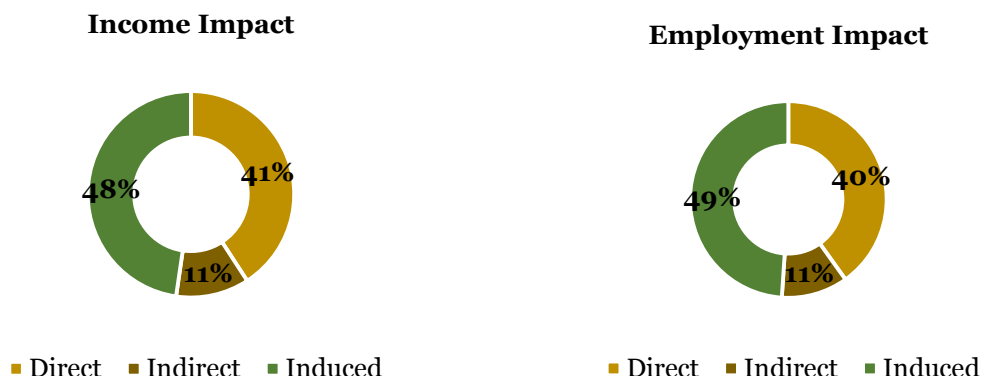
Table 8. Economic impact generated in the region by UC3M internationalisation activities during the 2018/2019 academic year.

	UC3M
Gross Value Added (GVA)	€16,598,438
Direct	€6,881,706
Indirect	€1,707,716
Induced	€8,009,016
Employment (FTE)	242
Direct	100
Indirect	25
Induced	117

UC3M is responsible for 19.6% of the total increase in income and 21.2% of the total employment generated in the Madrid economy by the University and its agents during 2018/2019.

Regarding the types of impacts, it is worth highlighting the employment-generating capacity of the university, which, in turn, drives increases in salaries and, subsequently, the acquisition of goods and services in the region. This circumstance is reflected in the predominant position of its induced impacts versus direct and indirect impacts.

Figure 7. Economic impact of UC3M spending on international activities in the region during the 2018/2019 academic year in terms of income (GVA) and employment in the Community of Madrid.



4.2. Economic impact of International students

Due to the expenditure made by UC3M international students (degree-seeking, Carlos III International School and incoming exchange students) during the 2018/2019 academic year, the GVA of the region increased to **€49,121,813**, of which **€27,536,122** is direct impact, **€5,610,382** is indirect impact and **€15,975,309** is induced impact. These expenses also generate an increase of **615** jobs (see Table 9).

Table 9. Economic impact generated in the Community of Madrid by international students during the 2018/2019 academic year.

	Degree-Seeking Students	C3IS Students	Incoming Students	Total
GVA	€22,761,164	€16,613,672	€9,746,977	€49,121,813
Direct	€12,092,268	€9,751,804	€5,692,050	€27,536,122
Indirect	€2,631,483	€1,714,962	€1,263,937	€5,610,382
Induced	€8,037,413	€5,146,906	€2,790,990	€15,975,309
Employment (FTE)	306	195	114	615
Direct	181	114	69	364
Indirect	8	6	4	18
Induced	117	75	41	233

International students accounted for 58% of the total increase in income generated in the Madrid economy by the University and its agents in 2018/2019. Of every additional 10 euros in income generated by the expenses incurred by international students, 5 come from degree-seeking students, 3 from C3IS students and the remaining 2 from incoming students.

In terms of employment, international students were responsible for 54% of the total employment generated in the Madrid economy by the University and its

agents in 2018/2019. Of every 10 jobs generated by the expenses incurred by international students, 5 come from degree-seeking students, 3 from C3IS students and the remaining 2 from incoming students.

The impact generated by degree-seeking students on both income and employment reaches 26.9% of the impact generated on the regional economy by the internationalisation activities of UC3M and its agents. These figures represent 19.6% of the income and 17.1% of the employment generated for C3IS students and 11.5% of the income and 10% of the employment generated for incoming exchange students.

