ISCTE Business School
Instituto Universitário de Lisboa

# A PATH TOWARD PROSPERITY: THE ROLE OF ISCTE-IUL AS A HIGHER EDUCATION INSTITUTION

Ana Catarina Queirós Estrela Pires

Project submitted as partial requirement for the conferral of

Master in Management

Supervisors:

Prof. Maria Catarina Salema Roseta Palma, Associate Professor, ISCTE-IUL Business School, Department of Economy

Prof. Ana Margarida Madureira Simaens, Assistant Professor, ISCTE-IUL Business School, Department of Marketing, Operations and General Management

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# Abstract

Sustainability is a persistent topic in today's society; the concern for the environment is growing, and people are demanding that organizations share those concerns. Literature provides a wide range of concepts for sustainability however, it agrees on the four pillars in which the concept should be based, Economic prosperity; Environmental quality; Social justice and Institutional. Despite being the most recent pillar, Institutional has gained importance due to the fundamental role of education on society. Based on this context, this project aims to present and discuss the role ISCTE-IUL has on prosperity, which is one of the recognized dimensions of sustainability. The chosen method to develop this topic was to measure the impact ISCTE-IUL's activity has on the surrounding community with a special focus on the economic component. The first step was to research the theoretical background and assess the available models used to compute the impact of Higher Education Institutions. This was followed by collecting data to apply the models to ISCTE-IUL. During the process, it became clear that the models could not be fully implemented due to the data gaps. Therefore, the impact of ISCTE-IUL could only be assessed based on a set of indicators. To extend this analysis in future research, this project proposes some changes to improve ISCTE's current data-collection processes. The main output of this project was to evaluate and report the role of ISCTE-IUL on prosperity. It was possible to identify the missing data needed to expand and reinforce a study on sustainability.

Keywords: Sustainability, Prosperity, Higher Education Institution, Economic Impact

# Resumo

Atualmente, a sustentabilidade é um tópico recorrente, a preocupação com o ambiente está a aumentar e a população espera que as organizações também tenham essa preocupação. Na literatura existem vários conceitos de sustentabilidade, contudo, há um consenso nos quatro pilares em quais o conceito se deve basear, Prosperidade económica; Qualidade ambiental; Justiça social e Institucional. Apesar de ser o pilar mais recente, o Institucional tem vindo a ganhar relevância devido ao papel fundamental da educação na sociedade. Com base neste contexto, este projeto visa apresentar e discutir o papel que o ISCTE-IUL, tem na prosperidade, uma das dimensões da sustentabilidade. O método escolhido para desenvolver este tópico foi medir o impacto que o ISCTE-IUL tem na sua comunidade com especial atenção na vertente económica. O primeiro passo foi estabelecer o enquadramento teórico e fazer o levantamento dos modelos utilizados para medir o impacto económico das IES. Seguido pela recolha de informação para implementar os modelos ao ISCTE-IUL. Durante a recolha dos dados, ficou claro que os modelos não podiam ser implementados na sua totalidade devido à falta de dados. Por isso, o impacto do ISCTE-IUL foi analisado com base num conjunto de indicadores. Para estender esta análise em investigações futuras, este projeto propõe sugestões de forma a melhorar os processos de recolha de dados utilizados pelo ISCTE-IUL. O principal resultado foi avaliar e reportar o papel do ISCTE-IUL na prosperidade. Foi possível identificar quais os dados indisponíveis que seriam necessários para expandir e reforçar um estudo no âmbito da sustentabilidade.

Palavras-Chave: Sustentabilidade, Prosperidade, Instituições de Ensino Superior, Impacto Económico

# Executive Summary

Sustainability is becoming more present in daily life, ensuring the development of economies without compromising social rights and preserving the environment is a growing concern of modern societies. People are demanding responsible business practices and sustainable products, thus generating pressure in firms and institutions to change the way in which they conduct their activities. However, a problem arises when sustainability is debated, i.e. what is, in fact, sustainability? Authors throughout the literature provide a wide range of descriptions. The most commonly known was provided by the World Commission on Environment and Development and states that sustainability is "*development that meets the needs of the present without compromising the ability of future generations to meet their own needs*" (WCED, 1987: 41).

The various definitions of sustainability generally encompass four main pillars in which sustainability is based, 1) economic, which is based on the sustainable growth of businesses and economies; 2) environmental, linked to the efficient use of energy and resources as well as nature conservation; 3) social/cultural, related with fair labour practices among others; and 4) institutional/educational. While the institutional pillar was incorporated most recently, education has always been related to sustainability. Since Higher Education Institutions (HEI) educate and help mould future generations, it is important that they promote sustainable practices to their students. Communities are demanding that universities need to adapt their teaching methods and activities so that change is becoming essential for these institutions. Reporting progress and debating future policies is one way to ensure that societies see this commitment and also the outcomes of the measures taken by HEI.

This project intends to present and discuss the role ISCTE-IUL has on prosperity as an HEI. Several theoretical models assess the economic impact of HEI in local communities. The literature provides three commonly used models, the American Council on Education model, the Ryan short-cut model and input-output techniques. All models present advantages and disadvantages when applied, however, the American Council on Education model seems to be the superior one, primarily due to two aspects: 1) the use of multipliers that could under or overestimate the results is not required, and 2) the model allows a relative assessment of the amounts obtained so that the results represent an appropriate approximation of the impact on the local economy.

In order to implement the analysis, the first step was to collect data from reliable sources of information such as official ISCTE-IUL reports. When reports were not enough, key employees were interviewed so that their expertise could be used to fill the gaps.

Based on the information, it was possible to state that ISCTE-IUL is in a growing path not only because of the increase in the number of students and employees but also the increase in the number of investigators. This increase in the campus community is creating some financial pressure since the costs are rising at a higher rate than revenues. Throughout the process, it became clear that some of the data was not available, and it was not possible to compute this data with reliable results. This lack of information occurred mainly for variables connected with expenditures such as students' and employees' expenses. It was also not possible to measure impacts related to visitors since ISCTE-IUL does not collect the information required for the models. Therefore, the models described by the literature could not be fully implemented with consistent and robust results hence, the impact of ISCTE-IUL could not be completely assessed. Consequently, the contribution of this project to future research was to report and identify the missing information that is required for the implementation of the models. This was reinforced by the proposal of measures to overcome this obstacle. This project proposes that ISCTE-IUL adapts the existing surveys of student and employee characterization, as well as to develop a platform to register the hours dedicated to volunteering in the name of the institution.

With the implementation of these suggestions, it is expected that future investigators will be able to fully estimate the impact of ISCTE-IUL and provide a clearer answer to which is the contribution of ISCTE-IUL to prosperity as a Higher Education Institution.

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# Abbreviations/Acronyms

| | |
|---|---|
| **ACE** | American Council on Education |
| **FT** | Financial Times |
| **GPSQ** | Gabinete de Planeamento, Sustentabilidade e Qualidade |
| **GRI** | Global Reporting Initiative |
| **HEI** | Higher Education Institutions |
| **IES** | Instituição de Ensino Superior |
| **I-O** | Input-output |
| **PhDs** | Doctor of Philosophy |
| **Q1** | First Quartile |
| **SBE** | School of Business & Economics |
| **SD** | Sustainable Development |
| **SDGs** | Sustainable Development Goals |
| **TBL** | Triple bottom line |
| **UCO** | Universidade Católica Portuguesa |
| **UN** | United Nations |
| **THE** | Times Higher Education |
| **WoS** | Web of Science |
| **WCED** | World Commission on Environment and Development |
| **YA** | Young Audax |

# 1. Introduction

Since the mid-1980s, the concept of sustainability has become more relevant for human activities. Organizations are now starting to realise that the current patterns of consumption cannot be sustained by our planet (Lim, 2017). Therefore, if societies continue to overexploit the natural resources, it is likely that Earth will no longer be so "*hospitable to the development of human societies*" (Steffen et al., 2015: 2). Despite the effort conducted by organizations to comprehend and reduce unsustainable practices, they are magnified by the growth of the global economy (Varey, 2013). In spite of the acknowledged importance of sustainability, it is an abstract concept than can be interpreted in different ways by different people. The lack of an agreement regarding the definition is partly mitigated by the fact the authors defend that it should be based on four pillars 1) economic, which is based on the sustainable growth economies; 2) environmental, linked to nature conservation; 3) social/cultural, regarding fair labour practices; and 4) institutional/educational (Aleixo, Azeiteiro, & Leal, 2018; Labuschagne, Brent, & Van Erck, 2005; Sachs, 2012).

The concerns of the general public are also becoming more focused on sustainable problems. Societies' perception and mentality are changing and therefore, creating pressure for public and private institutions to change the way they conduct business in order to adapt to the new reality. To ensure the that firms are indeed working towards better business practices, stakeholders demand accountability and transparency, "*what gets reported, gets measured; what is not measured, is not managed; and if you are not managing sustainability performance it is difficult to improve it, or know whether it has improved*" (Adams, 2013: 385). It is important that organizations begin to evaluate their current status regarding sustainability. To fulfil this need, management systems and reporting instruments such as the ISO 14000, Global Reporting Initiative, and The Global Compact Carbon Disclosure Project, among others, were developed in order to support institutions to become more transparent and accountable.

Higher Education Institutions (HEI)[1] are responsible for educating and forming future generations; however, their contributions to society go beyond teaching. Throughout the

[1] According the Encyclopaedia Britannica HEI include universities, colleges, professional schools and institutes. For the porpoise of this project the terms HEI and Universities will be used interchangeably accordingly to the references throughout the literature.

literature, authors synthesize the key contributions of universities into six categories (Rehman & Dzionek-Kozłowska, 2016; Rephann, 2009): 1) Employment opportunities since they required faculty and staff to conduct their activities; 2) Economy stimulators, the consumption of goods and services boost other business in their communities; 3) Workforce developers, throughout their core activity of teaching; 4) Innovation incubators, by providing a safe and supportive atmosphere for students to develop their ideas; 5) Real estate developers, by acquiring land and buildings to expand their campuses; and 6) Consultants due to the fact that universities conduct studies and projects in an objective perspective.

Due to the importance of HEI, the pressure to become better and to provide a positive contribution to the environment is becoming stronger. This is causing universities to restructure their mission, curriculum and programmes to meet the demand of society. Before adopting any changes, it is important to take a step back and perform an assessment of the current state. According to the literature, a way of doing this is to assess the economic impact that universities have on their local communities by applying one of the commonly used models. Through the literature, authors defend that the three models that perform better when applied are the American Council on Education model (Caffrey & Isaacs, 1971), the Ryan short-cut model (Ryan & Malgieri, 1992) and the Input-output model (Coughlin & Mandelbaum, 1991). Despite the advantages, all three models present some disadvantages that can create constraints during implementation. The need for extensive data is one of the most common weaknesses of the models since it can become difficult to assess all the required information.

