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The impact of sustainability in Higher Education Institutions

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Alle colonne portanti della mia vita, Alessandra ed Angela senza le quali non avrei saputo affrontare questo lungo ma indimenticabile capitolo della mia vita,
A Carlotta, la mia compagna di avventure e miglior amica, che anche a chilometri di distanza, è riuscita sempre a starmi accanto nonostante tutto,
A tutti i miei amici che mi hanno supportato e sopportato…

Ma soprattutto alla mia famiglia, Bruna Francesco e Filippo, perché è grazie a loro che ho potuto realizzare tutti i miei sogni, e renderli ogni giorno fieri di me.

Grazie per aver sempre creduto in me!

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Abstract

Sustainability is becoming one of today's biggest challenges. Contrary to popular belief, it can be pursued in many more other spheres than just the environmental one. De facto, green development has been implemented also in the economic, socio-cultural, as well as political classes of system. As a matter of fact, everyone is taking action and educational institutions are no exception. By being institutions of higher education, universities can play a significant role. The aim of the study is to examine the relationship between sustainability and education. In particular, the goal will be to shed light on the correlation and/or influence that sustainability can eventually have on students' willingness to apply to a certain university. Six online questionnaires targeting Italy, France, Germany, Spain, UK, and US were employed to generate a sample of 600 respondents. The results show that (1) the most important factor when it comes to choosing the best university is cost. Other relevant factors are prestige, reputation, and location; (2) there are deep variances among the examined countries on the importance given to sustainability and cost of a university. Contrarily, shared opinions were expressed regarding the relevance that network and reputation can have when choosing a university; (3) sustainability – related to social, economic, and environmental aspects – is not considered to be the most influential factors within the decision-making process when selecting the right university.

Keywords

Sustainability; University; Higher Education; Willingness to Apply; Students; Factors.

Introduction

Throughout the twenty-first century sustainability has become a significant worldwide matter, which is currently affecting every single sphere of our everyday life. However, what it seems to be a very simple concept, includes numerous other topics and elements that go way beyond the already explored and well-defined "environmental sustainability." As mention by Linda Too and Bhishna Bajracharya (2015) in *Sustainable campus: engaging the community in sustainability,* "in recent years, sustainability has become an important part of many corporate social responsibility agendas […] As such, there is an urgent need for every level of society to review their actions and aim to be better stewards of our natural resources for developing low-carbon economies." In other words, sustainability and the so-called "green" development are topics that can be placed within not only the environmental sphere, but also in the economic,

socio-cultural, as well as political classes of system. To make the scenario even more complicated, various socio-political and economic changes that our society experienced in the last decades, and continues to experience nowadays, had a deep influence on both the original definition of sustainability as well as all of its deriving aspects. To put it in another way, throughout the years, we deeply changed what we consider to be "sustainable." But, even if we can find the word "sustainability" pretty much everywhere in today's society, defining the term and constructing a proper meaning for each and every different context in which we can find it is very complicated (Vos, 2007) because there are multiple elements, variables, and scales that we need to consider when taking into consideration this concept.

Originally, the definition of sustainability was merely related to the biological dimension, so it was intended as the conservation of natural resources. As the years passed, the concept expanded itself and started to include many more other elements, and to be placed within various spheres and contexts, as mentioned before. The World Commission on the Environment and Development Report of 1987 (the Brundtland Commission) introduced a new language of sustainable development (Vos, 2007). In fact, brand new and contemporary concepts related to sustainability were permanently introduced. The Brundtland Commission defined sustainability to be the "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (United Nations World Commission on Environment and Development, 1987). The Commission sought to set up "a global agenda for change" with the ultimate goal of proposing long-term environmental strategies aimed at reaching a sustainable development, while achieving international co-operation among developed and under-developed countries so to collaborate to reach a common objective. Lastly, the Commission put its effort in sharing proper information on the matter so to deal with the issue at the best. (United Nations World Commission on Environment and Development, 1987).

After having explored the origins and the ongoing evolution that the concept of sustainability is experiencing lately as well as the influence that sustainable development is having on our everyday life, it is important to define how this concept can represent an actual advantage, not only for the environment. As also specified in the previous paragraphs, sustainability can be found and applied to many more spheres other than just the environmental one. In fact, there are numerous reasons why individuals should start considering sustainable activities and practices as something that goes way beyond the concept of preserving our surroundings for future generations.

Of course, the leading ultimate goal of implementing sustainable practices in our contemporary society is that of pursuing a sustainable development aimed at saving what is left of our natural surroundings for the upcoming future generations. That is a fact. As discussed and confirmed in *Sustainable campus: engaging the community in sustainability*, there is "the need for a paradigm shift towards building a low-carbon sustainable society to deal with climate change" (Too and Bajracharya, 2015). We need to start reducing the speed of the negative impacts that climate change is causing on our natural surroundings, allowing our environment to regenerate itself. However, sustainability is much more than this. In fact, it can have positive consequences also for our economy.

The world population is increasingly growing between 1% and 2% each year, reaching more than 7.7 billion (Cilluffo and Ruiz, 2019) and this rapid growth is having an impact on the economic sphere. An increasing number of consumers are entering the market, pressuring global companies to produce more and more usable goods. As observed in *Pathways towards sustainable through higher education*, "the increasing affluence and growing expectations for personal comfort and convenience in the developed world have led to consumption patterns that are unsustainable, degrading the global resource base and the quality of the physical social environment" (Sibbel, 2009). That is why all kind of businesses should start considering the implementation of sustainable green activities and practices within their business models as well as in their supply chain so to ameliorate their production cycles. As a matter of fact, corporations are being encouraged or required to address sustainability by boards, stockholders, and other stakeholders – and are exploring and implementing sustainable practices to improve both the environment and their own competitiveness (Rusinko, 2007) In other word, we can argue that sustainability can be considered to be a mean to ameliorate a business' reputation, image but also productivity level and revenue.

Besides having an economic and environmental influence, in the last decades, the concept of "becoming green" is having an impact also on the socio-cultural level. Nowadays, if we are talking about sustainable actions, we do not only refer to renewable energy, waste management, and environmental tech development, but we also indicate socio-cultural inclusion, diversity acceptance, and fair opportunities for personal development. Sustainability is becoming a much broader concept that includes not only ecological and economic dimensions, but also social and cultural ones.

Given the growing relevance that sustainability and green development are both reaching at a global level, key actors coming from all kind of sectors have started to take action, especially the ones in the educational sector. As observed by R. Lukman and P. Glavic (2007), "many

business organizations, governments, local agencies and non-governmental organizations are promoting sustainability, encouraging the establishment of regulations, activities for sustainable production and consumption, education processes, etc."

Focusing our attention on universities and High Education Institutions (HEIs), we can argue that they play a major role in the "green" scenario because they are one of the most important agents that can promote sustainable principles within society, especially to future generations that will be a substantial part of it. As a confirmation, we can use the concept developed by Swaim et. Al (2013) in the article *Influences on Student Intention and Behavior Toward Environmental Sustainability,* where they argue that "as organizations place greater emphasis on environmental objectives, business educators must produce the next set of leaders who can champion corporate environmental sustainability initiatives." We can easily understand the fundamental role that universities, and their staff members, play in shaping next generations. As mentioned by Perchinunno and Cazzolle in *A clustering approach for classifying universities in a world sustainability ranking* (2020), universities play a fundamental role when it comes to the implementation and promotion of sustainable development because university campuses are considered to be the best environment in which sustainability can be practiced at its best. HEIs' direct involvement can have a long-lasting positive effect on the environmental and on the society as well. As also confirmed by *Drivers for universities' contribution to the sustainable development goals: an analysis of Spanish public universities*, "universities are leaders in education, research and innovation, and therefore have a key role in the social change and development of societies and economies. As the literature points out, their involvement in global sustainable development is a cornerstone of the strategy of universities in relation to their teaching, research and third-mission activities" (Blasco, Brusca, and Labrador, 2021). As a matter of fact, several universities have begun the debate about the content of this concept and the ways in which to integrate it into their university policy, organization and activities. (van Weenen, 2000).

The integration of *green* development and sustainability within universities and HEIs it is still a quite new topic, and for this main reason not many researches and studies have been dedicated to the discussion and analysis of the phenomenon. Even supposing the contemporary arise of the environmental issue, the actual first actions taken towards a sustainable future have been started in the early 70s with the Stockholm Declaration which recognized the need for the development of a better environmental education (Wright 2002). Later on, there was the introduction of the Talloires Declarations in 1990 because numerous French universities started to be concerned about the quality of the environment and proposed actual actions that HEIs

should have started implementing (Clugson and Calder, 1999), then the United Nations (UN) Earth Summit in Rio de Janeiro in 1992 and finally, the Kyoto Declaration of 1993 (Ralph and Stubbs, 2014). Another important milestone for the evolution of what we mean by sustainability was the United Nations Conference on Sustainable Development held in Rio de Janeiro in 2012, also called Rio+20. In the conference all the countries agreed on setting up new goals that replaced the previously created Millennium Development Goals (MDGs). That is why they come up with the Sustainable Development Goals (SDGs) that were focused on the biggest environmental issues that the world was experiencing, and that needed to be solved in the shortest period of time. From this point on, the relevance of the issue gained more and more attention.

By being a quite new global issue to be faced, when it comes to sustainability and its implementation, especially within universities and HEIs, we can argue that there are still numerous barriers to overcome, challenges to confront, and numerous lacks to fulfill. As researches and past studies have demonstrated, universities represent the perfect environment in which we can actually start helping society addressing all the various problems directly related to the so-called "green" development, while shaping individuals' approach towards the matter. However, there is a big literature lack. As mentioned by Swaim et al. (2013) in *Influences on Student Intention and Behavior Toward Environmental Sustainability*, "despite the need to thoroughly understand individual behavioral aspects of sustainability decision making, such behavioral elements are often overlooked, and research is limited." In other words, organizations of all kind should start studying what influence the most individuals' decision-making path, especially that of students because they will be the next generations that can actually start changing the catastrophic environmental situation in which we are currently trying to live in.

Besides the above mentioned lack created by the absence of proper behavioral studies, as we will analyze in the following chapter, there are also a discreate number of challenges and barriers which are worth the mention. Among all the possible barriers, as discussed by Sibbel (2009), Ralph and Stubbs (2014), and Blasco, Brusca, and Labrador (2021), the ones that are mentioned the most by researches are:

- The lack of understanding of what it really means to pursue sustainability,
- The lack of proper information shared among people,
- Issues related with technological advancement, and
- Individuals' perception of the issue and their influence on it.

As for the challenges, the biggest one remains the personal opinion that every individual has on the subject and their approach to it. In fact, "a fundamental challenge with behavioral aspects of environmental sustainability is the range of opinions regarding the legitimacy of environmental objectives" (Swaim et al, 2013) Another big challenge which is worth mentioning, specifically regarding universities and HEIs, is the actual understanding that these have on the subject and how much they can benefit from it. The last challenge is related to measurements. In fact, as each university around the world bases its own purpose and mission on different elements and values, it is very hard for researches to find a single matrix that can fully measure sustainability performance. Many even argue that it would be quite impossible. As mentioned in *Defining sustainability metric targets in an institutional setting*, "potentially hundreds of sustainability metrics can be tracked, ranging in topic from material and energy management to community and governance" (Rauch and Newman, 2009).

The following thesis will examine the relationship between sustainability and universities. In particular, the goal will be to shed light on the correlation and/or influence that sustainability might have on the students' willingness to apply to a certain university. The research will be divided as it follows. The first chapter will be dedicated to the literature review. In these pages I will examine all the frameworks, researches, and past studies so to explain at its fullest the actual meaning of sustainability. In particular, I will examine the evolution that this phenomenon is having throughout the last decades. In addition to this, I will also discuss the growing relevance that universities and HEIs are getting by first exposing all the key declarations and events; and secondly, by introducing all the models, studies, and parameters developed so far. Finally, I will conclude the literature review by describing future actions already set up by international institutions aimed at finding real solutions to the ongoing global environmental crisis. The second chapter will be focused on the research gap. In other words, I will explain in detail the gap that I want to fulfill with the following research. Consequently, the third chapter will be exclusively dedicated to the methodology. So, I will recall the process I followed in order to create the questions for the online questionnaire to then analyze the sample, the research design and all the criteria used for the questionnaire. The fourth chapter will describe and analyze the data collected. The examination will be divided into two sections: the first one will focus on the influential parameters for the university decision-making process, and the second one will be discussing the five sustainability pillars. The last chapter will be dedicated to the conclusion where I will recap the aim of the research and how the collected data helped me satisfying my initial hypothesis.

Literature Review

Sustainability in the educational field

Nowadays, especially throughout the last decades, global sustainability and "green" development are turning into worldwide trending topics, to which individuals are given more and more attention and relevance. As observed by Rebeka Lukman and Peter Glavic (2007) in their work titled *What are the key elements of a sustainable university?* "many business organizations, governments, local agencies and non-governmental organizations are promoting sustainability, encouraging the establishment of regulations, activities for sustainable production and consumption, education processes, etc." As we can understand, sustainable development is an increasingly important subject placed at the center or both European and international policies and agendas of all sectors. In fact, agents and actors as well as governmental and non-governmental institutions are currently modifying their agendas while putting all their best effort to work towards the achievement of sustainable Development Goals, also called SDGs. As confirmed always by Lukman and Glavic (2007), sustainable development is considered to be "a key principle of both European and international policies. Sustainability principles are included within European Union (EU) Sustainable Development Strategy, United Nations Millennium Development Goals, and many other international declarations, national laws and initiatives."

Many international actors are realizing the relevance and importance that sustainability can play in their own field, especially universities and HEIs. As also confirmed by Hans van Weenen (2000) in its work titled *Towards a vision of a sustainable university*, "sustainable development is one of the biggest challenges of the twenty-first century. Several universities have begun the debate about the content of this concept and the ways in which to integrate it into their university policy, organization and activities." By being one of the most important places where to shape next generations' attitude towards ongoing societal issues, universities, HEIs, and their staff members as professors are considered to be key actors who need to involve students as much as possible so to make them have a positive impact when it comes to environmental issues and societal change (Ralph and Stubbs, 2014).

The role played by HEIs and universities

As argued by Monika Sady, Agnieszka Zak, and Karolina Rzepka (2019) in their work titled *The Role of Universities in Sustainability-Oriented Competencies Development: Insights from an Empirical Study on Polish Universities*, "the growing importance of sustainable

development constitutes a challenging trend for education." In fact, it is arguable that the latter actually performs a crucial role when it comes to the development, questioning, and transmission of key concepts, information as well as values and skills. In fact, "universities play a fundamental role in addressing global environmental challenges as their education, research and community involvement can produce long-lasting environmental effects and societal change" (Ralph and Stubbs, 2014). Education is identified to be fundamental for all those strategies whose focus is on sustainability and green development.

Since education is directly related to the achievement of sustainability, universities and HEIs can have a strong impact. In fact, many authors discussed the big responsibility that these non-governmental institutions have on both students and society, as well as on the economic performance of a country. As a matter of fact, when it comes to education and sustainability all the fundamental spheres are interconnected and impacted.

The first and most important task that universities and Higher Education Institutions have is that of shaping future generations, creating future leaders. They are able to do so by promoting positive attitudes and setting up a correct approach towards Sustainable Development Goals (SDGs) with the diffusion of proper information, because most of the times they are misunderstood. As a confirmation of the latter in *Drivers for Universities' Contribution to the Sustainable Development Goals: An Analysis of Spanish Public Universities* the author argues that universities "have a double role in implementing active policies for developing SDGs through all their activities and in promoting awareness among other actors, mainly students, of their role in achieving the SDGs and acquiring the skills and mind-sets needed to contribute to these challenges" (Blasco, Brusca, and Labrador, 2021). There are many ways through which these two non-governmental entities can shape future generations, and the one with the most impact is that of creating specific programs and extracurricular activities so to share and augment the level of awareness around environmental issues, while teaching students how to "shape sustainability competencies" (Sady, Zak, and Rzepka, 2019). It is all about the development of human goals with the final aim of providing essential means to be aware of how to protect our natural surroundings, giving next generations our same chances to enjoy them. In fact, "in order to ensure sustainable development that will meet the needs of present and future generations, it is necessary to equip all individuals with the appropriate knowledge and skills to shape a system of sustainability-related values" (Sady, Zak, and Rzepka, 2019).

As a consequence of creating specific programs and extracurricular activities, universities and HEIs are able to also have a meaningful impact on the society. As a matter of fact, they shape future generations that will run our populations one day. By giving them the right set of values

and skills, they assure a better future where sustainable goals and green development are known, respected, and achieved. This is the so-called social sustainability whose aim is to regulate – and possibly ameliorate – the impact that businesses have on people and their lives.

What has been done so far

An institution that has been able to fully integrate sustainability within its system can be described with the following characteristics and elements: (Clugston and Calder, 1999; Tilbury et al., 2005; Ferrer-Balas et al., 2008):

- Leadership and vision that express commitment to, and promotes, sustainability,
- Incorporation of the concepts and practices of sustainability into the teaching and research of all academic disciplines,
- An emphasis on fostering the inter- and trans-disciplinary teaching and research needed to provide solutions to sustainability challenges,
- Recognition of the ecological footprint of the institution, together with sustainable policies and practices in operations, support and services that minimize this footprint, and
- Engagement in community outreach that enhances environmental sustainability.

In order to reach these parameters so to consider a university to be fully sustainable, many studies and researches have been dedicated by analysts since the early of the 1970s. As a matter of fact, global concern focus on the environment and sustainability has started around this period and time, and since that, this growing attention has been transformed into real actions.
Since the beginning of the 70s numerous declarations, models, and parameters have been developed to measure, evaluate, and control the implementation of sustainability. Studies, researches, and the other various documents created on the subject throughout the years have helped detecting lacks where further work needed to be done, in finding solutions that could have eventually solved part of the ongoing environmental issue, and in creating indicators-based systems to keep track of the performance. As also confirmed in *Sustainability at universities: Students' perceptions from Green and Non-Green universities*, a "vast number of international declarations and initiatives (e.g., Higher Education Sustainability Initiative, Principles for Responsible Management Education) regarding sustainability and higher education were launched since sustainable development became part of the agenda" (Dagiliute,

Liobikiene, and Minelgaite, 2018). In the following pages there will be an analysis of what has been so far in terms of sustainable and green models, declarations, studies and parameters.

Key declarations and events

As mentioned in the previous pages, the early of 1970s mark the beginning of the growing relevance and attention given to global sustainability. Since this date, sustainability has been also introduced in the educational field through major national and international declarations, as well as institutional policies that tried to define and manage environmental sustainability within higher education (Wright, 2002). As we can observe in the table below, firstly created by Tarah S.A. Wright (2002) in the work titled *Definitions and framework for environmental sustainability in higher education*, it is noticeable that since 1970s many declarations have been created.

Table 1

Chronology of some declarations related to sustainability in higher education

Year	Declaration
1972	The Stockholm Declaration on the human environment
1977	Tbilisi Declaration
1990	University Presidents for a sustainable future: the Talloires Declaration
1991	The Halifax Declaration
1992	Report of the United Nations Conference on Environment and Development – Chapter 36, Promoting education, public awareness and training
1993	Ninth International Association of Universities Round Table: The Kyoto Declaration
1993	Association of Commonwealth Universities' Fifteenth Quinquennial Conference: Swansea Declaration

1994	CRE-Copernicus Chapter
1997	International Conference on Environment and Society – Education and Public Awareness for Sustainability: Declaration of Thessaloniki

Important to be discussed is the Talloires Declaration in 1990. Numerous French universities' leaders started to be concerned on the environmental global situation. Being aware of the fundamental role that universities can play in this scenario and their overall impact, they decided to create a shared document where they included a detailed description of all the key actions that, in their opinion and at that time, should have been taken so to assure future generations a better and more sustainable world. Then, there was the Tbilisi Declaration in 1977 where five key objectives have been set to be reached: awareness, knowledge, attitudes, skills, and participation. Another key declaration that set the foundations for sustainability in higher education as we know it today is the United Nations Conference on Environment and Development held in Rio de Janeiro in 1992. In this specific declaration the focus was all around the role that the education had towards the pursue and reach of green development goals (Lukman and Glavic, 2007). "It focused on the process of orienting and re-orienting education in order to foster values and attitudes regarding respect for the environment, and envisaged ways and means of doing so" (UNESCO, 2006). The last declaration that is worth the discussion is the CRE-Copernicus Chapter in 1994. It is considered to be relevant because it proposed some recommendations to "provide opportunities for higher education institutions to work and educate in line with the principles of sustainable development" (Lukman and Glavic, 2007). Among these proposed recommendations, the most relevant ones review the "implementation of the UN-Decade on ESD, sustainability standards of quality assurance for higher education institutions, and sustainable higher education institutions management" (Lukman and Glavic, 2007).

Aside from the ones mentioned in the table above, during the following years there were other numerous declarations. An example is the Bologna Declaration that took place in 1999, during which there was the proposal of actions so to better implement the environmental framework with various activities. "These activities include easily readable and comparable degrees (Bachelor, Master, Doctorate), the establishment of a system of credits (ECTS), promotion of mobility, cooperation and quality assurance, promotion of European dimensions in higher education (co-operation, cohesion, mobility schemes), lifelong learning, partnership with

students, promoting the attractiveness of the European Higher Education Area (EHEA), and connection between EHEA and the European research area (ERA)" (Lukman and Glavic, 2007). All the cited declarations discussed by Tarah S.A. Wright and other as the Bologna Declarations have had a big impact Higher Education Institutions, but it has been found that many universities and Higher Education Institutions signed the declarations but never really put their effort in pursuing actual environmental goals. Many could be the reasons why they agreed to take part in something they really did not believe in. They might have done it for social, economic, public relations purposes as well as reputation-related ones. After the creation of the first declarations, it emerged the first big issue: the practice by HEIs of "greenwash." (Wright, 2002) Transparency and measurement constitute two of the biggest problems ever related to sustainability in higher education because "measuring sustainability remains a complex and challenging process for higher education institutions, especially institutions that are at the early stage of their sustainable development programmes" (Alghamdi, den Heijer, and de Jonge, 2017).

Besides declarations, documents and first researches, there have been also key events that had an important impact on the way in which HEIs and universities think of sustainability and green development today. The first one was the Conference on the International Launch in Higher Education "Committing Universities to Sustainable Development" held in Austria in 2005. The conference revolved on the importance that future generations can have on our future and society. The final goal was that of identifying the role that universities could have played in the scenario, and how higher education institutions might have helped students to work towards the achievement of a sustainable development (Lukman and Glavic, 2007). Another significant attempt to implement sustainability in higher education was done throughout the United Nations Decade of Education for Sustainable Development (UNDESD) that started in 2005 and ended in 2014. The focus was the creation of a better sustainable future and that is why there was the proposal of "new opportunities in education and research, […] introducing the feasibility of confrontation using new challenges, aimed at approaching sustainability" (Lukman and Glavic, 2007). The Decade allowed for a unique approach to sustainability from a different point of view while mobilizing new educational resources. Education together with learning were considered to be two fundamental tools to be used in order to achieve the set goal: the integration of sustainable development within all the spheres related to education and learning. "This educational effort encouraged changes in behavior that created a more sustainable future in terms of environmental integrity, economic viability and a just society for present and future generations" (UNESCO 2005).

Models, studies, and parameters

Sustainability is a very hard concept to be defined because of the subjectivity of what can be considered to be environmentally sustainable; in fact, "what constitutes a 'green' scenario may be subject to interpretation" (Raunch and Newman, 2009). It is even harder to be measured seen the hundreds of metrics that can be possibly included in the analysis and elements to be considered. The majority of metrics and models created so far, among all the possible elements, decided to focus on the elements on which it was possible to gather more information and data: air emissions, energy use, water use, and material resource output so waster and recycling. (Raunch and Newman, 2009). In fact, numerous models have been created throughout the years, "ranging in topic from material and energy management to community and governance" (Raunch and Newman, 2009). Sustainability can be applied in numerous and diverse spheres within the educational field, and this is what makes it hard to create just one model to measure sustainable performance while setting goals to be reached in the future. When there are so many elements to be analyzed, it is very complicated to set precise targets. In this case, timing is crucial. As explained by Jason N. Raunch and Julie Newman (2009) in their work titles *Defining sustainability metric targets in an institutional setting*, universities should set short- or medium-term targets for sustainability metrics because when they decide to set long-term goals there is a lack of information of how to reach them. They do not have enough information of how to go through this long path.

The first model that will be analyzed is the one presented by Naif Alghamdi, Alexandra dei Heijer and Hans de Jonge (2017) in their work titled *Assessment tools' indicators for sustainability in universities: an analytical overview*. The paper pursued the objective of analyzing different tools used by universities so far in order to assess sustainability, while exploring the theoretical meaning of what it means to develop a sustainable university and what are the needed variables so to reach sustainable targets. The authors used a "desk study approach", so they analyzed a bunch of documents, papers, books as well as websites and social networks platforms so to come up with common areas and similar traits that characterize sustainable universities and determine the best tools to use. The final aim was to present institutions simple tools and indicators so to shed light on all the sustainability-related issues and allow universities to have new tools to face challenges and lack when it comes to measurements. As also mentioned in the previous pages, one of the biggest issues for the implementation of sustainability in HEIs is the complexity of measuring it.

In the paper it has been argued that "for measuring and analyzing sustainability in universities, three main approaches were developed: accounts assessment, narrative assessment and

indicator-based assessment." (Alghamdi, den Heijer, and de Jonge, 2017). The first one is a kind of assessment that takes into consideration raw data and then transforms it into common unit. However, this methodology considers only few aspects of sustainability and it is not very useful for strategy development because of a lack of transparency and consistency. The second typology of assessment, the narrative one, "combine text, maps, graphics and tabular data. They may use indicators but are not built around them. Their strength is their familiarity and flexibility. However, this flexibility has pitfalls" (Alghamdi, den Heijer, and de Jonge, 2017). The last categorization of assessment is the one based on indicators. Indicator-based assessment approach is considered to be very comprehensive and representative, and so that is why it has been used by many institutions. The power of this approach is to transform complicated messages into simple ones so to allow everyone to understand them. A comparison of the above-mentioned approaches is shown in the table below.