4.3. Economic Impact of International Students' visitors

The income or GVA of the Community of Madrid increased by **€17,504,400**, and **261 jobs** were created due to the expenditure made by people visiting international students who were enrolled at UC3M during the 2018/2019 academic year (see Table 10). The greatest impact of this group was concentrated as direct impacts, i.e. in the direct purchase of goods and services.

Table 10. Economic impact generated in the Community of Madrid by people visiting international students in the 2018/2019 academic year.

	Visitors of Degree-Seeking Students	Visitors of C3IS Students	Visitors of Incoming Students	Total
GVA	€5,562,655	€4,615,588	€7,326,157	€17,504,400
Direct	€2,882,116	€2,391,423	€3,795,820	€9,069,359
Indirect	€777,435	€645,073	€1,023,901	€2,446,408
Induced	€1,903,104	€1,579,092	€2,506,436	€5,988,633
Employment (FTE)	83	69	109	261
Direct	53	44	69	166
Indirect	2	2	3	7
Induced	28	23	37	88

Of every 10 euros of income generated in the region by the expenses incurred by people visiting international students, 3 come from visitors of degree-seeking students, another 3 come from visitors of C3IS students, and the remaining 4 euros come from visitors of incoming students. Regarding employment, of every 10 jobs generated in the region by the expenses of people visiting international students, 3 come from visitors of degree-seeking students, another 3 come from visitors of C3IS students, and the remaining 4 jobs come from visitors of incoming students.

The impact generated by visitors of incoming students could account for around 8.7% of the impact generated on the regional economy by the internationalisation activities of UC3M and its agents. For visitors of degree-seeking and C3IS

students, the impact on the regional economy is around 6.6% and 5.4% respectively.

4.4. Economic impact of conference attendees

In terms of income or GVA, the organisation of international seminars and workshops generated an economic impact in the region that amounted to **€1,438,313**. In terms of employment, **21** jobs were created in the region (Table 11). The greatest impact of this group was concentrated as direct impacts, i.e. in the direct purchase of goods and services.

Table 11. Economic impact generated on the region by the organisation of international seminars/workshops during the 2018/2019 academic year.

Seminars and Attendees of International Seminars/Workshops	
Gross Value Added (GVA)	€1,438,313
Direct	€629,203
Indirect	€277,264
Induced	€531,965
Employment (FTE)	21
Direct	9
Indirect	4
Induced	8

5 ECONOMIC IMPACT OF UC3M'S INTERNATIONAL ACTIVITIES ABROAD

This section will analyse the economic impacts caused by the expenses incurred in the countries where UC3M outgoing exchange and PhD students complete their exchange stays. On the other hand, UC3M's presence in international consortiums entails making transfers to its national and international partners that generate economic impact abroad. However, as the necessary information on the distribution of these funds in the destination countries is not available, this impact is not considered in the Study.

5.1. Economic Impact of Outgoing exchange students

European exchange represents 61.6% of the stays completed by the 1,556 outgoing exchange students during the 2018/2019 academic year: 16.4% of European exchange stays were made in Italy, 13.5% in France, 11.4% in the United Kingdom, 10.3% in Germany and 6.9% in the Netherlands. Non-European exchanges represent 38.4% of the stays made by the 1,556 outgoing exchange

students during the 2018/2019 academic year. The US accounts for 50.5% of these, followed by Australia with 12.3% and Canada with 9.2%. Of non-European exchanges, 4.8% took place in China and 3.2% in South Korea.

The expenditure made by the 1,556 outgoing exchange students in their destination countries amounted to **€13,618,305** during the 2018/2019 academic year.

Given that not all the expenditure made in the destination country has an economic impact on the region, since part of this demand for goods and services is covered with imports from other countries, it is necessary to correct this expenditure using the import margin. Furthermore, different margins have been applied (net tax margin, trade margin and transport margin) to convert expenditure vectors into demand vectors.