Based on the context that we live in, this project intends to assess the impact of ISCTE-IUL, a Portuguese HEI, in order to evaluate the effect that ISCTE-IUL has in the local community. By doing this, it aims to answer the following research question: "*What is ISCTE-IUL's contribution to prosperity as Higher Education Institution?*". To do so, the structure of this project is the following: Chapter 2 presents the literature review where the most recent and updated literature is analysed, to provide the required information about the topic of sustainability. Chapter 3 addresses the context of this project. Chapter 4 presents the methodology used to gather the information needed to apply the models described in Chapter 2 and the sources used to collect such information. Chapter 5 consists of the contextualization of the chosen HEI, the presentation of the results as well as benchmark with peer HEI. This will be followed by Chapter 6, which will present the

suggestions to overcome the identified difficulties and the timeframe for the implementations. Chapter 7 showcases some conclusions of the project.

# 2. Literature Review

## 2.1 The Concept of Sustainability

Sustainability has gained popularity and is now debated on a daily basis. However, despite the common use throughout the literature, the definition is not well-defined since there are three topics used interchangeably, 1) sustainable, 2) sustainability and 3) sustainable development (SD) (Feil & Schreiber, 2017). One of the earliest definitions was provided in 1987 by the World Commission on Environment and Development (WCED) in the what became known as the Brundtland report. The concept was described as: "*development that meets the needs of the present without compromising the ability of future generations to meet their own needs*" (WCED, 1987: 41).

After the Brundtland report, the topic of sustainability became more prominent in the literature. The idea of sustainability is consistent, however, the exact definition has caused some discussions (Ciegis, Ramanauskiene, & Martinkus, 2009). Some examples that are present in the literature include the definition such as: *"improving the quality of human life while living within the carrying capacity of supporting ecosystems"* (IUCN, UNEP and WWF, 1991: 10); "*development that lasts*" (World Bank, 1992: 34); "*means living within environmental constraints of absorptive and regenerative capacities*" (Costanza *et al.*, 1997: 182); or finally, "*process for improving the range of opportunities that will enable individual human beings and communities to achieve their aspirations and full potential over a sustained period of time, while maintaining the resilience of economic, social and environmental systems*" (Munasinghe, 2004: 2).

Another problem that arises in the definition of sustainability is the topic of corporate responsibility. Despite the fact that corporate responsibility was introduced in the 1950s by researchers, who claimed that moral responsibility should be a key factor in managers' decisions (Bansal & Song, 2017), and sustainability was introduced as a framework to stop the excessive exploitation of resources, in recent years the words responsibility and sustainability have often been used ambiguously and inconsistently because they share an interest in the business-society relationship. While the term responsibility was related to the negative impact of markets on society, sustainability, on the other hand, has been more associated with the negative impact of economic development on the environment. In the early years of the 21$^{st}$ century, the two concepts

have converged since both are currently focused on good environmental and social practices (Bansal & Song, 2017).

The merging of definitions is perceived in recent literature, with (Hart and Dowell, 2011: 1466) defending that sustainable development is "*not restricted to environmental concerns but also involves focusing on economic and social concerns*". Similarly, (Cheng, Ioannou and Serafeim, 2014: 2) described corporate social responsibility as "*the voluntary integration of social and environmental concerns in their companies' operations*". This happened because responsibility studies acknowledge that the management of the natural environment is included in social issues, and sustainability studies realized that society was an important factor in environmental systems.

Despite the similarities, there are still some distinctive factors, the main purpose of responsibility is to establish the moral responsibility of managers towards society and the environment. On the other hand, sustainability aims to highlight the links between environment, economics and society, so that all systems can be sustained intertemporally (Bansal & Song, 2017).

### 2.1.1 Dimensions of Sustainability

It is possible to perceive that different authors use different definitions, however, environmental, economic and social goals are symbols of sustainable development and serve as agreement across the world (Sachs, 2012).

Having this association in mind, the literature denominates the three concepts as dimensions of sustainability. Elkington (1997), provides a framework for assessing performance using the three dimensions, economic prosperity, environmental quality and social justice (Elkington, 1997). The framework was called Trible Bottom Line (TBL), and the agenda of TBL defends a balance between the lines. Economic prosperity relates the company growth with the growth of the economy and the ability to support future generations (Alhaddi, 2015). To assess the economic line, firms need to analyse a wide variety of data to provide an answer to questions such as: Are costs competitive and if so, will they remain competitive? Is demand sustainable? Is innovation competitive in the long term? (Elkington, 1997). The social line is based on the relationship between the community and organizations. It focuses on fair business and labour practices such as fair wages, health insurance (Alhaddi, 2015). The last line, the environmental, is linked to the efficient use of energy and resources in order to not

compromise the needs of future generations (Alhaddi, 2015). Different authors state that the environmental dimension is based on green construction of campus and buildings, recycling and using clean energy sources (Aleixo et al., 2018). In recent literature, authors have identified not three but four dimensions of sustainability, economic; environmental; social/cultural; and institutional/educational (Aleixo et al., 2018; Labuschagne et al., 2005; United Nations, 2001). The recent dimension, institutional/educational, is primarily concerned with the mission and values of the institution (Aleixo et al., 2018).

Human activity is pushing ecosystems to a dangerous path which can lead to a negative outcome for the planet, therefore, the pressure to prevent this crisis is becoming stronger (Sachs, 2012). Due to this pressure, the United Nations developed the "*2030 Agenda for Sustainable Development*", following the previous agenda of the Millennium Goals (2000-2015). The 2030 agenda is described by the UN as: "*the blueprint to achieve a better and more sustainable future for all"*[2]. This blueprint incorporates 17 goals (Sustainable Development Goals, hereafter SDGs) related to the three milestones that the world agrees for sustainable development (environmental, economic and social). The 17 goals are divided into 5 pillars: 1) people, 2) peace, 3) prosperity, 4) planet, and 5) partnerships. It is possible to establish a relation between the five pillars and the dimensions of sustainability which reinforces the importance of focusing on sustainability, instead of centring the attention on the environment. The SDG logic implies that the goals depend on each other (Nilsson, Griggs, & Visbeck, 2016), and offers a holistic and multidimensional point of view on development (Pradhan, Costa, Rybski, Lucht, & Kropp, 2017). This implies that even when dividing the SDGs into the five pillars, it is not possible to speak about one without connecting it with others. An example provided to explain these connections can be: educational efforts for girls (goal 4) in developing countries would improve maternal health outcomes (goal 3), and promote poverty eradication (goal 1), gender equality (goal 5) and economic growth (goal 8) (Nilsson, Griggs, & Visbeck, 2016).

[2] United Nations website, available at: https://www.un.org/sustainabledevelopment/sustainable-development-goals/, accessed on 18th January 2020.

### 2.1.2 Sustainability in Businesses

The most commonly used definition of sustainability, defined by the World Commission on Environment and Development, presents a downside, as it is difficult to make operational (Pojasek, 2012). To correct the lack of an operational explanation of sustainability stated by Pojasek (2012), the author suggests the definition: "*Sustainability is the capability of an organization to transparently manage its responsibilities for environmental stewardship, social well being, and economic prosperity over the long term while being held accountable to its stakeholders*" (Pojasek, 2012: 94).

To comprehend this definition, it is important to understand what a stakeholder is. The explanation provided by Freeman is "*Any group or individual who can affect or is affected by the achievement of the firm's objectives*" (Freeman, 1984: 25).

Pojasek (2012), defends that the engagement of stakeholders is a key factor in the practice of sustainability. For such engagement to be effective stakeholders must be aligned with the organization's strategy, which can only occur if the process is fair, genuine and well informed. There are two key concepts that contribute to the fairness of the process, which are transparency and accountability.

*On the one hand, "Transparency is the perceived quality of intentionally shared information from a sender"* (Schnackenberg and Tomlinson, 2014: 5). It is essential that organizations must share information timely and factual so that stakeholders can accurately assess the impact of the organization. On the other hand, *"Accountability is the obligation to report to others, to explain, to justify, to answer questions about how resources have been used, and to what effect"* (Trow, 1996: 2). The demand for accountability is significant since this can have a positive impact on the organization (Pojasek, 2012). For instance, it can build trust not only from employees but also from the general public; it helps define the goal, creating deadlines for important tasks; it also contributes to identifying new challenges that were not considered at the beginning of the project, and ways to prevent such challenges; and lastly, it prevents businesses from repeating the same mistakes.

As previously mentioned, the relevance of sustainability is increasing, and the accountability for reliable sustainability data and reporting is rising with it (Islam, Jain, & Thomson, 2016). To satisfy the need accountability, a wide range of tools were developed: Global Reporting Initiative (GRI); SIGMA Project; DSPIR Framework; The

Global Compact; Carbon Disclosure Project (CDP); World Business Council for Sustainable Development (WBCSD); Greenhouse Gas Protocol (GHG Protocol); Broad principle-based frameworks; The ISO 14 000 Series; and many others (Ceulemans, Lozano, & Alonso-Almeida, 2015). To understand which tool was considered to be more influential in multinational corporations, the World Bank and International Finance Corporation performed a study in which they reach a conclusion that companies preferred the ISO 14 000 Series followed by GRI (Berman, Webb, Fraser, & Harvey, 2003).

The ISO 14 000 Series is a "*management systems that identify, control, and monitor environmental risks"*(Woellner, 1997: 12), it provides guidelines so a business can control and monitor the pollution produced by them (Gupta & Racherla, 2016). The key theme defended in the ISO 14 000 is the consistency in environmental management practices without compromising the flexibility of firms to create their own process in order to reach goals in the most efficient way (Woellner, 1997).

The Global Reporting Initiative (GRI) created the GRI Sustainability Reporting Standards. These standards help organizations to communicate their impact on key aspects of sustainability and to make the reporting easier for subjects such as climate change, human rights and economics. The standards were developed with multi-stakeholder inputs and rooted in the public interest. The Standards are divided into two main categories: 1) Universal Standards and, 2) Topic-specific Standards. The first category includes three universal Standards that can be used when preparing a sustainability report. The Topic-specific Standards are divided into three groups: economic, environmental, and social.

The number of businesses that publish sustainability reports is rising, but the number is immaterial when compared to the total number of companies that are in business (Lozano, Llobet, & Tideswell, 2013).

Whether the motivation is the concern for the environment, the community or profit, the outcome should be that managers make significant changes in their policies regarding the environmental impacts of their institutions. Therefore, the challenge is no longer "whether" to fit the environment and the economic impacts into day-to-day management where the main concern is how to increase short-term profit but "how" to integrate it. The focus should be on how to improve corporate social performance without compromising financial performance (Epstein, 2009).

### 2.1.3 Sustainability in Higher Education

As previously mentioned, the pressure that society lays on firms to become more sustainable is increasing. Nowadays, public and non-profit organizations are also feeling this pressure to shift towards new behaviours and policies that are environmentally friendly as well as socially responsible, while maintaining financial sustainability.