Table 2

The three main approaches to measuring and analyzing sustainability (Dalal-Clayton and Bass, 2002)

Approaches	**Accounts**	**Narrative assessments**	**Indicator-based assessments**
Potential for transparency	Low	Medium	High
Potential for Consistency	High	Low	High
Potential for participation	Low	High	Medium
Usefulness for decision-making	Medium	Medium	High

After having discussed the best approach on how to assess sustainability, the authors go on in discussing the importance of sustainability in universities even though more guidance might be needed to ameliorate the implementation of it. They also discussed the importance of assessment tools for universities that want to put all their best effort in reaching a better and more sustainable future. "There are a relatively large number of tools available to help universities to measure their sustainability. Yet, many are still being improved and this is evidenced by a recent release of some of these tools" (Alghamdi, den Heijer, and de Jonge, 2017). However, as discussed by M. Shriberg (2002) in the work titled *Institutional assessment tools for sustainability in higher education: strengths, weaknesses, and implications for practice and theory,* an ideal assessment approach should be:

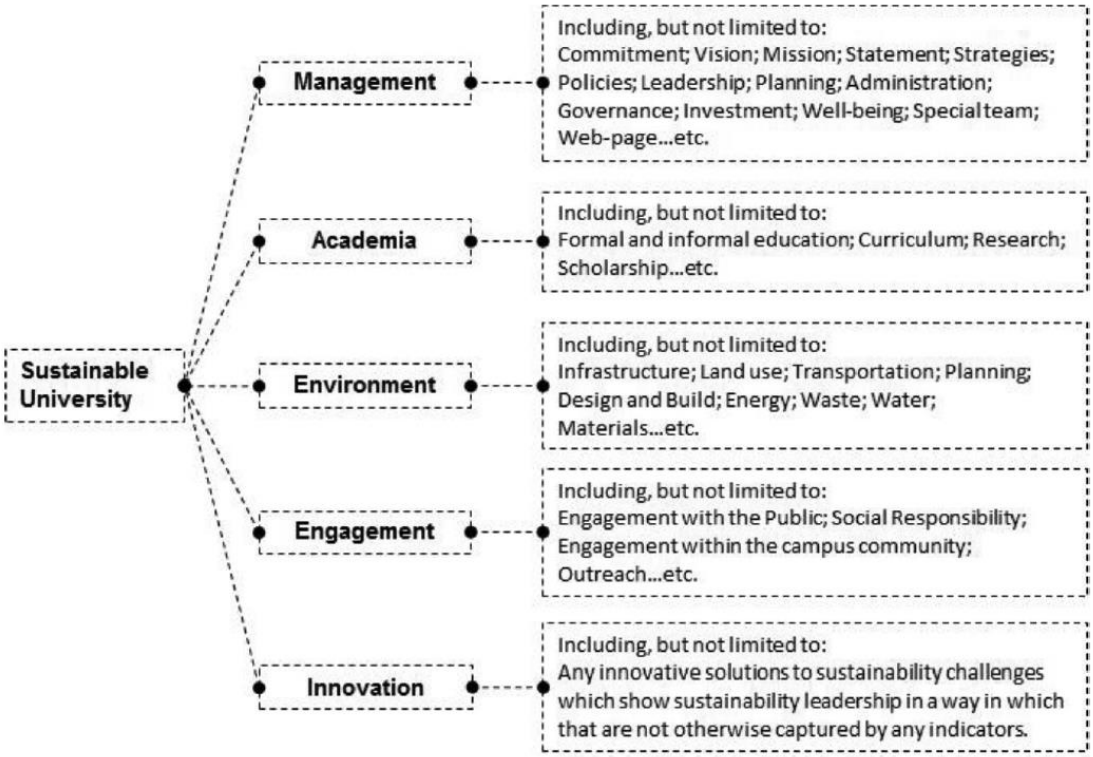
- Able to identify important issues,
- Calculable and comparable,
- Able to move beyond eco-efficiency,
- Able to measure process and motivations,
- Able to stress on comprehensibility.

After having recognized which are the main characteristics that a good assessment tool should have, the authors analyzed 12 different assessment tools used in the past so to implement sustainability within universities. After a deep analysis, it emerged that all the tools have common areas as we reported in **Image 1**. Those are the areas that all the tools decided to deal with, and so this means that these are the most important aspects on which HEIs and universities should work on if they want to properly implement sustainability within their institutions. Seen the numerous indicators we can recognize a real difficulty in creating a single model and/or tool able to address issues in all those different areas. Even though it seems very hard to do so, in 2010 there has been the creation of an assessment tool that covers the majority of the areas that we can read in **Image 1**.

As previously mentioned, an assessment tool needs to have five precise characteristics to be considered as a good one. These are the characteristics needed to help universities in correctly implementing sustainability. These elements are the ones contained in the so-called STARS assessment tool. It is considered to be the most comprehensive and advantageous one, because it is the only one that has the previously mentioned characteristics observed by M. Shriberg (2002).

Image 1

Main common criteria used in the 12 selected benchmarking tools to assess sustainable university



STARS is an acronym for Sustainability Tracking, Assessment and Rating System and it is an assessment tool developed by the AASHE, which is the Association for the Advancement of Sustainability in Higher Education. Developed in 2010, in few years the tool became one of the most used one among HEIs and universities in USA and Canada. According to the manual for understanding STARS 2.0, we acknowledge that the purposes of it is to:

> […] provide a framework for understanding sustainability in all sectors of higher education; to enable meaningful comparisons over time and across institutions using a common set of measurements developed with broad participation from the campus sustainability community; to create incentives for continual improvement towards sustainability; to facilitate information sharing about higher education sustainability practices and performance and finally to build a stronger, more diverse campus sustainability community (2014, p. 9).

All the elements contained in the STARS approach are shown in the **Image 2**. As we can notice from the image above, the assessment tool is divided into five different areas: academic, engagement, operations, planning and administration, and finally innovation. From these five

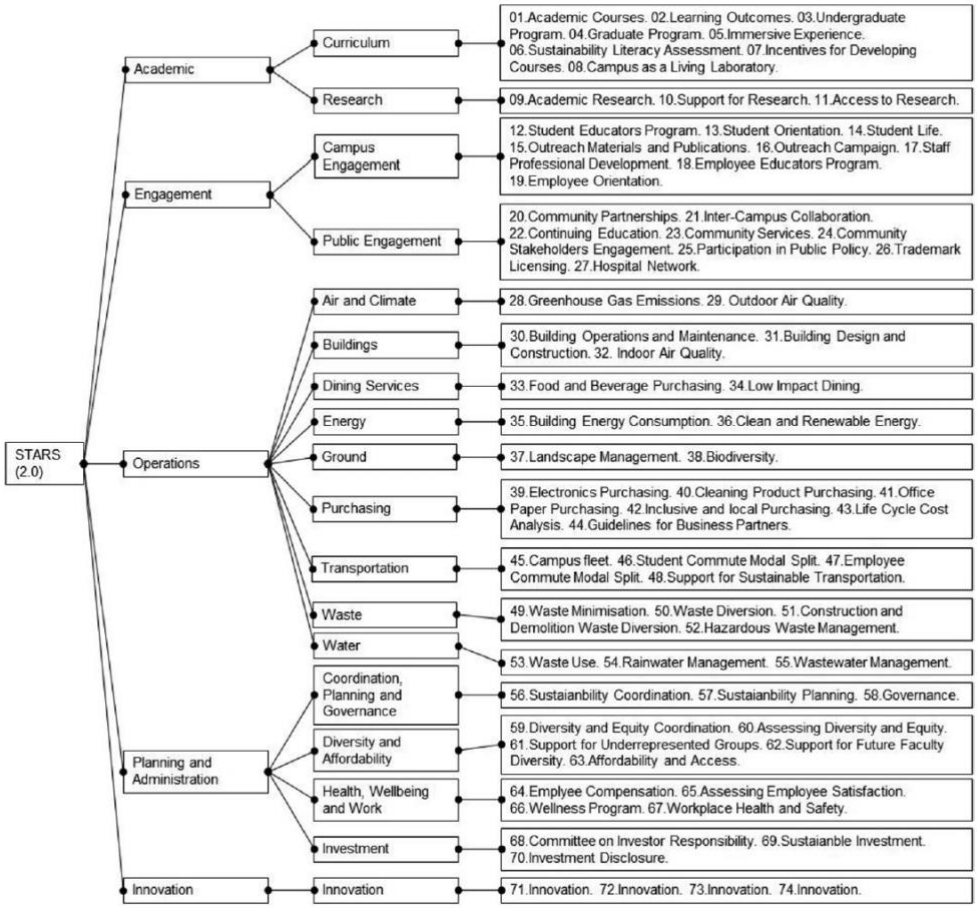
initial areas we can then notice 18 sub-criteria that go from curriculum, transportation, and energy to coordination, water and many others; and also 74 different indicators. As we can observe from the image, the majority of the indicators refer to the environmental sphere. Seen the completeness of the tool, it has been argued by the authors that "the STARS can be used as a road map for developing a sustainable plan for higher education institutions that taking first steps towards sustainability or those who already advanced" (Alghamdi, den Heijer, and de Jonge, 2017).

To sum up all the advantages coming from the use of the STARS assessment tool, it can be observed that:

- The tool contains almost all the criteria needed, so all the five aspects mentioned in **Image 1** are fully covered,
- The tool has numerous indicators that are fully able to assess sustainability when used within a university.

Image 2

A summary of the STARS assessment tool



The second study worth the mention is the one done by Tobler, Visschers, and Siegrist in 2012 in their work titled *Addressing climate change: determinants of consumers' willingness to act and to support policy makers.* The article focuses its analysis on two distinctive elements: the first one is how to properly address climate change, and the second one is on all the factors that might influence people's willingness to take specific actions. In this case, the study focuses on the consumers' willingness to take climate-friendly actions. The sustainability spheres that will be taken into consideration are the behavioral, social as well as the environmental one.

From the article it is possible to acknowledge which are the determinant elements, factors, and aspects that influence consumers when it comes to climate change and their willingness to act. In fact, we can read a first distinction between direct and indirect behaviors, and high- and low-cost behaviors. "In the literature, two alternative ways to differentiate pro-environmental actions have been suggested: (a) according to the actions' directness, indicating whether an action has a direct impact on greenhouse gas emissions (Kollmuss & Agyeman, 2002), or (b) costs, differentiating between actions associated with high or low level of personal or behavioral costs or efforts (Diekmann & Preisendörfer, 2003)" (Tobler, Visschers, and Siegrist, 2012). They represent different ways in which individuals can approach and act towards behaviors and their implementation. From this first behavioral distinction it is possible to understand that high-cost behaviors are considered to be a barrier where environmental concern itself cannot be sufficient as a factor to influence and convince consumers to act. "Generally, environmental concern is assumed to influence ecological behavior primarily when it is connected to low-costs and little inconvenience. Lower costs ease the transformation of attitudes into the corresponding behavior (Diekmann & Preisendörfer, 2003). However, for behaviors that are associated with higher costs or inconveniences, environmental concern alone is not sufficient to overcome the barriers." (Tobler, Visschers, and Siegrist, 2012) As one might think, people tend to choose all those actions that are considered to be relatively inexpensive and easy to perform; for this reason, high-cost behaviors are considered to be a barrier for the individuals' willingness to act. Other factors besides money and behaviors that can have a big influence on the personal motivation to act towards climate-friendly actions are:

- *Knowledge*: The personal concern that individuals have on climate change and their level of concern,
- *Impact*: The "locus of control" so to what extend individuals are aware of the power of their action. People with internal locus of control feel their action can actually have an impact on the final outcome and change the situation, in this case related to climate

change. Contrarily, people with external locus of control believe that their actions are meaningless and with no power, so they choose not to act at all because discouraged from the beginning,

- *Information*: Skepticism on the topic can make people developing a defense mechanism resulting in denying, for example, the existence of the problem with the ongoing climate change. Some people feel unsecure and skeptical and so they build barriers against it. Lack of information is another barrier.

In order to get this information, the authors developed a questionnaire presented to households in Switzerland, conducting a multiple linear regression analysis in which all predictor variables were entered simultaneously. From the results of the questionnaire, it is possible to observe that

- People are more likely to engage in low-cost and easy performable climate-friendly actions. "The more respondents thought that low-cost behaviors were beneficial for the climate, the more they were willing to exhibit these behaviors." Also, they showed "a strong positive relationship between the willingness to show climate-friendly low-cost behaviors and the acceptability of supportive measures" (Tobler, Visschers, and Siegrist, 2012).
- Perceived costs and climate benefits were the strongest predictive determinants for all five approaches to addressing climate change. "This finding might support the assumption that consumers make reasoned decisions, weighting costs and benefits of an action and choosing the option they believe to have the best balance" (Tobler, Visschers, and Siegrist, 2012).

Years later another article tried to analyze a similar topic to the one discussed by Tobler, Visschers, and Siegrist in 2012. Peidong Sang, Haona Yao, Lin Zhang, Sen Wang, Yanjie Wang, Jinjian Liu (2020) in their work titled *Influencing factors of consumers' willingness to purchase green housing: a survey from Shandong Province, China* want to analyze Chinese population's willingness to make a purchase when it comes to sustainable solutions for alleviating the energy crisis, in particular Green Housing (GH).

The article starts off by analyzing theories on which the analysis will be based on. The first and most famous one is the Theory of Planned Behavior, also called TPB. This theory explains human behaviors by taking into consideration three factors:

- Attitude Towards Behavior (ATB),
- Subjective norm (SN), and

- Perceived behavioral control (PBC).

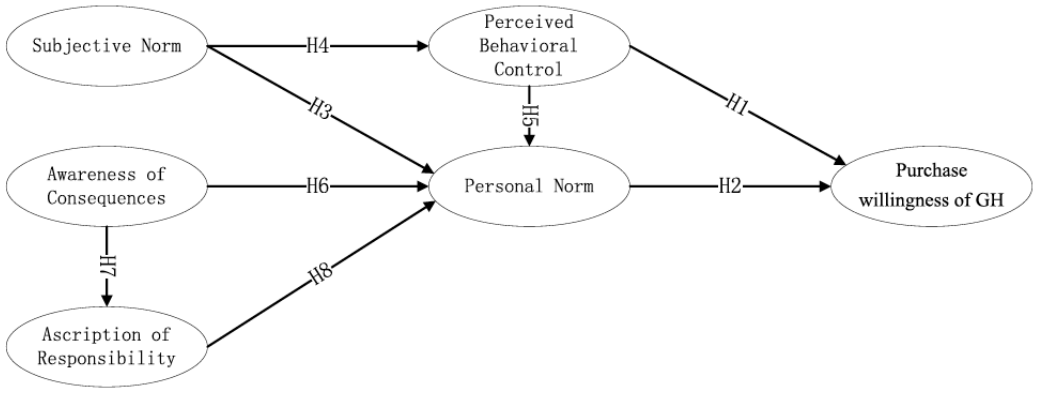
By being one of the most famous theories used in psychology, many researchers started to use it to explain environmental and non-environmental behaviors. The other theory taken as a basis is the Norm Activation Theory which explains altruistic behaviors. “According to NAM, a person’s pro-environmental behavior is predicted by three core components: awareness of consequences (AC), ascription of responsibility (AR) and personal norm (PN)” (Sang et al, 2020).

Starting from the two theories previously mentioned, the authors then explained the research hypothesis by dividing them into three different typologies of relationships. In fact, we have the first group of hypotheses that is referred to the relationship existing between the perceived behavior, the personal norm and Green Housing purchase willingness; the second group on the relationship among awareness of consequences, ascription of responsibility and personal norm; and finally, the third group of hypotheses that focuses on the relationship among subjective norm, perceived behavioral control and personal norm. From these initial three groups of relationships, the Shang et al. proposed the following hypotheses to be satisfied and then created a research theoretical framework described in Image 3 to predict Chinese population’s willingness to make a Green Housing purchase.

1. (H1) Perceived behavioral control positively influences GH purchase willingness,
2. (H2) Personal norm positively influences GH purchase willingness,
3. (H3) Awareness of consequences positively influences personal norm,
4. (H4) Awareness of consequences positively influences scription of responsibility,
5. (H5) Awareness of responsibility positively influences personal norm,
6. (H6) Subjective norm positively influences personal norm,
7. (H7) Subjective norm positively influences perceived behavioral control, and
8. (H8) Perceived behavioral control positively influences personal norms

Image 3

Research Model



The study focuses its analysis on the following elements:

- Awareness of consequences,
- Ascription of responsibility,
- Subjective norm,
- Perceived behavioral control,
- Personal norm, and
- Purchase willingness of GH.

After having carried out a partial least squares equation model used for statistical analyses, the results showed the following elements:

- Personal motivation plays a key role when it comes to action towards sustainability and willingness to purchase. "The consumer's willingness to purchase plays a key role in the promotion and development of GH. […] The results show that both egoism and altruism can stimulate consumers to purchase GH. In addition, egoism, as the original influencing factor of consumers' willingness to purchase, will have a direct or indirect impact on altruism" (Sang et el., 2020),
- About H1, results show that being a new kind of activity within Chinese society, the population will not be likely to make a purchase of a GH because of the lack of enough knowledge, money and other resources to convince them,
- About H2, results demonstrate that when personal norm is activated then consumers' sense of moral responsibility increases, and GH becomes consumers' first selection. Government can promote GH by increase consumers' willingness to purchase through the reduction of the burden through tax relief for example,
- About H3, H4, and H5 results show that pressure that individuals receive from the society will not only directly affect the decision on whether to fulfil or not moral obligations but will also indirectly influence the decision through the perception of the difficulty of this behavior. In other words, if the consumers feel that the decision of purchasing a GH is recognized by the society to be a behavior hard to implement, then they will be more likely to do it,
- "This study found that ascription of responsibility played a partial intermediary role between awareness of consequences and the personal norm" (Sang et al., 2020). So, for H6, H7, and H8 the results show that when consumers recognize the benefits they can get from making a purchase of GH, they are more inclined to choose GH because of the environmental protection and ethical obligations because they choose to act towards a more sustainable future.

Results show that personal norm and perceived behavioural control are the driving factors for consumers to purchase GH, indicating that GH purchase is driven by the comprehensive and irrational factors of consumers. Perceived behavioural control plays a part in the mediating role between subjective norm and personal norm, and ascription of responsibility plays a part of mediating role between awareness of consequences and personal norm.

The last sustainability sphere that will be analyzed in the following pages is the socio-economic one referred to the agricultural field. By the analysis of three works that discuss the same topic but in different countries, it will be possible to explain what might be the fundamental factors and determinant that influence people willingness to act. In particular, the focus will be on the willingness to take sustainable actions that will ameliorate and partly solve all the ongoing environmental issues. The comparison will be done by considering the papers analyzing Mexican, American, and German agriculture field. For the Mexican analysis I chose the work done by Padilla-Bernal et al. in 2018 titled *Views on sustainability and the willingness to adopt an environmental management system in the Mexican vegetable sector*; for the German food sector I selected the work titled *An Empirical Investigation into the Adoption of Green Procurement Practices in the German Food Service Industry* written by Verena Hauschildt and Birgit Schulze-Ehlersb in 2014; and finally for the American analysis I chose the work of Rankina et al. titled *Sustainability strategies in U.S. Agribusiness: Understanding key drivers, objectives, and actions* and published in 2011.

The three papers were able to provide a complete perspective on how sustainability and green practices are implemented in completely different realities with respect to the educational field. All works focus their methodologies on the use of surveys concerning sustainability views, actions, and performance measures of companies and data analysis. After having read and analysed all the models and factors described in all of the articles, I noticed some common areas which I observe to be useful for my dissertation as well. Even if the articles take into consideration three relatively different countries as Germany, USA, and Mexico they share the following elements when it comes to the implementation of sustainable practices within and outside the company:

DRIVERS

- Management pressure have a significant and very positive relationship with the level of sustainability and implementation of sustainable practice placed within the companies,

- Competition, governmental regulations, media as well as the size of the company are elements which have a very restricted impact,
- Cooperation between different entities working towards the same goals is considered to be fundamental to reach the goal of sustainability, environmental quality, social justice as well as economic prosperity for both the companies and the population as well,
- Because sustainability trend among consumers is increasing, companies are applying even more rules when choosing their suppliers to incorporate suppliers into corporate sustainability. That is why "green procurement strategies" (Germany) have been used so far so to use elements that go beyond the classical evaluation criteria as quality, price and/or reliability,
    - External drivers: political circumstances, preservation and support of local identity + cultural values, competitiveness, public pressure for sustainable activities.
    - Internal drivers: reputation, increase of productivity, profit, increase of moral aspects.
- Sustainability is recognized to be an element able to ameliorate the company's reputation, image and level of productivity.

BARRIERS

- Lack of proper knowledge on how to incorporate sustainable practice within a company,
- No developed network to share ideas and be inspired from,
- No economic help and/or suitable incentives for both consumers that find the increased price for sustainable products too high, and for companies that need to put extra effort and money to follow "sustainable rules" throughout their whole business model which might be more expensive and might take more time to be accomplished with respect to the traditional one,
- Consumers feel not to be directly affected by the potential consequences of not buying sustainable products and so they are not willing to pay higher prices for products coming from sustainable plants,
- The poor level of education of a company's management board might be a cause for the lack of sustainable activities and initiatives,

- Uncertainty towards benefits and costs.

Future actions – Agenda 2030

Human actions throughout the last decades have dramatically modified our natural surroundings, leading to the current environmental crisis in which we are living right now. Major actions needed to be taken at a global scale, and that is why in September 2015 the governments of all the United Nations member countries signed the Agenda 2030, also approved by the UN General Assembly. Agenda 2030 wants to shed light on the social and human development model that we are actually following, so to encourage and promote at a global level a responsible environmental stewardship (Ruiz-Mallen and Heras, 2020). The document contains 17 different Sustainable Development Goals (SGDs) with the final aim of promoting a sustainable development that everyone needs to work for: people, institutions, as well as businesses, national and international ones. As we can observe in **Image 4**, the SDGs set by the UN touch every spheres of the life from human development to education, passing through equality and health. The 17 Sustainable Development Goals contained in the UN Agenda 2030 are:

1. No poverty,
2. Zero hunger,
3. Good health and well-being,
4. Quality education,
5. Gender equality,
6. Clean water and sanitation,
7. Affordable and clean energy,
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,
14. Life below water,
15. Life on land,
16. Peace, justice and strong institutions, and
17. Partnership for the goals.

As stated by the United Nations, "this programme does not solve all the problems but represents a good common basis to build a different world and offer everyone the chance to live in an environmentally, socially, economically and socially sustainable world." All the 17 SDGs refer, in fact, to important issues that touch all the fundamental spheres of a sustainable

development. The spheres are the social, the ecological, and the economic one. As it can be understood, since the UN plan wants to implement good actions in all the critical spheres of human development, “climate action [represents just] one of the 17 Sustainable Development Goals (SGDs) of the Agenda 2030.”

Sustainability is not merely about the environment and its safeguard. In fact, with the Agenda 2030 the UN wants to increase awareness on how to implement actions towards a better and more sustainable world in all kind of fields. From civil society to international business, passing through governments and public institutions, everyone can help to ameliorate this environmental crisis with concrete measure and an integrated approach. The complete fulfillment of the Agenda 2030’s SDGs requires a committed involvement from all the components of the society.

Image 4

The 17 Sustainable Development Goals contained in the UN Agenda 2030

Sustainability is much more than just environment safeguard, as we can observe in **Image 4**, so universities and all kind of Higher Education Institutions play a fundamental role in the scenario as well. In fact, one the Agenda 2030’s goals (SDG 4) focuses on the need of having a fair access to tertiary education, including university, “as part of the promotion of lifelong learning opportunities for all. Yet, universities have another important role in the SDGs, as a driver for the achievement of the full set of goals, through their role in human formation,

knowledge production and innovation" (Chankseliani and McCowan, 2021). As observed by Ruiz-Mallen and Heras (2020),

> Universities and other Higher Education Institutions (HEIs) can play a crucial role in this endeavor. In particular, HEIs can prevent students from being overwhelmed by the nihilism and hopelessness of the current dramatic situation while promoting effective skills acquisition and values of connectedness between humans and nature.

However, there is a gap regarding the Agenda 2030 and the sustainability in HEIs. In fact, there is not a clear interpretation and understanding on how, where and when the latter should or might implement certain action towards a sustainable development. There is not a common understanding among HEIs on the precise meaning of sustainability and how this can have an influence on the staff members as well as on students (Ruiz-Mallen and Heras, 2020).

Drivers and barriers for Agenda 2030 SDGs' implementation in HEIs

After having recognized the importance of reaching a sustainable development, many universities included the goals developed in the UN Agenda 2030 in their own. "This requires the involvement of all the actors and some structural and cultural changes that put SDGs at the core of the governance and management of the university, embracing all the stakeholders" (Blasco, Brusca, and Labrador, 2021). However, there is never a referral to the importance of students within the process. None of the authors analyzed so far ever mentioned the role that students should and might play in putting all their effort in pursuing SDGs. But, more precisely, there has never been a reference on how sustainability implemented in universities and HEIs might have a positive influence on students' willingness to apply and participate as well.

Discussing on the many reasons why universities should implement sustainable actions in their own agenda, economic, social, and reputational drivers play a fundamental role. In fact, "one of the most compelling internal drivers for integrating sustainability into universities is the ethical obligation to address this significant global challenge. Given their collective knowledge and research capacity, there is a moral responsibility for universities to educate future leaders and to advance knowledge that can lead to the creation of a sustainable environment" (Moore 2005; Nicolaides 2006). Universities all around the world feel the moral obligation of putting all their best effort so to reach these sustainable goals because they are aware of the influence that these might have on the students, and on the society as well. Universities' students need to be aware of the national and international contexts in which they are currently living. One of the biggest issues here is the misinformation and lack of knowledge that the majority of

students have towards the topic. Universities as all kind of HEIs have a precise task: to increase awareness on the topic, teaching students how to address - and possibly solve - these environmental issues through precise policies, good leadership, and high engagement.

