

### **Why is it worth studying economics?**

#### **A course proposal for non-economics students**

**Jasmina Berbegal-Mirabent**

*Universitat Politècnica de Catalunya, Spain*

**David Carpi**

*Universitat Internacional de Catalunya, Spain*

Received August 10, 2022; accepted January 16, 2023.

#### **ABSTRACT**

---

At an early life stage, students must choose a degree, a crucial decision that will shape their professional life. Whatever the studies chosen, these are very topic specific, and the current higher education system does not have the mechanisms to make this choice less focused, allowing students to open their minds to other areas of knowledge. This situation is particularly critical for students who do not choose a major in a business-related discipline. Basic economic knowledge is paramount as it provides individuals with a better understanding of human behavior and the rules of the marketplace. Knowledge of its foundations is valuable for daily life (e.g. making better choices, allocating resources more effectively, and understanding policy options). However, in some countries, economics is compulsory at neither high school nor university; and thus, it is usually overlooked. Focusing on Spain's particular context, this study underlines the key reasons for including economics in non-economic university programs. A survey gathering students' perceptions of the fundamentals of economics and their level of understanding is presented and discussed. Building on the literature and the survey's results, we identify three core blocks that should be taught. A panel of experts is consulted to evaluate our proposal.

#### **KEYWORDS**

---

Economics, Non-economics, Higher education, Entrepreneurship.

## **1. Introduction**

We live in a society in which buying online, paying with a debit card, and applying for a mortgage are recurrent actions. Our world is globalized, and companies that leverage markets are constantly vigilant regarding new trends—even before the demand exists (Engel et al., 2018)—and compete internationally. Entrepreneurs also play a key role, being responsible for the creation of millions of jobs per year—in 2021 they created 2,991,172 jobs in the US (Statista, 2022). Nevertheless, our economy is characterized by economic cycles that affect the flow of local revenues and the demand for services. For instance, in 2008, a major financial crisis hit the world economy, and, at a time when the global economy was still healing from its effects, in the first half of 2020, we again witnessed the fragility of our global systems due to the COVID-19 pandemic.

Global crises, as well as how we navigate daily life, have made economics-related issues common water-cooler conversation topics (Mearman et al., 2014). A quick look at almost any newspaper also reveals how closely economics is linked to the real world and the prominent role that it plays in our lives (Atkinson & Johns, 2001). In this scenario, it is reasonable to assume the relevance of contemporary economics. Knowing its fundamentals can help us to understand how the world works and successfully survive in it (García del Barrio, 2017; González Medina, 2011).

However, there is sound evidence that many college students and citizens with a tertiary education diploma are illiterate in economics (De Beckker et al., 2019). There are several explanations for this situation, one of the most plausible ones being the current education system; in many countries, economics is not considered as compulsory at the high school or the university level, except when students choose economics as their main discipline. Even when it is taught, its importance in solving social issues is neglected. Does this mean that a philologist will not ask for a mortgage or that a dentist will not have to sign a contract for a credit card? Cannot a scientist (e.g., physicist) start a new venture that needs funding? Sooner or later, at some point in our life, to a greater or lesser extent, we will all have to deal with economics.

Contrary to the general wisdom that considers economics as a path to run a business or work on finance, economics embraces much more than this. As students grow and learn, they need to develop economic attitudes and opinions that will shape and influence their thoughts and actions over a lifetime (Wyk, 2012). The Cambridge Dictionary defines it

as a social science concerned with “the study of the way in which trade, industry, and money are organized.” Because it is a social science, it involves people and their choices; therefore, economics can help us to understand better how people interact, use resources, respond to incentives, and make trade-offs. As highlighted in a recent post in *The Conversation*, “we need economic literacy to remain politically and socially informed” (Evans, 2018).

However, despite its relevance, students tend to underestimate the relevance of economics to everyday life. The way in which economics is typically presented—too complex and theoretical instead of being connected to real-world topics—is probably not the most appealing way to convince students about its relevance. Linked to this aspect is the misconception that economics is a hard subject, with a strong mathematical background (Gil-Doménech & Berbegal-Mirabent, 2020). While it is true that economics uses mathematical formulations to model reality, these mathematical developments are loosely connected with only a few economic topics, the field actually being much broader. Lastly, there is considerable uncertainty and ambiguity in the career path of a graduate in economics, preventing students from considering a career in this field.

To reverse this situation, a wide range of initiatives have emerged at different education levels aiming at increasing the economic literacy of the population. One example includes the Financial Education Program in Schools in Catalonia (EFEC, <https://blog.efec.cat/que-es-efec/>), which emerged in 2012 following the recommendations of OECD to provide citizens with better economic skills that allow them to manage their savings, and avoid episodes of over-indebtedness and financial exclusion. This program is targeted to all students attending secondary education in Catalonia, and it is taught by volunteers who are professionals in the economic, financial, tax and insurance sectors. Another example is the charity [ecnm.org](http://ecnm.org), founded in 2016 in the UK, which through volunteerism, run free economics courses and transforms the way that economics is communicated across media, politicians and civil society, creating accessible ways to have conversations about the economy.

Within this context, universities are also called to be active players. Universities are the last stage of education where knowledge and skills are gained at a high level. They are responsible for preparing students to be competent and successful before they initiate occupational life. Accordingly, they should also commit to the development of activities aimed at reimagining economics as a conversation every student can be part of. For

instance, without making big changes, universities could include, within their offering, elective courses covering the basics of economics targeting non-economics students. This can be done at low cost, as most undergraduate (bachelor) degrees require the completion of some elective courses that students have to choose from a large and varied portfolio. These courses should be designed in such ways that highlight the relevance of economics for solving daily problems, reducing the barriers to participate in public debates and helping students to make reasonably well-informed judgements about the state of the economy.