Higher Education Institutions have a key role in helping the development of communities, their contribution can be classified into six categories 1) creating jobs, 2) stimulation of the local economy, 3) workforce developers, 4) fostering innovation, 5) real estate developers and 6) consultants (Rehman & Dzionek-Kozłowska, 2016; Rephann, 2009). In order to conduct their activities, universities require staff, and goods and services from third parties, thus creating jobs and stimulation the economy. The main activity of HEI is to teach and prepare students to enter the job market so, workforce development is the most commonly known contribution. Universities are strongly correlated with innovation and development by promoting research and a prosperous environment to create and debate ideas, consequently creating solutions for uprising crises. The fifth category connects to the university grounds, it is expected that as universities grow so does the need for a wider campus, which leads to investments in real estate properties. The last contribution refers to the studies and projects produced by the institutions proposed not only by government agencies but also by local businesses (Rehman & Dzionek-Kozłowska, 2016).

Universities have a significant influence on future generations, thus shaping future leaders. This influence is direct through knowledge and education transfer, but also indirect, through the example set within the university by its sustainability performance management. So, universities are expected to be on the front line of sustainability practices (Adams, 2013). Since the 1972 Stockholm Declaration, the role of education in environmental concerns is well established. The principle 19 states that "*education in environmental matters, for the young generation as well as adults*" (United Nations, 1972: 3). However, the first declaration that mentioned the role of higher education was the Talloires Declaration[3]. This document consists of 10 measures that presidents, vice-chancellors and rectors from universities from all around the world agreed on applying in their institutions in order to build a sustainable future.

[3] Available at: http://ulsf.org/talloires-declaration/, accessed on 18th of January 2020

Sibbel (2009), defended that students of higher education are in a formative stage so, they have the capability to assimilate the different dimensions of sustainability and are encouraged to find solutions to problems (Sibbel, 2009). This means that HEI are the place where the future generations are trained, so, "*the higher education sector bears a significant responsibility for sustainability by virtue of its influence on society and academic freedom to explore ideas"* (Sibbel, 2009: 74).

Based on the previous authors, it is possible to see that higher education has a key role in sustainability. Davis, Edmister, Sullivan and West (2003), decided to conduct a study in two HEI. The purpose of this study was to provide data concerning the incorporation of the concepts of sustainability into education. The main results were that the leaders of both institutions had a personal belief and commitment to the concept of sustainability, which can be a key factor in the integration of sustainability into teaching; and finally, the faculty and students perceived that the integration of sustainability is a benefit for individuals and the institution itself (Davis, Edmister, Sullivan, & West, 2003).

Knowing the benefits of integrating sustainability in HEI, the Times Higher Education (THE) decided to create a raking to help universities understanding their current situation when compared to peer institutions. This can lead to a self-evaluation process that can stimulate changes in behaviour by constructing a ranking that connects HEI policies with the SDGs. The THE bases its analysis[4] on 11 of the 17 goals, specifically numbers: 3 - Good health and well-being; 4 - Quality education; 5 - Gender equality; 8 - Decent work and economic growth; 9 - Industry, innovation and infrastructure; 10 - Reduced inequalities; 11 - Sustainable cities and communities; 12 - Responsible consumption and production; 13 - Climate action; 16 - Peace, justice and strong institutions; and 17 - Partnerships for the goals. The raking considers three broad areas, research, management policies and outreach which are converted to an index used to rank universities according to their policies and contributions, higher indexes represent better performances.

The HEI that choose to follow a SD path and promote it, do it by developing a new mission, reorganizing their curriculum, adapting their research programs, including green buildings design, fostering social engagement and, lastly, assessing and reporting

[4] Available at: https://www.timeshighereducation.com/news/university-impact-rankings-2019-results-announced, accessed on 18th of January 2020

these actions to stakeholders (del Mar Alonso-Almeida, Marimon, Casani, & Rodriguez-Pomeda, 2015; Watson, Hegtvedt, Johnson, Parris, & Subramanyam, 2017). However, as was previously mentioned the number of businesses that perform sustainability reporting is growing, but it is not relevant when compared to the total number of corporations, and this number is even smaller when the focus is HEI (Lozano, Llobet, et al., 2013). A search for planning documents on university websites revealed that only a limited number takes into consideration the impact of the university on sustainability through education and community engagement (Adams, 2013). In her study on sustainability reporting and performance management in universities, (Adams, 2013: 385) defends that: "*what gets reported, gets measured; what is not measured, is not managed; and if you are not managing sustainability performance it is difficult to improve it, or know whether it has improved*". Thus, it is possible to conclude that despite the number of documents that underline the importance of HEI in sustainability, the number of universities committed to sustainable development is low (Lozano, Lukman, Lozano, & Huisingh, 2013). A reason that can explain the low commitment is the barriers that universities face when shifting to more sustainable practices such as the ambiguity of the sustainability concept; lack of financial resources; resistance to change; organizational rigidity; lack of commitment; and lack of training (Aleixo, Leal, & Miranda, 2016).

## 2.2 Models to Describe Economic Impact

Many authors provide a wide range of methods to measure the economic impact of HEI (Coughlin & Mandelbaum, 1991; Garrido-Yserte & Gallo-Rivera, 2009; Ryan & Malgieri, 1992). These methods will now be presented and discussed. The models can be divided into two categories, with the first group characterised by demand-side effects, which are related to expenditure and its impact on the local economy. The second one, called the supply-side effect, refers to human capital and research.

### 2.2.1 Demand-Side Effects

There are three common methods to calculate the impact of universities on the demand side: the American Council on Education model (ACE) (Caffrey & Isaacs, 1971), the Ryan short-cut model (Ryan & Malgieri, 1992), and input-output techniques (I-O) (Coughlin & Mandelbaum, 1991).

The ACE model (Caffrey & Isaacs, 1971) is the traditional approach. The authors identified the economic impacts that a university would create to the local community and proposed simple models for each impact. They concluded that the direct impacts can be organized according to four affected groups: 1) local expenditures related with the university (equipment, supplies, communications); 2) workers' local expenditures; 3) students' local expenditures; 4) and visitors' local expenditures. The data needed to implement the ACE model are collected from surveys of students, professors and employees and applying the retail gravity model which is used to compute the non-related housing expenditures of the employees and students in a geographic area. According to Ryan and Malgieri (1992), the retail gravity model allows investigators to assess the percentage of non-housing expenditures that individuals are more likely to make in their local environment. The model was developed based on the gravity theory that states that the amount of money spent in non-housing expenses is inversely proportional to the square of the distance to the point of acquisition (Ryan & Malgieri, 1992).

Many authors have considered the ACE model too difficult to implement, so they developed some adaptations. Leslie and Lewis (2001) produced a simplified version of the model (Simplified ACE method) in which they propose eight categories to assess the impacts. However, with further research, they find that two of the eight categories concentrate the larger part of the impacts. In particular, the number of local businesses related to the university and the generation of jobs due to the presence of the university by the presence of the university is sufficient to assess the impacts correctly. This makes it easier to implement the Simplified ACE model (Leslie and Lewis, 2001). Ryan's short-cut model (Ryan & Malgieri, 1992) is an additional model that aims to simplify the ACE model. Since collecting data through surveys is time-consuming, Ryan proposed a different method of collecting data. Instead of surveys, the data should be collected from existing local and national sources. The main issue with this model is that by using Datasets instead of the Retail Gravity model, used in the ACE studies, the values are considered conservative since it includes direct expenses of the institution, of students and faculty and it excludes visitors' expenditures and human capital effects. Another problem that arises with Ryan's model is that it does not estimate job creation.

The last method to calculate economic impacts on the demand side is the Input-Output model. An I-O model is a mathematical representation of how the sectors of an economy are connected (Coughlin & Mandelbaum, 1991). The main variables are the

outputs of the sectors into which the model is divided. These are equal to the sum of sales to other industries and to the final demand. The I-O model not only describes the flow of goods and services and final demand between sectors but also allows the determination of the output that each industry needs to fulfil final demand. Like every model, the I-O has some limitations such as, the assumption of constant returns to scale, it is a static model, it assumes that supply is infinite and perfectly elastic, the assumption that each industry produces only one product and the assumption that consumption has homogeneous equations meaning that inputs are not substituted (Rey, 1999).

Despite the limitations, this is the most commonly used model by American HEI since it allows for easier comparisons between the different institutions. Additionally, the I-O model has two more important advantages: it allows the assessment of direct, indirect and consumer-induced effects; and the availability of the tables allows the disaggregation of the information (Garrido-Yserte & Gallo-Rivera, 2009). In particular, Garrido-Yserte and Gallo-Rivera (2008) compare the methods described above, providing a table with the perceived advantages and disadvantages (Table 1).

Garrido-Yserte and Gallo-Rivera decided to conduct a case study in which they applied the three models to the same HEI. The focus of their study was the University of Alcala in Madrid, and the main conclusion withdrawn from their case study was that the Simplified ACE model was superior when compared to the I-O model and the Ryan short-cut model. There are three main reasons that Garrido-Yserte and Gallo-Rivera point out for this conclusion: the estimation of the impacts in terms of local expenditure has been carried out in a direct way and the use of multipliers that could under or overestimate the results has not been required; it considers the productivity ratio in the public services sector to obtain the indirect effect upon employment instead of the employment multiplier used in the I-O; and even if results cannot be compared with other studies, due to different methodologies, it still allows a relative assessment of the amounts obtained so that the results represent an appropriate approximation of the impact on the local economy.

*Table 1 - Advantages and Disadvantages of Methods to Assess the Economic Impact on the Demand-Side.*

| **Methods** | **Advantages** | **Disadvantages** |
|---|---|---|
| ACE method | - Through simple models the model analyses the economic impact of a university upon local businesses or companies, local individuals and local administration;<br><br>- The impacts are estimated from information with an ample level of detail, and directly coming from surveying the principal agents;<br>- It allows the assessment of the direct and indirect effects of the principal agents of the University (University, Staff, Students, Visitors) From a strategical perspective, the method identifies who and how expend? and so the multipliers of some collectives could be potentially augmented; | - The total expenditure is considered as "new" expenditure in the influencing area; it is multiplied in several formulas and therefore large impacts;<br><br>- It is costly in terms of collecting information based on surveys done on students, employees, visitors, local businesses, etc., not only because of the time used but because of the low answer rate;<br>- It requires a serial of hypothesis about crucial parameters and multipliers;<br>- The inherent mathematical complexity of retail gravity model in order to determine the percentage of expenditures of an individual, not related to housing, in the local environment; |
| I-O model | - The method uses secondary information to estimate the impacts upon the local economy;<br>- It is the most used technique mostly used in this type of studies, allowing the comparison between universities and territories;<br>- It allows the assessment of the direct, indirect and consumers' induced effects;<br>- The availability of the Input-Output product tables allows the disaggregation of the information required in the model; | - It is a short-term model since it assumes the consistency of the structural coefficients of a given year and provides the effects that an exogenous demand shock has in the year analysed;<br>- The productive structure is constant and does not seem to be affected by the investment;<br>- The input-output model is linear and does not contemplate substitution of factors nor scale economies; |
| Ryan short-cut model | - The method is effective as long as there are strong secondary information sources that allow the estimation of the parameters needed in the model; | - It requires a serial of hypothesis about crucial parameters and multipliers;<br>- Indirect effects could be overestimated; |

Source: Garrido-Yserte and Gallo-Rivera, (2008: 48-49)

## 2.2.2 Supply-Side Effects

Authors like Caffrey and Isaacs (1971) and Blackwell (2002) defend that models that assess the impacts on the demand-side underestimate the real value of impacts since non-monetary impacts are not considered (Blackwell, Cobb, & Weinberg, 2002). The majority of studies only use models on the demand-side because the impacts of the supply-side are not easily determined. The main problem with the supply-side literature

is that the model is not developed properly, and empirical studies have triggered conflicting and disappointing results.