Besides the moral obligation, universities also have a public image to respect. In time, this can also increase the financial viability because of an increased number of students willing to apply to that specific university. In fact, the enhanced public image resulting from environmental leadership within the sector can also provide universities with improved financial viability through increased student recruitment and through the financial savings achieved from environmental efficiencies (Nicolaides 2006; Nomura and Abe 2010).

The last element can be considered to be either a driver or a barrier. In fact, financial incentives when received can play a big role in the implementation of the SDGs. The contrary, however, can become a big obstacle. As observed by the studies run by Meredith Ralph and Wendy Stubbs (2014) and then exposed in their work titled *Integrating environmental sustainability into universities,* almost 60% of actions towards sustainability are put in operational areas. "Universities are concentrating on […] 'green' operational areas of their campuses, rather than undertaking transformational change across all universities activities." In order to do so, universities need important financial incentives and governmental help, as well as support.

Research Gap

As observed in the previous paragraphs, an increasing number of studies and researches on the importance and implementation of sustainability in universities and HEIs have been done in the last decades. However, there are still many gaps to be fulfilled and many questions to answer to. In fact, as the majority of authors focus their attention on how, when, and where universities should implement sustainable actions, none of them discuss on the consequences. In other words, none of the contemporary authors ever analyzed the repercussions that sustainable implementations might have on students. The latter have never been the central focus of any analysis. The attention has been only focused on the universities and the important role they play.

We are well aware of the increasing importance that sustainability is gaining throughout the last decade, and the influence that this is having on every single sphere of everyone's life. The concept is completely focused on the development of goods and services that can fulfil our ongoing needs without compromising the ones of our future generations. The concern for the environment and the future of our planet is at the center of today's debate, but people are not

taking into consideration other aspects of sustainability. In fact, they do not realize that sustainability and the so-called "green development" should not be applied only to environmental matters, because they represent so much more that the preservation of our natural surroundings. In other words, even though the majority of people are now aware of it, sustainability can be associate to various contexts as for example the economic and social one. Sustainability mixed together with the so-called "green development" should have the final goal of reaching a sustainable society in which there is a harmony between the natural environmental, the conservation of all the available resources, and the social justice. All these elements needed to be reached to augment the quality of everyone's life. To do so, people need to realize that sustainability is much more than the preservation of our natural surroundings.

In order to address this important gap, I will create a survey containing specific questions on students' approach to sustainability, and how much the latter influence their educational choice. As described in the next pages, the survey will be divided into four different sections. Each of it will be focused on different aspects of sustainability. The final aim of the study is to understand the level of awareness and importance that people, in particular students, give to sustainability when choosing the university where to complete their academic path. I want to understand if, among all the most important factors as costs, locations, and future salary, sustainability can represent an influential element.

After having collected and analyzed the results, I will then discuss them so to shed light and understand whether students give actual importance to sustainability, or if sustainable development pursued by HEIs is not so important when it comes to choosing the best university for the future.

Methodology

The aim of the study was to explore the relationship that exists between sustainable development and Higher Education Institutions, especially universities. In particular, the goal was to examine the perceptions that students between 18 and 24 years old have towards sustainability and green activities, while understanding to what extent these two factors can influence students' willingness to apply to a certain university. The topic chosen for the following examination has just recently emerged; in fact, sustainability gained more and more importance only during the last decades. The following research wants to provide an initial approach to the impact that sustainability has – or might have – on the students' willingness to apply to a certain university.

Based on the available information and previous studies as well as knowledge related to sustainable development activities pursued by universities all around the world, a questionnaire was developed and distributed through Prolific. The questionnaire was split into four different parts, each measuring a different aspect of sustainability related to HEIs.

Questionnaire design

The questions chosen for the questionnaires were very specific and seven-point rating scales were used throughout the whole research with 1 indicating a negative attitude (not important at all), and 7 indicating a positive view (extremely important).

The questionnaire was divided as it follows, and it addressed the following questions:

- The first section sought to determine how sustainability can be inserted within the students' decision-making process when it comes to choosing a certain university. That is why the first question asked people how much importance they give to a list of 13 different factors using a Likert scale that goes from 1 (not important at all) to 7 (extremely important). In the list of factors, economic, social, and environmental sustainability were added. With the following question the aim was to understand if sustainability is actually taken into consideration in the decision-making process or if people give more importance to other factors. The second question ask respondents to rank the same factors previously mentioned in the first question, going from 1 (not important at all) to 13 (extremely important). This to understand if the change of scale would influence in any way the level of importance that people give to the same factors.
- The second section was related to the respondents' personal experiences with sustainability. The goal of the following section was to check what kind of relationship

people have with sustainable matters and their sustainability concern. A list of seven considerations on sustainability was presented and people needed to express their opinion, going from 1 (strongly disagree) to 7 (strongly agree). The final aim was to understand what kind of relationship people currently have with sustainability.

- The third section was entirely focused on sustainability. In this part the goal was to determine the approach that people had towards sustainability, and all the possible sustainable activities that a university might be pursuing within its campuses. That is why the questions asked people to:
    - Rate with a Likert scale from 1 (not important at all) to 7 (extremely important) a list of five sustainability pillars covering all the main areas in which sustainability can be applied,
    - Rank from 1 (not important at all) to 5 (extremely important) the previously mentioned sustainability pillars,
    - Rate with a Likert scale from 1 (not important at all) to 7 (extremely important) a list of factors contained in each of the five sustainability pillars mentioned in the previous questions. The aim was to understand if people were aware of the different areas in which sustainability can be applied to, and how much importance they give to each and every aspect,
    - Rank the same elements mentioned in the previous bullet point – the list of factors contained in each of the five sustainability pillars – from 1 (not important at all) to a maximum of 6 (extremely important).

  As also mentioned before, the questionnaire asked people to first rate and then rank the same elements, all referred to the 5 fundamental sustainability pillars, in order to understand if a change of scale would influence in any way the level of importance that people give to the same factors.
- The fourth section was focused on the social and demographical elements of the respondents. That is why the 6 questions contained in this last part of the questionnaire were about gender, age, level of study as well as job, income and nationality. This last part was fundamental in order to understand if the change in any of the elements would influence in any way possible the importance that people, in particular students, give to sustainability and related matters.

Sample

In order to create the online questionnaires, all the questions described in the previous paragraph have been grouped together. Surveys (*n = 600)* were distributed across the online platform – Prolific – over a period of seven days, starting at the end of May 2021. Respondents were not pre-briefed about the topic of the survey, but they were made sure that all the information coming from these online surveys would be collected and spread for no other purposes other than the following research. People who accepted to answer were given a total of 21 questions. In order to ensure a higher rate of completion without missing none of the proposed questions, the "force response" requirement was added to the survey. Completed surveys were immediately collected and then analyzed. A total of 579 usable questionnaires were used in the following research as can be observes in the **Image 5** below, representing a rate of return of 96.5 per cent.

Research design

With the aim of expanding the research while gathering further information so to compare Italian respondents' opinion with the ones coming from different countries all over the world, other countries besides Italy were taken into consideration for the data collection. In other words, a comparison between Italy and the rest of the world wanted to be made. The countries chosen for the comparison are France, Germany, Spain, UK, and US. This to have a global perspective on the importance that people, in particular students, give to sustainability and related matters when it comes to university. That is why the original questionnaire was replicated 5 more times, containing all the same topics and respecting the same order of questions. The order was:

- *First section* = how sustainability can be inserted within the students' decision-making process when it comes to choosing a certain university.,
- *Second section* = personal experiences with sustainability
- *Third section* = sustainability,
- *Fourth section* = respondents' social and demographical elements.

The only element that was differing from one questionnaire to another was the current country of residence. Before survey distribution, I reviewed the scales and personally pre-tested it to maximize the validity and functionality of it. The questions chosen for all the questionnaires were constructed following existing sustainability researches and past studies. However, some of them have been modified in order to better fit the final aim of the research.

Demographics

Prior to the examination, an explanatory line is needed for the numbers related to the countries:

1. Italy
2. France
3. Germany
4. Spain
5. UK
6. US

For all the above-mentioned countries, the 579 respondents were profiled based on gender, age, level of education as well as job, income, and nationality. As we can observe in **Image 5**, the sample was almost equally distributed in terms of gender because 51.6 per cent were male with a total of 299 questionnaires completed. As we can examine in **Image 6**, out of the 299 male respondents, the majority of them come from Spain with a percentage of 10.71; and 10.19 per cent was coming from France and Germany. Instead, 47 per cent were female with a total of 272 questionnaires completed. Out of the 272 female respondents, the majority of them came from UK with a total of 12.44 per cent; 9.15 per cent were from US and 6.91 per cent from Italy. Finally, 1.4 per cent of the respondents that preferred to not express their gender with a total of 8 questionnaires completed. The majority of respondents that preferred to not reveal their gender were coming from France and US.

For what concerns the age, we asked the online platform to only select people going from an age of 18 to a maximum of 24. So, starting from this information it can be observed in **Image 8** that the majority of respondents were 24 years old for a total 19.9 per cent. Then, 17.8 per cent were 22 years old with a total of 103 questionnaires completed; 16.2 per cent were 21 and 23 years old with a total of 188 questionnaires completes. Finally, a big part of the respondents was 20 years old with a 14.2 per cent and a total of 82 questionnaires completed. The rest of the respondents were 18 years old with a percentage of 3.6 and 21 total questionnaires completed; 25 years old and 26 years old with a percentage of 0.3 and a total of 4 questionnaires completed. In the contingency table in **Image 9** we can examine where these respondents come from. As observable in the table below, the group of 24 years-old respondents, which represent the age with most completed questionnaires, mainly come from Germany with a percentage of 4.50 and from France with a total percentage of 4.15. This is an unexpected result. The only two languages that were selected for the online questionnaires were Italian and English. Consequently, highest percentages were expected in countries where these languages are well-spoken as Italy, UK, and US. Contrarily, the majority of respondents come from two countries where the first language is neither Italian nor English. The only groups of age coming from one

of the three before-mentioned countries speaking either Italian or English are 22 years-old respondents from Italy with a percentage of 4.50 per cent; 23 years-old respondents from Italy and UK with a total of 6.22 per cent.

To discuss the level of education that has been recorded from each respondent, an explanatory line is needed for the number in **Image 10** that go from 1 to 7.

- 1 = primary school,
- 2 = middle school,
- 3 = high school,
- 4 = technical institute,
- 5 = professional institute,
- 6 = university,
- 7 = other.

Once clarified this, we can observe from **Image 10** that a significant part of the respondents with a total percentage of 50.4 is currently or already attended university, having a total of 292 questionnaires completed out of 579. This might be explained by the range of age that has been decided for the research (18 – 24 years old). Then, a percentage worth mentioning is the 35.2 per cent of respondents who stopped their education level at high school. As mentioned before, this element can be explained by the range of age selected for the online survey, which goes from 18 to 24 years old. This part of respondents might be students that are still unsure of what kind of academic path they want to undertake and still undecided about their future.

By comparing the level of education to the respondents' country of origin and the declared age in **Image 11**, we can observe that in Italy, even though the majority of respondents declared to be 22 years old, 44 completed questionnaires out of a total of 99, so 44.45 per cent, answered "high school" where they were asked to express their level of education; and 32.33 per cent of them selected "university" as maximum level of education. This might be due to the typology of question. Respondents were asked to express their highest level of education obtained so far, and not to report the ongoing on. In France, the majority of respondents were 20 years old and in fact, almost 75.76 per cent declared to be attending university and only 16.16 per cent of them declared to be a high school student. Moreover, also Germany registered a 51.58 per cent of high school students, and a 36.84 per cent of university students. However, Spain, UK, and US respected the expectations. All three had a majority of respondents going from 21 to 23 years old. In fact, in Spain 52.58 declared to be university students and 27.84 per cent to be high school students; in UK and US, where the majority of respondents were 23 years old, surveys revealed that 53.68 per cent in UK and 55.32 per cent in USA were university students; and 32.63 per cent in UK and 39.36 per cent in US were high school students.

After having discussed gender, age, and level of education, the fourth element selected to screen the respondents is the typology of job they have. As for education, also here an explanatory line is needed for the numbers that can be observed in **Image 12**.

- 1 = students,
- 2 = office worker, workers, clerk,
- 3 = professor,
- 4 = freelance,
- 5 = self-employed worker,
- 6 = business owner,
- 7 = retired,
- 8 = administrator,
- 9 = unemployed,
- 10 = other.

As we can examine by the table below, the majority of respondents are students. In fact, this option of the survey recorded a 70.3 per cent with a total of 407 questionnaires completed. As mentioned in the previous page, this high percentage was expected before analyzing the data collected because of the range of age chosen for this online survey. Then, the survey recorded a significant 11.4 per cent of respondents being employed as office worker, with a total of 66 questionnaires completed. The rest of the job listed as an option recorded a minimum of 0.2 per cent for business owner, to a maximum of 7.8 per cent for the unemployed option.

If we compare the typology of employment with the country of origin, researches revealed that, concerning the 70.3 per cent of respondents who were recorded as students, 83 out of a total of 407 came from Italy. So, 14.16 per cent of all students are Italian. Then, there was almost a 26 per cent of students coming from France and Spain. For what concerns the second most answered type of employment (office workers), from **Image 13** we can observe that 18 out of 66 respondents were from UK (27.28 per cent) and 17 out of 66 were from US (25.76 per cent).

As fifth element for the respondents' screening, net income was chosen. This factor was chosen to understand whether the level of income recorded in the previous year might be an influential indicator within the decision-making process that students undertake to choose their university. In other words, this question aimed at understanding if the cost of a university and the possibility of getting a scholarship (economic sustainability) might be a fundamental factor for the university choice. Also here, an explanatory line is needed:

- 1 = 0€ - 9.999€
- 2 = 10.000€ - 19.000€
- 3 = 20.000€ - 39.000€
- 4 = 40.000€ - 59.000€

- 5 = 60.000€ - 79.000€
- 6 = 80.000€ - 99.000€
- 7 = 100.000€ +

As we can observe from **Image 13**, the majority of respondents fall in the first range of income that goes from 0€ to 9.999€ with a percentage of 63.7 and a total 369 questionnaires completed. As expected from the previous data, respondents chosen for the online survey are very young and they still attend university, so their net income was expected to fall into this first group. In fact, as proof, less than 1 per cent of respondents included themselves in the last two categories, which can be considered to be the highest ones. On the contrary, the online surveys unexpectedly recorded a 17.8 per cent of respondents falling into the 10.000€ - 19.000€, and a 12.8 per cent that can be inserted in the third group, the one that goes from 20.000€ to 39.000€. As for the other socio-demographic factors previously analyzed, also for the net income there has been the creation of a contingency table that put in a direct comparison net income and country of origin. As we can notice in both **Image 14** and **Image 15**, the majority of the answers fall into the first group that goes from 0€ to 9.999€. This can be explained, as already mentioned before, by the range of age chosen and because the majority of the respondents (70.3 per cent) declared to be a student. Keeping this in mind, the following percentages have been observed for each category of income:

- *1 = 0€ - 9.999€*
    - 20.05 per cent of respondents came from France,
    - 18.43 per cent of respondents came from Germany, and
    - 17.62 per cent of respondents came from Spain.
- *2 = 10.000€ - 19.000€*
    - 20.39 per cent of respondents came from Spain,
    - 18.45 per cent of respondents came from UK, and
    - 16.51 per cent of respondents came from Germany.
- *3 = 20.000€ - 39.000€*
    - 27.03 per cent of respondents came from US,
    - 21.62 per cent of respondents came from UK, and
    - 20.27 per cent of respondents came from Italy.
- *4 = 40.000€ - 59.000€*
    - 38.89 of respondents came from US, and
    - 22.20 of respondents came from UK and Italy.
- *5 = 60.000€ - 79.000€*

    - 50 per cent of respondents came from US,
    - 20 per cent of respondents came from Spain and Italy, and
    - 10 per cent of respondents came from Germany.
- *6 = 80.000€ - 99.000€*
    - 75 per cent of respondents came from US, and
    - 15 per cent of respondents came from Germany
- *7 = 100.000€ +*
    - This category registered just one answer and the respondent came from UK.

Image 5 – Total Sample

Statistiche

		Country	Sex	Age	Edu	Employment	Income
N	Valido	579	579	579	579	579	579
	Mancante	0	0	0	0	0	0
Media		3,47	1,50	21,67	4,69	2,39	1,64
Mediana		3,00	1,00	22,00	6,00	1,00	1,00
Modalità		1[a]	1	24	6	1	1
Deviazione std.		1,710	,527	1,853	1,462	2,831	1,035
Minimo		1	1	18	1	1	1
Massimo		6	3	32	7	10	7

a. Esistono più mode. Viene visualizzato il valore più piccolo

Image 6 – Gender

		Frequenza	Percentuale	Percentuale valida	Percentuale cumulativa
Valido	uomo	299	51,6	51,6	51,6
	donna	272	47,0	47,0	98,6
	altro	8	1,4	1,4	100,0
	Totale	579	100,0	100,0	

Image 7 – Gender * Country

		Country						
		1	2	3	4	5	6	Totale
Gender	1	58	59	59	62	22	39	299
	2	40	38	35	34	72	53	272
	3	1	2	1	1	1	2	8
Totale		99	99	95	97	95	94	579

Image 8 – Age

		Frequenza	Percentuale	Percentuale valida	Percentuale cumulativa
Valido	18	21	3,6	3,6	3,6
	19	65	11,2	11,2	14,9
	20	82	14,2	14,2	29,0
	21	94	16,2	16,2	45,3
	22	103	17,8	17,8	63,0
	23	94	16,2	16,2	79,3
	24	115	19,9	19,9	99,1
	25	2	,3	,3	99,5
	26	2	,3	,3	99,8
	32	1	,2	,2	100,0
	Totale	579	100,0	100,0	

Image 9 – Age * Country

		Country						
		1	2	3	4	5	6	Totale
Age	18	2	3	7	2	3	4	21
	19	8	11	9	13	11	13	65
	20	10	19	10	13	16	14	82
	21	18	14	14	20	11	17	94
	22	26	17	12	16	20	12	103
	23	18	9	16	18	18	15	94
	24	17	24	26	14	16	18	115
	25	0	1	0	0	0	1	2
	26	0	1	1	0	0	0	2
	32	0	0	0	1	0	0	1
Totale		99	99	95	97	95	94	579

Image 10 – Level of Education

		Frequenza	Percentuale	Percentuale valida	Percentuale cumulativa
Valido	1	1	,2	,2	,2
	2	10	1,7	1,7	1,9
	3	204	35,2	35,2	37,1
	4	44	7,6	7,6	44,7
	5	20	3,5	3,5	48,2
	6	292	50,4	50,4	98,6
	7	8	1,4	1,4	100,0
	Totale	579	100,0	100,0	

Image 11 – Level of Education * Country

		Country						
		1	2	3	4	5	6	Totale
Edu	1	0	0	1	0	0	0	1
	2	5	0	4	0	1	0	10
	3	44	16	49	27	31	37	204
	4	16	5	4	10	5	4	44
	5	2	3	0	8	3	4	20
	6	32	75	35	51	52	47	292
	7	0	0	2	1	3	2	8
Totale		99	99	95	97	95	94	579

Image 12 – Employment

		Frequenza	Percentuale	Percentuale valida	Percentuale cumulativa
Valido	1	407	70,3	70,3	70,3
	2	66	11,4	11,4	81,7
	3	3	,5	,5	82,2
	4	14	2,4	2,4	84,6
	5	10	1,7	1,7	86,4
	6	1	,2	,2	86,5
	8	6	1,0	1,0	87,6
	9	45	7,8	7,8	95,3
	10	27	4,7	4,7	100,0
	Totale	579	100,0	100,0	

Image 13 – Employment * Country

		Country						
		1	2	3	4	5	6	Totale
Employ	1	82	74	72	74	50	55	407
	2	5	9	9	8	18	17	66
	3	1	2	0	0	0	0	3
	4	2	3	2	3	3	1	14
	5	1	0	1	1	1	6	10
	6	0	0	0	1	0	0	1
	8	0	0	1	0	3	2	6
	9	8	8	6	6	9	8	45
	10	0	3	4	4	11	5	27
Totale		99	99	95	97	95	94	579

Image 14 – Net Income

		Frequenza	Percentuale	Percentuale valida	Percentuale cumulativa
Valido	1	369	63,7	63,7	63,7
	2	103	17,8	17,8	81,5
	3	74	12,8	12,8	94,3
	4	18	3,1	3,1	97,4
	5	10	1,7	1,7	99,1
	6	4	,7	,7	99,8
	7	1	,2	,2	100,0
	Totale	579	100,0	100,0	

Image 15 – Net Income * Country

		Country						
		1	2	3	4	5	6	Totale
Income	1	62	74	68	65	55	45	369
	2	16	16	17	21	19	14	103
	3	15	8	6	9	16	20	74
	4	4	1	2	0	4	7	18
	5	2	0	1	2	0	5	10
	6	0	0	1	0	0	3	4
	7	0	0	0	0	1	0	1
Totale		99	99	95	97	95	94	579

Analysis and Results

As already mentioned in the previous pages, the submitted questionnaire was split into four sections, each measuring a different aspect of sustainability. The aim of the questionnaire and of all the questions that were inserted within it was that of analyzing to what extend sustainability and related matters could eventually influence students' decision-making process when choosing their future university. Based on the literature and past studies, as well as correlated researches, an online questionnaire was distributed to a specific online audience. In the following paragraphs all the data collected for each section will be analyzed. First, there will be the discussion of all the influential parameters with the help of a factor analysis, which grouped into 4 different groups (sustainability, networks and extra-curricular activities, cost, and reputation) the most important factors. Then, there will be a One-Way Analysis of Variance (ANOVA) with the goal of comparing each country on the singular factors previously mentioned. Secondly, there will be the analysis of all the sustainability pillars. A descriptive and a One-Way Analysis of Variance (ANOVA) will reveal the level of importance that every of the analyzed countries give to each sustainability pillars.

Section 1: Influential parameters for the university decision-making process

In the following paragraph there will be the analysis of the chosen parameters that can influence the university decision-making process for students. The chosen parameters were:

1. Positioning of the university in national/international rankings,
2. Prestige and reputation,
3. Cost,
4. Presence of scholarships,
5. Extra-curricular activities,
6. Participation of companies in courses,
7. Post-graduate salary,
8. Location (country, city, etc),
9. Social sustainability level,
10. Economic sustainability level,
11. Environmental sustainability level,
12. Transparency of admission procedures and rules,
13. Excellence in research,
14. Sport,
15. Security inside the university.

Respondents were asked to rank the 15 parameters in order of importance from 1 (extremely important) to 15 (not important at all). Results revealed that the most attention was given to the following elements:

- Positioning of the university in national/international rankings
- Prestige and reputation
- Cost
- Location (country, city, etc)

As a matter of fact, from the graphs below we can observe that respondents rank these elements always among the first positions. In absolute terms, the elements that were placed in the first position by the majority of the respondents is *cost*. This means that all cost-related matters are considered to be very important for students, and in general by young people, when choosing a specific university. In spite of this result, economic sustainability level so all the economic help that students can receive to attend a university, was not placed among the first positions of the raking. This might be due to a lack of information and knowledge on the true meaning of "economic sustainability". By looking at the graphs below, from **Image 17** it can be observed how the cost of a university has been placed in the first position by 141 respondents out of a total of 577. In other words, 24.4 per cent of the time people considered cost to be the most influential element when choosing a university. At the second place of the ranking there is the *location*. In fact, 107 respondents out of 577 put this factor in the first position. So, 18.5 per cent of the selected respondents considered cost to be the most influential element when choosing a university as we can also see in **Image 18 and 18.1**. In third position there is the prestige and reputation of the university. This factor was not considered by many respondents to be the absolute most influential one. As a matter of fact, 92 out of 577 respondents placed this element in the third position of the ranking. Notwithstanding, it can still be considered one of the most influential elements. In fact, 41.1 per cent of respondents put this factor in the top three positions. Last but not least, at the fourth place of the ranking we find the positioning of a university in national/international rankings. In fact, as we can see in **Image 20 and 20.1**, this element was considered to be among the most important ones by 99 respondents for a total percentage of 15.5.

After having analyzed the elements that respondents considered to be the most influential ones, now we will analyze the elements that were placed by respondents in the middle of the total ranking. In other words, the following elements were considered to be important, but not so relevant to deserve the top four positions of the absolute ranking. The first two that will be

examined are the ones related to wealth. In fact, the presence of scholarships and the post-graduate salary were not considered to be fundamental for students. As we can observe in **Image 21, 21.1, 22, and 22.1** both elements were placed between the 3rd and 9th position in the absolute ranking with a total percentage of 62.7 for the presence of scholarships, and 51.8 for the post-graduate salary. Then, there are factors related to network and extra-curricular activities. The first that will be analyzed are extra-curricular activities and the presence of companies in courses. These two elements were mostly put among the 5th and 10th position of the ranking. As we can observe in **Image 23 and 23.1**, extra-curricular activities were always put somewhere between the 5th and 10th position. In fact, 29.3 per cent of respondents placed the elements between the 5th and 7th position, and 10.5 per cent of them place it at the 10th place. For what concerns the presence of companies in courses, the results are very similar. In fact, the majority of the respondents placed this factor between the 6th and 8th position with a total percentage of 27.6.

Now let's analyze the elements that gained the lowest positions. The factors in question are:

- Transparency of admission procedures and rules,
- Excellence in research,
- Security inside the university,
- Sport.

The first three parameters were always placed in the lowest positions. In fact, in the general ranking they can were placed somewhere between the 13th and 15th position. As we can understand from the table in **Image 25**, transparency of admission procedures and rules was placed by the majority of respondents (n=69) at the 13th position with a percentage of 11.9; in **Image 26 and 26.1** we see that excellence in research was mainly placed between the 13th and 14th position with a total percentage of 21.9; finally, in **Image 27 and 27.1** we observe how the security in the university was not considered an important parameter and it was mainly placed between the 14th and 15th position by 121 with an incidence of 18.5 per cent. However, the least important parameter of all the ones listed was sport. In fact, this was placed by 268 respondents with an incidence of 46.3 per cent in the very last position of the ranking. Researches revealed that students did not put much attention to sports and all related matters when choosing university.