Rooted in this context, the purpose of this research is to explore how universities, by means of elective courses can empower undergraduate students with the fundamentals of economics knowledge. To this end, the final outcome of this study is a suggested course, structured in three modules—introduction to economics, entrepreneurship, and economics for daily life—that is expected to increase economic literacy among future graduates and help them to understand better the economic landscape, policies, and decisions that affect their lives. To do this so, we use a mixed-method approach. First, based on a literature review, we uncover the reasons why is it worth studying economics. Second, by combining qualitative and quantitative information obtained from a panel of experts and an ad hoc survey conducted with students we capture aspects of the reality of the teaching and learning of economics.

This study contributes to the limited research base on the teaching and learning of economics in higher education in three main ways. First, scholarly publications dealing with the relevance of economics as a discipline have mainly been reduced to discussing the underlying reasons for students' choices to study (or not) economics (Bleemer et al., 2022; Livermore & Major, 2020), why economics should matter and students' perceptions of it (Mearman et al., 2014), and the adoption of innovative teaching strategies to engage students in the study of economics (Brunnermeier, 2017; Lagoa-Varela et al., 2018). Besides the lack of a systematic review of the main outcomes of these discussions, what can be concluded after a comprehensive review of the literature is that academics seem to have overlooked how to confront non-economics students with the study of economics. Second, this study offers a detailed analysis of the reasons why economics is relevant to everyone and which aspects of it should be reinforced at higher education level. Creating an economically curious, confident and capable society is a mandate from the OECD (OECD, 2005). It is therefore necessary to explore the role of

economics in society and communicate the story of why a change is needed to the new generations.

With this goal in mind, the remaining of the paper is organized as follows. Section 2 provides the theoretical background for the study. Section 3 describes the research design, while the results together with the analysis are presented in Section 4. The paper concludes with the discussion and the implications in Section 5.

## **2. Literature Review**

Universities are the perfect place to gain deep knowledge. At the age of 17 or 18, students have to choose the degree in which they want to enroll. This decision is critical as they will have to spend at least the next 3 or 4 years of their life studying what they feel is their preference at this early stage of life. On a related note, whatever the subjects chosen, they tend to be much focused, and the current higher education system is not equipped with the proper mechanisms to make this choice less focused and allow students to open their minds to other relevant areas of knowledge that will be highly useful in both their personal and their professional life.

Economic literacy helps individuals in making rational economic decisions; therefore, studying economics should be as important as reading or writing (Varum et al., 2014; Jacobson, 2012). A quick fact: economics is one of the few subjects for which there is a Nobel Prize.

In the paragraphs that follow we elaborate on the key reasons why students, whatever their studies, should have a basic background in economics. The support for these arguments can be found in the literature. We performed an exhaustive review of both scholarly documents and reports in the grey literature. Specifically, we looked at Web of Science and Scopus databases, searching for articles that deal with at least one of the following topics: economics literacy, teaching economics to non-economists and interest in studying economics. We triangulated the information obtained with the content of official reports from the OECD and the World Bank, evaluating national strategies for increasing the financial literacy of the population and the role of education. From this review it can be concluded that there is a myriad of reasons why students, whatever their studies, should have a basic background in economics given its practical application in everyday life. We have synthesized them in four main blocks:

Economics helps to develop entrepreneurial skills. The importance of startups when it comes to explaining economic growth and employment opportunities is undeniable (Kane, 2010). Economics gives students an understanding of how markets work, how to identify hidden costs, and how to collect and analyze information for decision making (Contreras-Barraza et al., 2021; Wardana et al., 2021). These skills are highly valuable for people who want to start their own company, particularly for conducting market research and investigating the feasibility of their ideas. Among the key reasons for business failures are poor value propositions, inadequate cash flow, and poor management practices. Classes in economics help students to become aware of these problems and how to overcome and prevent them. Likewise, in economics classes, students learn how to read balance sheets and income statements and how to use financial ratios that reveal the financial health of a company.

Learning from the past. Economies evolve in patterns. Recessions have come and gone throughout history. According to the Keynesian approach, supply and demand go hand in hand, and that causes the economy to evolve in clear patterns that are repeated over time. Although economics is not an exact science, new technologies (e.g., big data and machine learning) can help us to improve forecasts and performance monitoring. However, to achieve this, we need to know our history. The study of the past—economic history—can help to narrow the scope of the “unknown unknowns” by casting the net wider (Skidelsky, 2009). Classical theories on economic thought still prevail. To illustrate this, we can take the magnum opus “The Wealth of Nations” of Adam Smith (2012) and his explanation of the concepts of scarcity and value: “The things which have the greatest value in use have frequently little or no value in exchange; and, on the contrary, those which have the greatest value in exchange have frequently little or no value in use. Nothing is more useful than water: but it will purchase scarce or any thing: scarce anything can be had in exchange for it. A diamond, on the contrary, has scarce any value in use; but a very great quantity of other goods may frequently be had in exchange for it” (pp. 44-45).

Economics can help us to make better choices. Economics is about determining whether one product is better than another, whether one policy fits better than another one, or which is the most suitable mortgage or loan. All these decisions cannot be taken arbitrarily. Unconsciously, when making daily choices, we apply the concepts of competitive advantage and opportunity cost. Economy is everywhere; no one can organize his/her life without taking into account the principles of this science. Economics

is projected in both our personal and our professional lives. For the decision-making process to be accurate, it is essential to base these decisions on knowledge rather than relying on mere intuition. Just for illustrative purposes, in Gregory Mankiw's book on the Principles of Economics (2000; pp. 3-6, 270-272), he brilliantly exemplifies how the concept of opportunity costs can be applied to day-to-day decision-making processes: "The notion of opportunity cost helps explain why star athletes often do not graduate from college. The cost of going to school includes the millions of dollars they could earn as professional athletes. If Kobe Bryant had decided to attend college for four years after high school instead of signing with the Lakers, his implicit cost would have been over \$10 million, the salary he earned in his first four years as a Laker." Clearly, knowing the basics of economic principles, laws, and concepts can help students to take a better perspective on the world that surrounds them and make more informed decisions (i.e. which car to buy, which destination to choose for a family trip, etc.).