In 2013, Smith stated that the purpose of the universities is to provide education services to the population, not explicitly to create jobs (Smith, 2013). The author defends that after the primary purpose there are many more responsibilities that the university has to the community, such as to generate ideas and technologies, deliver information and knowledge, and to provide a reservoir of resources for the region. These are supply-side functions. It is difficult to put values into these functions, but the more delineation of these impacts can be instructive.

Since supply-side analyses are important in the decision-making process, analysts are advised to include them in their studies. Smith (2013) refers to two main methods: the first one is to roughly estimate the value of the benefits into an analysis of net social gain, which, if done correctly, can be insightful. The second and most common approach is to simply delineate the benefits and whenever possible to correlate them with measures of economic activity.

# 3. Project Framework

Based on the literature, it is possible to perceive the increasing demand for accountability and transparency. The pressure set by stakeholders is forcing organizations to start reporting on their current commitment to sustainability. However, as described in the literature, sustainability is a broad concept that can create some uncertainty on what organizations should report on. Some corporation can focus on one specific pillar of sustainability such as economic or environment other can report on the all concept. A way of making this process easier can be to choose a set of SDGs and assess the current status on the existent policies related to those targets. Subsequently, the results should be reported in order to improve the current contributions and to satisfy the demand set by communities on accountability.

Some of the main contributions of HEI such as job creation, teaching future workforce and innovation have an impact on the local economy. Therefore, it is important to understand the current economic impact of these institutions. A way to perform this impact study is to apply one of the many theoretical models described throughout the literature. According to various authors, there are three models that present the best advantages, the ACE model (Caffrey & Isaacs, 1971), the Ryan short-cut model (Ryan & Malgieri, 1992), and I-O (Coughlin & Mandelbaum, 1991).

Based on the context set by the literature and the benefits that arise from an impact study, this project aims to assess the impact of ISCTE-IUL has on prosperity. To do so, it is proposed to use the models described in section 2.2 an apply them to the HEI in focus for this project. It is expected that by knowing the impact, it is possible to understand the present contribution that the HEI has on prosperity. This analysis will be focused on three points, 1) connection of the theoretical models to prosperity, 2) assessing the economic impact, and 3) benchmark.

# 4. Methodology

## 4.1 Identification of the Data Collection Needs

According to the literature review, in order to fully assess the economic impact of HEI, a complete and detailed dataset would be required. Having this in mind, the first step was to collect the indicators that are used throughout the different models: the ACE model (Caffrey & Isaacs, 1971), the Ryan short-cut model (Ryan & Malgieri, 1992), and the I-O model (Coughlin & Mandelbaum, 1991). To assemble the variables, it was necessary to study not only the theory of each model but also to research practical cases that allowed for a deeper understanding of how the models work.

Since this project is integrated into the topic of prosperity, the impact assessment while not be exclusively economic as defended by the models but rather an integration between the several pillars and the theoretical background. Therefore, in order to choose the best model, it was necessary to compare the indicators used to implement the models with SDG targets. However, the SDG encompass 17 goals that cover many aspects of sustainability. Given that some goals do not have a prominent role when applying the economic assessment models, it was necessary to select the most relevant ones. The goals that had a stronger correlation with the topic in this study were number 8 – "P*romote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all*"; number 9 – "B*uild resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation"*; goal number 11 – "*Make cities and human settlements inclusive, safe, resilient and sustainable";* and lastly number 12 – "*Ensure sustainable consumption and production patterns"* (UN, 2015: 14). Since the goals are broad, it was necessary to look at the targets associated with each goal.

The targets that were considered to add value to this study are chosen according to the contributions of HEI described in the literature review. Since innovation and preparing the future workforce population are central contributions of universities, it was determined that the targets that were more associated with these impacts were the most relevant to perform the comparison. The chosen targets include not only concrete outcomes that arise from the innovation performed at university, such as scientific research or new enterprises but also the ones that promote green and sustainable

education. The SDG targets chosen for comparison with the theoretical models are specified in appendix[5].

Based on the practical application of the models, it was possible to list the common variables described by the different models. These indicators were computed into a table where it is possible to perceive to what model correspond which variable. The following phase was to compare the chosen SDGs targets with the collected indicators from the models.

Target 8.5 promote full and productive employment and decent work therefore it can be connected with the variable Number of employees and the University expenses with employees. The youth not in employment, education or training (Target 8.6), the inspiration for companies to adopt sustainable practices (Target 12.6) and the promotion of relevant information and awareness for sustainable development (Target 12.8) can be achieved by HEI promoting and teaching their communities. Thus, the number of national and foreigner students and the number of visitors establish a relation between the models and SDGs. The set of indicators related with the scientific outcomes of universities such as the number of investigators, publications, patents and companies created are strongly related to the majority of the chosen targets from goal number 8 and 9 because goals promote scientific research, innovation and creation of enterprises (Targets 8.2; 8.3; 9.5 and 9.B).

After assessing the variables used by the models and targets utilized to measure the progress in the SDGs goals, a table was developed to summarize and present the information (Table 2). The main output of the table was that the I-O model was the one with the most similarities with the SDGs targets. Nevertheless, this model has some disadvantages, namely, it is difficult to construct the Input-Output tables due to the need for wide and detailed information.

[5] Available in Appendix A

*Table 2 - Correlation Between the Indicators Used by the Theoretical Models and the Targets Proposed by the SDGs.*

| Indicator | Indicator Description | Model | | | SDGs |
|---|---|---|---|---|---|
| | | I-O | ACE | Ryan's Short-cut | |
| Number of employees | Number of employees with effective contracts | X | X | X | X |
| Number of local employees | Number of employees that did not relocate to perform activities at the HEI | | | X | |
| Total number of students | Number of students including bachelor, master, integrated master, PhD and Postgraduation | | | X | X |
| Number of students from Lisbon | Number of students that did not relocate to attend the HEI | | | X | |
| Number of foreign students | Number of students that do not have the same nationality as the Institution | X | X | | X |
| Number of university visitors | Number of people that visit the region due to family or friends being part of the HEI community | X | | X | X |
| University incomes | Revenues received by the HEI as a result of its activity | X | | | |
| Total university expenses | Costs that the HEI incurs to conduct its activity | X | X | X | |
| University expenses with employees | Wages and social charges received by employees as payment for their work at the HEI | X | X | X | X |
| University administration and taxes expenses | Taxes paid by the HEI to the local government | X | X | | |
| Total employee's expenditures | Employees expenses on a daily bases (ex: food, housing, transportation, education…) | X | X | X | |
| Total students' expenditures | Students expenses on a daily bases (ex: food, housing, transportation, education…) | | X | X | |
| Total visitors' expenditures | Visitors expenses per visit (ex: food, housing, transportation, education…) | X | X | X | |
| Accommodation expenses in Lisbon | Employees and students' expenses with housing | | | X | |
| Expenses done in Lisbon by the economic agents who are neither employees or students but whose incomes are university's related | Local expenditures done by local agents that are not student or staff | | X | | |
| Number of full-time jobs generated from each € spent by the university community in Lisbon | How many jobs can be generated by investing 1€ on the community | | X | | |
| Number of local businesses related to the university | Number of business that exists to fulfil the demand created by the HEI and its players | | X | | |
| Value of durable goods produced by activities related to the university | Goods acquired with income received from HEI or businesses create due to the HEI (ex: car, house) | | X | | |
| Income increase as a result of the academic degree | The expected increase in income as a consequence of the degree from the HEI as a comparison with other institutions over the course of the active life | X | | | X |

| | | | | | |
|---|---|---|---|---|---|
| Number of companies created by alumni | Companies developed by employees and students while attending the HEI | X | | | X |
| Job creation as a result of companies created | The number of jobs created on companies built by employees and students. | X | | | X |
| Number of hours dedicated to volunteering | Hours of volunteering conducted by employees and students on campus or in the name of the HEI | X | | | |
| Number of scientific awards | Awards provided from external entities | X | | | |
| Number of investigators | Total number of investigators integrated on research teams | X | | | X |
| Number of publications | Number of publications in journals from external entities | X | | | X |
| Number of patents | Number of patents developed by employees and students while attending the HEI | X | | | X |
| Number of honorary PhDs | Honorary PhDs granted to influential personalities (had a positive influence on the community) from the HEI | X | | | |
| Network of international internships | The number of HEI students enrolled in outgoing mobility programmes (ex: Erasmus, Internships…) | X | | | |

## 4.2 Data Collection and Analysis Techniques

The process of collecting data was the next step. In order to guarantee reliable and trustworthy information, the primary data source was official ISCTE-IUL reports. To fully comprehend some of the variables that were not available through the reports or that were not as detailed as the models require, key employees were interviewed to fill the gaps. The secondary data source was ISCTE-IUL official website where it was possible to gather complementary information.

The reports that were chosen to create the database were the Activity Plan, Activity Report and Financial Statements. By analysing ISCTE's Financial Report, it was possible to assess the variables directly correlated with income and expenses like Employees Income; Administration and taxes; Number of local business related to the University; and University Income. The remaining variables were collected in the Activity Plan and Activity Report. These sources and correspondent indicator are summarized in Table 3. This project all so collected data through conducted interviews with the Social Services and the Studies, Planning and Quality Office of ISCTE-IUL.

*Table 3 - Sources of Available Data for ISCTE-IUL*

| Indicator | Source |
|---|---|
| Number of employees | Activity Report [1] |
| Total number of students | Activity Report [1] |
| Number of students from Lisbon | Students Characterization Study [2] |
| Number of foreign students | Activity Report [1] |
| University incomes | Financial Report [1] |
| Total university expenses | Financial Report [1] |
| University expenses with employees | Financial Report [1] |
| University administration and taxes expenses | Financial Report [1] |
| Number of companies created by alumni | Activity Report [1] |
| Job creation as a result of companies created | Activity Report [1] |
| Number of scientific awards | Activity Report [1] |
| Number of investigators | Activity Report [1] |
| Number of publications | Activity Report [1] |
| Number of patents | ICTE-IUL's Repository [3] |
| Number of honorary PhDs | ISCTE-IUL's Website [4] |
| Network of international internships | Activity Report [1] |

[1] Available at: https://www.iscte-iul.pt/contents/iscte/quem-somos/1070/documentos-institucionais, accessed on 29th January 2020

[2] Available at: https://www.iscte-iul.pt/conteudos/iscte/qualidade/estudos-relatorios/50/novos-estudantes-caracterizacao-fontes-de-informacao-fatores-de-atracao-iscte-curso, accessed on 29th January 2020

[4] Available at: https://repositorio.iscte-iul.pt/handle/10071/227, accessed on 29th January 2020

[3] Available at: https://www.iscte-iul.pt/conteudos/iscte/premios/57/doutoramento-honoris-causa, accessed on 29th January 2020

Since the evolution of the indicators was also a component of this project, a longitudinal analysis, including the years 2016, 2017 and 2018 was performed. Since ISCTE-IUL changed its accounting framework to the Accounting Normalization System for Public Administration, some of the numbers were not accounted for using the same method and others were no longer accounted for. It is possible to see an example of this in the Effects upon Administration and taxes indicator, it was possible to assess the value for 2016 and 2017 however, for 2018 the value was not available and therefore, not presented.