Let's now analyze the data on which the research in mainly focused on: sustainability. Hypothesis forecasted these elements to be placed in the middle of the ranking because, as the literature review also revealed, still not much attention is given to sustainability and related

matters. Respecting the hypothesis, all three aspects of sustainability (economic, social, and environmental) were placed between the 10th and 12th position of the ranking. Among all three, the one that was given more importance was the social sustainability. In fact, this element was placed at the 10th position by 81 respondents with an incidence of 14 per cent; economic sustainability was placed at the 11th position by 83 respondents and a percentage of 14.3; and finally, environmental sustainability that was placed 12th by 86 respondents with an incidence of 14.9 per cent. Results respected the expectations, even though environmental sustainability was expected to gain the best position among the three since it is the most-known parameter. All the data analyzed can be observed in **Image 29, 30, and 31.**

Image 16 – Parameters

		SC_UNIrank_pos	SC_UNIrank_resp	SC_UNIrank_cost	SC_UNIrank_borsest	SC_UNIrankextrcurr
N	Valido	577	577	577	577	577
	Mancante	2	2	2	2	2
Media		6,09	5,75	5,16	6,79	7,96
Mediana		5,00	4,00	3,00	6,00	8,00
Modalità		1	3	1	3	5
Deviazione std.		4,345	4,034	4,676	3,766	3,612
Minimo		1	1	1	1	1
Massimo		15	15	15	15	15

Image 16.1 – Parameters

		SC_UNIrank_compan	SC_UNIrank_salary	SC_UNIrank_locat	SC_UNIrank_socsust	SC_UNIrank_ecsust
N	Valido	577	577	577	577	577
	Mancante	2	2	2	2	2
Media		8,40	7,43	5,84	8,98	9,46
Mediana		8,00	7,00	4,00	9,00	10,00
Modalità		7[a]	5	1	10	11
Deviazione std.		3,806	3,714	4,498	3,026	3,144
Minimo		1	1	1	1	1
Massimo		15	15	15	15	15

Image 16.2 – Parameters

		SC_UNIrank_envsust	SC_UNIrank_admproc	SC_UNIrank_research	SC_UNIrank_sport	SC_UNIrank_security
N	Valido	577	577	577	577	577
	Mancante	2	2	2	2	2
Media		10,09	8,82	8,86	11,24	9,15
Mediana		11,00	9,00	9,00	14,00	10,00
Modalità		12	13	14	15	15
Deviazione std.		3,199	3,675	3,968	5,121	4,330
Minimo		1	1	1	1	1
Massimo		15	15	15	15	15

Image 17 – Cost

SC_UNIrank_cost

		Frequenza	Percentuale	Percentuale valida	Percentuale cumulativa
Valido	1	141	24,4	24,4	24,4
	2	99	17,1	17,2	41,6
	3	69	11,9	12,0	53,6
	4	50	8,6	8,7	62,2
	5	35	6,0	6,1	68,3
	6	22	3,8	3,8	72,1
	7	21	3,6	3,6	75,7
	8	11	1,9	1,9	77,6
	9	12	2,1	2,1	79,7
	10	9	1,6	1,6	81,3
	11	9	1,6	1,6	82,8
	12	10	1,7	1,7	84,6
	13	17	2,9	2,9	87,5
	14	31	5,4	5,4	92,9
	15	41	7,1	7,1	100,0
	Totale	577	99,7	100,0	
Mancante	Sistema	2	,3		
Totale		579	100,0		

Image 17.1 – Cost

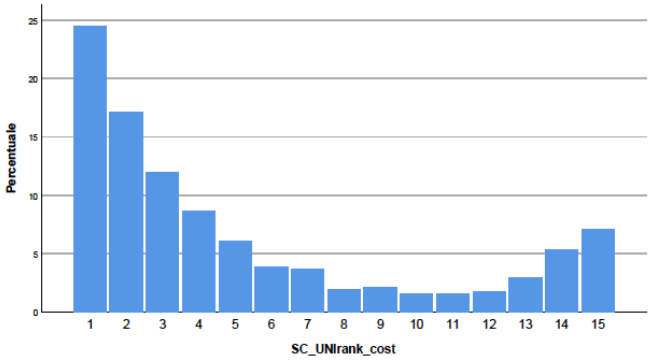


Image 18 - Location (country, city, etc)

SC_UNIrank_locat

		Frequenza	Percentuale	Percentuale valida	Percentuale cumulativa
Valido	1	107	18,5	18,5	18,5
	2	78	13,5	13,5	32,1
	3	58	10,0	10,1	42,1
	4	52	9,0	9,0	51,1
	5	34	5,9	5,9	57,0
	6	31	5,4	5,4	62,4
	7	34	5,9	5,9	68,3
	8	27	4,7	4,7	73,0
	9	18	3,1	3,1	76,1
	10	26	4,5	4,5	80,6
	11	18	3,1	3,1	83,7
	12	15	2,6	2,6	86,3
	13	22	3,8	3,8	90,1
	14	25	4,3	4,3	94,5
	15	32	5,5	5,5	100,0
	Totale	577	99,7	100,0	
Mancante	Sistema	2	,3		
Totale		579	100,0		

Image 18.1 – Location (country, city, etc.)

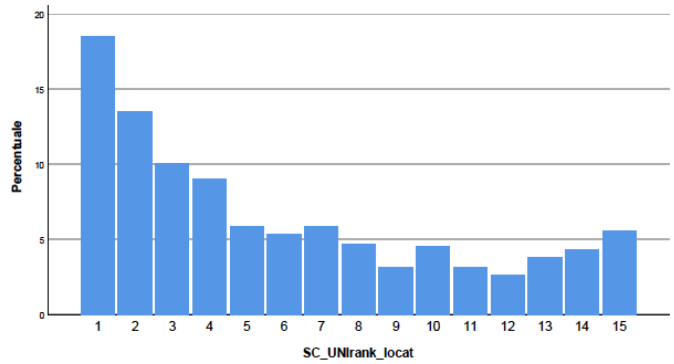


Image 19 – Prestige and reputation

SC_UNIrank_rep

		Frequenza	Percentuale	Percentuale valida	Percentuale cumulativa
Valido	1	58	10,0	10,1	10,1
	2	88	15,2	15,3	25,3
	3	92	15,9	15,9	41,2
	4	54	9,3	9,4	50,6
	5	42	7,3	7,3	57,9
	6	37	6,4	6,4	64,3
	7	36	6,2	6,2	70,5
	8	21	3,6	3,6	74,2
	9	31	5,4	5,4	79,5
	10	22	3,8	3,8	83,4
	11	16	2,8	2,8	86,1
	12	23	4,0	4,0	90,1
	13	23	4,0	4,0	94,1
	14	23	4,0	4,0	98,1
	15	11	1,9	1,9	100,0
	Totale	577	99,7	100,0	
Mancante	Sistema	2	,3		
Totale		579	100,0		

Image 19.1 – Prestige and reputation

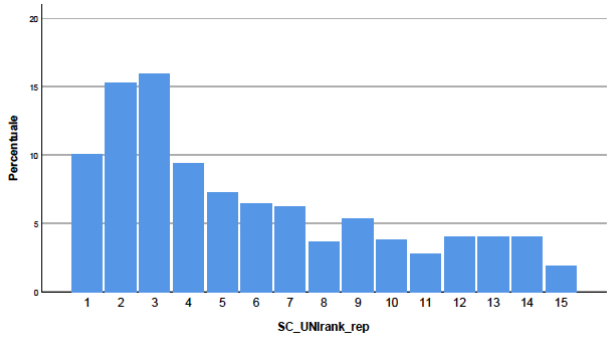


Image 20 - Positioning of the university in national/international rankings

SC_UNIrank_pos

		Frequenza	Percentuale	Percentuale valida	Percentuale cumulativa
Valido	1	90	15,5	15,6	15,6
	2	69	11,9	12,0	27,6
	3	52	9,0	9,0	36,6
	4	60	10,4	10,4	47,0
	5	37	6,4	6,4	53,4
	6	36	6,2	6,2	59,6
	7	36	6,2	6,2	65,9
	8	34	5,9	5,9	71,8
	9	19	3,3	3,3	75,0
	10	29	5,0	5,0	80,1
	11	24	4,1	4,2	84,2
	12	20	3,5	3,5	87,7
	13	20	3,5	3,5	91,2
	14	27	4,7	4,7	95,8
	15	24	4,1	4,2	100,0
	Totale	577	99,7	100,0	
Mancante	Sistema	2	,3		
Totale		579	100,0		

Image 20.1 – Positioning of the university in national/international rankings

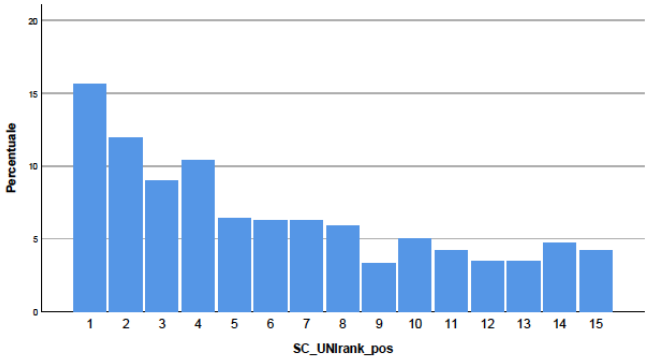


Image 21 – Presence of scholarships

SC_UNIrank_borsest

		Frequenza	Percentuale	Percentuale valida	Percentuale cumulativa
Valido	1	25	4,3	4,3	4,3
	2	46	7,9	8,0	12,3
	3	66	11,4	11,4	23,7
	4	62	10,7	10,7	34,5
	5	53	9,2	9,2	43,7
	6	50	8,6	8,7	52,3
	7	41	7,1	7,1	59,4
	8	45	7,8	7,8	67,2
	9	46	7,9	8,0	75,2
	10	38	6,6	6,6	81,8
	11	18	3,1	3,1	84,9
	12	24	4,1	4,2	89,1
	13	28	4,8	4,9	93,9
	14	29	5,0	5,0	99,0
	15	6	1,0	1,0	100,0
	Totale	577	99,7	100,0	
Mancante	Sistema	2	,3		
Totale		579	100,0		

Image 21.1 – Presence of scholarships

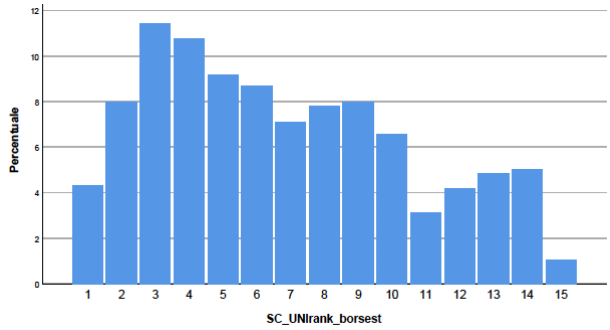


Image 22 – Post-graduate salary

SC_UNIrank_salary

		Frequenza	Percentuale	Percentuale valida	Percentuale cumulativa
Valido	1	16	2,8	2,8	2,8
	2	29	5,0	5,0	7,8
	3	53	9,2	9,2	17,0
	4	48	8,3	8,3	25,3
	5	65	11,2	11,3	36,6
	6	50	8,6	8,7	45,2
	7	51	8,8	8,8	54,1
	8	40	6,9	6,9	61,0
	9	51	8,8	8,8	69,8
	10	38	6,6	6,6	76,4
	11	30	5,2	5,2	81,6
	12	42	7,3	7,3	88,9
	13	29	5,0	5,0	93,9
	14	16	2,8	2,8	96,7
	15	19	3,3	3,3	100,0
	Totale	577	99,7	100,0	
Mancante	Sistema	2	,3		
Totale		579	100,0		

Image 22 – Post-graduate salary

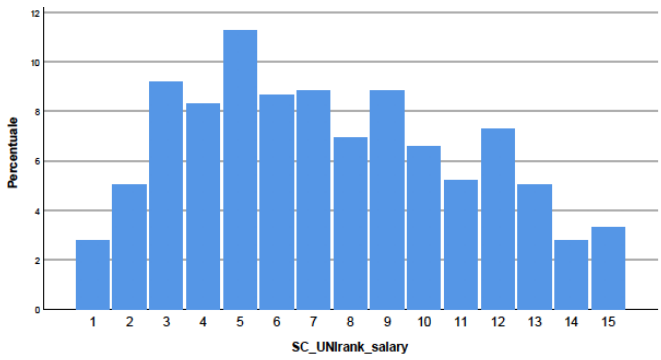


Image 23 – Extra-curricular activities

SC_UNIrankextrcurr

		Frequenza	Percentuale	Percentuale valida	Percentuale cumulativa
Valido	1	6	1,0	1,0	1,0
	2	28	4,8	4,9	5,9
	3	38	6,6	6,6	12,5
	4	36	6,2	6,2	18,7
	5	65	11,2	11,3	30,0
	6	55	9,5	9,5	39,5
	7	50	8,6	8,7	48,2
	8	42	7,3	7,3	55,5
	9	44	7,6	7,6	63,1
	10	61	10,5	10,6	73,7
	11	37	6,4	6,4	80,1
	12	37	6,4	6,4	86,5
	13	30	5,2	5,2	91,7
	14	37	6,4	6,4	98,1
	15	11	1,9	1,9	100,0
	Totale	577	99,7	100,0	
Mancante	Sistema	2	,3		
Totale		579	100,0		

Image 23.1 – Extra-curricular activities

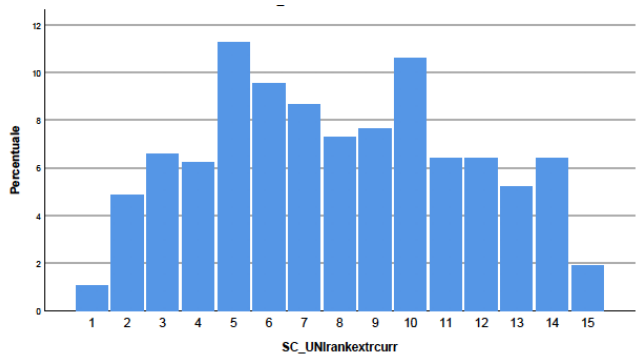


Image 24 – Presence of companies in courses

SC_UNIrank_compan

		Frequenza	Percentuale	Percentuale valida	Percentuale cumulativa
Valido	1	11	1,9	1,9	1,9
	2	25	4,3	4,3	6,2
	3	32	5,5	5,5	11,8
	4	40	6,9	6,9	18,7
	5	35	6,0	6,1	24,8
	6	50	8,6	8,7	33,4
	7	55	9,5	9,5	43,0
	8	55	9,5	9,5	52,5
	9	46	7,9	8,0	60,5
	10	40	6,9	6,9	67,4
	11	44	7,6	7,6	75,0
	12	43	7,4	7,5	82,5
	13	30	5,2	5,2	87,7
	14	41	7,1	7,1	94,8
	15	30	5,2	5,2	100,0
	Totale	577	99,7	100,0	
Mancante	Sistema	2	,3		
Totale		579	100,0		

Image 24.1 – Presence of companies in courses

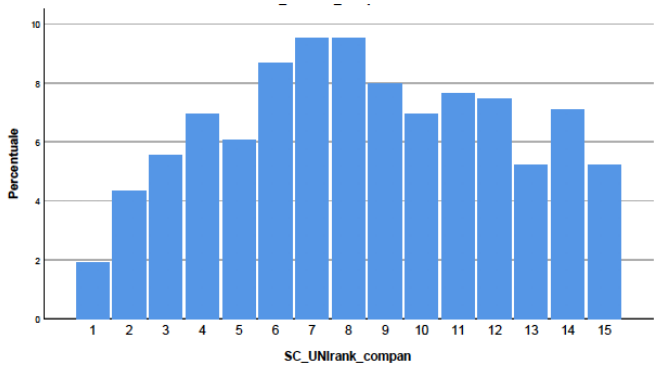


Image 25 – Transparency of admission procedures and rules

SC_UNIrank_admproc

		Frequenza	Percentuale	Percentuale valida	Percentuale cumulativa
Valido	1	6	1,0	1,0	1,0
	2	21	3,6	3,6	4,7
	3	23	4,0	4,0	8,7
	4	37	6,4	6,4	15,1
	5	36	6,2	6,2	21,3
	6	48	8,3	8,3	29,6
	7	46	7,9	8,0	37,6
	8	50	8,6	8,7	46,3
	9	60	10,4	10,4	56,7
	10	35	6,0	6,1	62,7
	11	45	7,8	7,8	70,5
	12	40	6,9	6,9	77,5
	13	69	11,9	12,0	89,4
	14	44	7,6	7,6	97,1
	15	17	2,9	2,9	100,0
	Totale	577	99,7	100,0	
Mancante	Sistema	2	,3		
Totale		579	100,0		

Image 25.1 – Transparency of admission procedures and rules

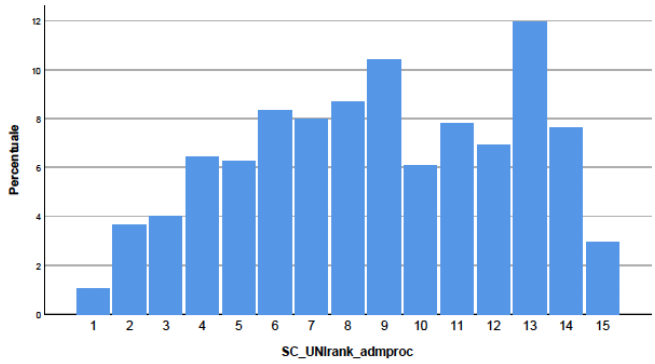


Image 26 – Excellence in research

SC_UNIrank_research

		Frequenza	Percentuale	Percentuale valida	Percentuale cumulativa
Valido	1	19	3,3	3,3	3,3
	2	24	4,1	4,2	7,5
	3	24	4,1	4,2	11,6
	4	23	4,0	4,0	15,6
	5	48	8,3	8,3	23,9
	6	41	7,1	7,1	31,0
	7	45	7,8	7,8	38,8
	8	42	7,3	7,3	46,1
	9	36	6,2	6,2	52,3
	10	35	6,0	6,1	58,4
	11	53	9,2	9,2	67,6
	12	42	7,3	7,3	74,9
	13	62	10,7	10,7	85,6
	14	65	11,2	11,3	96,9
	15	18	3,1	3,1	100,0
	Totale	577	99,7	100,0	
Mancante	Sistema	2	,3		
Totale		579	100,0		

Image 26.1 – Excellence in research

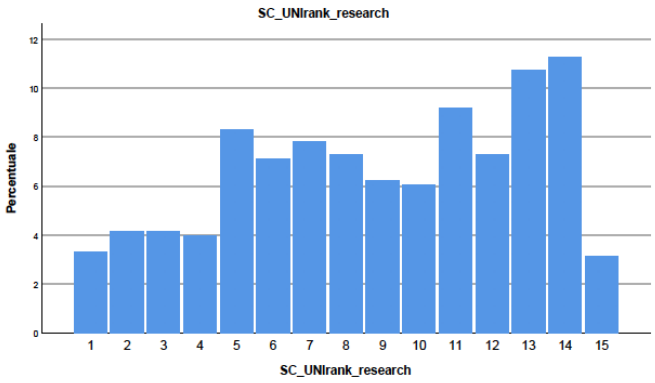


Image 27 – Security inside the university

SC_UNIrank_security

		Frequenza	Percentuale	Percentuale valida	Percentuale cumulativa
Valido	1	24	4,1	4,2	4,2
	2	25	4,3	4,3	8,5
	3	24	4,1	4,2	12,7
	4	37	6,4	6,4	19,1
	5	36	6,2	6,2	25,3
	6	35	6,0	6,1	31,4
	7	30	5,2	5,2	36,6
	8	43	7,4	7,5	44,0
	9	31	5,4	5,4	49,4
	10	35	6,0	6,1	55,5
	11	33	5,7	5,7	61,2
	12	51	8,8	8,8	70,0
	13	52	9,0	9,0	79,0
	14	55	9,5	9,5	88,6
	15	66	11,4	11,4	100,0
	Totale	577	99,7	100,0	
Mancante	Sistema	2	,3		
Totale		579	100,0		

Image 27.1 – Security inside the university

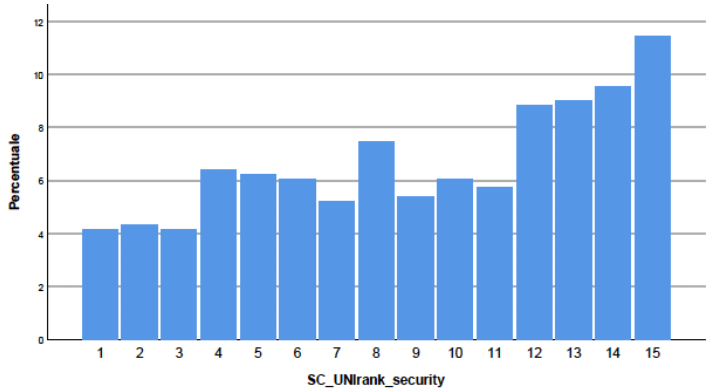


Image 28 – Sport

SC_UNIrank_sport

		Frequenza	Percentuale	Percentuale valida	Percentuale cumulativa
Valido	1	61	10,5	10,6	10,6
	2	19	3,3	3,3	13,9
	3	11	1,9	1,9	15,8
	4	9	1,6	1,6	17,3
	5	12	2,1	2,1	19,4
	6	18	3,1	3,1	22,5
	7	12	2,1	2,1	24,6
	8	16	2,8	2,8	27,4
	9	12	2,1	2,1	29,5
	10	10	1,7	1,7	31,2
	11	14	2,4	2,4	33,6
	12	17	2,9	2,9	36,6
	13	22	3,8	3,8	40,4
	14	76	13,1	13,2	53,6
	15	268	46,3	46,4	100,0
	Totale	577	99,7	100,0	
Mancante	Sistema	2	,3		
Totale		579	100,0		

Image 28.1 – Sport

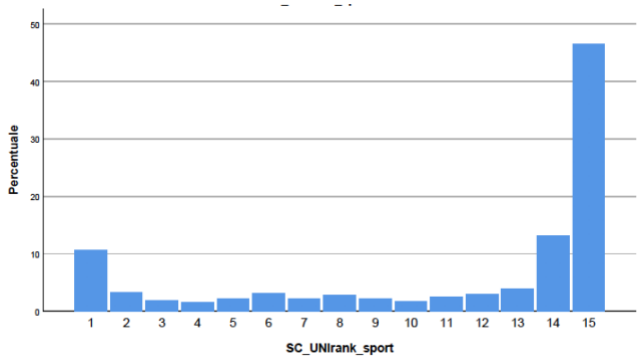


Image 29 – Social sustainability level

SC_UNIrank_socsust

		Frequenza	Percentuale	Percentuale valida	Percentuale cumulativa
Valido	1	4	,7	,7	,7
	2	9	1,6	1,6	2,3
	3	12	2,1	2,1	4,3
	4	35	6,0	6,1	10,4
	5	29	5,0	5,0	15,4
	6	35	6,0	6,1	21,5
	7	48	8,3	8,3	29,8
	8	54	9,3	9,4	39,2
	9	69	11,9	12,0	51,1
	10	81	14,0	14,0	65,2
	11	77	13,3	13,3	78,5
	12	60	10,4	10,4	88,9
	13	40	6,9	6,9	95,8
	14	17	2,9	2,9	98,8
	15	7	1,2	1,2	100,0
	Totale	577	99,7	100,0	
Mancante	Sistema	2	,3		
Totale		579	100,0		

Image 29.1 – Social sustainability level

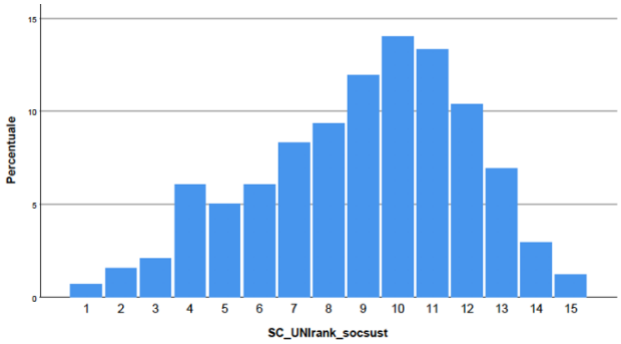


Image 30 – Economic sustainability level

SC_UNIrank_ecsust

		Frequenza	Percentuale	Percentuale valida	Percentuale cumulativa
Valido	1	4	,7	,7	,7
	2	11	1,9	1,9	2,6
	3	15	2,6	2,6	5,2
	4	15	2,6	2,6	7,8
	5	29	5,0	5,0	12,8
	6	37	6,4	6,4	19,2
	7	40	6,9	6,9	26,2
	8	49	8,5	8,5	34,7
	9	57	9,8	9,9	44,5
	10	65	11,2	11,3	55,8
	11	83	14,3	14,4	70,2
	12	67	11,6	11,6	81,8
	13	68	11,7	11,8	93,6
	14	29	5,0	5,0	98,6
	15	8	1,4	1,4	100,0
	Totale	577	99,7	100,0	
Mancante	Sistema	2	,3		
Totale		579	100,0		

Image 30.1 – Economic sustainability level

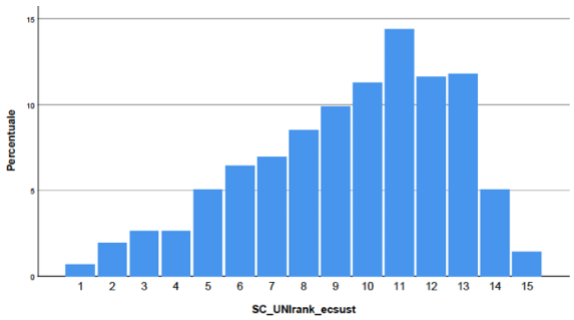
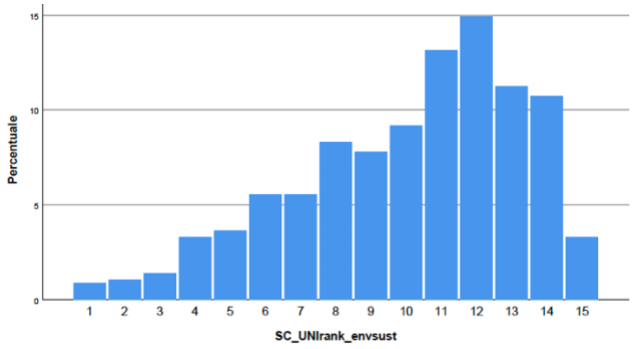


Image 31 – Environmental sustainability level

SC_UNIrank_envsust

		Frequenza	Percentuale	Percentuale valida	Percentuale cumulativa
Valido	1	5	,9	,9	,9
	2	6	1,0	1,0	1,9
	3	8	1,4	1,4	3,3
	4	19	3,3	3,3	6,6
	5	21	3,6	3,6	10,2
	6	32	5,5	5,5	15,8
	7	32	5,5	5,5	21,3
	8	48	8,3	8,3	29,6
	9	45	7,8	7,8	37,4
	10	53	9,2	9,2	46,6
	11	76	13,1	13,2	59,8
	12	86	14,9	14,9	74,7
	13	65	11,2	11,3	86,0
	14	62	10,7	10,7	96,7
	15	19	3,3	3,3	100,0
	Totale	577	99,7	100,0	
Mancante	Sistema	2	,3		
Totale		579	100,0		

Image 31.1 – Environmental sustainability level



After having analyzed the results from the ranking, we will now examine through a factor analysis if it was possible to group together the parameters previously mentioned. With the

following examination I wanted to understand if it was possible to identify groups of variables related one another so to create new factors, easier to be managed. The criteria used to reduce the number of variables was based on correlation and similarities among the presented parameters. The analysis aimed at analyzing the various correlations that might be possibly made among all the variables. With this scope in mind, I analyzed the whole list proceeding with the examination for communalities, excluding the variables with a value < 0.5 to decide which of the parameters could be excluded from the groups of factors. To understand how many factors I would be analyzing, we can observe **Image 33**. I needed to choose only the elements having a total >1 and a cumulative variance explained > 60%. With this information in mind, it is easy to understand that the only eligible factors were the first four. The last acceptable factor had a total of 1,167 and a cumulative variance explained of 74%. The other factors were excluded from the analysis because their values did not respect the criteria. As a counterproof for the number of eligible factors in **Image 34** we can observe the numbers of factors that the analysis needed to retain: the elbow points that can be counted in the graph are equal to four, as the number of factors detected by the scale validation in SPSS.