Understanding the changes that modern economies are experiencing. Contemporary economies evolve fast and grow in very different ways from classical economies. Three key factors have radically changed and are shaping the new economic landscape: pensions, the labor market, and financial markets. Another big challenge that modern economies face is that of globalization, linked with the information technology revolution, which is breaking down the barriers between countries. The Internet has driven the marginal transmission costs of voice and data to nearly zero, reducing the costs of trading goods and expanding investment opportunities almost everywhere (Haskel et al., 2012). Future professionals need to understand why the financial markets operate as they do. In this regard, there is an urgent call for universities to update their courses and include modules that deal with the evolution of economics as it is crucial to understand where we are and how we arrived here (Masciandaro, 2019).

### **3. Research design**

#### **3.1. Geographical scope**

According to the 2018 edition of the OECD's Programme for International Student Assessment (PISA), around one in four students in the 20 countries that took part in the study and one in seven in the 13 OECD countries face difficulties when confronted with financial problems (money matters and personal finance), being unable to make simple decisions about everyday spending, such as dealing with bank accounts and debit cards,

understanding interest rates on a loan, interpreting a bank statement, or choosing between a variety of mobile phone plans. These numbers corroborate the assertion that students' ability to face real-life situations involving financial issues and decisions is very limited. Estonia is the country with the highest average score, followed by Finland, the participating Canadian provinces, Poland, and Australia. The results of the PISA report (2018) also signal that socio-economically advantaged students are more likely to perform better than low-family-income students. This situation is worrisome because the gap between students with more economic facility and those with less is accentuated. These numbers reaffirm the need for the educational system to reverse this situation, compensate for this lack of opportunities, and guarantee a minimum level of financial literacy for all students.

For the purpose of this paper, we focus on the case of Spain. To promote financial education in schools, the National Commission Stock Market (CNMV in Spanish) and the Bank of Spain signed a collaboration agreement in 2009 with the Ministry of Education, Culture, and Sport. Under this agreement, a financial education program aimed at students between 14 and 17 years old (before accessing university) was designed. About 500 centers from all over the Spanish territory enroll in the program each year, yet these efforts seem to be insufficient. The average performance in financial literacy of 15-year-olds according to the PISA 2018 report was 492 points, lagging behind the average performance in OECD countries (505 points). As it is highlighted in the OECD (2018) report for Spain, the percentage of students who have a bank account and/or a prepaid debit card is one of the lowest among the countries participating in this assessment; on the contrary, the percentage of students holding a bank account is relatively high compared with that in the other countries. Improving the financial literacy of students is crucial. Therefore, to fight against high levels of unemployment, it is imperative to train students in the fundamentals of entrepreneurship, self-employment, and building a company.

### 3.2. Research methods

The ultimate purpose of this study was to produce a proposal for a hypothetical course on economics targeting students enrolled in non-economics-related disciplines that covers the fundamentals of economics. To create a strong proposal, different sources of information were consulted, embracing two potential views: the experts (professors in economics) and the recipients of education (the students). Once all the information had



been collected, processed, and analyzed, a course proposal was drafted, discussed, and validated with the panel of experts.

*Experts' opinions.* We created a panel of experts made up of professors in the field of economics. To be part of this panel, experts should met the following requirements: 1) teach economics to non-economics students, 2) have at least 10 years of teaching experience, 3) achieved outstanding evaluations in teaching assessments, 4) be currently teaching in the Spanish higher education system, and 5) have worked at least at two different universities in order to bring multiple insights from different contexts into the conversation. Table 1 shows the main descriptives for the five experts that agreed to participate in the study. The rationale for this panel was to allow experts to express their understanding of their perceived reality of teaching economics, the topics they address in their courses and the challenges they typically face.

| ID  | Gender | Background  | Current teaching  |
|-----|--------|---|---|
| RMS | Female | PhD and MSc in Economics, Finance, and Management   | "Economics" to students in Audiovisual Communication (4th year) and Advertising and Public Relations (2nd year). Both courses are compulsory. |
| MBP | Male   | MSc in Business Administration and PhD in Economics   | "Introduction to Economics" to 2nd-year students enrolled in Humanities and Cultural Studies. The course is compulsory.                       |
| PGB | Male   | MSc and PhD in Economics  | "Economics" to 2nd-year students of Law (compulsory). He is the coordinator of the courses on Macroeconomics in Business Administration.      |
| PA  | Male   | MSc and PhD in Economics  | "Microeconomics," "World Economics," and "International Trade" to students of both Business and Engineering.                                  |
| MFF | Male   | MSc and PhD in Economics<br>He worked for the Directorate for Employment, Labor, and Social Affairs at the OECD | "Economic History" to students of Business and Administration.  |

**Table 1.** Profile of the panel of experts.

There are several steps to follow when planning a course. By far the most complex and intriguing one is choosing the course content and the rationale behind it. It was, therefore, decided that semi-structured interviews were the best fit for this purpose. To guide the interview four main questions were posed:

- Which topics do you typically include in your courses? How did you decide on them?
- What are the difficulties, if any, that you find when teaching economics to non-economics students?
- What are the competences that you would like your students to develop?
- Do you include real cases (or daily life examples) in your course?

The discussion generated around these questions enabled the research team to enter more depth about specific issues raised by the participants that were considered to be relevant and that require additional clarification.

Interviews were scheduled and took place between February 3 and February 7, 2020. Each interview lasted no longer than 1 hour, and the conversation was entirely recorded and transcribed later.