The Input-Output tables of the 53 destination countries have been used to quantify the economic impact of expenditure made by this group³⁹. Overall, in terms of income, the expenses incurred by outgoing exchange students represent an increase in gross value added (GVA) abroad of **€18,478,441**, of which **€6,871,629** was generated directly, **€3,976,994** indirectly and **€7,629,818** induced. By type of exchange, **€9,619,613** were generated by European exchange students and **€8,858,828** by non-European exchange students.

Table 12 shows the expenditure and the impacts generated in terms of income⁴⁰ by type of exchange (European and non-European).

Table 12. Expenditure and economic impact generated abroad in terms of income (GVA) by outgoing exchange students during the 2018/2019 academic year by type of exchange.

	European Exchange	Non-European Exchange	Total
No. of students	959	597	1,556
Expenditure	€7,981,570	€5,636,735	€13,618,305
Gross Value Added (GVA)	€9,619,613	€8,858,828	€18,478,441
Direct impact	€3,926,363	€2,945,266	€6,871,629
Indirect impact	€2,043,401	€1,933,593	€3,976,994
Induced impact	€3,649,849	€3,979,969	€7,629,818

³⁹ There are 7 countries receiving students (Latvia, Iceland, the Philippines, the United Arab Emirates, Puerto Rico, Taiwan and Lebanon) that do not have Input-Output tables, so the economic impact generated has been allocated in these countries based on the economic impact generated by the rest of the outgoing exchange students (1,538 students).

⁴⁰ It has not been possible to quantify the impact generated in terms of employment since the Input-Output Tables published by the OECD do not contain information on employment by branches of activity.

Tables 13 and 14 present the expenditure and the impact generated in terms of income by type of exchange (European and non-European) in detail by destination country.

In terms of type of impact, it is worth highlighting how induced impact predominates over direct impact in terms of income generated in certain countries receiving outgoing students. Basically, these high induced effects are identified in the European countries in Table 12 (France, the UK, Germany, Sweden and Switzerland) and in the non-European countries in Table 13 (USA, Australia and Canada) which correspond to dynamic economies with low or moderate external dependence.

Table 13. Expenditure and economic impact generated in the destination country by European exchange students in terms of GVA during the 2018/2019 academic year.

COUNTRY	n	EXPENDITURE MADE	DIRECT IMPACT	INDIRECT IMPACT	INDUCED IMPACT	TOTAL IMPACT
Italy	156	€1,243,733	€666,974	€346,370	€447,149	€1,460,492
France	139	€1,203,797	€636,416	€327,941	€681,630	€1,645,987
United Kingdom	110	€1,123,924	€554,538	€287,253	€614,072	€1,455,864
Germany	99	€895,716	€428,149	€225,672	€455,230	€1,109,050
Netherlands	67	€519,173	€217,778	€132,322	€210,001	€560,102
Poland	64	€450,711	€196,921	€138,748	€138,699	€474,368
Belgium	42	€330,901	€140,745	€66,060	€107,391	€314,196
Austria	32	€302,375	€157,766	€66,426	€127,772	€351,964
Sweden	32	€199,682	€87,857	€54,549	€97,375	€239,781
Portugal	31	€205,387	€114,367	€45,791	€78,698	€238,856
Switzerland	26	€228,208	€104,395	€61,463	€176,036	€341,895
Finland	25	€239,618	€109,192	€64,626	€116,592	€290,410
Norway	20	€165,451	€75,207	€44,668	€100,813	€220,689
Denmark	16	€91,283	€41,597	€20,839	€49,549	€111,985
Ireland	16	€171,156	€90,329	€20,479	€44,542	€155,350
Lithuania	16	€159,746	€86,088	€30,605	€57,780	€174,473
Czech Republic	13	€96,988	€42,087	€23,710	€26,061	€91,858
Hungary	11	€62,757	€28,837	€12,942	€18,972	€60,750
Turkey	8	€62,757	€32,525	€21,320	€18,078	€71,923
Latvia	7	€39,936	€19,646	€10,224	€18,262	€48,132
Croatia	5	€45,642	€24,562	€9,375	€19,689	€53,626
Slovenia	5	€28,526	€13,850	€5,687	€11,046	€30,583
Romania	5	€28,526	€14,388	€7,386	€6,835	€28,609
Slovakia	4	€22,821	€10,943	€5,205	€6,408	€22,556
Estonia	4	€22,821	€10,180	€4,764	€8,246	€23,189
Greece	3	€17,116	€9,752	€4,104	€4,143	€17,998
Cyprus	2	€11,410	€5,661	€1,951	€3,562	€11,175
Iceland	1	€11,410	€5,613	€2,921	€5,218	€13,752
	959	€7,981,571	€3,926,363	€2,043,401	€3,649,849	€9,619,613