Other indicators present in the models are not measured by the institution. Nevertheless, it is possible to calculate them based on the information available. The

number of local students is not published in any report but, ISCTE-IUL provides a Social-demographic Characterization report in which the percentage of students that were born in the Lisbon district appears. This was used to calculate the number of local students. According to this report, in 2016, 56% of bachelor and 63% of master students were from Lisbon; in 2017 the percentage increased for both levels, 57% in bachelor and 66% in master; and lastly, in 2018, 59% of bachelor students and 61% of the master were from Lisbon. ISCTE-IUL does not provide information for PhDs and other Postgraduate degrees, therefore, it was assumed that they were similar to the trends in master students. This assumption was based on the fact that students are more likely to move to a different city when enrolling in bachelor programs than when they continue to further studies.

The number of local business related to the university is another example of a variable that is not measured by ISCTE-IUL but is it possible to assess using available information. To compute the value, it was necessary to add the expenses related to external suppliers with the cost of goods sold and materials consumed. By adding these two values, it is possible to understand the business generation that occurs due to the existence of ISCTE-IUL.

Despite the fact that some of the data could be estimated using accessible information, for some, this was not possible to calculate with the consistency necessary to implement the models with robust and resilient results. In order to be able to apply the models in the near future, this thesis will provide some suggestions, based on the literature review and employee experience, to fill the gaps of missing information.

# 5. Analysis

## 5.1 Contextualization of ISCTE-IUL

ISCTE-IUL is a public university, located in Lisbon, that was created in 1972. Based on 2018 Activity Report[6], currently, the institution provides 15 undergraduate programmes, 49 masters, 22 PhDs, and 24 postgraduates. ISCTE-IUL's mission is*: "to create and convey scientific knowledge according to the best international standards, training highly skilled professionals, mainly at the postgraduate level, in the areas of management, information technology and architecture, social sciences and public policy, for the advancement of society*."[7]

Having this mission in mind, ISCTE-IUL defends that ethics is a crucial pillar in the quality of teaching and investigation (GPSQ, 2018). Knowing that corruption is a breach of ethics, transparency, and justice, the university created a Risk Management Plan with the purpose of preventively minimizing the impact of corruption. This plan consists of a grid that identifies the main management risks and corruption in all activities as well as measures of prevention to adopt. Another main pillar is sustainability. As previously mentioned, the literature defends four dimensions of sustainability, 1) economic; 2) environmental; 3) social/cultural; and 4) institutional/educational (Aleixo et al., 2018). ISCTE-IUL is aligned with the literature in the sense that it takes into consideration all four dimensions in its operational practices (GPSQ, 2018). Additionally, ISCTE-IUL aims at contributing to sustainable development through teaching, research, professional training and proposing new solutions for social and environmental issues.

The importance of higher education is well established and supported by the literature; thus, universities must engage in all topics related to sustainability. It is possible to state that ISCTE-IUL recognizes its responsibilities towards the environment, and its commitment to the SDGs is well established. In a document released in 2017, the institute states that their main goals related with the SDGs are "*promoting the integration of sustainability contents in Curricular Units in the three study cycles*" and "*increase research activity directed towards the achievement of the Sustainable Development*

[6] Available at: https://www.iscte-iul.pt/contents/iscte/quem-somos/1070/documentos-institucionais, accessed on 29th of January 2020
[7] Available at: https://www.iscte-iul.pt/conteudos/iscteiul/about-us/542/mission-and-vision, accessed on 18th of January 2020

*Goals*". [8] In 2018, ISCTE's commitment towards sustainability was recognized by receiving the ISO 14001 certificate, which guarantees that the institution is working towards adequate environmental management and promoting sustainable actions in the community. Being the first Portuguese university to ever receive this certification creates some pressure to keep improving but also set the tone for other HEI to follow the path of sustainability.

The combined concern of ISCTE-IUL with sustainability and the increasing demand for transparency and accountability described in the literature resulted in the need to evaluate the current status of ISCTE-IUL towards prosperity. It is expected that this evaluation brings a set of benefits to ISCTE-IUL such as, define new goals for sustainable practices and design policies to fulfil them, avoid mistakes and build trust with the community.

## 5.2 Application of the Theoretical Models

The models discussed in the literature are used to measure the economic impact that HEI have in the local community. In order to assess the value of the impact, the models require a set of information that can be divided into three categories, 1) community characterization; 2) expenses; and 3) university outcomes. The community characterization consists of information such as the number of students and employees and how many of them are local, meaning that they already lived in the area and did not have to move to study or work at the university. The second category, expenses, includes variables related to the expenditures not only from students and staff but also the institute itself and visitors. The university outcome is a more wide category since it includes data such as the number of patents, number of companies created, number of research projects and publications, number of hours dedicated to volunteering and many others. This category includes everything that students develop during the degree with the support of the university or in its name and also employees' contributions while working at the HEI.

A table was developed in which all the indicators described in the different models were listed (Table 3) with the purpose of studying the evolution of data throughout the three years.

[8]Available at: https://www.iscte-iul.pt/assets/files/2019/01/08/1546950457349_Sustainability_Highlights_2017.pdf, page 8; accessed on 18th of January 2020

*Table 4 - Summarized Data of ISCTE-IUL for the Indicators Described by the Theoretical Models.*

| Indicator | Year | | |
|---|---|---|---|
| | **2016** | **2017** | **2018** |
| Number of employees | 728 | 827 | 867 |
| Number of local employees | - | - | - |
| Total number of students | 9 283 | 9 337 | 9 641 |
| Number of students from Lisbon[1] | 5 550 | 5 782 | 5 796 |
| Number foreign students | 1 684 | 1 146 | 1 392 |
| Number of university visitors | - | - | - |
| University incomes[2] | € 44 525 422 | € 46 974 375 | € 48 967 662 |
| Total university expenses[3] | € 42 942 687 | € 46 382 583 | € 48 967 882 |
| University expenses with employees | € 28 349 748 | € 30 290 527 | € 32 934 063 |
| University administration and taxes expenses | € 120 192 | € 144 251 | - |
| Total employee's expenditures | - | - | - |
| Total students' expenditures | - | - | - |
| Total visitors' expenditures | - | - | - |
| Accommodation expenses in Lisbon | - | - | - |
| Expenses done in Lisbon by the economic agents who are neither employees nor students but whose incomes are university's related | - | - | - |
| Number of full-time jobs generated from each € spent by the university community in Lisbon | - | - | - |
| Number of local businesses related to the university[4] | € 7 024 092 | € 7 173 174 | € 7 267 540 |
| Value of durable goods produced by activities related to the university | - | - | - |
| Income increase as a result of the academic degree | - | - | - |
| Number of companies created by alumni | 25 | 33 | 22 |
| Job creation as a result of companies created | 130 | 119 | - |
| Number of hours dedicated to volunteering | - | - | - |
| Number of scientific awards | 33 | 21 | - |
| Number of investigators | 936 | 1 044 | 1 143 |
| Number of publications | 1 635 | 1 536 | 1 446 |
| Number of patents | 0 | 0 | 0 |
| Number of honorary PhDs | 5 | 5 | 5 |
| Network of international internships | 314 | 382 | 312 |

1 Calculated doing:

$$(\text{Total number of students} - \text{Number of foreign students}) \cdot \text{Percentage of students from Lisbon (estimated)}$$

2 Taking for example, state contributions, fees and book sales, into account

3 Does not include minority interests

4 Sum of expenses with merchandise and material with expenses of external supplies

The indicators related to student's characterization were the ones with most data available since ISCTE-IUL provides an extensive social-demographic study about its students. When analysing the data presented on table 4, it is possible to conclude that the number of students is increasing: in 2016 ISCTE-IUL had a total enrolment of 9.283, in 2017 the registration increased to 9.337, and in 2018 the number of students increased by 3,3% and reached 9.641 students. According to table 5, it is possible to see that in 2017 the increase was mainly due to the increase in the number of PhD students, however, in 2018, the enrolment in postgraduate studies was the main source of new students. In the time period considered, the number of foreign students was volatile since in 2017 the number decreased by 31,9% when compared with the previous year and in 2018 it is possible to see a rise in the value, but not enough to attain the number presented in 2016. Another indicator in the student's characterization is the local students. As previously mentioned the number of local students is not disclosed in any report, however, by using the assumption described in the methodology, it was possible to conclude that in 2016 ISCTE-IUL welcomed 4.560 local students, in 2017, 5.038 and in 2018 the number decreased slightly to 4.950 students from Lisbon.

*Table 5 - Student's Distribution per Degree and Nationality.*

| Characterization | 2016 | 2017 | Growth Rate | 2018 | Growth Rate |
|---|---|---|---|---|---|
| Bachelor | 4 255 | 4 227 | -0,7% | 4 253 | 0,6% |
| Master | 3 720 | 3 838 | 3,2% | 4 048 | 5,5% |
| PhD | 732 | 803 | 9,7% | 817 | 1,7% |
| Post-graduation | 576 | 469 | -18,6% | 523 | 11,5% |
| **Total** | **9 283** | **9 337** | **0,6%** | **9 641** | **3,3%** |
| Portugal | 7 599 | 8 191 | 7,8% | 8 249 | 0,7% |
| Lisbon | 5 550 | 5 782 | 4,2% | 5 796 | 0,2% |
| Foreign | 1 684 | 1 146 | -31,9% | 1 392 | 21,5% |

Source: ISCTE-IUL's Activity Report from 2016, 2017 and 2018.

Returning to table 4, it is possible to say that the number of employees is also experiencing growth and it makes sense that the global income of staff is also increasing. The number of investigators followed the same trend, which may indicate that ISCTE-IUL is investing in research. Despite the increase in investigators, publications did not follow the same trend given that they are falling in absolute terms and so are the number of scientific awards.