*Students' perspective.* Students were the other important source of information. We collected their points of view by means of an online survey. As the expected outcome of this study was to provide an appealing course for non-economics students, it was necessary to investigate how confident they were in economics and finance. To the best of the authors' knowledge, there is no validated scale/survey to explore the literacy level of higher education students in economics. Building upon the key reasons why students should learn economics (as elaborated in section 2) and the conversations held with the group of experts, three main dimensions emerged on which a course targeted to non-economics students should revolve around, namely, introduction to economics, entrepreneurship and economics for daily life. For each of these dimensions we looked at the key concepts they entailed and formulated a question referring to it (see Table 2).

| Dimension                 | Code | How confident you are in...  |
|---------------------------|------|--|
| Introduction to economics | I1   | understanding general economic news on TV?   |
|                           | I2   | defining the origins and causes of unemployment?   |
|                           | I3   | explaining the role of the banking system in the overall economy?                        |
|                           | I4   | understanding the accountability of a company?   |
|                           | I5   | understanding new technologies (blockchain, crypto currencies ...)?                      |
| Entrepreneurship          | E1   | properly preparing and explaining a business plan?                                       |
|                           | E2   | identifying the most suitable source of funding for a startup?                           |
|                           | E3   | convincing investors to invest in your idea?   |
|                           | E4   | justifying the economic viability of a project?  |
|                           | E5   | brainstorming in events such as conference and workshops?                                |
| Economics for daily life  | D1   | reading/signing the contractual part of a credit or debit card?                          |
|                           | D2   | understanding the differences between direct taxation (IRPF) and indirect taxation?      |
|                           | D3   | defining Value Added Tax?  |
|                           | D4   | going to a bank and asking for a loan?   |
|                           | D5   | looking for alternative funding sources (different from the traditional banking system)? |

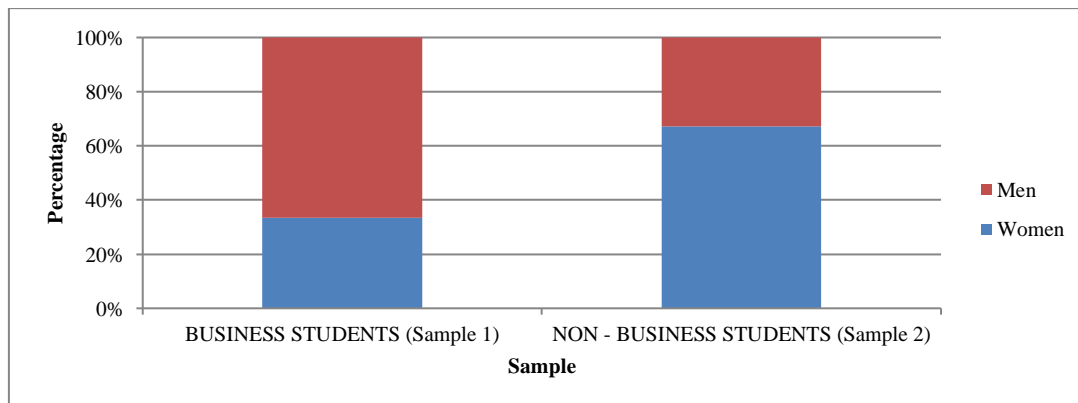
**Table 2.** Questions in the survey.

These concepts were introduced in the survey as self-reflective questions, asking students to rate their level of confidence on a Likert scale from 1 to 7. In this way, the responses obtained helped us to identify the knowledge gaps. Note that these items were discussed and refined with the input from the panel of experts in an additional round of meetings held between February 18 and 25, 2020.

Besides collecting material about the main field of study, we also gathered other relevant information such as demographic data (year of study, gender, country, etc.), entry studies and whether they have already attended economics courses at university.

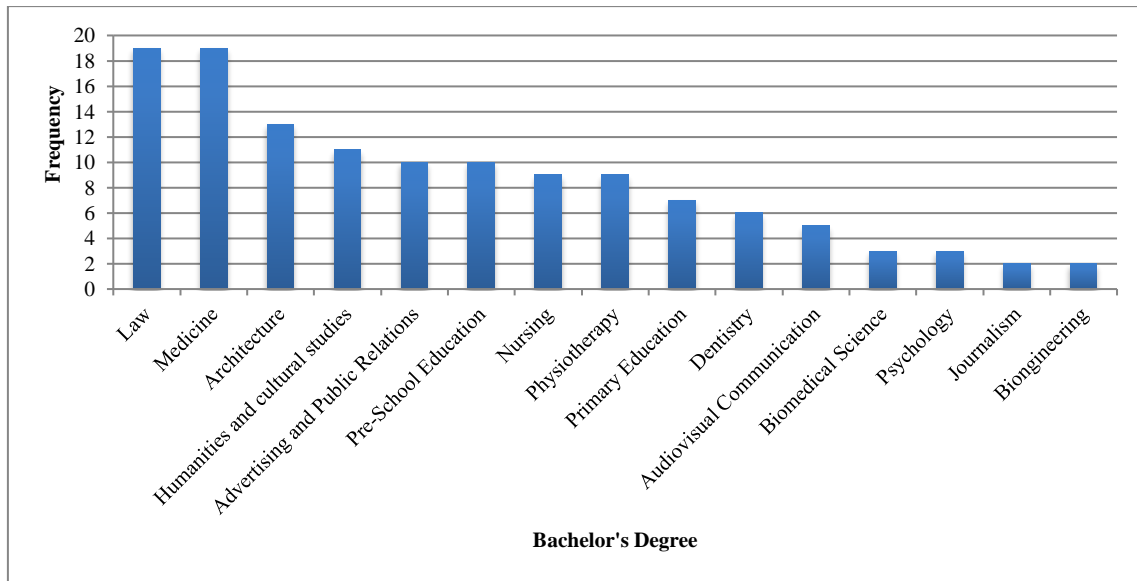
The survey was distributed among students enrolled at the Universitat Internacional de Catalunya (Spain). A snowball sampling technique was used. Responses were collected during March 2020, with a final sample of 185 valid responses. Although only one survey was created, it targeted two different populations: students enrolled in the bachelor's degree in Business Administration (with a strong focus on economics) and students enrolled in a different academic program (in which economics is not as critical as it is for Business Studies). From the responses collected, 57 questionnaires were completed by business students and the remaining 128 came from students enrolled in other courses offered at UIC Barcelona.