I then relaunched the analysis without the factors that I just excluded from the list with the aim of ameliorating the total explained variance. As a result, I obtained a component matrix in **Image 35** and a rotated component matrix in **Image 36** that helped me understanding which were the right parameters to be placed within each factor, previously detected based on their values. I selected only the parameters with the highest numbers for each line of the table. I obtained four groups of factors, divided as it follows:

1. Sustainability parameters,
2. Extra-curricular activities, sport, and presence of companies in courses,
3. Post-graduate salary and reputation,
4. Cost and presence of scholarships.

After having grouped together all the chosen parameters, I named the four groups that can be considered as sectors of high interest based on their shared characteristics. The name decided for the groups are:

1. Sustainability,
2. Network and extra-curricular factors,
3. Reputation,
4. Cost.

After the creation of the four groups, I proceeded with the analysis by carrying out a reliability analysis for each of the grouped parameters. This analysis checked the trustworthiness of the

elements examined, which could be accepted only if they had a Cronbach's Alpha > 0,7 and these were the results:

- Sustainability with a Cronbach's Alpha of 0,868
- Network with a Cronbach's Alpha of 0,652
- Reputation with a Cronbach's Alpha of 0,829
- Cost with a Cronbach's Alpha of 0,576

From these four numbers we can understand that the most reliable groups of factors in the university decision-making process for people are the sustainability and reputation because they have the higher Cronbach's Alpha with respect to the other two groups of parameters. In fact, network is on the line of the 0,7 acceptable minimum so it can be said that the factors inside this group are somehow reliable if we would replicate the research and group together the same parameters. However, cost is the only group of parameters which is below the acceptable minimum for the Cronbach's Alpha. This means that the sector of interest is not a reliable measure for grouping the parameters together and it is not consistent in case the questionnaire would be replicated in the future, holding the same conditions.

Before continuing with the analysis, it is worth mentioning the means obtained in the Sustainability Descriptives' table in **Image 37**. Here we can notice that the general mean was 4,4997. All countries obtained a similar mean, except Italy. In fact, France obtained 4,4040; Germany 4,4175; Spain 5,5395; UK 4,2737; and US 4,3014. Instead, Italy obtained a mean of 5,0404. At this point, after having created four factors and having carried out a reliability analysis, I proceeded with the One-Way Analysis of Variance (ANOVA). The aim is comparing countries based the four factors and check the presence of possible variances using a single independent variable for the analysis. Let's start from sustainability. The first thing we need to check is the ANOVA table in **Image 38** that gives us the difference among country on that specific factor. In this case, we have a $0,001 < \alpha = 0,05$. This means that we can accept the factor and extend it to the whole population because the One-Way Analysis of Variance detected a significant difference among the selected countries. In particular, if we analyze the Multiple Comparisons in **Image 44**, we will notice that between Country 1 (Italy) and Country 2 (France) there is a significance difference of $0,017 < \alpha = 0,05$; between Country 1 (Italy) and Country 3 (Germany), Country 5 (UK) and Country 6 (US) there is a significant difference respectively of 0,024, 0,002, and $0,003 < \alpha = 0,05$. The only non-significant difference is between Country 1 (Italy) and Country 4 (Spain) because they have a difference of $0,159 > \alpha$

= 0,05. This means that Italy, among all the countries examined, is the country that gives the most importance to sustainability.

Let's look at the network. We can say that this factor is given less importance with respect to sustainability because the latter started with a mean of 5,0404 and a total mean of 4,4997. Instead, network had a total mean of 3,6989. Moreover, as we can notice in **Image 39** Italy had a mean of 3,9495; France 3,4714; Germany 3,6596; Spain3,9244; UK 3,6246; and US obtained a mean of 3, 5567. From the table we can also notice that there is not a big difference between the countries' means. They go from a maximum of 3,9495 to a minimum of 3,6989. This means that there is not a lot of difference among countries to the level of importance that is given to this factor. In fact, in the Multiple Comparisons in **Image 45** we can see that none of the countries compared have a difference which is $< \alpha = 0,05$. All countries give a similar level of importance to network. As a counterproof of it, we can look at **Image 40** that shows in the ANOVA table a difference among country of 0,048 which is barely $< \alpha=0,05$. This means that there is not a big difference among the level of importance that each country gives to this factor.

Let's go on with reputation. In this case, we can notice a similar condition as for network. The means are not very far from each other and the total mean is 4,6269. In **Image 41**, we can observe that Italy obtained a mean of 4,8586; France 4,6717; Germany 4,1263; Spain 4,5258; UK 4,9842; and US 4,5851. However, by analyzing **Image 46** we can detect some significant differences between Country 1 (Italy) and Country 2 (France) with a difference of $0,003 < \alpha = 0,05$; and between Country 2 (France) and Country 3 (Germany) with a difference of $0,086 > \alpha = 0,05$. From these results, it can be confirmed that Italy and UK are the countries that give most importance to reputation as a factor when choosing a university. Moreover, as a counterproof of the difference among countries we can look at Image 42 with the ANOVA table that shows a difference equals to 0 which, of course, is $< \alpha=0,05$ and it underlines the difference of importance given by each country to reputation.

Lastly, let's analyze cost. As for reputation and network, even for cost the difference between all countries' means is low and it goes from 5,3232 to 5,2176. In particular, **Image 43** shows all the mean. Italy obtained 5,3232; France 4,4192; Germany 4,8789; Spain 5,6031; UK 4,3158; and US with a mean of 5,7500. However, the ANOVA table in **Image 44** shows a difference equals to 0 which, of course, is $< \alpha=0,05$ and it underlines the difference of importance given by each country to cost. Looking at the differences in **Image 47** among countries, we can notice a significant difference that equals 0 between Country 1 (Italy) and Country 5 (UK). This means that cost is much more important for Italy. Then there is a

significant difference between Country 2 (France) and Country 3 (Germany) and Country 5 (UK) because the country that gives the highest level of importance is France because the difference is always < α = 0,05. Moreover, between Country 3 (Germany) and Country 4 (Spain) there is a difference of 0,001 < α = 0,05 so this means that Spain gives more importance to cost with respect to Germany. However, if we compare Germany to Country 5 (UK) we notice a difference of 0,034 < α = 0,05. This means that Germany give more importance to cost if compared to UK.

Image 33 – Explained variance

Varianza totale spiegata

	Autovalori iniziali			Caricamenti somme dei quadrati di estrazione			Caricamenti somme dei quadrati di rotazione		
Componente	Totale	% di varianza	% cumulativa	Totale	% di varianza	% cumulativa	Totale	% di varianza	% cumulativa
1	3,252	32,518	32,518	3,252	32,518	32,518	2,375	23,751	23,751
2	1,730	17,298	49,816	1,730	17,298	49,816	1,839	18,386	42,137
3	1,251	12,515	62,331	1,251	12,515	62,331	1,724	17,245	59,381
4	1,167	11,672	74,003	1,167	11,672	74,003	1,462	14,621	74,003
5	,704	7,036	81,039						
6	,571	5,708	86,747						
7	,470	4,703	91,450						
8	,343	3,430	94,880						
9	,284	2,837	97,717						
10	,228	2,283	100,000						

Metodo di estrazione: Analisi dei componenti principali.

Image 34 – Scree plot

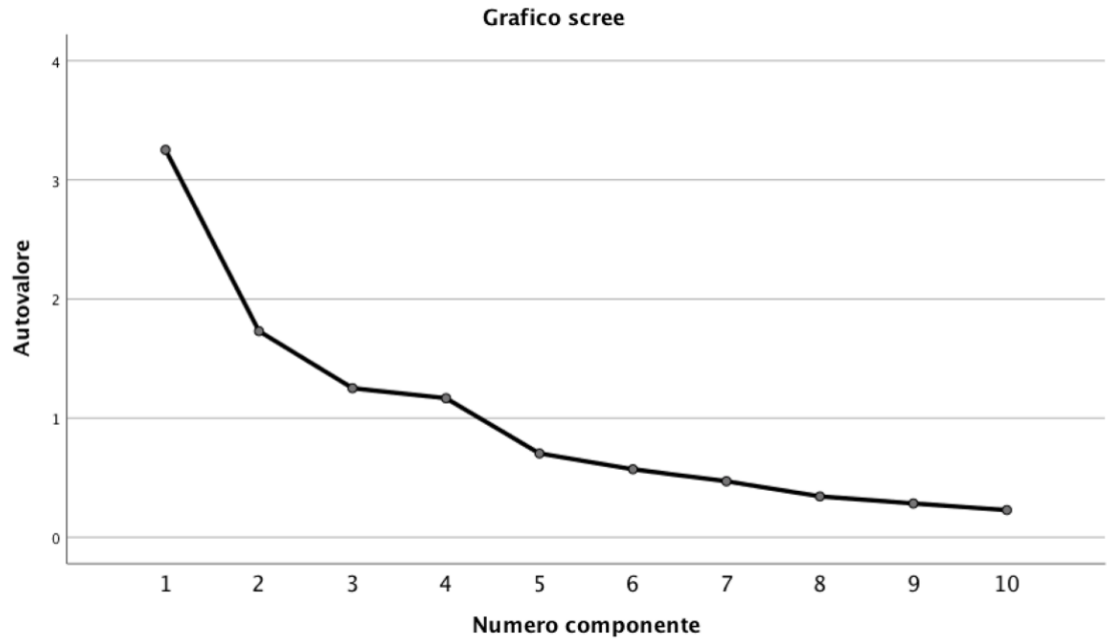


Image 35 – Component matrix

Matrice dei componenti[a]

	Componente			
	1	2	3	4
SC_UNILIK_socsust	,783	-,216	-,366	,205
SC_UNILIK_ecsust	,766	-,259	-,291	,306
SC_UNILIK_envsust	,759	-,229	-,348	
SC_UNILIKextrcurr	,624		,237	-,512
SC_UNILIK_compan	,587	,146	,210	-,300
SC_UNILIK_pos	,269	,841		,264
SC_UNILIK2_rep	,297	,826		,279
SC_UNILIK_cost	,297	-,165	,674	,420
SC_UNILIK4_borsest	,506	-,243	,592	,162
SC_UNILIK_sport	,488	,250		-,573

Metodo di estrazione: Analisi dei componenti principali.

a. 4 componenti estratti.

Image 36 – Rotated component matrix

Matrice dei componenti ruotati[a]

	Componente			
	1	2	3	4
SC_UNILIK_socsust	,895	,152		
SC_UNILIK_ecsust	,888			,189
SC_UNILIK_envsust	,820	,278		
SC_UNILIKextrcurr	,167	,809		,167
SC_UNILIK_sport		,769	,119	-,122
SC_UNILIK_compan	,188	,635	,143	,201
SC_UNILIK_pos			,918	
SC_UNILIK2_rep		,115	,913	
SC_UNILIK_cost				,860
SC_UNILIK4_borsest	,189	,246		,769

Metodo di estrazione: Analisi dei componenti principali.
Metodo di rotazione: Varimax con normalizzazione Kaiser. [a]

a. Convergenza per la rotazione eseguita in 5 iterazioni.

Image 37 – Sustainability Descriptives

Descrittive

SOSTMEAN

	N	Media	Deviazione std.	Errore std.	95% di intervallo di confidenza per la media		Minimo	Massimo
					Limite inferiore	Limite superiore		
1	99	5,0404	1,11501	,11206	4,8180	5,2628	1,00	7,00
2	99	4,4040	1,49168	,14992	4,1065	4,7016	1,00	7,00
3	95	4,4175	1,35179	,13869	4,1422	4,6929	1,00	7,00
4	97	4,5395	1,28600	,13057	4,2803	4,7987	1,00	7,00
5	95	4,2737	1,48274	,15213	3,9716	4,5757	1,00	7,00
6	94	4,3014	1,44188	,14872	4,0061	4,5967	1,00	7,00
Totale	579	4,4997	1,38557	,05758	4,3866	4,6128	1,00	7,00

Image 38 – Sustainability ANOVA

ANOVA

SOSTMEAN

	Somma dei quadrati	gl	Media quadratica	F	Sign.
Tra gruppi	39,193	5	7,839	4,196	,001
Entro i gruppi	1070,446	573	1,868		
Totale	1109,639	578			

Image 39 – Network Descriptives

Descrittive

networkMEAN

	N	Media	Deviazione std.	Errore std.	95% di intervallo di confidenza per la media		Minimo	Massimo
					Limite inferiore	Limite superiore		
1	99	3,9495	1,20408	,12101	3,7093	4,1896	1,00	7,00
2	99	3,4714	1,23352	,12397	3,2254	3,7174	1,00	5,67
3	95	3,6596	1,42003	,14569	3,3704	3,9489	1,00	7,00
4	97	3,9244	1,38402	,14053	3,6455	4,2033	1,00	7,00
5	95	3,6246	1,24175	,12740	3,3716	3,8775	1,00	6,67
6	94	3,5567	1,26377	,13035	3,2979	3,8156	1,00	6,33
Totale	579	3,6989	1,30009	,05403	3,5928	3,8050	1,00	7,00

Image 40 – Network ANOVA

ANOVA

networkMEAN

	Somma dei quadrati	gl	Media quadratica	F	Sign.
Tra gruppi	18,845	5	3,769	2,254	,048
Entro i gruppi	958,108	573	1,672		
Totale	976,954	578			

Image 41 – Reputation Descriptives

Descrittive

RepMean

	N	Media	Deviazione std.	Errore std.	95% di intervallo di confidenza per la media		Minimo	Massimo
					Limite inferiore	Limite superiore		
1	99	4,8586	1,22274	,12289	4,6147	5,1025	1,00	7,00
2	99	4,6717	1,40908	,14162	4,3907	4,9528	1,00	7,00
3	95	4,1263	1,46223	,15002	3,8284	4,4242	1,00	7,00
4	97	4,5258	1,40752	,14291	4,2421	4,8095	1,00	7,00
5	95	4,9842	1,44482	,14824	4,6899	5,2785	1,00	7,00
6	94	4,5851	1,25003	,12893	4,3291	4,8411	1,00	7,00
Totale	579	4,6269	1,38979	,05776	4,5135	4,7404	1,00	7,00

Image 42 – Reputation ANOVA

ANOVA

RepMean

	Somma dei quadrati	gl	Media quadratica	F	Sign.
Tra gruppi	42,603	5	8,521	4,547	,000
Entro i gruppi	1073,816	573	1,874		
Totale	1116,420	578			

Image 43 – Cost Descriptives

Descrittive

CostMean

	N	Media	Deviazione std.	Errore std.	95% di intervallo di confidenza per la media		Minimo	Massimo
					Limite inferiore	Limite superiore		
1	99	5,3232	1,09104	,10965	5,1056	5,5408	3,00	7,00
2	99	5,4192	1,21787	,12240	5,1763	5,6621	2,00	7,00
3	95	4,8789	1,19999	,12312	4,6345	5,1234	2,00	7,00
4	97	5,6031	1,09196	,11087	5,3830	5,8232	1,50	7,00
5	95	4,3158	1,60294	,16446	3,9893	4,6423	1,00	7,00
6	94	5,7500	1,33954	,13816	5,4756	6,0244	1,00	7,00
Totale	579	5,2176	1,35075	,05614	5,1074	5,3279	1,00	7,00

Image 44 – Cost ANOVA

ANOVA

CostMean

	Somma dei quadrati	gl	Media quadratica	F	Sign.
Tra gruppi	134,342	5	26,868	16,730	,000
Entro i gruppi	920,238	573	1,606		
Totale	1054,580	578			

Image 44 – Sustainability Multiple Comparisons

Variabile dipendente: SOSTMEAN

Bonferroni

(I) Country	(J) Country	Differenza della media (I–J)	Errore std.	Sign.	Intervallo di confidenza 95% Limite inferiore	Intervallo di confidenza 95% Limite superiore
1	2	,63636*	,19427	,017	,0637	1,2090
	3	,62286*	,19630	,024	,0442	1,2015
	4	,50089	,19527	,159	-,0747	1,0764
	5	,76672*	,19630	,002	,1881	1,3453
	6	,73899*	,19683	,003	,1588	1,3192
2	1	-,63636*	,19427	,017	-1,2090	-,0637
	3	-,01350	,19630	1,000	-,5921	,5651
	4	-,13548	,19527	1,000	-,7110	,4401
	5	,13036	,19630	1,000	-,4483	,7090
	6	,10262	,19683	1,000	-,4776	,6828
3	1	-,62286*	,19630	,024	-1,2015	-,0442
	2	,01350	,19630	1,000	-,5651	,5921
	4	-,12198	,19729	1,000	-,7035	,4596
	5	,14386	,19832	1,000	-,4407	,7284
	6	,11613	,19884	1,000	-,4700	,7022
4	1	-,50089	,19527	,159	-1,0764	,0747
	2	,13548	,19527	1,000	-,4401	,7110
	3	,12198	,19729	1,000	-,4596	,7035
	5	,26583	,19729	1,000	-,3157	,8474
	6	,23810	,19782	1,000	-,3450	,8212
5	1	-,76672*	,19630	,002	-1,3453	-,1881
	2	-,13036	,19630	1,000	-,7090	,4483
	3	-,14386	,19832	1,000	-,7284	,4407
	4	-,26583	,19729	1,000	-,8474	,3157
	6	-,02773	,19884	1,000	-,6138	,5584
6	1	-,73899*	,19683	,003	-1,3192	-,1588
	2	-,10262	,19683	1,000	-,6828	,4776
	3	-,11613	,19884	1,000	-,7022	,4700
	4	-,23810	,19782	1,000	-,8212	,3450
	5	,02773	,19884	1,000	-,5584	,6138

*. La differenza della media è significativa al livello 0.05.

Image 45 – Network Multiple Comparisons

Variabile dipendente: networkMEAN

Bonferroni

(I) Country	(J) Country	Differenza della media (I–J)	Errore std.	Sign.	Intervallo di confidenza 95% Limite inferiore	Intervallo di confidenza 95% Limite superiore
1	2	,47811	,18379	,143	-,0636	1,0199
	3	,28985	,18572	1,000	-,2576	,8373
	4	,02510	,18474	1,000	-,5194	,5696
	5	,32493	,18572	1,000	-,2225	,8723
	6	,39276	,18622	,531	-,1561	,9417
2	1	-,47811	,18379	,143	-1,0199	,0636
	3	-,18827	,18572	1,000	-,7357	,3591
	4	-,45302	,18474	,217	-,9975	,0915
	5	-,15318	,18572	1,000	-,7006	,3942
	6	-,08536	,18622	1,000	-,6343	,4635
3	1	-,28985	,18572	1,000	-,8373	,2576
	2	,18827	,18572	1,000	-,3591	,7357
	4	-,26475	,18665	1,000	-,8149	,2854
	5	,03509	,18762	1,000	-,5179	,5881
	6	,10291	,18812	1,000	-,4516	,6574
4	1	-,02510	,18474	1,000	-,5696	,5194
	2	,45302	,18474	,217	-,0915	,9975
	3	,26475	,18665	1,000	-,2854	,8149
	5	,29984	,18665	1,000	-,2503	,8500
	6	,36766	,18715	,749	-,1840	,9193
5	1	-,32493	,18572	1,000	-,8723	,2225
	2	,15318	,18572	1,000	-,3942	,7006
	3	-,03509	,18762	1,000	-,5881	,5179
	4	-,29984	,18665	1,000	-,8500	,2503
	6	,06782	,18812	1,000	-,4867	,6223
6	1	-,39276	,18622	,531	-,9417	,1561
	2	,08536	,18622	1,000	-,4635	,6343
	3	-,10291	,18812	1,000	-,6574	,4516
	4	-,36766	,18715	,749	-,9193	,1840
	5	-,06782	,18812	1,000	-,6223	,4867

Image 46 – Reputation Multiple Comparisons

Variabile dipendente: RepMean

Bonferroni

(I) Country	(J) Country	Differenza della media (I–J)	Errore std.	Sign.	Intervallo di confidenza 95% Limite inferiore	Intervallo di confidenza 95% Limite superiore
1	2	,18687	,19457	1,000	-,3867	,7604
	3	,73227*	,19661	,003	,1527	1,3118
	4	,33281	,19557	1,000	-,2437	,9093
	5	-,12562	,19661	1,000	-,7051	,4539
	6	,27348	,19714	1,000	-,3076	,8546
2	1	-,18687	,19457	1,000	-,7604	,3867
	3	,54540	,19661	,086	-,0341	1,1249
	4	,14594	,19557	1,000	-,4305	,7224
	5	-,31249	,19661	1,000	-,8920	,2670
	6	,08661	,19714	1,000	-,4945	,6677
3	1	-,73227*	,19661	,003	-1,3118	-,1527
	2	-,54540	,19661	,086	-1,1249	,0341
	4	-,39946	,19760	,655	-,9819	,1830
	5	-,85789*	,19863	,000	-1,4434	-,2724
	6	-,45879	,19916	,324	-1,0458	,1282
4	1	-,33281	,19557	1,000	-,9093	,2437
	2	-,14594	,19557	1,000	-,7224	,4305
	3	,39946	,19760	,655	-,1830	,9819
	5	-,45844	,19760	,310	-1,0409	,1240
	6	-,05933	,19813	1,000	-,6433	,5247
5	1	,12562	,19661	1,000	-,4539	,7051
	2	,31249	,19661	1,000	-,2670	,8920
	3	,85789*	,19863	,000	,2724	1,4434
	4	,45844	,19760	,310	-,1240	1,0409
	6	,39910	,19916	,683	-,1879	,9861
6	1	-,27348	,19714	1,000	-,8546	,3076
	2	-,08661	,19714	1,000	-,6677	,4945
	3	,45879	,19916	,324	-,1282	1,0458
	4	,05933	,19813	1,000	-,5247	,6433
	5	-,39910	,19916	,683	-,9861	,1879

*. La differenza della media è significativa al livello 0.05.

Image 47 – Cost Multiple Comparisons

Variabile dipendente: CostMean

Bonferroni

(I) Country	(J) Country	Differenza della media (I–J)	Errore std.	Sign.	Intervallo di confidenza 95% Limite inferiore	Intervallo di confidenza 95% Limite superiore
1	2	-,09596	,18012	1,000	-,6269	,4350
	3	,44428	,18201	,224	-,0922	,9808
	4	-,27986	,18105	1,000	-,8135	,2538
	5	1,00744*	,18201	,000	,4710	1,5439
	6	-,42677	,18250	,296	-,9647	,1112
2	1	,09596	,18012	1,000	-,4350	,6269
	3	,54024*	,18201	,047	,0038	1,0767
	4	-,18390	,18105	1,000	-,7176	,3498
	5	1,10340*	,18201	,000	,5669	1,6399
	6	-,33081	,18250	1,000	-,8687	,2071
3	1	-,44428	,18201	,224	-,9808	,0922
	2	-,54024*	,18201	,047	-1,0767	-,0038
	4	-,72415*	,18293	,001	-1,2633	-,1850
	5	,56316*	,18388	,034	,0212	1,1051
	6	-,87105*	,18436	,000	-1,4145	-,3276
4	1	,27986	,18105	1,000	-,2538	,8135
	2	,18390	,18105	1,000	-,3498	,7176
	3	,72415*	,18293	,001	,1850	1,2633
	5	1,28730*	,18293	,000	,7481	1,8265
	6	-,14691	,18342	1,000	-,6875	,3937
5	1	-1,00744*	,18201	,000	-1,5439	-,4710
	2	-1,10340*	,18201	,000	-1,6399	-,5669
	3	-,56316*	,18388	,034	-1,1051	-,0212
	4	-1,28730*	,18293	,000	-1,8265	-,7481
	6	-1,43421*	,18436	,000	-1,9776	-,8908
6	1	,42677	,18250	,296	-,1112	,9647
	2	,33081	,18250	1,000	-,2071	,8687
	3	,87105*	,18436	,000	,3276	1,4145
	4	,14691	,18342	1,000	-,3937	,6875
	5	1,43421*	,18436	,000	,8908	1,9776

Section 2: Sustainability Pillars

After having analyzed in detailed the first section on the influential parameters, the following paragraph will examine the 5 sustainability pillars. The same procedure as the previous section will be followed: first I will examine the level of importance given to each pillar, and then I will analyze the One-Way Analysis of Variance (ANOVA) to understand and compare the importance given to each pillar by every country. The pillars taken into consideration are:

1. *Sustainability within courses and student experiential activities* (sustainability in student learning paths and in the experiential activities that involve them),
2. *Sustainability within the faculty scientific research* (the University's commitment to obtaining quality research linked to sustainability),
3. *Sustainability within the facilities and operations of university campuses* (sustainability as the main driver for all logistics activities, for the management of spaces and supplies in order to improve the use of resources and reduce the environmental impact of the university),
4. *Sustainability in the social field* (acceleration of the green culture characterized by inclusiveness and well-being both inside and outside the university campus),
5. *Sustainability in the communication and level of engagement of the university* (promotion of sustainability activities inside and outside the university).