*Table 6 - Change in the Number of Annual Scientific Publications.*

| Characterization | 2016 | 2017 | Growth Rate | 2018 | Growth Rate |
|---|---|---|---|---|---|
| Articles, books and book chapters with scientific review | 920 | 876 | -4,8% | 804 | -8,2% |
| Publications in congress minutes | 372 | 400 | 7,5% | 399 | -0,3% |
| Working papers with scientific evaluation and online publication | 17 | 13 | -23,5% | 19 | 46,2% |
| Articles, books and book chapters without scientific review | 49 | 87 | 77,6% | 81 | -6,9% |
| Other publications (editorials, notes, book reviews, etc.) | 168 | 136 | -19,0% | 116 | -14,7% |
| **Total publications** | **1 526** | **1 512** | **-0,6%** | **1 419** | **-6,2%** |

Source: ISCTE-IUL's Activity Report from 2016, 2017 and 2018.

Regarding publications in articles and books with scientific review (table 6), it is possible to observe that the numbers are falling since 2016 and the percentage of decrease from 2017 to 2018 almost doubled its value when compared to the previous year. The number of working papers and the number of articles and books without scientific review presents a volatile evolution. In the global scenario, it is possible to see a 0,6% reduction of publications from 2016 to 2017 and a 6,2% decrease in 2018. Despite this fact, it is important to analyse not only the quantitative aspect of the variable but also the qualitative part. Based on table 7, it is possible to observe an increase in the number of publications index on international databases such as the Web of Science (WoS) and the Scopus. The rise in publications classified on the first quartile (Q1) is another conclusion that can be withdrawn. Therefore, it is possible to conclude that despite the decrease in publications numbers in absolute terms, the quality of the outlets of publication is increasing and their value for the scientific community is becoming stronger.

*Table 7 - Change in the Number of Annual Scientific Publications on International Databases*

| Characterization | 2016 | 2017 | Growth Rate | 2018 | Growth Rate |
|---|---|---|---|---|---|
| Scientific articles in indexed journals WoS / Scopus | 414 | 431 | 4,1% | 457 | 6,0% |
| Articles in journals classified in the SJR | 376 | 401 | 6,6% | 436 | 8,7% |
| Articles in journals classified in the JCR | 242 | 272 | 12,4% | 289 | 6,3% |
| Articles in journals classified in Q1 | 180 | 212 | 17,8% | 230 | 8,5% |

Source: ISCTE-IUL's Activity Report from 2016, 2017 and 2018.

Companies created by alumni are a strong indicator to measure the impact that an institution has on the community since they create jobs and boost the local economy. ISCTE-IUL provides guidance to students that want to develop their own companies, and by doing that, the impact that the new companies created locally is potentially related to ISCTE-IUL. In order to support students and their ideas, ISCTE-IUL created an entrepreneurship centre called Audax-ISCTE. The purpose of this centre is to promote the entrepreneurial attitude and to transform ideas into business. To do so, Audax-ISCTE provides a wide range of services such as training in entrepreneurship, incubation program and consultancy. To build a proximity relation with young entrepreneurs, Audax-ISCTE has an entrepreneurship students group called Young Audax Generation (YA Generation) that develops projects that provide the help ISCTE-IUL students need on the first steps of developing a new business idea. With the support of Audax, in 2016, ISCTE-IUL helped to create 25 companies which employed 130 workers; in 2017, 33 new businesses created 119 job openings, and in 2018, the alumni built 22 new companies (table 4). In 2018, the number of jobs created was no longer measured by ISCTE-IUL since it considered that the data was not substantial and relevant for the existing reports.

Based on the increase of students and staff, along with the rise in investigators, it can be concluded that ISCTE-IUL is growing every year and the increase in expenses is a consequence of that growth. According to table 4, it is possible to perceive that in 2017, the costs increased by 8,0% when compared to the previous year and, in 2018 the trend continued and ISCTE-IUL grows its expenses by 5,6% and reached 48,97 million euros. Another indicator linked with expenses is the number of local business related to the institution. To compute the values for this variable, the expenses related with external suppliers were added with the cost of goods sold and materials consumed, by adding these Income Statement Items it was possible to assess the cash flow generation that occurs due to ISCTE-IUL. The pressure on profit is becoming bigger since the costs are rising faster than ISCTE-IUL income. In 2017, the income increased by 5,5%, which was below the 8,0% rise in expenses however, the profit remained positive, which was not true for 2018.

After analysing the available data that is summarized on Table 4, it was clear that a few indicators could not be estimated, due to the sensitivity of the data, the lack of historical record or the by the fact that some information is not provided through reliable sources. The ones that are the most challenging to estimate are the ones that are related to the staff and guests of ISCTE-IUL for example, the number of employees that are local,

the number of visitors that ISCTE-IUL introduces in the local economy, the hours of voluntary work that is done on behalf of the institution, and lastly, the expenses that employees and students have in the local community such as housing, food and transportation. The ACE model provides a formula for calculating the local purchases done by the economic agents which are not staff nor students but whose incomes are related to ISCTE-IUL; However, the data needed to compute the value is not known since the local expenses are one of the variables that cannot be estimated. By not being able to assess this indicator, it means that the number of full-time jobs generated for each euro spend locally cannot be computed since it is strongly related to local expenses.

Although the number of employees that are local should not be difficult to obtain, ISCTE-IUL only provides information of the current address which does not indicate if the employee changed the address to perform its job or if the person already lived locally. The second indicator that presents some challenges is the number of visitors since the to the models account for the number of family and friends that visit staff and students. To overcome this difficulty, it can be used the number of visits to the institution due do events that are organized aimed not only at students and staff but also to the general public. ISCTE-IUL does not report an exact number of guests per year. Instead, it provides an estimation of how many events were organized within a range of participants. Table 8 illustrates the evolution of the events over the three-year period. It is possible to conclude that the total number of events does not present a significant fluctuation since 2016, it increased 1,4% in 2017 and had a fall of 0,5% in 2018.

*Table 8 - Number of Events Classified by the Range of Participants*

| Number of participants | Number of events | | | | |
|---|---|---|---|---|---|
| | 2016 | 2017 | Growth Rate | 2018 | Growth Rate |
| Less than 100 | 366 | 262 | -28,4% | 349 | 33,2% |
| Between 100 and 249 | 194 | 185 | -4,6% | 228 | 23,2% |
| Between 250 and 499 | 45 | 102 | 126,7% | 39 | 61,8% |
| Between 500 and 999 | 32 | 96 | 200,0% | 31 | -67,7% |
| Between 1000 or more | 7 | 8 | 14,3% | 3 | -62,5% |
| Total events | 644 | 653 | 1,4% | 650 | -0,5% |

Source: ISCTE-IUL's Activity Report from 2016, 2017 and 2018.

The number of hours dedicated to volunteering is a crucial aspect of social prosperity. Still, this variable is not considered relevant to HEI since there is no official

way of measuring. The last indicator that was not possible to quantify was the expenditure made by ISCTE-IUL community.

The increase in income as a result of the academic degree is an example of an indicator that cannot be estimated due to the fact that ISCTE-IUL does not provide historical information that allows reliable results. The institution provides information about the salary, the time of contract, and how long did it take to get the job but only for the first job students have after the degree. Since it is not possible to assess the long-term increase, the indicator cannot be correctly estimated. However, the study of integration on active life conducted by ISCTE-IUL allows for conclusions such as 98% of bachelor students get a job within a year of completing their degree. On average, 31% of students receive between 600€ and 899€, 30% fall into the range of 900€ to 1199€, 22% earn between 1200€ and 1799€ and only 5% receive more than 1800€. The remaining 12% receive less than 600€. The data for the other degrees is not representative since it only considers a small portion of the students therefore, it is not possible to withdraw significant conclusions.

To overcome the difficulty associated with this variable, the literature provides a suggestion, to use the value estimated by the government and use it to assess their values. ISCTE-IUL and many other universities are located in Lisbon, so, the value computed by the government is not specific to one university but for the sum of all, which can lead to a false conclusion. The solution only provides solid results if the city only has one university. Another solution could be to use the Financial Times ranking since it provides some data about the expected increase in salary of ISCTE-IUL students; however, the information is exclusive to the master in Business Administration. In 2017, the FT stated that ISCTE-IUL students that enrolled in the Business Administration were expected to get a 48% increase in salary and in 2018, the value rose to 51%. Still, the information cannot be used as a representative for ISCTE-IUL as a whole.

## 5.3 Benchmarking

The following step was to gather the existent impact studies conducted by Portuguese HEI. To the best of our knowledge, only three institutions provided a report on their impact: Instituto Politécnico de Bragança (Fernandes, Cunha, & Oliveira, 2014), Universidade Católica Portuguesa (UCP) (UCP, 2017), and Nova School of Business & Economics (Nova SBE) (Nova SBE, 2018). Instituto Politécnico de Bragança performed

its analysis based on the ACE model, but on the opposite side, UCP decided to use the I-O models as a base for its study. The analysis provided by Nova SBE did not use the models described by the literature instead, it was chosen to perform a direct link to the SDGs namely numbers: 3 – *"Ensure healthy lives and promote well-being for all at all ages"*; 4 - *"Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all"*; 5 – "*Achieve gender equality and empower all women and girls*"; 8 – "*Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all*"; and 17 –" *Strengthen the means of implementation and revitalize the global partnership for sustainable development*" (United nations, 2015:14). Since Nova SBE does not provide information regarding the same variables, the impact study cannot be directly comparable to ISCTE-IUL. Nevertheless, Universidade Nova de Lisboa and ISCTE-IUL were both ranked in the University Impact Rankings[9] that assess HEI against the SDGs. In order to understand the current situation of Portuguese HEI regarding the goals, this project will discuss the results of the ranking.

To measure its impact on the community, Instituto Politécnico de Bragança performed a characterization study on its students and employees in which the aim was to conclude the number of individuals that relocated to the region in order to attend the Institution. This was followed by the assessment of the expenses of all the involved parties such as students, employees, visitors and the university itself. Since the study conducted by Instituto Politécnico de Bragança (Fernandes et al., 2014) is based on the ACE model (Caffrey & Isaacs, 1971), it was also important to measure the economic outcomes for the community such as the number of full-time jobs created. The final step was to use the gathered information to implement the formulas provided by Caffrey and Isaacs (1971). The conclusion of this study was that in 2007 the Institution had an impact on the community of 54,9 million euros and created 2.390 new jobs thus, 8,7% of the economic activity of the region was generated by the Institution. The fact that the assessed value of the impact in this study is not updated associated with the fact that after the study, Portugal sustained an economic crisis, implies that values are not directly comparable to the ones provided by recent studies so, it will not be used during the comparison process.

[9] Available at: https://www.timeshighereducation.com/rankings/impact/2019/overall#!/page/0/length/25/sort_by/rank/sort_order/asc/cols/undefined, accessed on 18 of January of 2020

Universidade Católica Portuguesa decided to focus its study on variables more linked to scientific outcomes (UCP, 2017). The emphasis was primarily on variables such as the number of scientific awards; the number of publications; the number of companies created by alumni; and increase in income as a result of the academic degree. Based on the selected indicators, UCP reached the conclusion that during its 50 years of existence the institution had an impact of 18 billion euros on the Portuguese economy and in 2017 alone, the impact was 600 million euros.