The sample is representative in terms of gender (Figure 1). For business students, most of the answers were from men (38), representing two-thirds of the total answers. This distribution follows that of the students in Business Administration at UIC Barcelona (60.06% men and 39.94% women in the academic year 2018/2019). Likewise, the second sample mirrors the overall distribution of students by gender. In our case, 67% of the respondents (86) were female and the general proportion for the university is 35.66% men and 64.34% women.



**Figure 1.** Gender distribution of the two samples.

The respondents were aged between 19 and 23 years old, most of them attending their 3rd or 4th year (a bachelor's degree in Spain is expected to be completed in 4 years). The distribution of students by degree is shown in Figure 2.



**Figure 2.** Distribution of students by field of study (bachelor's degree).

## 4. Analysis of the data collected

### 4.1. Experts' opinions

From the interviews conducted with the panel of experts, several conclusions arise. First, it is highly important to empathize with the students and understand their interests. A potential course on economics needs to be aligned with the main core of the discipline in which they are enrolled (e.g. medicine, architecture, or law), and the course contents should include examples so that they can see the usefulness of economics in their professional activity. Examples for daily life might also be helpful in engaging students in learning more about economics. In this regard, it is important to connect the areas covered with trending topics, news, or cases that are capturing media attention.

Second, the experts agreed that students tend to have prejudices about economics. Because many of them did not take economics at high school, when they are confronted with key terms and concepts with which they are not familiar, students are reluctant to ask questions and participate in front of their peers (particularly in large classes). Moreover, because some disciplines (e.g. humanities and cultural studies) do not require a strong background in mathematics, when dealing with numerical economic problems, they struggle.

Third, common agreement was found concerning the skills that they aim to develop when teaching economics. Besides providing the students with the key principals and economic theories that are expected to help them analyze the economic-financial environment of organizations as well as the costs associated with their activities, the experts believed that

courses on economics should also be aimed at infusing problem-solving abilities, boosting entrepreneurial skills, and promoting reflective capacity and critical thinking in interdisciplinary contexts as well as the ability to confront and evaluate alternatives and make decisions following a rigorous procedure in the presence of multiple criteria and factors.

Fourth, the selection of the teaching method is critical. RMS and MB agreed on the importance of using case studies and generating in-class discussions about real cases of large corporations with which students are familiar. On a different note, PGB claimed that, unfortunately, time is very limited and discourages the use of case studies as students in disciplines that are far from the social sciences are not familiar with the method. Instead, he recommended balancing theory with practice by introducing short but very illustrative examples extracted from the news or from situations in daily life.

#### 4.2. Students' perceptions

First, we analyze the responses by splitting the sample into business students (with a strong focus on economics) and non-business students (any other field of studies). The first sample (business students) can be considered as the treatment group as it consists of students who have already attended some courses on economics at the university. The other sample is considered as the control group (non-business students). At this stage, we are interested in investigating whether there are any significant differences in the responses to the items listed in Table 2.

No surprises are found. As reported in Table 3, there is a clear difference in the average values between the two groups. While, for all the questions, students with a background in business have an average value higher than 6 (on a scale from 1 to 7), non-business students have values that range between 1.88 (E5) and 4.11 (D13). The dispersion (measured by the standard deviation) is also greater, revealing an imbalance among the respondents. Thus, the above numbers provide strong evidence about the differences in the responses among the two groups; while the first sample is less dispersed and has higher scores, the latter is more dispersed and the respondents are less confident in their level of knowledge. To investigate whether these differences are significant, a t-test was conducted, the null hypothesis being that there are no differences between the responses of the groups. For all the items, the results reported p-values lower than 0.05; therefore, we found strong support for the argument that business students are more literate in

finance. The larger differences are observable in the module related to entrepreneurship, confirming that studying economics promotes entrepreneurial behavior.

| Module                                    | Item    | Treatment (Business) |          | Control (Non-business) |          | t-test* |
|---|---------|----------------------|----------|------------------------|----------|---------|
|   |         | Mean                 | Std Dev. | Mean                   | Std Dev. |         |
| Module 1:<br>Introduction to<br>economics | I1      | 6.47                 | 0.78     | 3.49                   | 1.29     | -16.14  |
|   | I2      | 6.49                 | 0.63     | 3.48                   | 1.44     | -15.05  |
|   | I3      | 6.49                 | 0.60     | 3.20                   | 1.49     | -16.05  |
|   | I4      | 6.63                 | 0.52     | 2.91                   | 1.61     | -17.00  |
|   | I5      | 6.21                 | 1.11     | 2.02                   | 1.16     | -23.03  |
|   | Average | 6.47                 | 0.73     | 3.02                   | 1.40     | -36.44  |
| Module 2:<br>Entrepreneurship             | E1      | 6.46                 | 0.71     | 2.74                   | 1.31     | -20.09  |
|   | E2      | 6.47                 | 0.71     | 2.54                   | 1.22     | -22.64  |
|   | E3      | 6.51                 | 0.66     | 2.78                   | 1.27     | -20.88  |
|   | E4      | 6.49                 | 0.68     | 2.66                   | 1.30     | -20.81  |
|   | E5      | 6.46                 | 0.76     | 1.88                   | 1.17     | -27.02  |
|   | Average | 6.48                 | 0.70     | 2.52                   | 1.26     | -48.42  |
| Module 3:<br>Economics for daily<br>life  | D1      | 6.53                 | 0.71     | 3.23                   | 1.62     | -14.72  |
|   | D2      | 6.49                 | 0.66     | 3.77                   | 1.71     | -11.59  |
|   | D3      | 6.51                 | 0.63     | 4.11                   | 1.65     | -10.62  |
|   | D4      | 6.56                 | 0.63     | 3.25                   | 1.32     | -18.01  |
|   | D5      | 6.04                 | 0.94     | 2.23                   | 1.22     | -21.41  |
|   | Average | 6.42                 | 0.71     | 3.32                   | 1.50     | -30.77  |
| Number of observations                    |         | 57                   |          | 128                    |          |         |

\* All the values are significant at the 1% level.