Let's start the analysis with the positioning that every pillar got in the general ranking. The ranking went from 1 (extremely important) to 5 (not important at all). As we can observe in **Image 49 and 49.1**, the first pillar related to the sustainability placed within courses and student experiential activities was always placed between the 1st and the 2nd position. This means that people considered this pillar to be the most important one. In total, 180 respondents with an incidence of 31.1 per cent placed it at the first place; 136 respondents with an incidence of 23.5 per cent placed it at the second place. Instead, the second pillar was not perceived to be as important as the first one, and it was always put between the 2nd and 3rd place with a very little variance between the two. In fact, as we can see in **Image 50 and 50.1**, 22.5 per cent of respondents placed it at the 2nd place; 22.3 per cent of respondents placed it at the 3rd place. Going on with the analysis, in **Image 51 and 51.1** we can observe that the pillar number three got very similar percentages with respect to the second pillar but placed at a little bit lower position in the general ranking. In fact, 23.5 per cent of respondents placed it at the 3rd place; 22.5 per cent of respondents however placed it at the 1st and last place, considering sustainability within university facilities and operations the most important pillar.

The fourth pillar in **Image 52 and 52.1** related to sustainability within the social field was considered not to be a very important one. Numbers show that 23.5 per cent of respondents placed it at the 4th place, and 23.3 per cent of respondents placed it at the 5th place. Finally, there is the fifth pillar related to communication and engagement that was given by 178 respondents out of 579 the very last place on the ranking. In total, as shown in **Image 53**, 30.7 per cent of respondents considered it to be the least important pillar among the five.

As for the parameters, after having determined the level of importance that respondents give to each of the five pillars, we now need to analyze the ANOVA and the Multiple Comparisons analysis. As we can notice in **Image 54, 55, 56, 57, and 58** there is not a lot of differences among the countries on the level of importance given to each pillar. Notwithstanding these variances, we need to check if the differences among the countries are sig. That is why we analyze **Image 59** where we can observe and confirm the fact that there are not particular and significant differences among pillars. However, if we want to discover which is the country that gives more important to every pillar, we need to analyze the Descriptives table in **Image 60**. There we can observe that Italy and US are the countries most interested in the first pillar with a mean of 4,97 and in the fifth pillar with a mean of 5,06. For what concerns the second pillar and forth pillar we can understand from the table that Italy is the country that gives more importance to the within the faculty scientific research with a mean of 5,06; and to the sustainability in the social field with a mean of 5,36. Lastly, we have UK that is the country most interested to the third pillar with a mean of 5,27. Finally, with the aim of comparing the countries and their level of importance given to the single factor, I carried out an ANOVA analysis based on the Likert that goes from 1 (not important at all) to 7 (extremely important). In the **Image 59** it can be observed that there are not particular differences among the countries because there is not a significant difference among the levels of importance that each country gave to the sustainability pillars. It can be stated that all the examined countries give similar importance to all the sustainability pillars.

After having examined the ranking and carried out the Likert analysis of each pillar, we observed a discrepancy in the numbers. In other words, after having analyzed the data coming from the two analysis, we noticed two different results. As a matter of fact, from the means obtained by the ranking, we see that there is not a significant difference among the pillars. Moreover, they have been placed in the following order: (1) first pillar, (2) second pillar, (3) third pillar, (4) fourth pillar, (5) fifth pillar. However, if we examine the means coming from the Likert analysis in the Image 60 the scenario changes and so the ranking. This is the ranking obtained using the mentioned means: (1) pillar 4 (mean= 5,08), (2) pillar 3 (mean= 5,03), (3)

pillar 2 (mean= 4,95), (4) pillar 1 (mean= 4,87), (5) pillar 5 (mean= 4,85). The following discrepancy can be better examined in future research.

Image 48 – Pillars

		PILL_Rank1	PILL_Rank2	PILL_Rank3	PILL_Rank4	PILL_Rank5
N	Valido	579	579	579	579	579
	Mancante	0	0	0	0	0
Media		2,59	2,88	2,83	3,24	3,46
Mediana		2,00	3,00	3,00	3,00	4,00
Deviazione std.		1,435	1,352	1,373	1,360	1,386
Minimo		1	1	1	1	1
Massimo		5	5	5	5	5

Image 49 – Pillar 1

PILL_Rank1

		Frequenza	Percentuale	Percentuale valida	Percentuale cumulativa
Valido	1	180	31,1	31,1	31,1
	2	136	23,5	23,5	54,6
	3	90	15,5	15,5	70,1
	4	87	15,0	15,0	85,1
	5	86	14,9	14,9	100,0
	Totale	579	100,0	100,0	

Image 49.1 – Pillar 1

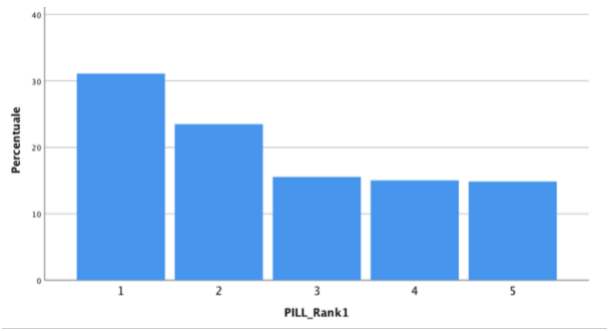


Image 50 – Pillar 2

PILL_Rank2

		Frequenza	Percentuale	Percentuale valida	Percentuale cumulativa
Valido	1	116	20,0	20,0	20,0
	2	130	22,5	22,5	42,5
	3	129	22,3	22,3	64,8
	4	115	19,9	19,9	84,6
	5	89	15,4	15,4	100,0
	Totale	579	100,0	100,0	

Image 50.1 – Pillar 2

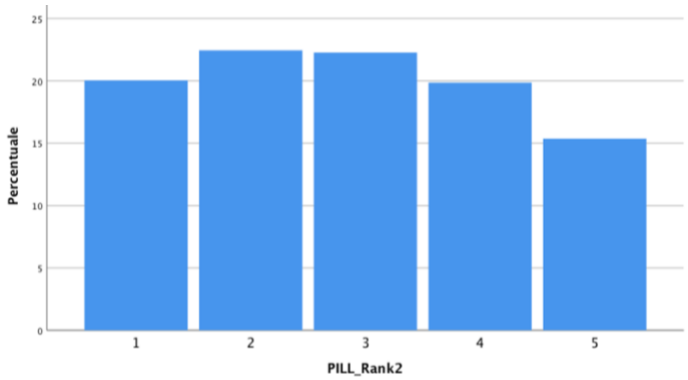


Image 51 – Pillar 3

PILL_Rank3

		Frequenza	Percentuale	Percentuale valida	Percentuale cumulativa
Valido	1	130	22,5	22,5	22,5
	2	120	20,7	20,7	43,2
	3	136	23,5	23,5	66,7
	4	102	17,6	17,6	84,3
	5	91	15,7	15,7	100,0
	Totale	579	100,0	100,0	

Image 51.1 – Pillar 3

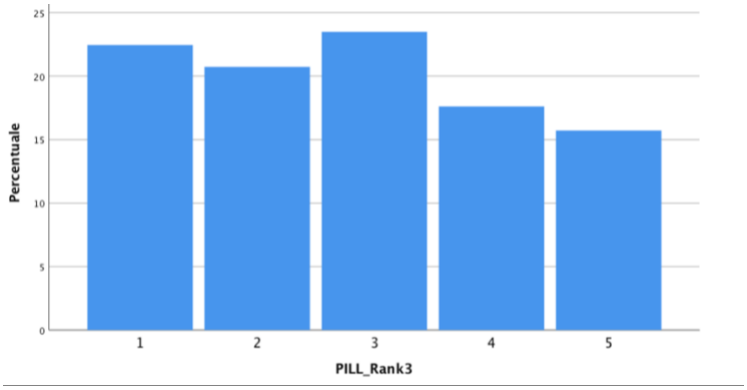


Image 52 – Pillar 4

PILL_Rank4

		Frequenza	Percentuale	Percentuale valida	Percentuale cumulativa
Valido	1	78	13,5	13,5	13,5
	2	113	19,5	19,5	33,0
	3	117	20,2	20,2	53,2
	4	136	23,5	23,5	76,7
	5	135	23,3	23,3	100,0
	Totale	579	100,0	100,0	

Image 52.1 – Pillar 4

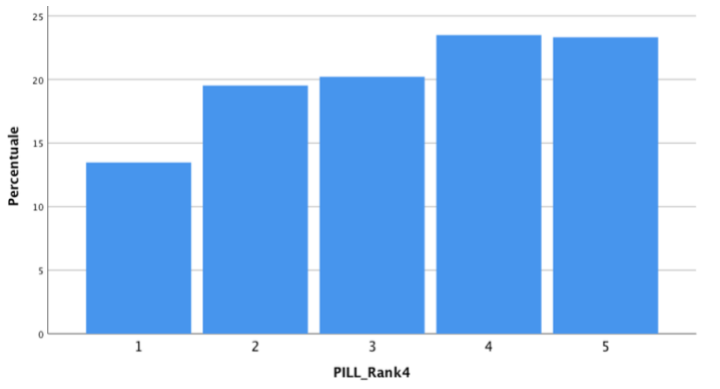


Image 53 – Pillar 5

PILL_Rank5

		Frequenza	Percentuale	Percentuale valida	Percentuale cumulativa
Valido	1	75	13,0	13,0	13,0
	2	80	13,8	13,8	26,8
	3	107	18,5	18,5	45,3
	4	139	24,0	24,0	69,3
	5	178	30,7	30,7	100,0
	Totale	579	100,0	100,0	

Image 53.1 – Pillar 5

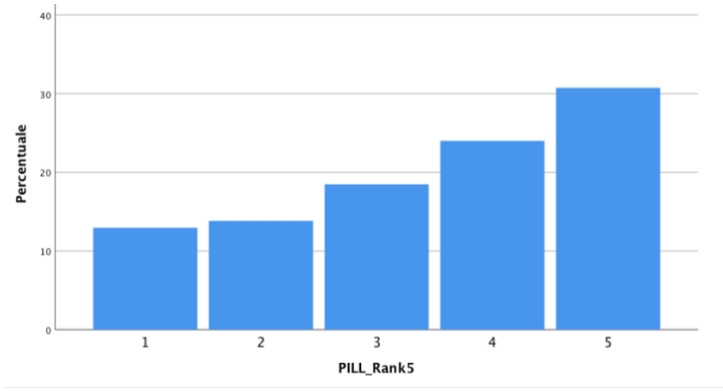


Image 54 – Pillar 1 Multiple Comparisons

Confronti multipli

Bonferroni

Variabile dipendente	(I) Country	(J) Country	Differenza della media (I-J)	Errore std.	Sign.	Intervallo di ... Limite inferiore
PILL_Lik1	1	2	,101	,192	1,000	-,47
		3	,212	,194	1,000	-,36
		4	,227	,193	1,000	-,34
		5	,054	,194	1,000	-,52
		6	,002	,195	1,000	-,57
	2	1	-,101	,192	1,000	-,67
		3	,111	,194	1,000	-,46
		4	,126	,193	1,000	-,44
		5	-,047	,194	1,000	-,62
		6	-,099	,195	1,000	-,67
	3	1	-,212	,194	1,000	-,78
		2	-,111	,194	1,000	-,68
		4	,016	,195	1,000	-,56
		5	-,158	,196	1,000	-,74
		6	-,210	,197	1,000	-,79
	4	1	-,227	,193	1,000	-,80
		2	-,126	,193	1,000	-,70
		3	-,016	,195	1,000	-,59
		5	-,174	,195	1,000	-,75
		6	-,226	,196	1,000	-,80
	5	1	-,054	,194	1,000	-,63
		2	,047	,194	1,000	-,53
		3	,158	,196	1,000	-,42
		4	,174	,195	1,000	-,40
		6	-,052	,197	1,000	-,63
	6	1	-,002	,195	1,000	-,58
		2	,099	,195	1,000	-,48
		3	,210	,197	1,000	-,37
		4	,226	,196	1,000	-,35
		5	,052	,197	1,000	-,53

Image 55 – Pillar 2 Multiple Comparisons

Confronti multipli

Bonferroni

Variabile dipendente	(I) Country	(J) Country	Differenza della media (I-J)	Errore std.	Sign.	Intervallo di ... Limite inferiore
PILL_Lik2	1	2	,222	,205	1,000	-,38
		3	,166	,207	1,000	-,45
		4	,215	,206	1,000	-,39
		5	,061	,207	1,000	-,55
		6	,007	,208	1,000	-,61
	2	1	-,222	,205	1,000	-,83
		3	-,056	,207	1,000	-,67
		4	-,007	,206	1,000	-,62
		5	-,162	,207	1,000	-,77
		6	-,215	,208	1,000	-,83
	3	1	-,166	,207	1,000	-,78
		2	,056	,207	1,000	-,56
		4	,049	,208	1,000	-,57
		5	-,105	,210	1,000	-,72
		6	-,158	,210	1,000	-,78
	4	1	-,215	,206	1,000	-,82
		2	,007	,206	1,000	-,60
		3	-,049	,208	1,000	-,66
		5	-,155	,208	1,000	-,77
		6	-,208	,209	1,000	-,82
	5	1	-,061	,207	1,000	-,67
		2	,162	,207	1,000	-,45
		3	,105	,210	1,000	-,51
		4	,155	,208	1,000	-,46
		6	-,053	,210	1,000	-,67
	6	1	-,007	,208	1,000	-,62
		2	,215	,208	1,000	-,40
		3	,158	,210	1,000	-,46
		4	,208	,209	1,000	-,41
		5	,053	,210	1,000	-,57

Image 56 – Pillar 3 Multiple Comparisons

Confronti multipli

Bonferroni

Variabile dipendente	(I) Country	(J) Country	Differenza della media (I-J)	Errore std.	Sign.	Intervallo di ... Limite inferiore
PILL_Lik3	1	2	,273	,212	1,000	-,35
		3	,247	,214	1,000	-,38
		4	,255	,213	1,000	-,37
		5	-,142	,214	1,000	-,77
		6	-,018	,214	1,000	-,65
	2	1	-,273	,212	1,000	-,90
		3	-,026	,214	1,000	-,66
		4	-,018	,213	1,000	-,64
		5	-,415	,214	,791	-1,05
		6	-,290	,214	1,000	-,92
	3	1	-,247	,214	1,000	-,88
		2	,026	,214	1,000	-,60
		4	,008	,215	1,000	-,63
		5	-,389	,216	1,000	-1,03
		6	-,265	,217	1,000	-,90
	4	1	-,255	,213	1,000	-,88
		2	,018	,213	1,000	-,61
		3	-,008	,215	1,000	-,64
		5	-,397	,215	,975	-1,03
		6	-,273	,216	1,000	-,91
	5	1	,142	,214	1,000	-,49
		2	,415	,214	,791	-,22
		3	,389	,216	1,000	-,25
		4	,397	,215	,975	-,24
		6	,125	,217	1,000	-,51
	6	1	,018	,214	1,000	-,61
		2	,290	,214	1,000	-,34
		3	,265	,217	1,000	-,37
		4	,273	,216	1,000	-,36
		5	-,125	,217	1,000	-,76

Image 57 – Pillar 4 Multiple Comparisons

Confronti multipli

Bonferroni

Variabile dipendente	(I) Country	(J) Country	Differenza della media (I-J)	Errore std.	Sign.	Intervallo di ... Limite inferiore
PILL_Lik4	1	2	,293	,216	1,000	-,34
		3	,395	,218	1,000	-,25
		4	,580	,217	,117	-,06
		5	,185	,218	1,000	-,46
		6	,279	,219	1,000	-,37
	2	1	-,293	,216	1,000	-,93
		3	,102	,218	1,000	-,54
		4	,287	,217	1,000	-,35
		5	-,108	,218	1,000	-,75
		6	-,014	,219	1,000	-,66
	3	1	-,395	,218	1,000	-1,04
		2	-,102	,218	1,000	-,75
		4	,185	,220	1,000	-,46
		5	-,211	,221	1,000	-,86
		6	-,117	,221	1,000	-,77
	4	1	-,580	,217	,117	-1,22
		2	-,287	,217	1,000	-,93
		3	-,185	,220	1,000	-,83
		5	-,395	,220	1,000	-1,04
		6	-,302	,220	1,000	-,95
	5	1	-,185	,218	1,000	-,83
		2	,108	,218	1,000	-,54
		3	,211	,221	1,000	-,44
		4	,395	,220	1,000	-,25
		6	,094	,221	1,000	-,56
	6	1	-,279	,219	1,000	-,92
		2	,014	,219	1,000	-,63
		3	,117	,221	1,000	-,54
		4	,302	,220	1,000	-,35
		5	-,094	,221	1,000	-,75

Image 58 – Pillar 5 Multiple Comparisons

Confronti multipli

Bonferroni

Variabile dipendente	(I) Country	(J) Country	Differenza della media (I-J)	Errore std.	Sign.	Intervallo di ... Limite inferiore
PILL_Lik5	1	2	,061	,208	1,000	-,55
		3	,267	,211	1,000	-,35
		4	,157	,210	1,000	-,46
		5	-,038	,211	1,000	-,66
		6	-,165	,211	1,000	-,79
	2	1	-,061	,208	1,000	-,67
		3	,207	,211	1,000	-,41
		4	,096	,210	1,000	-,52
		5	-,098	,211	1,000	-,72
		6	-,225	,211	1,000	-,85
	3	1	-,267	,211	1,000	-,89
		2	-,207	,211	1,000	-,83
		4	-,111	,212	1,000	-,73
		5	-,305	,213	1,000	-,93
		6	-,432	,213	,648	-1,06
	4	1	-,157	,210	1,000	-,77
		2	-,096	,210	1,000	-,71
		3	,111	,212	1,000	-,51
		5	-,195	,212	1,000	-,82
		6	-,322	,212	1,000	-,95
	5	1	,038	,211	1,000	-,58
		2	,098	,211	1,000	-,52
		3	,305	,213	1,000	-,32
		4	,195	,212	1,000	-,43
		6	-,127	,213	1,000	-,76
	6	1	,165	,211	1,000	-,46
		2	,225	,211	1,000	-,40
		3	,432	,213	,648	-,20
		4	,322	,212	1,000	-,30
		5	,127	,213	1,000	-,50

Image 59 – Pillars ANOVA

ANOVA

		Somma dei quadrati	gl	Media quadratica	F	Sign.
PILL_Lik1	Tra gruppi	4,864	5	,973	,531	,753
	Entro i gruppi	1050,421	573	1,833		
	Totale	1055,285	578			
PILL_Lik2	Tra gruppi	5,033	5	1,007	,483	,789
	Entro i gruppi	1195,412	573	2,086		
	Totale	1200,446	578			
PILL_Lik3	Tra gruppi	15,204	5	3,041	1,372	,233
	Entro i gruppi	1270,354	573	2,217		
	Totale	1285,558	578			
PILL_Lik4	Tra gruppi	18,606	5	3,721	1,608	,156
	Entro i gruppi	1326,050	573	2,314		
	Totale	1344,656	578			
PILL_Lik5	Tra gruppi	10,922	5	2,184	1,016	,407
	Entro i gruppi	1232,304	573	2,151		
	Totale	1243,226	578			

Image 60 – Pillars Descriptives

Descrittive

		N	Media	Deviazione std.	Errore std.	95% di intervallo di confidenza per la media		Minimo	Massimo
						Limite inferiore	Limite superiore		
PILL_Lik1	1	99	4,97	1,313	,132	4,71	5,23	1	7
	2	99	4,87	1,283	,129	4,61	5,12	1	7
	3	95	4,76	1,350	,139	4,48	5,03	1	7
	4	97	4,74	1,409	,143	4,46	5,03	1	7
	5	95	4,92	1,404	,144	4,63	5,20	1	7
	6	94	4,97	1,364	,141	4,69	5,25	1	7
	Totale	579	4,87	1,351	,056	4,76	4,98	1	7
PILL_Lik2	1	99	5,06	1,384	,139	4,78	5,34	1	7
	2	99	4,84	1,405	,141	4,56	5,12	1	7
	3	95	4,89	1,533	,157	4,58	5,21	1	7
	4	97	4,85	1,417	,144	4,56	5,13	1	7
	5	95	5,00	1,451	,149	4,70	5,30	1	7
	6	94	5,05	1,476	,152	4,75	5,36	1	7
	Totale	579	4,95	1,441	,060	4,83	5,07	1	7
PILL_Lik3	1	99	5,13	1,523	,153	4,83	5,44	1	7
	2	99	4,86	1,414	,142	4,58	5,14	1	7
	3	95	4,88	1,649	,169	4,55	5,22	1	7
	4	97	4,88	1,401	,142	4,59	5,16	1	7
	5	95	5,27	1,387	,142	4,99	5,56	1	7
	6	94	5,15	1,545	,159	4,83	5,47	1	7
	Totale	579	5,03	1,491	,062	4,91	5,15	1	7
PILL_Lik4	1	99	5,36	1,460	,147	5,07	5,65	2	7
	2	99	5,07	1,311	,132	4,81	5,33	2	7
	3	95	4,97	1,741	,179	4,61	5,32	1	7
	4	97	4,78	1,508	,153	4,48	5,09	1	7
	5	95	5,18	1,604	,165	4,85	5,51	1	7
	6	94	5,09	1,479	,153	4,78	5,39	1	7
	Totale	579	5,08	1,525	,063	4,95	5,20	1	7

PILL_Lik5	1	99	4,90	1,432	,144	4,61	5,18	1	7
	2	99	4,84	1,375	,138	4,56	5,11	1	7
	3	95	4,63	1,625	,167	4,30	4,96	1	7
	4	97	4,74	1,529	,155	4,43	5,05	1	7
	5	95	4,94	1,443	,148	4,64	5,23	2	7
	6	94	5,06	1,382	,143	4,78	5,35	1	7
	Totale	579	4,85	1,467	,061	4,73	4,97	1	7

Discussion

Sustainability and related matters are becoming essential elements in today's society. As mention by Linda Too and Bhishna Bajracharya (2015) in *Sustainable campus: engaging the community in sustainability,* "in recent years, sustainability has become an important part of many corporate social responsibility agendas […] As such, there is an urgent need for every level of society to review their actions and aim to be better stewards of our natural resources for developing low-carbon economies." In other words, sustainability and the so-called "green" development are topics that can be placed within not only the environmental sphere, but also in the economic, socio-cultural, as well as political classes of system. Everyone is taking action, and the educational field is no exception. As we discovered in the previous pages, universities and HEIs all around the world are adapting their strategies to be more sustainable, pursuing the so-called "green development". However, the attention has been given merely to what universities are doing, but now how their sustainable actions can influence students. In fact, as the majority of authors focus their attention on how, when, and where universities should implement sustainable actions, none of them discuss on the consequences. In other words, none of the contemporary authors ever analyzed the repercussions that sustainable implementations might have on students. The latter have never been the central focus of any analysis. The attention has been only focused on the universities and the important role they play.

The aim of the following thesis was to understand to what extend sustainability and sustainable actions can influence students' decision-making process when selecting their future university. After having collected and analyzed the data, the following observations can be made:

- When respondents needed to rank the proposed influential parameters, the majority of them gave more importance to positioning, prestige, cost and location. In absolute terms, the parameter which was given the most importance was cost. Less importance was given to parameters related to network, extra-curricular activities, wealth and sustainability. As a matter of fact, the initial hypothesis was confirmed: sustainability is becoming an essential element in today's society, but the lack of knowledge negatively influences the approach that people have towards it. In fact, sustainability-related parameters were placed among the last places in the ranking.
- Out of the four groups created after the Reliability and ANOVA analysis (sustainability, cost, network, and reputation), we can argue that the most controversial ones are sustainability and cost. These two groups are the ones that obtained the most differences among the analyzed countries. This means that respondents do not share a common

opinion on the importance that these two elements can play in choosing a university. For what concerns sustainability, the most significant differences were between Italy (mean=5.04) and UK (mean=4.27) with a p value= 0,002; and between Italy (mean=5.04) and US (mean=4.30) with a p value= 0,003. This suggests that Italy is the country, among the ones examined, that gives the most importance to sustainability. For cost, a significant comparison is between Germany (mean=4.88) and Spain (mean=5.60) with a p value of 0,001. This means that Spain significantly gives more importance to cost than Germany. However, another one worth the mention is the sig. difference that UK (mean 4.31) has with Italy (mean=5.32), France (mean 5.41), Spain (mean=5.60), and US (mean=5.76). All these comparisons had a p value equals to zero. This means that UK, if compared to these countries, is the one which gives the least importance to cost. As a consequence, to this examination, it would be more likely to have sustainability and cost placed in future researches and extend the factors to the whole population to have a better understanding. At the contrary, similar opinions were expressed on network (average mean=3.70) and reputation (average mean=4.63). The majority of respondents agreed on the importance that these parameters have.