Since, UCP, is the one that provided the most analogous results due to the similarity in methodology and time proximity this project will attempt to develop a comparison between the data presented in the impact study of Universidade Católica Portuguesa and the gathered information about ISCTE-IUL. The UCP presents most of its values on an average base, therefore, to produce more reliable results, it was necessary to calculate the average of ISCTE-IUL values. The UCP indicators' that were not measured in an average base were reported for the years 2016 and 2017 so, it was necessary to gather the information for 2018, which was collected using official sources[10]. Then the average of these indicators was assessed. Table 9 summarizes the related data across ISCTE-IUL and Universidade Católica Portuguesa.

*Table 9 - Comparison Between the Average of Indicators for 2016, 2017 and 2018: ISCTE-IUL VS Universidade Católica Portuguesa.*

| Indicator | Institution | |
|---|---|---|
| | ISCTE-IUL | UCP |
| Number of employees | 867 | 1 401 [1] |
| Total students | 9 420 | 18 920 [2] |
| Number of foreign students | 1 407 | 1 646 [2] |
| Number of companies created by alumni | 27 | 390 [2] |
| Job creation as a result of companies created | 125 | 9 900 [2] |
| Number of scientific awards | 27 | 35 [2] |
| Number of investigators | 1 041 | 1 130 [2] |
| Number of publications | 1 539 | 1 200 [2] |
| Number of patents | 0 | 30 [2] |
| Number of honorary PhDs | 5 | 25 [2] |
| A network of international internships | 336 | 600 [2] |

[1] Source: Universidade Católica Website, available at: https://www.ucp.pt/pt-pt/catolica/institucional/apresentacao/catolica-em-numeros

[2] Source: (UCP, 2017)

[10] Available at: https://www.ucp.pt/pt-pt/catolica/institucional/apresentacao/catolica-em-numeros, accessed on 18th January 2020

Based on the table, it is possible to conclude that UCP presents higher values for the majority of indicators. However, the data cannot be directly compared to the discrepancy on the size of both institutions since UCP has approximately the double of the number of students than ISCTE-IUL. The variables that can be compared are the ones in relative terms, such as the percentage of foreign students on the total number of students and the publications per investigator. When it comes to the number of foreign students, it can be seen that ISCTE-IUL has a better ratio since 15% of its students are foreign against 9% of UCP. Another interesting variable that is worth exploring is the number of investigators and publications. Although Católica has a higher number of investigators and publications, when the ratio between those two variables is analysed, it is possible to see that ISCTE-IUL has a proportion of 1,5 published papers per investigator and Universidade Católica Portuguesa was 1,1.

Regarding Universidade Nova de Lisboa, the comparison will be made based in the University Impact Rankings. Universidade Nova has 20.077[11] students which means that when compared to ISCTE-IUL, the differences in size cannot be ignored. Due to this fact, the results of the ranking cannot be directly comparable hence, they will be used purely for indicative porpoises. According to the ranking, Nova and ISCTE-IUL share their best scores in the same SDGs indicator, number 4 – "*Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all*", number 16 – "*Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels"*, and number 17 – "*Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development*"(United Nations, 2015). Since none of the indicators used by the ranking overlap to the ones considered relevant for this project and due to the discrepancy of the size of ISCTE-IUL and Universidade Nova de Lisboa, this information is merely informative and cannot be used to draw reliable conclusions. ISCTE-IUL underperformed Universidade Nova de Lisboa in two of these goals, namely, 16 and 17. On the overall ranking, Nova has a superior position since its located in the top 200 of 467 with an overall score of 75,6 and ISCTE-IUL is on the top 300 of 467 with 64,4 on The University Impact Rankings 2019.

[11] Source: Universidade Nova de Lisboa Website. Available at: https://www.unl.pt/nova/factos-e-numeros, accessed on 19th January 2020

# 6. Forms of Implementation

To ensure that in the future, ISCTE-IUL can perform better assessments of its impact using the models that exist in the literature, this project will propose some suggestions, based on the literature review and employee interviews.

To overcome the lack of information related to community characterization, the literature suggests the implementation of a survey. Since ISCTE-IUL already does surveys, it is only needed to add some questions to identify the weight of expenditures such as housing, transportation, food and studying materials, in the case of students. Also, it would be useful to measure the number of visitors that came to the university (for example, for events) or come to visit their family and friends in the ISCTE-IUL community. In order to help data collection, a draft survey is proposed in the appendix[12]. For responses to be accurate and precise, it would be best for such a survey to be implemented through official university channels. Finally, in order to have robust and resilient results, it is required that the data is collected using the same methodology and questions over a long period of time. Therefore, it is proposed that the next study on student's and employee's characterization starts introducing the suggested questions.

Regarding the increase in income, this variable requires data collection throughout a longer period and cannot be measured by a single survey. Ideally, it would assess the increase in salary not only in the first year after the degree but in the long term. If ISCTE-IUL performs a study that follows the alumni for at least five years, it is possible to calculate the percentage of increase that occurs every year and then infer for the remaining years of active working life. Based on the literature, there are no other Portuguese HEI performing this type of study which means that ISCTE-IUL can be pioneer regarding researches on the specific increase on income due to its degrees and not based on national averages.

As previously mentioned, the hours spent in volunteering are not accounted for, so, it is not possible to input the value in the models. During an interview with the Social Services of ISCTE-IUL, it was confirmed that the institute did not keep any record regarding volunteering, however, they believe that would be relevant for ISCTE-IUL

[12] Available in appendix C and D

itself to start doing it. In the same interview, the responsible for the Social Services claimed that based on her personal opinion and experience, a good way of measuring the hours spent on volunteering would be to create a platform where students and staff should register them. An example could be professors volunteering to lecture and perform workshops in other institutions, without any formal report or measurement as volunteering. Keeping a record of the hours could be an important add-on to the existing platforms developed internally.

The first step to implement the proposed suggestions should consist of the systemization of the available data and the processes to collect it. Based on the results that arise from step one, the processes should be adapted to gather the missing data. After the implementation of the updated processes, ISCTE-IUL should start conducting periodical reports customized to each set of variables. The main output that this project's suggestions hope to achieve is a global report where it is summarized the data and main conclusions of ISCTE-IUL impact on the community. A summary of the plan suggested for the implementation of these measures can be found in figure 1.

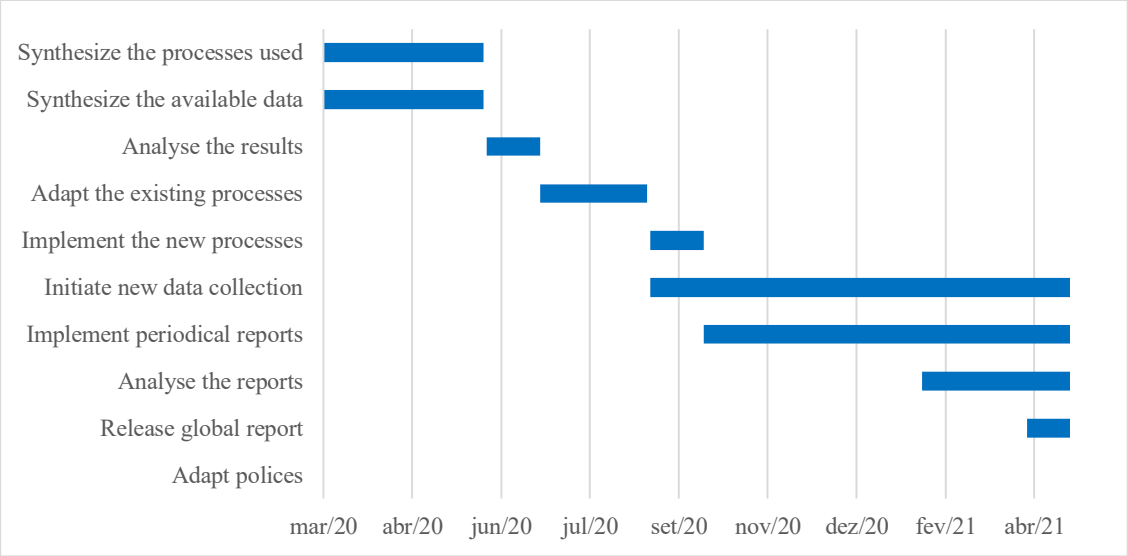


*Figure 1 - Timeframe to Implement the Project Suggestions*

# 7. Conclusions

Sustainability is fundamental for ISCTE-IUL since its foundation in 1972. Thus, it is a natural step to perform an evaluation of its current contribution to sustainability. Having in mind the four pillars of sustainability and the main contributions of HEI on the community, it was decided that this project should be focused on the role of HEI in the path towards prosperity with an especial focus on the economic pillar.

The way chosen to assess the role of HEI was to measure their impact on the local community. According to the literature review, there are three commonly used models to assess the economic impact of HE institutions, the ACE model, the I-O model and the Ryan Short-Cut model. All the models present advantages and disadvantages during implementation nevertheless, the most commonly used model is the ACE model due to 1) the use of multipliers that could under or overestimate the results is not required, and 2) the model allows a relative assessment of the amounts obtained so that the results represent an appropriate approximation of the impact on the local economy. Through implementing the models, HEI improve on their accountability and transparency, which are now highly demanded by society. By meeting this demand created by the community, it is expected that a set of benefits arises, such as the increase in trust not only from employees but also from the general public; definition of clearer goals, identify new challenges and ways to prevent them, and lastly, it prevents the recurrence of mistakes. Despite the focus of the models on the economic pillar of sustainability, it is possible to perceive that some of the variables are strongly connected to the social pillar. This is explained by the existent synergies between all the pillars, one cannot be achieved without the others. Therefore, even when applying models to measure the economic impact, it is not possible to ignore the social and environmental components.

The obstacle that was found during this project was the fact that the models described in the literature cannot be applied since some of the required data is not available through official channels. By not being able to collect on the information, it is not possible to estimate all the indicators, and therefore, the impact cannot be fully measured. Since the models cannot be implemented with reliable results, it was chosen to analyse the available data and provide some suggestion to gather the missing information.

Based on the data that was collected, it was possible to conclude that the ISCTE-IUL community is growing, the number of students is increasing along with the number of employees. This increase is putting some pressure in the efficiency side since the costs are growing faster than revenues, this pressure becomes more prominent in 2018 because ISCTE-IUL presented a negative net income. As for scientific activity, the number of investigators is rising however, the number of publications and scientific awards is presenting a downward trend. Nevertheless, the quality of the scientific work done by ISCTE-IUL is increasing. The number of companies created by alumni is following the descending trend and are presenting a lower number every year.

To overcome the lack of information and allow the application of the models to the ISCTE-IUL case, it is necessary to adapt the current surveys to meet the need of the models. This can be done by adding a section where the students and employees detail their expenses associated with rent, transportation and household expenditures. Another section that should be added is related to family and friends that visit students and staff or the institute itself. The adaptation of the existent surveys would provide the majority of the missing information nonetheless, the hours dedicated to volunteering are not covered by this survey. To measure this variable, it was suggested the creation and development of a platform where students and employees could register the hours that they dedicate to volunteering in the representation of ISCTE-IUL. This suggestion was supported by interviews with the Department of Social Services and professors of ISCTE-IUL.