**Table 3.** Descriptive statistics for the two samples.

Second, we concentrate on the second sample (i.e. non-business students) and analyze the results by comparing those who have taken some economics courses at some point despite being enrolled in a different degree from Business Administration (treatment group) with those who have not (control group). Table 4 displays the results, along with those of the t-test. Again, significant differences are apparent, validating the argument that small interventions (such as a course or module) play a role and provide students with a minimum level of literacy in economics. As observed in the previous analysis, the modules in which students struggle the most are those related to entrepreneurship.

| Module                                 | Item    | Non-business students (N=128)                  |          |  |          | t-test*  |
|--|---------|--|----------|--|----------|----------|
|  |         | Treatment (have attended courses on economics) |          | Control (have not attended courses on economics) |          |          |
|  |         | Mean   | Std Dev. | Mean   | Std Dev. |          |
| Module 1:<br>Introduction to economics | I1      | 3.83   | 1.52     | 3.34   | 1.15     | -1.99**  |
|  | I2      | 4.05   | 1.66     | 3.22   | 1.23     | -3.55*** |
|  | I3      | 3.63   | 1.76     | 3.01   | 1.32     | -2.19**  |
|  | I4      | 3.93   | 1.75     | 2.45   | 1.32     | -5.26*** |
|  | I5      | 2.43   | 1.17     | 1.83   | 1.11     | -2.77*** |
|  | Average | 3.57   | 1.57     | 2.77   | 1.22     | -6.56*** |
| Module 2:<br>Entrepreneurship          | E1      | 3.40   | 1.48     | 2.44   | 1.11     | -4.05*** |
|  | E2      | 2.75   | 1.28     | 2.44   | 1.19     | -1.32    |
|  | E3      | 3.15   | 1.39     | 2.61   | 1.19     | -2.24**  |
|  | E4      | 3.08   | 1.53     | 2.48   | 1.13     | -2.77*** |
|  | E5      | 2.28   | 1.28     | 1.70   | 1.07     | -2.52**  |
|  | Average | 2.93   | 1.39     | 2.34   | 1.14     | -5.58*** |
| Module 3:<br>Economics for daily life  | D1      | 3.88   | 2.15     | 2.94   | 1.22     | -3.12*** |
|  | D2      | 4.60   | 2.10     | 3.40   | 1.36     | -3.88*** |
|  | D3      | 4.88   | 1.96     | 3.76   | 1.36     | -3.71*** |
|  | D4      | 3.55   | 1.50     | 3.11   | 1.22     | -1.74*   |
|  | D5      | 2.83   | 1.28     | 1.95   | 1.09     | -3.96*** |
|  | Average | 3.95   | 1.80     | 3.03   | 1.25     | -6.73*** |
| Number of observations                 |         | 40   |          | 88   |          |          |

\*\*\* denotes significance at the 1% level, while \*\* indicates significance at the 5% level.

**Table 4.** Descriptive statistics for non-business students distinguished by whether they have ever enrolled in a course on economics.

### 4.3. Course proposal

Taking into account the information obtained in the two previous stages and the analysis conducted, a course structured in three modules—containing the same topics as in the survey, which in turn emerged from the literature—was drafted. The proposal was then discussed and refined with the panel of experts.

Below we provide a general overview of the content that each module might cover.

*Introduction to economics.* This module aims to familiarize students with economic terms. Not all students have a solid background in mathematics, and even fewer have one in economics. An introduction is therefore deemed necessary to provide them with the basics of economics, such as the key concepts (e.g. trade, growth, inefficiency, crisis, and inflation), econometric models, and fundamental theories. Specifically, the topics to address might include:

1. Microeconomic magnitudes: supply and demand curves, opportunity costs, an introduction to the concepts of the demand for goods and services as well as the supply, the underlying factors, how they can be modified, what happens when the

two curves cross, and how prices can move up and down according to scarcity or excess.

2. Macroeconomic magnitudes: GDP, price indexes, IBEX 35, and so on. At this point, the reading and in-class discussion of news articles that deal with the impact of economic policies on employment, GDP, prices, and the stock market might be helpful.
3. The labor market and its characteristics, with a special focus on unemployment, how to estimate it, and its main causes.

*Entrepreneurship.* This module focuses on boosting entrepreneurial skills among students. The ultimate purpose is to provide students with the tools and steps to follow to transform an idea into a real (and feasible) business. The proposed topics covered in the module are the following:

1. How to raise money: funding opportunities from both traditional systems (banking) and alternative sources (e.g. venture capital, accelerators, incubators, crowdfunding, etc.).
2. Business plan: understanding the factors that need to be taken into consideration when designing a business model and learning the tools that can be used to create it. This module will also cover the design issues that are critical for a viable and sustainable business model and identifying the relevant trends, uncertainties, and risks that might affect the business.

*Economics for daily life.* Economics can be applied in any field of our daily lives. Everybody has a bank account, pays taxes, and may apply for a loan. This module covers all these situations, which students will confront at some point in their lives. Special attention might be devoted to the following:

1. Banking system: interest rates, how they affect consumption, how to ask for a mortgage, how to ask for a loan, and how to understand a credit or debit card contract.
2. Tax compliance: provide students with a basic overview of the Spanish taxation system and their obligations (e.g. IRPF, social security, and VAT).

## **5. Discussion and concluding remarks**

In a modern and globalized world, interdisciplinarity is a competence that should be promoted at universities. Having this as a premise, there are many points that support the importance of learning economics for students enrolled in any bachelor's degree.



For instance, knowing our economic history can assist us in understanding the changes that modern economies are experiencing. This is helpful in that it can help us anticipate the challenges of the economic cycles, with a focus on policies for economic growth (Masciandaro, 2019). We are aware that resources are limited and that universities need to abide by the department requirements and ministerial orders. Nevertheless, both the literature and practical evidence support the need to increase the average level of economics knowledge among students.