Table 14. Expenditure and economic impact generated in the destination country by non-European exchange students in terms of GVA during the 2018/2019 academic year.

COUNTRY	n	EXPENDITURE MADE	DIRECT IMPACT	INDIRECT IMPACT	INDUCED IMPACT	TOTAL IMPACT
USA	302	€3,445,939	€1,855,208	€1,268,152	€2,813,409	€5,936,769
Australia	74	€422,185	€187,987	€143,511	€247,074	€578,572
Canada	55	€547,699	€279,093	€162,311	€344,761	€786,166
China	29	€188,271	€89,620	€67,894	€126,173	€283,687
Argentina	26	€148,335	€83,965	€43,303	€85,031	€212,299
Brazil	26	€296,670	€161,732	€84,359	€134,607	€380,698
South Korea	19	€154,040	€71,370	€44,136	€53,832	€169,338
Chile	15	€85,578	€45,853	€24,881	€37,007	€107,741
Mexico	13	€74,168	€46,200	€17,024	€13,507	€76,731
New Zealand	5	€28,526	€12,986	€9,186	€12,477	€34,649
Singapore	4	€45,642	€14,750	€7,939	€10,272	€32,961
Costa Rica	3	€17,116	€8,623	€4,731	€8,116	€21,470
Philippines	3	€17,116	€8,528	€5,599	€11,524	€25,651
Hong Kong	3	€34,231	€16,859	€7,950	€22,107	€46,916
Russia	3	€17,116	€7,750	€6,083	€5,676	€19,509
Thailand	3	€17,116	€7,307	€5,922	€3,631	€16,860
Vietnam	3	€17,116	€6,601	€4,625	€6,669	€17,895
United Arab Emirates	2	€11,410	€5,685	€3,732	€7,683	€17,100
Puerto Rico	2	€17,116	€8,528	€5,599	€11,524	€25,651
Taiwan	2	€11,410	€5,685	€3,732	€7,683	€17,100
Colombia	1	€5,705	€3,306	€1,549	€1,838	€6,693
India	1	€11,410	€5,807	€3,977	€3,066	€12,850
Japan	1	€5,705	€2,916	€2,077	€3,179	€8,172
Peru	1	€5,705	€3,222	€1,587	€1,439	€6,248
Lebanon	1	€11,410	€5,685	€3,732	€7,683	€17,100
	597	€5,636,735	€2,945,266	€1,933,593	€3,979,969	€8,858,828