With this project, it was possible to conclude that it exists a gap between the literature and the practical application. The implementation of the models described to assess the economic impact of HEI must be adapted to meet the available data, which can lead to results that are not directly comparable. Another conclusion that can be withdrawn is the fact that across the world the importance of prosperity in HEI does not have a significant weight on the literature since the number of studies about it is immaterial when compared to the total number of HEI.

The main output of this project was to evaluate and report the role of ISCTE-IUL on prosperity. It was possible to identify the missing data needed to expand and reinforce a study on sustainability. Therefore, this work expects to create a path for future investigators to be able to estimate the economic impact of ISCTE-IUL and provide a

clearer answer to which is the contribution of ISCTE-IUL to prosperity as an HEI. It is also expected that this project stimulates ISCTE-IUL to develop and implement new policies in order to contribute to a more sustainable future.

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# Appendix A – Targets of SDGs

**8.2** Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors

**8.3** Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services

**8.4** Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-year framework of programmes on sustainable consumption and production, with developed countries taking the lead

**8.5** By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value

**8.6** By 2020, substantially reduce the proportion of youth not in employment, education or training

**9.5** Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending

**9.B** Support domestic technology development, research and innovation in developing countries, including by ensuring a conducive policy environment for, inter alia, industrial diversification and value addition to commodities

**11.6** By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management

**11.B** By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels

**12.2** By 2030, achieve the sustainable management and efficient use of natural resources

**12.5** By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse

**12.6** Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle

**12.7** Promote public procurement practices that are sustainable, in accordance with national policies and priorities

**12.8** By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature

# Appendix B – Faculty and Staff Survey

## Section 1: Living Conditions

The purpose of this section is to characterize de living conditions of Faculty and Staff of ISCTE-IUL and estimate their average mensal costs.

**What type of accommodation do you live in?**

- Rented room
- Family house
- Own home
- Rented house
- Other

**What is the average monthly net income of your household?**

- Less than 500€
- Between 501€ and 1000€
- Between 1001€ and 1500€
- Between 1501€ and 2000€
- Between 2001€ and 3000€
- More than 3000€

**State your household monthly spending's with the following categories**

State the average monthly spending's in euros in the next categories:

Housing

---

Expenditure (e.g. wate, electricityty, etc.)

---

Food

---

Education (e.g. tuition, documents, etc.)

---

Children's education (if you have children)

---

Health

---

Leisure activities (e.g. movies, museums, etc.)

---

Personal goods (e.g. clothes, toiletries, etc.)

---

Other

---

**Where do you eat your meals?**

| | Home | ISCTE's Cafeteria | Restaurants | Other |
|---|---|---|---|---|
| Breakfast | ○ | ○ | ○ | ○ |
| Lunch | ○ | ○ | ○ | ○ |
| Dinner | ○ | ○ | ○ | ○ |

**Do you own a personal vehicle?**

- ○ Yes
- ○ No

**If you do not own a personal vehicle, state your average monthly spending with travel expenses (bus tickets, metro, taxi, etc.)**

- ○ Less than 29€
- ○ Between 30€ and 40€
- ○ Between 41€ and 65€
- ○ Between 66€ and 90€
- ○ Between 91€ and 110€
- ○ Between 111€ and 150€
- ○ More than 150€

**If you own a personal vehicle state:**

Average monthly expenditures with your personal transportation (e.g. gas, maintenance, insurance, etc.)?

- ○ Less than 50€
- ○ Between 51€ and 75€
- ○ Between 76€ and 100€
- ○ Between 101€ and 150€
- ○ Between 151€ and 200€
- ○ Between 201€ and 300€
- ○ Between 301€ and 500€
- ○ More than 500€

**Your expenses with other means of transportation (bus, metro, taxis etc.)?**

- Less than 50€
- Between 51€ and 75€
- Between 76€ and 100€
- Between 101€ and 125€
- Between 126€ and 150€
- More than 150€

## Section 2: Guests

This section aims at estimating the average spending's that result from Faculty and Staff guests.

**How often do you receive visits from family/friends?**

- Never
- Less than 5 times per year
- Between 5 and 10 times per year
- More than 10 per year

**How many guests per visit?**

- 1
- 2
- 3
- 4
- More than 4

**How long, on average, do visitors stay?**

- Less than 24 hours
- Between 24 hours and two days
- Between 3 and 5 days
- More than 5 days

**In average, how much does each person spends per day?**

- Less than 50€
- Between 51€ and 75€
- Between 76€ and 100€
- Between 101€ and 125€
- Between 126€ and 150€
- Between 151€ and 175€
- More than 175€

## Section 3: Investments and Savings

In this section it is intended to estimate the investment and the savings of ISCTE's Faculty and Staff.

**Are your savings deposited in a bank in Lisbon?**

- Yes
- No

**On average, how much are your savings per month?**

- Less than 50€
- Between 51€ and 100€
- Between 101€ and 250€
- Between 251€ and 500€
- Between 501€ and 750€
- More than 750€

**Do you have a loan from a bank branch in Lisbon?**

- Yes
- No

**If yes, please indicate the initial loan amount:**

- Less than 10 000€
- Between 10 001€ and 25 000€
- Between 25 001€ and 50 000€
- Between 50 001€ and 75 000€
- Between 75 001€ and 100 000€
- More than 100 000€

**Did you make any investment or acquisition in Lisbon?**

- Yes
- No

**If you answered yes in the previous question, indicate which type of acquisition:**

- Own home
- House for rent to third parties
- Vehicle
- Company
- Other

## Section 4: Personal and Family characterization

With the following questions it is intended to characterize the Faculty and Staff of ISCTE-IUL.

**Gender**

- Male
- Female
- Prefers not to answer

**Marital Status**

- Single
- Married
- Divorced
- Widowed

**Education**

- Elementary school
- Middle school
- High school
- Bachelor
- Postgraduate
- Master
- PhD

**Job description**

- Researcher
- Professor
- Staff

**If in your previous answer you selected professor, state the school where you teach:**

- IBS
- ECSH
- ESPP
- ETA

**Is your current residence in Lisbon?**

- Yes
- No

**If your previous answer was yes, before working at ISCTE-IUL, did you lived in Lisbon?**

- Yes
- No

**If the previous answer was no, why did you move to Lisbon?**

- To work at ISCTE-IUL
- Interest in the city
- To live with family
- Other

**How many people does your household has?**

- 1
- 2
- 3
- 4
- 5
- More than 5

**Do you have children living in Lisbon?**

- Yes
- No

**How many children do you have?**

- 1
- 2
- 3
- 4
- More than 4

**State if your children are enrolled in public or private school**

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# Appendix C – Student's Survey

## Section 1: Living Conditions

The purpose of this section is to characterize de living conditions of Students of ISCTE-IUL and estimate their average mensal costs.

**What type of accommodation do you live in?**

- Rented room
- Family house
- Own home
- Rented house
- University Residential
- Other

**What is the average monthly net income at your disposal?**

- Less 100€
- Between 101€ and 250€
- Between 251€ and 350€
- Between 351€ and 450€
- Between 451€ and 550€
- Between 551€ and 700€
- Between 701€ and 1000€
- More than 1000€

**State your household monthly spending's with the following categories**

State the average monthly spending's in euros in the next categories:

Housing

---

Expenditure (e.g. water, Electricity, etc.)

---

Food

---

Education (e.g. tuition, documents, etc.)

---

Children's education (if you have children)

---

Health

---

Leisure activities (e.g. movies, museums, etc.)

---

Personal goods (e.g. clothes, toiletries, etc.)

---

Other

---

**Where do you eat your meals?**

| | Home | ISCTE's Cafeteria | Restaurants | Other |
|---|---|---|---|---|
| Breakfast | ○ | ○ | ○ | ○ |
| Lunch | ○ | ○ | ○ | ○ |
| Dinner | ○ | ○ | ○ | ○ |

**Do you own a personal vehicle?**

- ○ Yes
- ○ No

**If you do not own a personal vehicle, state your average monthly spending with travel expenses (bus tickets, metro, taxi, etc.)**

- ○ Less than 29€
- ○ Between 30€ and 40€
- ○ Between 41€ and 65€
- ○ Between 66€ and 90€
- ○ Between 91€ and 110€
- ○ Between 111€ and 150€
- ○ More than 150€

**If you own a personal vehicle state:**

Average monthly expenditures with your personal transportation (e.g. gas, maintenance, insurance, etc.)?

- ○ Less than 50€
- ○ Between 51€ and 75€
- ○ Between 76€ and 100€
- ○ Between 101€ and 150€
- ○ Between 151€ and 200€
- ○ Between 201€ and 300€
- ○ Between 301€ and 500€
- ○ More than 500€

**Your expenses with other means of transportation (bus, metro, taxis, ect.)?**

- Less than 50€
- Between 51€ and 75€
- Between 76€ and 100€
- Between 101€ and 125€
- Between 126€ and 150€
- More than 150€

## Section 2: Guests

This section aims at estimating the average spending's that result from Student's guests

**How often do you receive visits from family/friends?**

- Never
- Less than 5 times per year
- Between 5 and 10 times per year
- More than 10 per year

**How many guests per visit?**

- 1
- 2
- 3
- 4
- More than 4

**How long, on average, do visitors stay?**

- Less than 24 hours
- Between 24 hours and two days
- Between 3 and 5 days
- More than 5 days

**In average, how much does each person spends per day?**

- Less than 50€
- Between 51€ and 75€
- Between 76€ and 100€
- Between 101€ and 125€
- Between 126€ and 150€
- Between 151€ and 175€
- More than 175€

## Section 3: Personal and Family characterization

With the following questions it is intended to characterize the Students of ISCTE-IUL.

**Gender**

- Male
- Female
- Prefers not to answer

**Marital Status**

- Single
- Married
- Divorced
- Widowed

**Is your current residence in Lisbon?**

- Yes
- No

**If your previous answer was yes, before studying at ISCTE-IUL, did you lived in Lisbon?**

- Yes
- No

**If the previous answer was no, why did you move to Lisbon?**

- To study at ISCTE-IUL
- Interest in the city
- To live with family
- Other

**After graduation do you intend to continue in Lisbon?**

- Yes, to continue with the studies
- Yes, to work
- No
- Do not know

**Do you have children living in Lisbon?**

- Yes
- No

**How many children do you have?**

- 1
- 2
- 3
- 4
- More than 4

**State if your children are enrolled in public or private school**

---

## Section 4: Academic

With the following questions it is intended to characterize the Students of ISCTE-IUL.

**Level in which you are enrolled**

- Bachelor
- Postgraduate
- Master
- Integrated Master
- Phd

**Please indicate to which school you are enrolled:**

- Business School
- Social Sciences
- Sociology and Public Policy
- Technology and Architecture

**Are you a working student?**

- Yes
- No

**Do you benefit from financial support (ex: grants)?**

- Yes
- No