Accordingly, in this study, we stressed the importance of providing students with the opportunity to learn the foundations of economics. As it is shown in the empirical analysis, those students that were not following a major in economics but had been exposed to introductory courses on economics, obtained higher scores in our survey in all dimensions. We tested this by confronting two samples: business students vs non-business students. During a business degree, students study core topics in the field of business, such as marketing, finance, accounting, economics, human resources and operations management. That is, economics is not at the core of the program (as it is for economists), but is part of it. Our argument here is that although business students are confronted with economics for a short period of time (one or a few courses), they gained familiarity with economic thinking and consequently, were provide with a framework for the application of economic theory to real-life problems. In this regard, the empirical analysis conducted validates our intuition that these skills can be learned.

Turning into the specificities of the results, business students were found to have superior literacy levels on economics in the three dimensions under examination (both in aggregated terms and when looking at the items of the questionnaire in an individual fashion), doubling the scores of non-business students. Additionally, the responses among business students are more homogenous, meaning that external environmental factors play a little role and cannot be considered as bias. Largest differences in the responses between the two groups are found in the questions revolving about entrepreneurship. This result can be interpreted by saying that business education includes instruction in opportunity recognition, commercializing a concept, managing resources, and starting a new venture. Therefore, it is not surprising that business students outperform non-business students in questions related to how to raise money and different sources of funding. Also, due to the nature of the discipline, business students are often offered the opportunity to present their ideas in front of a panel of experts, simulating an elevator

pitch; consequently, they are more confident in convincing others about their ideas and brainstorming in networking events. Taking altogether these considerations, we suggest that if the goal is to design a course on economics for business students, the modules on “Introduction to economics” and “Economics for daily life” that we proposed in our course design, should gain prominence compared to the one on “Entrepreneurship”. However, if the target population is students in any other discipline, the three modules should be equally distributed.

Another item in the questionnaire in which big differences are found between business and non-business students is item I5, which inquires students about their knowledge on specific technologies linked to economic markets, such as blockchain or crypto currencies. These are hot topics that are part of our economy and are commonly found in the media, not only in the financial section but on the front page. Both concepts are based on brand new technologies that have already shown their ability to disrupt the global system, creating a paradigm shift in the way we look at money and transactions. Given that these technologies are redefining a variety of industries, pragmatic examples of their uses and misuses should be covered in economic courses targeted to non-economist, as regardless the sector in which students will find a job, they are most likely to will have to face them at some point.

The empirical analysis also reveals that among non-business students, those that have attended a course on economics are in an advantageous position, scoring higher than those that did not, meaning that even short exposures make a difference. Again, in the module on entrepreneurship the differences are reduced, as it is increasingly a common practice to include entrepreneurial courses within the syllabus of different disciplines (Mwasalwiba, 2010). Therefore, when designing the module on entrepreneurship it is advisable to concentrate on the financial aspects the entrepreneurial process embraces, namely, understanding the process of acquiring capital and making financial decisions.

The items in which the scores of the two groups were more different are in the module which apparently might have more immediate value for students: application of economics for daily life. Having the knowledge and confidence to engage in conversations about the economy is an essential skill, as economics is at the centre of every public debate (Smith, 2016). Our survey results reveal that students would find themselves in trouble if having to sign a contractual agreement for a credit/debit card, explaining the differences between direct and indirect taxation or defining what VAT

means. These findings stress the importance of providing high quality opportunities to promote economic literacy as an essential part of education, as economics should be a tool at everybody's arm's length.

All in all, this work contributes to the current debates on how to increase the economics literacy of the adult population. First, the empirical results support the need for specific courses on economics for non-economics students. We have not only confirmed that undergraduate students lack the economics literacy necessary to make better informed decisions, but we have also identified in which areas the greatest shortages are. To enhance economics literacy skills among non-economics students, courses need to be effective (Mearman et al., 2015). To this end, we have proposed a course structure that is consistent with the literature, is aligned with the experts' opinions and ensures that the main gaps identified in the survey are covered. Nonetheless, our proposal is just an initial starting point that is expected to help instructors in the first stages of course design and provide an initial outline for it. The three proposal modules need to be developed further and adapted to the specificities of the discipline in which this course might be embodied. That is, the content and the materials provided should be aligned with students' interests and offer meaningful value. This strategy would not only keep students motivated but also empower them in content development and in posing questions as they will find a connection with their personal world (Thoonen et al., 2010). Another key reflection concerns the likelihood of being too ambitious in the course content. Our proposal aims to provide non-economics students with a general overview of economics, exposing the core concepts of economics that everyone should know about in their simplest and most intuitive form; therefore, different topics are covered but without much depth. The ultimate goal is to start a conversation and generate the willingness among students to learn more.

Second, this research opens the door for additional studies to examine methodologies for instruction. Following Marangos (2002) and Brunnermeier (2017), the teaching of economics should avoid abstract concepts and mathematical formulation, but instead, demonstrate the relevance of economics for both life and future employment. This strategy implies the use of participatory methods and methods of experiential learning, that is, the use of real-life situations instead of simulated cases. The advantage of this approach and the mixing of different methods is that students do not only learn the fundamentals of the subject, but also develop interpersonal and communication abilities,

skills that are highly demanded in the marketplace. Admittedly, there is a positive relationship between the use of active learning methods in economics and students' superior performance (Lagoa-Varela et al., 2018; Hettler, 2015; Wyk, 2012), as moving the student away from the side-lines of the learning process is linked to a deeper understanding of the teaching material and the acquisition of a series of skills that extend beyond the subject. Yet, limited studies reveal how to effectively implement these strategies in courses that fall outside the core topic of a major. Identifying which teaching methods suit best and under which circumstances should be implemented, would be beneficial to both academics and students. The ultimate goal is to find accessible ways to discuss about economics in ordinary terms.

Third, this work proposed a structure and procedure for determining why a specific subject (in this case, economics) matters and therefore why all students—regardless of their specialization—should have a basic knowledge. For instance, there are no law-related subjects in high schools or universities for those students who have not enrolled in a degree in Law, but we are all under jurisprudence and should know the basics. Finally, future studies might consider expanding the geographical scope. For the purpose of this study, we mainly concentrated on the case of Spain and examined students' literacy in economics at a given university. Cross-country studies in this direction might bring interesting insights to this discussion.