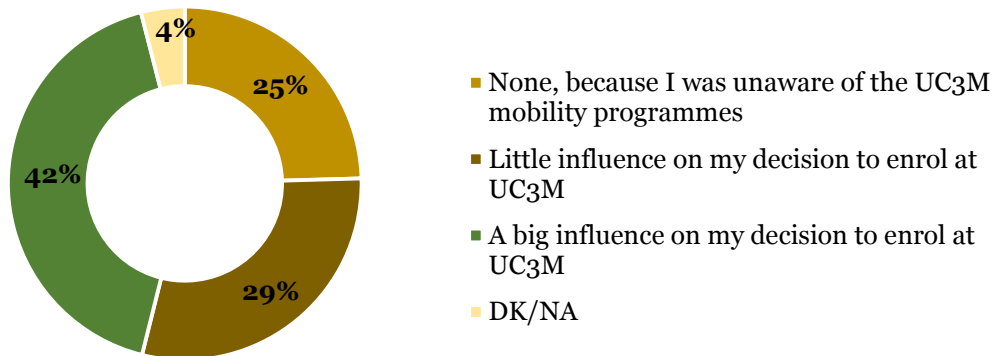
5.2. Economic impact of PhD students

During the 2018/2019 academic year, 64 PhD students completed a stay abroad. Expenditure abroad amounted to **€245,389**, generating an economic impact of **€295,600** in destination countries in terms of income (GVA), of which 23% is direct impact, 29% is indirect and the remaining 48% is induced.

6. INFLUENCE OF KNOWLEDGE OF UC3M EXCHANGE PROGRAMMES ON THE DECISION OF STUDENTS

To analyse the attraction power that knowledge of the exchange programmes offered by the University has on students who enrol at UC3M, students who completed an outgoing exchange stay during the 2018/2019 academic year were surveyed. The survey resulted in the collection of 504 valid responses⁴¹. When asked "Rate the influence of UC3M exchange programmes on your decision to enrol at UC3M", 42% answered "High influence", 29% answered "Low influence", 25% answered "No influence because I did not know about the UC3M exchange programmes" and 4% answered "DK/NA".

Rate the influence of UC3M exchange programmes on your decision to enrol at UC3M



That is, **7 out of every 10 respondents** affirmed that knowledge of UC3M exchange programmes **had some degree of influence** on their decision to enrol at UC3M, and **4 out of 10 valued the influence on this decision as high**. One out of every 4 students surveyed had no knowledge of the UC3M exchange programmes before enrolling.

⁴¹ With the sample obtained, the sampling error is 3.6% for a 95% confidence interval and the worst-case population variance situation $p=q=0.5$.

7. CONCLUSIONS

This pioneering study, carried out for the first time at the Carlos III University of Madrid, presents a comprehensive analysis of the economic and social impact generated by all the internationalisation actions carried out by UC3M and its agents involved during the 2018/2019 academic year, which goes far beyond the usual impact assessment of international students.

Due to their mobilisation capacity, the internationalisation activities that UC3M has carried out in different institutional, teaching, research or university extension areas have been an attractive driving force for other agents that generate expenditure in the Community of Madrid, such as UC3M international undergraduate and postgraduate students (degree-seeking students, incoming exchange students and students enrolled in the Carlos III International School), visitors of international students (family and friends) and people attending international seminars/workshops organised by UC3M departments and institutes.

Regarding expenses, 77.8% of the internationalisation expenditure of UC3M and its agents involved is contributed by the families of students; 18.5% of all expenditure comes from the European Union (€17,901,230.80); 1.7% of the total funds come from the Community of Madrid (€1,642,183.90); private companies contribute 1.3% of the total expenditure made (€1,229,395.10).

THAT IS, OF EVERY 10 EUROS SPENT ON INTERNATIONALISATION BY THE UNIVERSITY AND ITS AGENTS INVOLVED, 7.50 EUROS ARE CONTRIBUTED BY FAMILIES (6.50 EUROS CORRESPOND TO FAMILIES OUTSIDE THE COMMUNITY OF MADRID AND 1 EURO TO FAMILIES FROM THE COMMUNITY OF

MADRID), 1.50 EUROS ARE PAID BY THE EUROPEAN UNION, AND THE REMAINING AMOUNT IS PAID BY THE COMMUNITY OF MADRID AND PRIVATE COMPANIES.

Overall, in terms of economic impact, the internationalisation activities carried out by UC3M and its agents involved during the 2018/2019 academic year have increased the Community of Madrid GVA by **€84,663,065 (income)** and generated **1,139 jobs** (full-time jobs).