- Among the five sustainability pillars, the most important one is the first pillar related to the sustainability when placed within courses and student experiential activities. The majority of respondents placed this pillar between the 1st and 2nd position of the ranking. The pillar related to the sustainability within communication and engagement was considered to be the least important by more that 30 per cent of respondents. No significant differences among countries were detected through the one-way ANOVA ($p>.05$).

Managerial Implications

The following research opened the discussion on a controversial and not-well explored topic. Sustainability is considered to be a relevant matter in today's society, but not many researchers have been carried out studies on the effects that the latter might have on students. The majority of the attention has been given to the actions pursued by the Higher Education Institutions, but not on the repercussion that these might have.

The proposed conceptual framework not only reveals the level of importance that students give to sustainability when choosing among other factors, but it also shows the differences among countries. This element might be useful to understand how different conditions as language, country of origin, or level of education as well as income, gender, or age might influence the

approach to sustainability and related matter when placed within universities. Moreover, the research reveals the factors to which students give the majority of importance, and that worldwide university might exploit to adapt and ameliorate their policy, strategy, and overall activities. Finally, the data collected unveil the lack of knowledge and proper information that still need to be spread to eventually clarify the concept of social, economic, and environmental sustainability.

Limits and Future Research

The aim of the following thesis was to contribute to the academic research on sustainability and education. However, we found numerous limitations, which can be overcome through future research. The first limitation if the number of countries to which the questionnaire was distributed to. The study wanted to understand not only the influence of sustainability on the education field, but also explores the differences among countries. Examining only six countries might have reduced the extendibility of the data. Therefore, future research should try to reach as many countries as possible in order to have a clear perspective. The second limitation was the topic itself. In fact, even though sustainability is gaining importance among people, still there is a lack of knowledge that need to be fulfilled. The third and final limitation is the discrepancy found when analyzing the 5 sustainability pillars. As already mentioned, after having examined the ranking and carried out the Likert analysis of each pillar, we observed a discrepancy in the numbers. So, after having analyzed the data coming from the two analysis, we noticed two different results. As a matter of fact, from the means obtained by the ranking, we see that there is not a significant difference among the pillars. Moreover, they have been placed in the following order: (1) first pillar, (2) second pillar, (3) third pillar, (4) fourth pillar, (5) fifth pillar. However, if we examine the means coming from the Likert analysis the scenario changes and so the ranking. This is the ranking obtained using the mentioned means: (1) pillar 4 (mean= 5,08), (2) pillar 3 (mean= 5,03), (3) pillar 2 (mean= 4,95), (4) pillar 1 (mean= 4,87), (5) pillar 5 (mean= 4,85). The following discrepancy can be better examined in future research.

References

Adams, C. A. (2013). Sustainability reporting and performance management in universities: Challenges and benefits. *Sustainability Accounting, Management and Policy Journal*, *4*(3), 384–392. https://doi.org/10.1108/SAMPJ-12-2012-0044

Alghamdi, N., den Heijer, A., & de Jonge, H. (2017). Assessment tools' indicators for sustainability in universities: an analytical overview. *International Journal of Sustainability in Higher Education*, *18*(1), 84–115. https://doi.org/10.1108/IJSHE-04-2015-0071

Almarshad, S. O. (2017). Adopting Sustainable Behavior in Institutions of Higher Education: a Study on Intentions of Decision Makers in the Mena Region. *European Journal of Sustainable Development*, *6*(2), 89–110. https://doi.org/10.14207/ejsd.2017.v6n2p89

Association of University Leaders for a Sustainable Future 1994, *The Talloires Declaration 10 Point Action Plan*.

Bennett, R., & Ali-Choudhury, R. (2009). Prospective students' perceptions of university brands: An empirical study. *Journal of Marketing for Higher Education*, *19*(1), 85–107. https://doi.org/10.1080/08841240902905445

Blasco, N., Brusca, I., & Labrador, M. (2021). Drivers for universities' contribution to the sustainable development goals: An analysis of Spanish public universities. *Sustainability (Switzerland)*, *13*(1), 1–19. https://doi.org/10.3390/su13010089

Chankseliani, M., & McCowan, T. (2021). Higher education and the Sustainable Development Goals. *Higher Education*, *81*(1), 1–8. https://doi.org/10.1007/s10734-020-00652-w

Cilluffo, A., & Niel G. Ruiz. (2019). World's population is projected to nearly stop growing by the end of the century. *Pew Research Center*, *10*, 1–10. http://www.pewresearch.org/fact-tank/2018/10/19/5-charts-on-global-views-of-china/

Clugston, R. R. M., & Calder, W. (2000). Critical dimensions of sustainability in higher education. *Sustainability and University Life*, *January 1999*, 31–46. http://www.ulsf.org/pdf/Critical_dimensions_SHE.pdf

Dagiliūtė, R., Liobikienė, G., & Minelgaitė, A. (2018). Sustainability at universities: Students' perceptions from Green and Non-Green universities. *Journal of Cleaner Production*, *181*, 473–482. https://doi.org/10.1016/j.jclepro.2018.01.213

Dalal-Clayton, B., and Bass, S. (2002), Sustainable Development Strategies, 1st ed., *Earthscan Publications*, London.

Diekmann, A., & Preisendörfer, P. (2003). Green and greenback: The behavioral effects of environmental attitudes in low-cost and high-cost situations. *Rationality and Society*, 15(4), 441e472.

Drewes, T., & Michael, C. (2006). How do students choose a university?: An analysis of applications to universities in Ontario, Canada. *Research in Higher Education*, *47*(7), 781–800. https://doi.org/10.1007/s11162-006-9015-6

Ferrer-Balas, D., Adachi, J., Banas, S., Davidson, C. I., Hoshikoshi, A., Mishra, A., et al. (2008). An international comparative analysis of sustainability transformation across seven universities. *International Journal of Sustainability in Higher Education*, 9(3), 295–316.

Figueredo, F. R., & Tsarenko, Y. (2013). Is “being green” a determinant of participation in university sustainability initiatives? *International Journal of Sustainability in Higher Education*, *14*(3), 242–253. https://doi.org/10.1108/IJSHE-02-2011-0017

Hauschildt, V., & Schulze-Ehlers, B. (2014). An Empirical Investigation into the Adoption of Green Procurement Practices in the German Food Service Industry. *International Food and Agribusiness Management Review*, *17*(3), 1–32.

Kollmuss, A., & Agyeman, J. (2002). Mind the gap: Why do people act environ- mentally and what are the barriers to pro-environmental behavior? *Environmental Education Research*, 8(3), 239e260.

Iyer-Raniga, U., & Andamon, M. M. (2016). Transformative learning: innovating sustainability education in built environment. *International Journal of Sustainability in Higher Education*, *17*(1), 105–122. https://doi.org/10.1108/IJSHE-09-2014-0121

Larralde, A. S. & B. (2008). Electronic copy available at : Electronic copy available at : *Grou*, *23529*(2), 1–45.

Lozano, R., Lozano, F. J., Mulder, K., Huisingh, D., & Waas, T. (2013). Advancing Higher Education for Sustainable Development: International insights and critical reflections. *Journal of Cleaner Production*, *48*, 3–9. https://doi.org/10.1016/j.jclepro.2013.03.034

Lozano, R., & Young, W. (2013). Assessing sustainability in university curricula: exploring the influence of student numbers and course credits. *Journal of Cleaner Production*, *49*, 134–141. https://doi.org/https://doi.org/10.1016/j.jclepro.2012.07.032

Lukman, R., & Glavič, P. (2007). What are the key elements of a sustainable university? *Clean Technologies and Environmental Policy*, *9*(2), 103–114. https://doi.org/10.1007/s10098-006-0070-7

Lukman, R., Krajnc, D., & Glavič, P. (2010). University ranking using research, educational and environmental indicators. *Journal of Cleaner Production*, *18*(7), 619–628. https://doi.org/https://doi.org/10.1016/j.jclepro.2009.09.015

Moore, J. (2005). Seven recommendations for creating sustainability education at the university level. *International Journal of Sustainability in Higher Education*, 6(4), 326–339.

Nasa, S. M. La. (2000). *Understanding the College-Choice Process*. *412*, 5–22.

Nicolaides, A. (2006). The implementation of environmental management towards sustainable universities and education for sustainable development as an ethical imperative. *International Journal of Sustainability in Higher Education*, 7(4), 414–424.

Nomura, K., & Abe, O. (2010). Higher education for sustainable development in Japan: Policy and progress. *International Journal of Sustainability in Higher Education*, 11(2), 120–129.

O’Connor, M. (2006). The “Four Spheres” framework for sustainability. *Ecological Complexity*, *3*(4), 285–292. https://doi.org/10.1016/j.ecocom.2007.02.002

Padilla-Bernal, L. E., Lara-Herrera, A., Rodríguez, A. V., & Loureiro, M. L. (2018). Views on sustainability and the willingness to adopt an environmental management system in the Mexican vegetable sector. *International Food and Agribusiness Management Review*, *21*(3), 423–436. https://doi.org/10.22434/IFAMR2017.0015

Padilla-Bernal, L. E., Lara-Herrera, A., Rodríguez, A. V., & Loureiro, M. L. (2018). Views on sustainability and the willingness to adopt an environmental management system in the

Mexican vegetable sector. *International Food and Agribusiness Management Review*, *21*(3), 423–436. https://doi.org/10.22434/IFAMR2017.0015

Perchinunno, P., & Cazzolle, M. (2020). A clustering approach for classifying universities in a world sustainability ranking. *Environmental Impact Assessment Review*, *85*, 106471. https://doi.org/https://doi.org/10.1016/j.eiar.2020.106471

Petruzzellis, L., & Romanazzi, S. (2010). Educational value: How students choose university: Evidence from an Italian university. *International Journal of Educational Management*, *24*(2), 139–158. https://doi.org/10.1108/09513541011020954

Ralph, M., & Stubbs, W. (2014). Integrating environmental sustainability into universities. *Higher Education*, *67*(1), 71–90. https://doi.org/10.1007/s10734-013-9641-9

Rankin, A., Gray, A. W., Boehlje, M. D., & Alexander, C. (2011). Sustainability strategies in U.S. Agribusiness: Understanding key drivers, objectives, and actions. *International Food and Agribusiness Management Review*, *14*(4), 1–20.

Rauch, J. N., & Newman, J. (2009). Defining sustainability metric targets in an institutional setting. *International Journal of Sustainability in Higher Education*, *10*(2), 107–117. https://doi.org/10.1108/14676370910945927

Robert O. Vos. (2008). Defining sustainability: a conceptual orientation. *Journal of Chemical Technology & Biotechnology*, *83*(May), 1163–1169. https://doi.org/10.1002/jctb

Ruiz-Mallén, I., & Heras, M. (2020). What sustainability? Higher Education Institutions' pathways to reach the Agenda 2030 goals. *Sustainability (Switzerland)*, *12*(4). https://doi.org/10.3390/su12041290

Rusinko, C. A. (2014). *Integrating sustainability in higher education : a generic matrix*. *2009*. https://doi.org/10.1108/14676371011058541

Ryan, A., Tilbury, D., Blaze Corcoran, P., Abe, O., & Nomura, ko. (2010). Sustainability in higher education in the Asia-Pacific: developments, challenges, and prospects. *International Journal of Sustainability in Higher Education*, *11*(2), 106–119. https://doi.org/10.1108/14676371011031838

Sady, M., Żak, A., & Rzepka, K. (2019). The Role of Universities in Sustainability-Oriented Competencies Development: Insights from an Empirical Study on Polish Universities. *Administrative Sciences*, *9*(3), 62. https://doi.org/10.3390/admsci9030062

Sang, P., Yao, H., Zhang, L., Wang, S., Wang, Y., & Liu, J. (2020). Influencing factors of consumers' willingness to purchase green housing: a survey from Shandong Province, China. *Environment, Development and Sustainability*, *22*(5), 4267–4287. https://doi.org/10.1007/s10668-019-00383-8

Scheunpflug, A., & Asbrand, B. (2006). Global education and education for sustainability. *Environmental Education Research*, *12*(1), 33–46. https://doi.org/10.1080/13504620500526446

Shephard, K. (2008). Higher education for sustainability: Seeking affective learning outcomes. *International Journal of Sustainability in Higher Education*, *9*(1), 87–98. https://doi.org/10.1108/14676370810842201

Shriberg, M. (2002). Institutional assessment tools for sustainability in higher education: Strengths, weaknesses, and implications for practice and theory. *International Journal of Sustainability in Higher Education*, *3*(3), 254–270. https://doi.org/10.1108/14676370210434714

Sibbel, A. (2009). Pathways towards sustainability through higher education. *International Journal of Sustainability in Higher Education*, *10*(1), 68–82. https://doi.org/10.1108/14676370910925262

Singh, R. K., Murty, H. R., Gupta, S. K., & Dikshit, A. K. (2009). An overview of sustainability assessment methodologies. *Ecological Indicators*, *9*(2), 189–212. https://doi.org/https://doi.org/10.1016/j.ecolind.2008.05.011

STARS (2014), "Technical manual 2.0"

Swaim, J. A., Maloni, M. J., Napshin, S. A., & Henley, A. B. (2014). Influences on Student Intention and Behavior Toward Environmental Sustainability. *Journal of Business Ethics*, *124*(3), 465–484. https://doi.org/10.1007/s10551-013-1883-z

Tilbury, D., & Cooke, K. (2005). A national review of environmental education and its contribution to sustainability in Australia: Frameworks for sustainability. Canberra: Australian Government Department of the Environment and Heritage and Australian *Research Institute in Education for Sustainability*.

Tobler, C., Visschers, V. H. M., & Siegrist, M. (2012). Addressing climate change: Determinants of consumers' willingness to act and to support policy measures. *Journal of Environmental Psychology*, *32*(3), 197–207. https://doi.org/10.1016/j.jenvp.2012.02.001

Too, L., & Bajracharya, B. (2015). Sustainable campus: engaging the community in sustainability. *International Journal of Sustainability in Higher Education*, *16*(1), 57–71. https://doi.org/10.1108/IJSHE-07-2013-0080

UN General Assembly. Resolution adopted on 25 September 2015. Transforming our world. The 2030 Agenda for Sustainable Development.

United Nations. "The UN Agenda 2030 for Sustainable Development." Agenzia per La Coesione Territoriale, www.agenziacoesione.gov.it/comunicazione/agenda-2030-per-lo-sviluppo-sostenibile/?lang=en.

United Nations Conference on Environment and Development (1992): Agenda 21. Rio Declaration on Environment and Development

UNESCO. (2017): Education for Sustainable Development Goals. Learning Objectives. Paris: UNESCO.

UNESCO. (2014): Roadmap for Implementing the Global Action Programme on Education for Sustainable Development. UNESCO. Paris.

UNESCo (2005) United Nations decade of education for sustainable development 2005-2014. International implementation scheme. February 2006.

Urquiza Gómez, F., Sáez-Navarrete, C., Rencoret Lioi, S., & Ishanoglu Marzuca, V. (2015). Adaptable model for assessing sustainability in higher education. *Journal of Cleaner Production*, *107*, 475–485. https://doi.org/https://doi.org/10.1016/j.jclepro.2014.07.047

Van Weenen, H. (2000). Towards a vision of a sustainable university. *International Journal of Sustainability in Higher Education*, *1*(1), 20–34. https://doi.org/10.1108/14676300103070 75

Vos, R.O. (2007), Defining sustainability: a conceptual orientation. J. Chem. Technol. Biotechnol., 82: 334-339.

Wright, T. S. A. (2002). Definitions and frameworks for environmental sustainability in higher education. *International Journal of Sustainability in Higher Education*, *3*(3), 203–220. https://doi.org/10.1108/14676370210434679

Xie, B., Brewer, M. B., Hayes, B. K., McDonald, R. I., & Newell, B. R. (2019). Predicting climate change risk perception and willingness to act. *Journal of Environmental Psychology*, *65*(January). https://doi.org/10.1016/j.jenvp.2019.101331

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The impact of sustainability in Higher Education Institutions

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Table of Contents

Abstract
Sustainability is becoming one of today's biggest challenges. Contrary to popular belief, it can be pursued in many more other spheres than just the environmental one. De facto, green development has been implemented also in the economic, socio-cultural, as well as political classes of system. As a matter of fact, everyone is taking action and educational institutions are no exception. By being institutions of higher education, universities can play a significant role. The aim of the study is to examine the relationship between sustainability and education. In particular, the goal will be to shed light on the correlation and/or influence that sustainability can eventually have on students' willingness to apply to a certain university. Six online questionnaires targeting Italy, France, Germany, Spain, UK, and US were employed to generate a sample of 579 respondents. The results show that (1) the most important factor when it comes to choosing the best university is cost. Other relevant factors are prestige, reputation, and location; (2) there are deep variances among the examined countries on the importance given to sustainability and cost of a university. Contrarily, shared opinions were expressed regarding the relevance that network and reputation can have when choosing a university; (3) sustainability – related to social, economic, and environmental aspects – is not considered to be the most influential factors within the decision-making process when selecting the right university.

Keywords
Sustainability; University; Higher Education; Willingness to Apply; Students; Factors.

Academic Background
Throughout the last decade, a growing number of Higher Institutions are starting to integrate sustainability in their policies, regulations, as extra-curricular activities as well as in their campuses. This because universities realize the importance they have in setting the example for next generations. However, this process might include numerous and various obstacles to overcome. So far, a lot has been done. In fact, many declarations introduced sustainability within the educational field, many key events shared knowledge and information on the topic, and many models have been created by researchers so to manage as well as possible this complicated path.
The integration of green development and sustainability within universities and HEIs it is still a quite new topic. Nonetheless, many future actions have been set so to ameliorate while preserving our natural surrounding for future generation. It is common knowledge how human actions throughout the last decades have dramatically modified our natural surroundings, leading to the current environmental crisis in which we are living right now. Major actions needed to be taken at a global scale, and that is why in September 2015 the governments of all the United Nations member countries signed the Agenda 2030, also approved by the UN General Assembly.

Managerial Evidence
The topic chosen for the following examination has just recently emerged; in fact, sustainability gained more and more importance only during the last decades. The following research wants to provide an initial approach to the impact that sustainability has – or might have – on the students' willingness to apply to a certain university. Moreover, this research wants to open the discussion on a controversial and not-well explored topic. Sustainability is considered to be a

relevant matter in today's society, but not many researchers have been carried out studies on the effects that the latter might have on students. In fact, as the majority of authors focus their attention on how, when, and where universities should implement sustainable actions, none of them discuss on the consequences. In other words, none of the contemporary authors ever analyzed the repercussions that sustainable implementations might have on students. The latter have never been the central focus of any analysis. The attention has been only focused on the universities and the important role they play.
The proposed conceptual framework not only reveals the level of importance that students give to sustainability when choosing among other factors, but it also shows the differences among countries. This element might be useful to understand how different conditions as language, country of origin, or level of education as well as income, gender, or age might influence the approach to sustainability and related matter when placed within universities. Moreover, the research reveals the factors to which students give the majority of importance, and that worldwide university might exploit to adapt and ameliorate their policy, strategy, and overall activities. Finally, the data collected unveil the lack of knowledge and proper information that still need to be spread to eventually clarify the concept of social, economic, and environmental sustainability.

Introduction

Since its first mention, the word "sustainability" has always been a controversial one because its definition created various misunderstandings among people all around the world. To put it in another way, throughout the last year people repeatedly changed what they consider to be "sustainable". In fact, even if we can find the word "sustainability" pretty much everywhere in today's society, defining the term and constructing a proper meaning for each and every different context in which we can find it is very complicated (Vos, 2007) because there are multiple elements, variables, and scales that we need to consider when taking into consideration this concept.
Originally, the definition of sustainability was merely related to the biological dimension, so it was intended as the conservation of natural resources. As years passed, sustainability got also introduced in the social, economic, and also educational sphere because a growing number of people and institutions are finally realizing all the advantages that sustainability brings along.
Given the growing relevance that sustainability and green development are both reaching at a global level, key actors coming from all kind of sectors have started to take action, especially the ones in the educational sector. As observed by R. Lukman and P. Glavic (2007), "many business organizations, governments, local agencies and non-governmental organizations are promoting sustainability, encouraging the establishment of regulations, activities for sustainable production and consumption, education processes, etc." Focusing our attention on universities and High Education Institutions (HEIs), we can argue that they play a major role in the "green" scenario because they are one of the most important agents that can promote sustainable principles within society, especially to future generations that will be a substantial part of it. As mentioned by Perchinunno and Cazzolle in *A clustering approach for classifying universities in a world sustainability ranking* (2020), universities play a fundamental role when it comes to the implementation and promotion of sustainable development because university campuses are considered to be the best environment in which sustainability can be practiced at its best. HEIs' direct involvement can have a long-lasting positive effect on the environmental and on the society as well.
The integration of sustainability and related matters within universities and HEIs it is still a quite new topic, and for this main reason not many researches and studies have been dedicated to the discussion and analysis of the phenomenon. It can be also argued that by being a not-

well explored topic, the implementation of sustainable practices in HEIs might implicate numerous barriers and obstacles to overcome. The biggest challenge, however, will remain that of spreading clear information and knowledge on the topic.
The following thesis will examine the relationship between sustainability and universities. In particular, the goal will be to shed light on the correlation and/or influence that sustainability might have on the students' willingness to apply to a certain university. The research will be divided as it follows. The first chapter will be dedicated to the literature review. In these pages I will examine all the frameworks, researches, and past studies so to explain at its fullest the actual meaning of sustainability. In particular, I will examine the evolution that this phenomenon is having throughout the last decades. In addition to this, I will also discuss the growing relevance that universities and HEIs are getting by first exposing all the key declarations and events; and secondly, by introducing all the models, studies, and parameters developed so far. Finally, I will conclude the literature review by describing future actions already set up by international institutions aimed at finding real solutions to the ongoing global environmental crisis. The second chapter will be focused on the research gap. In other words, I will explain in detail the gap that I want to fulfill with the following research. Consequently, the third chapter will be exclusively dedicated to the methodology. So, I will recall the process I followed in order to create the questions for the online questionnaire to then analyze the sample, the research design and all the criteria used for the questionnaire. The fourth chapter will describe and analyze the data collected. The examination will be divided into two sections: the first one will focus on the influential parameters for the university decision-making process, and the second one will be discussing the five sustainability pillars. The last chapter will be dedicated to the conclusion where I will recap the aim of the research and how the collected data helped me satisfying my initial hypothesis.

Literature Review

Many international actors are realizing the relevance and importance that sustainability can play in their own field, especially universities and HEIs. As also confirmed by Hans Van Weenen (2000) in its work titled *Towards a vision of a sustainable university*, "sustainable development is one of the biggest challenges of the twenty-first century. Several universities have begun the debate about the content of this concept and the ways in which to integrate it into their university policy, organization and activities." By being one of the most important places where to shape next generations' attitude towards ongoing societal issues, universities, HEIs, and their staff members as professors are considered to be key actors who need to involve students as much as possible so to make them have a positive impact when it comes to environmental issues and societal change (Ralph and Stubbs, 2014).
Since education is directly related to the achievement of sustainability, universities and HEIs can have a strong impact. In fact, many authors discussed the big responsibility that these non-governmental institutions have on both students and society, as well as on the economic performance of a country. As a matter of fact, when it comes to education and sustainability all the fundamental spheres are interconnected and impacted.
Since the early of the 1970s, many researches have been carried out to study the phenomenon. As a matter of fact, global concern focus on the environment and sustainability has started around this period and time, and since that, this growing attention has been transformed into real actions. Numerous declarations, models, and parameters have been created as observable in **Image 1**. Other important declarations regarding sustainability are listed below:

- Tbilisi Declaration (1977),
- United Nations Conference on Environment and Development, Rio de Janeiro (1992)
- Bologna Declaration (1999)

However, besides declarations, also key events helped raising the awareness. The first one was the Conference on the International Launch in Higher Education "Committing Universities to Sustainable Development" held in Austria in 2005. The conference revolved on the importance that future generations can have on our future and society., Moreover, there was the United Nations Decade of Education for Sustainable Development (UNDESD) that started in 2005 and ended in 2014. The focus was the creation of a better sustainable future.

Image 1

Chronology of some declarations related to sustainability in higher education

Year	Declaration
1972	The Stockholm Declaration on the human environment
1977	Tbilisi Declaration
1990	University Presidents for a sustainable future: the Talloires Declaration
1991	The Halifax Declaration
1992	Report of the United Nations Conference on Environment and Development – Chapter 36, Promoting education, public awareness and training
1993	Ninth International Association of Universities Round Table: The Kyoto Declaration
1993	Association of Commonwealth Universities' Fifteenth Quinquennial Conference: Swansea Declaration
1994	CRE-Copernicus Chapter
1997	International Conference on Environment and Society – Education and Public Awareness for Sustainability: Declaration of Thessaloniki

Sustainability is a very complicated concept to define and measure because of the subjectivity of what can be considered to be environmentally sustainable. As previously mentioned, that is many researchers have been trying to create models and parameters to manager as well as possible this phenomenon. The majority of tools and models created so far, among all the possible elements, decided to focus on the elements on which it was possible to gather more information and data: air emissions, energy use, water use, and material resource output so waste and recycling. (Raunch and Newman, 2009).

A model that is worth being analyzed is the one presented by Naif Alghamdi, Alexandra dei Heijer and Hans de Jonge (2017). The authors used a "desk study approach" to present institutions simple tools and indicators to shed light on all the sustainability-related issues while allowing universities to have new tools to face challenges and lack connected to measurements. In the paper it has been argued that "for measuring and analyzing sustainability in universities, three main approaches were developed: accounts assessment, narrative assessment and indicator-based assessment." (Alghamdi, den Heijer, and de Jonge, 2017). We can observe these approaches in **Image 2.**

Aside from this model, a very important assessment tool that helped the actual measurement of sustainability is the STARS assessment tool. The name is an acronym for Sustainability

Tracking, Assessment and Rating System. STARS is an assessment tool developed by the AASHE. which is the Association for the Advancement of Sustainability in Higher Education. Developed in 2010, in few years the tool became one of the most used one among HEIs and universities in USA and Canada. All the elements contained in the STARS approach are shown in the **Image 3**. As we can notice from the image above, the assessment tool is divided into five different areas: academic, engagement, operations, planning and administration, and finally innovation. From these five initial areas we can then notice 18 sub-criteria that go from curriculum, transportation, and energy to coordination, water and many others; and also 74 different indicators.