## REFERENCES

---

Atkinson, B. and Johns, S. (2001). *Studying Economics*. Basingstoke: Macmillan International Higher Education

Bleemer, Z. and Mehta, A. (2022). Will Studying Economics Make You Rich? A Regression Discontinuity Analysis of the Returns to College Major. *American Economic Journal: Applied Economics*, 14(2), 1-22.

Brunnermeier, S. (2017). Learning by doing: The challenge of engaging undergraduates in economics research. *The Journal of Economic Education*, 48(4), 290-294.

Contreras-Barraza, N., Espinosa-Cristia, J. F., Salazar-Sepulveda, G. and Vega-Muñoz, A. (2021). Entrepreneurial intention: A gender study in business and economics students from Chile. *Sustainability*, 13(9), 4693.

De Beckker, K., De Witte, K. and Van Campenhout, G. (2019). Identifying financially illiterate groups: An international comparison. *International Journal of Consumer Studies*, 43(5), 490-501.

Engel, J. S., Berbegal-Mirabent, J. and Piqué, J. M. (2018). The renaissance of the city as a cluster of innovation. *Cogent Business & Management*, 5(1), 1532777.

Evans, J. (2018). Secret men's business – why the public image of economics is bad news for all of us. *The Conversation*, June 13<sup>th</sup>. Available at: <https://theconversation.com/secret-mens-business-why-the-public-image-of-economics-is-bad-news-for-all-of-us-98145> (last accessed 3 May 2021)

García del Barrio, P. (2017). “Por qué saber economía debería interesar a estudiantes de derecho. Propuesta de un sistema de evaluación e incentivos”. In: C. Espaliú, R.M. Jiménez and C. Miranda (Eds.), *¿Cómo la innovación mejora la calidad de la enseñanza del Derecho? Propuestas en un mundo global* (pp. 109-124). Cizur Menor: Aranzadi Thomson Reuters.

Gil-Doménech, D. and Berbegal-Mirabent, J. (2020). Making the learning of mathematics meaningful: An active learning experience for business students. *Innovations in education and teaching international*, 57(4), 403-412.

González Medina, A. A. (2011). La enseñanza de la economía como respuesta a una necesidad social. *eXtoikos*, 1(2011), 94-98.

Haskel, J., Lawrence, R. Z., Leamer, E. E. and Slaughter, M. J. (2012). Globalization and U.S. Wages: Modifying Classic Theory to Explain Recent Facts. *Journal of Economic Perspectives*. 2012(April), 119-140.

Hettler, P. L. (2015). Active learning in economics: Increasing student engagement, excitement and success. *International Advances in Economic Research*, 21(4), 357-360.

Jacobson, S. (2012). Economics for non-economists. *Australasian Journal of Economics Education*, 9(1), 59-83.

Kane, T. (2010). The Importance of Startups in Job Creation and Job Destruction. *Kauffman Foundation Research Series: Firm Formation and Economic Growth*, 2010(July), 1-12.

Lagoa-Varela, D., Alvarez-García, B. and Boedo Vilabella, L. (2018). Recent changes in the role of Spanish lecturers in economics and business: an empirical analysis based on their own perspectives. *Studies in Higher Education*, 43(8), 1321-1333.

Livermore, T. and Major, M. (2020). Why Study (or Not Study) Economics? A Survey of High School Students. *Bulletin*, 2020(June Quarter 2020).

Mankiw, G. (2000). *The principles of economics*. Fprt Eorth, TX: Harcourt College Publ, 270-279.

Masciandro, D. (2019). Evolution of economic ideas. Milan: Bocconi University.

Mearman, A., Papa, A. and Webber, D. (2014). Why do students study economics? *Economic Issues*, 19(1), 119-147.

Mwasalwiba, E. S. (2010). Entrepreneurship education: a review of its objectives, teaching methods, and impact indicators. *Education + Training*, 52 (1), 20-47.

OECD (2005). *Improving financial literacy: Analysis of issues and policies*. Available at: <https://www.oecd.org/finance/financial-education/improvingfinancialliteracyanalysisofissuesandpolicies.htm> (last accessed 22 November 2022).

OECD (2018). *Spain: Student performance (PISA 2018)*. Available at: <https://gpseducation.oecd.org/CountryProfile?primaryCountry=ESP&treshold=10&topic=PI> (last accessed 3 August 2022).

PISA (2018). Programme for International Student Assessment 2018. Data base. Available at: <https://www.oecd.org/pisa/data/2018database/> (last accessed 3 August 2022).

Skidelsky, R. (2009). *Keynes: the return of the Master*. New York: Public Affairs.

Smith, H. M. (2016). *Understanding economics*. New York: Routledge.

Smith, A. (2012). *The Wealth of Nations [1776]*. London: Wordsworth.

Statista (2022). Number of jobs created by start-up businesses that were less than one year old in the United States from March 1994 to March 2021. Available at: <https://www.statista.com/statistics/235515/jobs-created-by-start-ups-in-the-us/> (last accessed 3 August 2022).

Thoonen, E. E. J., Slegers, P. J. C., Peetsma, T. T. D. and Oort, F. J. (2010). Can teachers motivate students to learn. *Educational Studies*, 37(3), 345-360.

Varum, C., Santos, E. and Afreixo, V. (2014). Recent trends and new evidence in economics literacy among adults. *Journal of Economics and Economic Education Research*, 15(2), 187-205.

Wardana, L. W., Narmaditya, B. S., Wibowo, A., Saraswati, T. T. and Indriani, R. (2021). Drivers of entrepreneurial intention among economics students in Indonesia. *Entrepreneurial Business and Economics Review*, 9(1), 61-74.

Wyk, M. M. V. (2012). Measuring students' attitudes to economics education: a factorial analysis approach. *Journal of Social Sciences*, 31(1), 27-42.