The ratio between the total income generated in the Community of Madrid by UC3M and its agents involved (€84,663,065) and the expenditure made by UC3M and its agents in internationalisation activities in the Community of Madrid (€76,098,134) translates into a multiplier of **1.11**.

THAT IS, FOR EACH EURO SPENT BY UC3M AND ITS AGENTS INVOLVED IN THE COMMUNITY OF MADRID, THE INCOME (GVA) OF THE COMMUNITY OF MADRID IS INCREASED BY **€1.11**.

UC3M ITSELF WAS RESPONSIBLE FOR **19.6% OF THE TOTAL INCREASE IN INCOME AND 21.2% OF THE TOTAL EMPLOYMENT (242 FULL-TIME JOBS)** CREATED IN THE MADRID ECONOMY BY THE INTERNATIONALISATION ACTIVITIES OF UC3M AND ITS AGENTS DURING 2018/2019.

The ratio between the total income generated in the Community of Madrid by UC3M and its agents involved (€84,663,065) and the expenditure made by UC3M itself on internationalisation activities (€19,965,684) translates into a multiplier of **4.24**.

THAT IS, FOR EACH EURO SPENT BY UC3M ITSELF ON INTERNATIONALISATION ACTIVITIES, THE INCOME (GVA) OF THE COMMUNITY OF MADRID

INCREASED BY **€4.24**, DUE TO THE EXCHANGE CAPACITY OF THE UNIVERSITY AND ITS INVOLVED AGENTS.

The ratio between the income generated in the Community of Madrid attributable to UC3M (€16,598,438) and the expenditure made by the university in the region (€12,502,960) translates into a multiplier of **1.33**.

THAT IS, FOR EACH EURO SPENT BY UC3M IN THE COMMUNITY OF MADRID, UC3M GENERATES **1.33 EUROS** OF INCOME IN THE REGION.

INTERNATIONAL STUDENTS ARE RESPONSIBLE FOR **58% OF THE TOTAL INCREASE IN INCOME AND 54% OF THE EMPLOYMENT (615 FULL-TIME JOBS)** CREATED IN THE MADRID ECONOMY BY THE INTERNATIONALISATION ACTIVITIES OF UC3M AND ITS AGENTS DURING 2018/2019.

The ratio between the income generated in the Community of Madrid by international students (€49,121,813) and the expenditure made by international students in the Community of Madrid (€47,142,746) translates into a multiplier of **1.04**.

THAT IS, FOR EACH EURO SPENT BY INTERNATIONAL STUDENTS IN THE COMMUNITY OF MADRID, **1.04 EUROS** OF INCOME ARE GENERATED IN THE REGION.

Of every additional 10 euros in income generated by the expenses of international students, 5 euros come from degree-seeking students, 3 euros from C3IS students and the remaining 2 euros from incoming students.

took place in the US. The ratio between the economic impact generated abroad (€8,858,825) and the funding received by students from UC3M's own funds and Santander Iberoamérica scholarships (€285,990 and €72,540, respectively) translates into a multiplier of **€24.70**.

Of every 10 jobs generated by the expenses incurred by international students, 5 come from degree-seeking students, 3 from C3IS students and the remaining 2 from incoming students.

INTERNATIONAL STUDENTS AND THEIR VISITORS WERE RESPONSIBLE FOR **78.7% OF THE TOTAL INCREASE IN INCOME** GENERATED IN THE MADRID ECONOMY BY UC3M AND ITS AGENTS IN 2018/2019. THEY WERE, IN ADDITION, RESPONSIBLE FOR THE CREATION OF **876 FULL-TIME JOBS**, 77% OF THE TOTAL EMPLOYMENT CREATED IN THE COMMUNITY OF MADRID BY UC3M AND ITS AGENTS DURING 2018/2019.