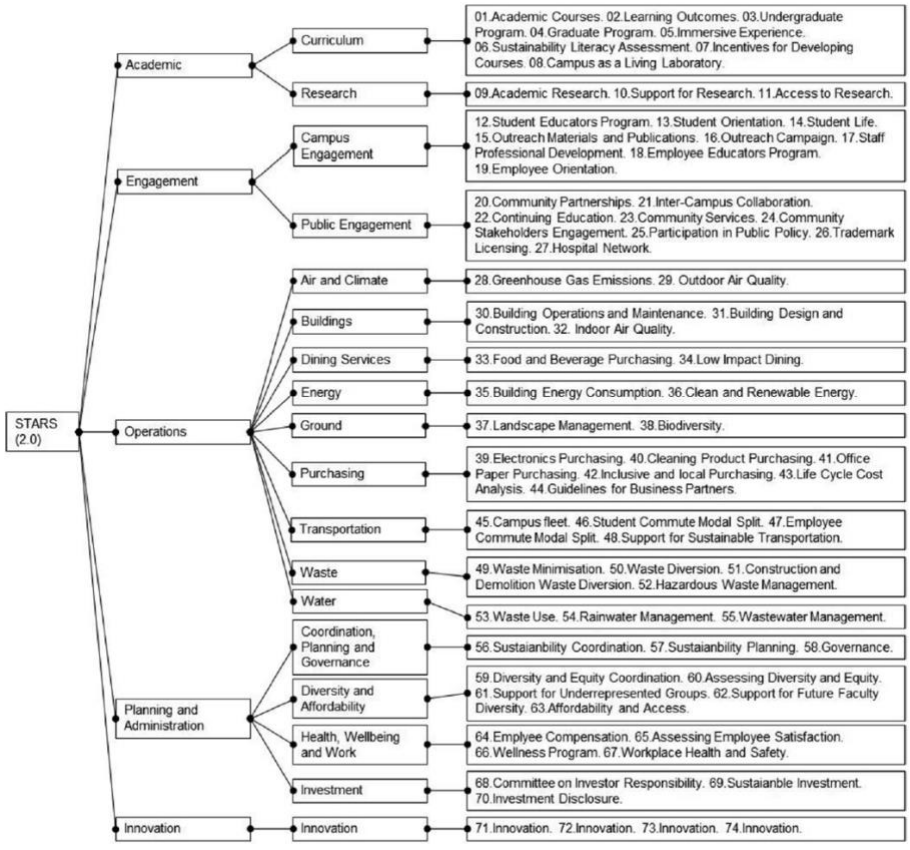
Image 2

The three main approaches to measuring and analyzing sustainability (Dalal-Clayton and Bass, 2002)

Approaches	Accounts	Narrative assessments	Indicator-based assessments
Potential for transparency	Low	Medium	High
Potential for Consistency	High	Low	High
Potential for participation	Low	High	Medium
Usefulness for decision-making	Medium	Medium	High

Image 3

A summary of the STARS assessment tool



After having discussed about the past declarations and models created, we now focus our attention on what has been set for the future. It is common knowledge that human actions are slowly impacting our natural surroundings. Major actions needed to be taken at a global scale, and that is why in September 2015 the governments of all the United Nations member countries signed the Agenda 2030, also approved by the UN General Assembly. Agenda 2030 wants to shed light on the social and human development model that we are actually following, so to encourage and promote at a global level a responsible environmental stewardship (Ruiz-Mallen and Heras, 2020). The 17 Sustainable Development Goals contained in the UN Agenda 2030 are shown in **Image 4**.

Image 4
The 17 Sustainable Development Goals contained in the UN Agenda 2030

Research question

As observed in the previous paragraphs, an increasing number of studies and researches on the importance and implementation of sustainability in universities and HEIs have been done in the last decades. However, there are still many gaps to be fulfilled and many questions to answer to. In fact, as the majority of authors focus their attention on how, when, and where universities should implement sustainable actions, none of them discuss on the consequences. In other words, none of the contemporary authors ever analyzed the repercussions that sustainable implementations might have on students. The latter have never been the central focus of any analysis. The attention has been only focused on the universities and the important role they play.

We are well aware of the increasing importance that sustainability is gaining throughout the last decade, and the influence that this is having on every single sphere of everyone's life. The concept is completely focused on the development of goods and services that can fulfil our ongoing needs without compromising the ones of our future generations. The concern for the environment and the future of our planet is at the center of today's debate, but people are not taking into consideration other aspects of sustainability. In fact, they do not realize that sustainability and the so-called "green development" should not be applied only to environmental matters, because they represent so much more that the preservation of our natural surroundings. In other words, even though the majority of people are now aware of it, sustainability can be associate to various contexts as for example the economic and social one. Sustainability mixed together with the so-called "green development" should have the final goal of reaching a sustainable society in which there is a harmony between the natural environmental, the conservation of all the available resources, and the social justice. All these elements needed to be reached to augment the quality of everyone's life. To do so, people need to realize that sustainability is much more than the preservation of our natural surroundings.

In order to address this important gap, I will create a survey containing specific questions on students' approach to sustainability, and how much the latter influence their educational choice. As described in the next pages, the survey will be divided into four different sections. Each of it will be focused on different aspects of sustainability. The final aim of the study is to understand the level of awareness and importance that people, in particular students, give to sustainability when choosing the university where to complete their academic path. I want to understand if, among all the most important factors as costs, locations, and future salary, sustainability can represent an influential element.
After having collected and analyzed the results, I will then discuss them so to shed light and understand whether students give actual importance to sustainability, or if sustainable development pursued by HEIs is not so important when it comes to choosing the best university for the future.

Hypothesis

The aim of the study was to explore the relationship that exists between sustainable development and Higher Education Institutions, especially universities. In particular, the goal was to examine the perceptions that students between 18 and 24 years old have towards sustainability and green development, while understanding to what extent these two factors can influence students' willingness to apply to a certain university.
Considering the recent arise of the topic and the attention given to it, the initial hypothesis was that students did not consider sustainability as a significant factor in their decision-making process to select the best university for their future. It is true that sustainability is becoming an essential element in today's society, but the lack of knowledge negatively influences the approach that students have towards it. In fact, sustainability-related parameters were expected to be placed among the last places in the ranking.

Experiment

Based on the available information and previous studies as well as knowledge related to sustainable development activities pursued by universities all around the world, a questionnaire was developed and distributed through Prolific. The questionnaire was split into four different parts, each measuring a different aspect of sustainability related to HEIs. The questions chosen for the questionnaires were very specific and seven-point rating scales were used throughout the whole research with 1 indicating a negative attitude (not important at all), and 7 indicating a positive view (extremely important). The questionnaire was divided into four sections:

1. The first section sought to determine how sustainability can be inserted within the students' decision-making process when it comes to choosing a certain university,
2. The second section was related to the respondents' personal experiences with sustainability. The goal of the following section was to check what kind of relationship people have with sustainable matters and their sustainability concern,
3. The third section was entirely focused on sustainability. In this part the goal was to determine the approach that people had towards sustainability, and all the possible sustainable activities that a university might be pursuing within its campuses,
4. The fourth section was focused on the social and demographical elements of the respondents.

Surveys (*n = 600)* were distributed across the online platform – Prolific – over a period of seven days, starting at the end of May 2021. A total of 579 usable questionnaires spread in 6 different countries (1: Italy, 2: France, 3: Germany, 4: Spain, 5: UK, 6: US) were used in the following research as can be observes in **Image 5**, representing a rate of return of 96.5 per cent.

Image 5 – Total Sample

Statistiche

		Country	Sex	Age	Edu	Employment	Income
N	Valido	579	579	579	579	579	579
	Mancante	0	0	0	0	0	0
Media		3,47	1,50	21,67	4,69	2,39	1,64
Mediana		3,00	1,00	22,00	6,00	1,00	1,00
Modalità		1[a]	1	24	6	1	1
Deviazione std.		1,710	,527	1,853	1,462	2,831	1,035
Minimo		1	1	18	1	1	1
Massimo		6	3	32	7	10	7

a. Esistono più mode. Viene visualizzato il valore più piccolo

Results

For all the above-mentioned countries, the 579 respondents were profiled based on gender, age, level of education as well as job, income, and nationality. Data collected that is worth mentioning is based on age and level of education.

For what concerns the age, we asked the online platform to only select people going from an age of 18 to a maximum of 24. So, starting from this information it can be observed that the majority of respondents were 24 years old for a total 19.9 per cent. Then, 17.8 per cent were 22 years old with a total of 103 questionnaires completed; 16.2 per cent were 21 and 23 years old with a total of 188 questionnaires completes. Finally, a big part of the respondents was 20 years old with a 14.2 per cent and a total of 82 questionnaires completed. The rest of the respondents were 18 years old with a percentage of 3.6 and 21 total questionnaires completed; 25 years old and 26 years old with a percentage of 0.3 and a total of 4 questionnaires completed.

In the contingency table we can examine where these respondents come from. As observable in the table below, the group of 24 years-old respondents mainly come from Germany with a percentage of 4.50 and from France with a total percentage of 4.15. The only two languages that were selected for the online questionnaires were Italian and English. Consequently, highest percentages were expected in countries where these languages are well-spoken as Italy, UK, and US. Contrarily, the majority of respondents come from two countries where the first language is neither Italian nor English. The only groups of age coming from one of the three before-mentioned countries speaking either Italian or English are 22 years-old respondents from Italy with a percentage of 4.50 per cent; 23 years-old respondents from Italy and UK with a total of 6.22 per cent.

To discuss the level of education that has been recorded from each respondent, an explanatory line is needed for the number that go from 1 to 7.

- 1 = primary school,
- 2 = middle school,
- 3 = high school,
- 4 = technical institute,
- 5 = professional institute,
- 6 = university,
- 7 = other.

Once clarified this, we can observe that a significant part of the respondents with a total percentage of 50.4 is currently or already attended university, having a total of 292 questionnaires completed out of 579. This might be explained by the range of age that has been decided for the research (18 – 24 years old). Then, a percentage worth mentioning is the 35.2 per cent of respondents who stopped their education level at high school. By comparing the level of education to the respondents' country of origin and the declared age we can observe that in Italy, even though the majority of respondents declared to be 22 years old, 44 completed questionnaires out of a total of 99, so 44.45 per cent, answered "high school" where they were asked to express their level of education; and 32.33 per cent of them selected "university" as

maximum level of education. In France, the majority of respondents were 20 years old and in fact, almost 75.76 per cent declared to be attending university and only 16.16 per cent of them declared to be a high school student. Moreover, also Germany registered a 51.58 per cent of high school students, and a 36.84 per cent of university students. However, Spain, UK, and US respected the expectations. All three had a majority of respondents going from 21 to 23 years old. In fact, in Spain 52.58 declared to be university students and 27.84 per cent to be high school students; in UK and US, where the majority of respondents were 23 years old, surveys revealed that 53.68 per cent in UK and 55.32 per cent in USA were university students; and 32.63 per cent in UK and 39.36 per cent in US were high school students.

To analyze the collected data, we are going to first examine the parameters considered by students to be the most influential ones, to then group them in four groups (sustainability, networks and extra-curricular activities, cost, and reputation), which represent the areas of interest to which were given the highest level of importance. Secondly, we will discuss about the five sustainability pillars. For each section there will be the application of a descriptive analysis for the rankings to understand which were the elements that gained the most importance, and a One-Way Analysis of Variance (ANOVA) for the Likert to understand the importance that each respondent allocates to each element.

The first section is dedicated to the influential parameters, and they are:

16. Positioning of the university in national/international rankings,
17. Prestige and reputation,
18. Cost,
19. Presence of scholarships,
20. Extra-curricular activities,
21. Participation of companies in courses,
22. Post-graduate salary,
23. Location (country, city, etc),
24. Social sustainability level,
25. Economic sustainability level,
26. Environmental sustainability level,
27. Transparency of admission procedures and rules,
28. Excellence in research,
29. Sport,
30. Security inside the university.

Respondents were asked to rank the 15 parameters in order of importance from 1 (extremely important) to 15 (not important at all). Results revealed that the most attention was given to cost, as observable in Image 10. In spite of this result, economic sustainability level so all the economic help that students can receive to attend a university, was not placed among the first positions of the raking. This might be due to a lack of information and knowledge on the true meaning of “economic sustainability”. Contrarily, the parameters which gained the lowest positions in the ranking are:

- Transparency of admission procedures and rules,
- Excellence in research,
- Security inside the university,
- Sport.

However, in absolute terms sport is the parameters to which was given the least of importance. In fact, this was placed by 268 respondents with an incidence of 46.3 per cent in the very last position of the ranking. Researches revealed that students did not put much attention to sports and all related matters when choosing university.

Let’s now analyze the data on which the research in mainly focused on: sustainability. Hypothesis forecasted these elements to be placed in the middle of the ranking because, as the

literature review also revealed, still not much attention is given to sustainability and related matters. Respecting the hypothesis, all three aspects of sustainability (economic, social, and environmental) were placed between the 10th and 12th position of the ranking. Among all three, the one that was given more importance was the social sustainability. In fact, this element was placed at the 10th position by 81 respondents with an incidence of 14 per cent; economic sustainability was placed at the 11th position by 83 respondents and a percentage of 14.3; and finally, environmental sustainability that was placed 12th by 86 respondents with an incidence of 14.9 per cent. Results respected the expectations, even though environmental sustainability was expected to gain the best position among the three since it is the most-known parameter.
After having analyzed the results from the ranking, we will now examine through a Factor Analysis if it was possible to group together the parameters previously mentioned based on correlation and similarities. Analyzing the list, all the variables with a value <.05 were excluded. We then chose only the parameters with a total >1 and a cumulative variance explained >60% as we can see in **Image 6**. We then relaunched the analysis with the selected four elements that were grouped and named into the following factors: sustainability, network and extra-curricular factors, reputation, cost.

Image 6 – Explained variance

Varianza totale spiegata

	Autovalori iniziali			Caricamenti somme dei quadrati di estrazione			Caricamenti somme dei quadrati di rotazione		
Componente	Totale	% di varianza	% cumulativa	Totale	% di varianza	% cumulativa	Totale	% di varianza	% cumulativa
1	3,252	32,518	32,518	3,252	32,518	32,518	2,375	23,751	23,751
2	1,730	17,298	49,816	1,730	17,298	49,816	1,839	18,386	42,137
3	1,251	12,515	62,331	1,251	12,515	62,331	1,724	17,245	59,381
4	1,167	11,672	74,003	1,167	11,672	74,003	1,462	14,621	74,003
5	,704	7,036	81,039						
6	,571	5,708	86,747						
7	,470	4,703	91,450						
8	,343	3,430	94,880						
9	,284	2,837	97,717						
10	,228	2,283	100,000						

Metodo di estrazione: Analisi dei componenti principali.

We then launched the reliability analysis for each grouped parameter to test the trustworthiness of the elements examined, which could be accepted only if they had a Cronbach's Alpha > 0,7 and these were the results: Sustainability (α = 0,868), network (α =0,652), reputation (α =0,829), and cost (α =0,576). From these four numbers we can understand that the most reliable groups of factors in the university decision-making process for people are the sustainability and reputation because they have the higher Cronbach's Alpha with respect to the other two groups of parameters. After this, we analyzed each group and ran the ANOVA Analysis. Let's start with sustainability. The first data to be checked is the difference with respect to the other countries (0,001 < α=0,05). This means that we can accept the factor and extend it to the whole population because the One-Way Analysis of Variance detected a significant difference among the selected countries. In particular, if we analyze the Multiple Comparisons, we will notice that between Country 1 (Italy) and Country 2 (France) there is a significance difference of 0,017 < α = 0,05; between Country 1 (Italy) and Country 3 (Germany), Country 5 (UK) and Country 6 (US) there is a significant difference respectively of 0,024, 0,002, and 0,003 < α = 0,05. The only non-significant difference is between Country 1 (Italy) and Country 4 (Spain) because they have a difference of 0,159 > α = 0,05. This means that Italy, among all the countries examined, is the country that gives the most importance to sustainability. Going on with network we can say that this factor is given less importance with respect to sustainability because the latter started with a mean of 5,0404 and a total mean of 4,4997. From the data collected we also noticed not a big difference between the countries' means. They go from a

maximum of 3,9495 to a minimum of 3,6989. As a counterproof of it, we can look at the ANOVA Analysis that shows a difference among country of 0,048 which is barely < α=0,05. Let's go on with reputation, where means are very close to each other. Lastly, let's analyze cost. As for the last two, even for this factor there is not a significant variance among the means that go from 5,3232 to 5,2176. Passing to the ANOVA Analysis, it shows a difference equals to 0 which, of course, is < α=0,05 and it underlines the difference of importance given by each country to cost. Looking at the differences among countries, we can notice a significant difference that equals 0 between Country 1 (Italy) and Country 5 (UK). This means that cost is much more important for Italy. Then there is a significant difference between Country 2 (France) and Country 3 (Germany) and Country 5 (UK) because the country that gives the highest level of importance is France because the difference is always < α = 0,05. Moreover, between Country 3 (Germany) and Country 4 (Spain) there is a difference of 0,001 < α = 0,05 so this means that Spain gives more importance to cost with respect to Germany. However, if we compare Germany to Country 5 (UK) we notice a difference of 0,034 < α = 0,05. This means that Germany give more importance to cost if compared to UK.

After the analysis of the influential parameters, we will now deal with the 5 sustainability pillars with the same procedure followed before. The 5 pillars in question are referred to sustainability when placed within courses and student experiential activities, within the faculty scientific research, within facilities and university campuses' operations, within the social field, and finally within communication and level of engagement. We will start by analyzing the place in the ranking obtain by each pillar that went from 1 (extremely important) to 5 (not important at all). The first pillar was always placed between the 1st and the 2nd position. In total, 180 respondents with an incidence of 31.1 per cent placed it at the first place; 136 respondents with an incidence of 23.5 per cent placed it at the second place. Instead, the second pillar was usually placed between the 2nd and 3rd place: 22.5 per cent of respondents placed it at the 2nd place; 22.3 per cent of respondents placed it at the 3rd place. The third pillar got placed in the lowest part of the ranking. In fact, 23.5 per cent of respondents placed it at the 3rd place; 22.5 per cent of respondents however placed it at the 1st and last place, considering sustainability within university facilities and operations the most important pillar. The fourth pillar was considered not to be a very important one. Numbers show that 23.5 per cent of respondents placed it at the 4th place, and 23.3 per cent of respondents placed it at the 5th place. Finally, there is the fifth pillar related to communication and engagement that was given by 178 respondents out of 579 the very last place on the ranking. In total, 30.7 per cent of respondents considered it to be the least important pillar among the five.

As for the parameters, after having determined the level of importance that respondents give to each of the five pillars, we now need to analyze the ANOVA and the Multiple Comparisons analysis. As we can notice from the collected data, there is not a lot of differences among countries on the level of importance given to each pillar. Notwithstanding these variances, we need to check if the differences among the countries are sig. By analyzing the ANOVA Analysis applied to the 5 pillars, we observe and confirm that there are not significant differences among the pillars. We can declare that Italy and US are the countries most interested in the first pillar with a mean of 4,97 and in the fifth pillar with a mean of 5,06. For what concerns the second pillar and forth pillar we can understand from the table that Italy is the country that gives more importance to the within the faculty scientific research with a mean of 5,06; and to the sustainability in the social field with a mean of 5,36. Lastly, we have UK that is the country most interested to the third pillar with a mean of 5,27. It can be stated that all the examined countries give similar importance to all the sustainability pillars.

After having examined the ranking and carried out the Likert analysis of each pillar, we observed a discrepancy in the numbers. In other words, after having analyzed the data coming from the two analysis, we noticed two different results. As a matter of fact, from the means

obtained by the ranking, we see that there is not a significant difference among the pillars. Moreover, they have been placed in the following order: (1) first pillar, (2) second pillar, (3) third pillar, (4) fourth pillar, (5) fifth pillar. However, if we examine the means coming from the Likert analysis in the Image 60 the scenario changes and so the ranking. This is the ranking obtained using the mentioned means: (1) pillar 4 (mean= 5,08), (2) pillar 3 (mean= 5,03), (3) pillar 2 (mean= 4,95), (4) pillar 1 (mean= 4,87), (5) pillar 5 (mean= 4,85). The following discrepancy can be better examined in future research.

Discussion

With the aim of discovering the correlation between sustainability and the influence that this element might have on students' willingness to apply to a certain university, the following research has been carried out. Gathering data through online questionnaires (n= 600), the following observations can be made:

- When respondents needed to rank the proposed influential parameters, the majority of them gave more importance to positioning, prestige, cost and location. In absolute terms, the parameter which was given the most importance was cost. Less importance was given to parameters related to network, extra-curricular activities, wealth and sustainability. As a matter of fact, the initial hypothesis was confirmed: sustainability is becoming an essential element in today's society, but the lack of knowledge negatively influences the approach that people have towards it. In fact, sustainability-related parameters were placed among the last places in the ranking.
- Out of the four groups created after the Reliability and ANOVA analysis (sustainability, cost, network, and reputation), we can argue that the most controversial ones are sustainability and cost. These two groups are the ones that obtained the most differences among the analyzed countries. This means that respondents do not share a common opinion on the importance that these two elements can play in choosing a university. For what concerns sustainability, the most significant differences were between Italy (mean=5.04) and UK (mean=4.27) with a p value= 0,002; and between Italy (mean=5.04) and US (mean=4.30) with a p value= 0,003. This suggests that Italy is the country, among the ones examined, that gives the most importance to sustainability. For cost, a significant comparison is between Germany (mean=4.88) and Spain (mean=5.60) with a p value of 0,001. This means that Spain significantly gives more importance to cost than Germany. However, another one worth the mention is the sig. difference that UK (mean 4.31) has with Italy (mean=5.32), France (mean 5.41), Spain (mean=5.60), and US (mean=5.76). All these comparisons had a p value equals to zero. This means that UK, if compared to these countries, is the one which gives the least importance to cost. As a consequence, to this examination, it would be more likely to have sustainability and cost placed in future researches and extend the factors to the whole population to have a better understanding. At the contrary, similar opinions were expressed on network (average mean=3.70) and reputation (average mean=4.63). The majority of respondents agreed on the importance that these parameters have.
- Among the five sustainability pillars, the most important one is the first pillar related to the sustainability when placed within courses and student experiential activities. The majority of respondents placed this pillar between the 1st and 2nd position of the ranking. The pillar related to the sustainability within communication and engagement was considered to be the least important by more that 30 per cent of respondents. No significant differences among countries were detected through the one-way ANOVA ($p>.05$).

Future avenues of research

The aim of the following thesis was to contribute to the academic research on sustainability and education. However, we found numerous limitations, which can be overcome through future research. The first limitation if the number of countries to which the questionnaire was distributed to. The study wanted to understand not only the influence of sustainability on the education field, but also explores the differences among countries. Examining only six countries might have reduced the extendibility of the data. Therefore, future research should try to reach as many countries as possible in order to have a clear perspective. The second limitation was the topic itself. In fact, even though sustainability is gaining importance among people, still there is a lack of knowledge that need to be fulfilled. The third and final limitation is the discrepancy found when analyzing the 5 sustainability pillars. As already mentioned, after having examined the ranking and carried out the Likert analysis of each pillar, we observed a discrepancy in the numbers. So, after having analyzed the data coming from the two analysis, we noticed two different results. As a matter of fact, from the means obtained by the ranking, we see that there is not a significant difference among the pillars. Moreover, they have been placed in the following order: (1) first pillar, (2) second pillar, (3) third pillar, (4) fourth pillar, (5) fifth pillar. However, if we examine the means coming from the Likert analysis the scenario changes and so the ranking. This is the ranking obtained using the mentioned means: (1) pillar 4 (mean= 5,08), (2) pillar 3 (mean= 5,03), (3) pillar 2 (mean= 4,95), (4) pillar 1 (mean= 4,87), (5) pillar 5 (mean= 4,85). The following discrepancy can be better examined in future research.

References

Alghamdi, N., den Heijer, A., & de Jonge, H. (2017). Assessment tools' indicators for sustainability in universities: an analytical overview. *International Journal of Sustainability in Higher Education*, *18*(1), 84–115. https://doi.org/10.1108/IJSHE-04-2015-0071

Lukman, R., & Glavič, P. (2007). What are the key elements of a sustainable university? *Clean Technologies and Environmental Policy*, *9*(2), 103–114. https://doi.org/10.1007/s10098-006-0070-7

Perchinunno, P., & Cazzolle, M. (2020). A clustering approach for classifying universities in a world sustainability ranking. *Environmental Impact Assessment Review*, *85*, 106471. https://doi.org/https://doi.org/10.1016/j.eiar.2020.106471

Ralph, M., & Stubbs, W. (2014). Integrating environmental sustainability into universities. *Higher Education*, *67*(1), 71–90.

Rauch, J. N., & Newman, J. (2009). Defining sustainability metric targets in an institutional setting. *International Journal of Sustainability in Higher Education*, *10*(2), 107–117. https://doi.org/10.1108/14676370910945927

Ruiz-Mallén, I., & Heras, M. (2020). What sustainability? Higher Education Institutions' pathways to reach the Agenda 2030 goals. *Sustainability (Switzerland)*, *12*(4). https://doi.org/10.3390/su12041290

Van Weenen, H. (2000). Towards a vision of a sustainable university. *International Journal of Sustainability in Higher Education*, *1*(1), 20–34.

Vos, R.O. (2007), Defining sustainability: a conceptual orientation. J. Chem. Technol. Biotechnol., 82: 334-339.