Outgoing exchange students spent money in the countries where they completed their exchange stays, representing an increase in gross value added (GVA) abroad of **€18,478,441**. By type of exchange, **€9,619,613** (52% of the total) were generated by European exchange students and **€8,858,828** (the remaining 48%) by non-European exchange students.

The ratio between the economic impact generated in terms of income abroad by outgoing European exchange students (€9,619,613) compared to the value of the Erasmus+ scholarships they receive from the European Union (€1,517,677) translates into a multiplier of **6.34**.

THAT IS, EACH EURO SPENT BY THE EUROPEAN UNION TO FINANCE UC3M EXCHANGE PROGRAMMES TRANSLATES INTO AN INCREASE IN INCOME (GVA) OF **€6.34** IN THE EUROPEAN ECONOMY.

Of non-European exchange stays, 50.5%

THAT IS, EACH EURO ALLOCATED TO NON-EUROPEAN EXCHANGE SCHOLARSHIPS BY UC3M (IN CO-FINANCING WITH SANTANDER BANK) TRANSLATES INTO AN INCREASE IN INCOME (GVA)

OF €24.70 IN THE NON-EUROPEAN COUNTRIES WITH WHICH UC3M MAINTAINS EXCHANGE AGREEMENTS.

Of every **10 outgoing exchange students surveyed during the 2018/2019 academic year**, **7 of them** affirmed that knowledge of UC3M exchange programmes **had some degree of influence** on their decision to enrol at UC3M, and **4 out of 10 rate the influence on this decision as high**. **One out of every 4** students surveyed **had no knowledge of the UC3M exchange programmes** before enrolling.

8. ANNEX

Estimated expenditure made by visitors of international students and people attending international seminars/workshops organised by UC3M departments and institutes

The estimate of the number of visitors received by international degree-seeking students, incoming exchange students and students enrolled at the Carlos III International School during the 2018/2019 academic year has been obtained from the responses of the students surveyed. They were asked about the number of visits they received during the 2018/2019 academic year and the duration of the visits, differentiating between visitors that stayed in the students' homes and visitors that stayed in a hotel. Table 1 shows the information collected from the survey.

Table 1. Data from the survey completed by international students during the 2018/2019 academic year.

DATA ON STUDENTS WHO RECEIVED VISITORS WHO STAYED IN A HOTEL	
Percentage of students who receive visitors who stay in a hotel	16.9%
Number of people who visit the student	3
Number of times they visit the student per year	2.5
Average number of days in hotel	5.5
DATA ON STUDENTS WHO RECEIVED VISITORS WHO STAYED IN THEIR HOME	
Percentage of students who receive visitors who stay in their home	45.8%
Number of people who visit the student	2.8
Number of times they visit the student per year	3.1
Average number of days	5.8

On the other hand, taking into account that the average daily expenditure of a tourist in hotel accommodation (EGATUR, 2018) amounts to €163 and that the average expenditure of a non-market tourist (i.e. staying with family/friends) amounts to €85, the total expenditure for visitors of students staying in a hotel amount to **€5,440,504**, and **€9,607,174** for those staying at the student's home. Altogether, the expenditure made amounts to **€15,047,678**. Finally, the pattern of spending by visitors is provided by the 2018 Tourism Yearbook of the Community of Madrid.

The total number of conference attendees attending the international seminars/workshops organised by the UC3M departments and institutes totalled 3,124. According to the information provided by the UC3M institutes, 13% of the attendees come from abroad, 27% from other autonomous communities and the

remaining 60% from the Community of Madrid. The average cost of registration for international seminars/workshops is €11.81.

The study published by the *Spain Convention Bureau* for the year 2018 has been used in relation to the expenditure made by conference attendees. These data is collected in Table 2.

Table 2. Expenses corresponding to conference attendees/attendees of international events organised by UC3M during the 2018/2019 academic year

AVERAGE EXPENDITURE OF CONFERENCE ATTENDEES *	
Cost of the trip	€320
Daily cost of accommodation	€127
Daily expenses	€101

*Source: Spain Convention Bureau, 2018

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