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Final Thesis

The Higher Educational Institutes' third mission and students' initiatives.

An application of Data Envelopment Analysis on students associations' activities for Sustainable Development Goals

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Riassunto

Il seguente lavoro di ricerca si focalizza sull'impatto che le attività studentesche universitarie hanno rispetto alla società. Nello specifico è stata condotta un'analisi partendo dalle già presenti valutazioni che si riferiscono all'impatto dell'università sulla società: la terza missione. Oltre alla ricerca e all'educazione, le università stanno ampliando i loro servizi negli ultimi anni e lo stanno facendo con l'obiettivo di essere motore propulsivo della società. Nelle valutazioni internazionali, che successivamente analizzeremo, manca però un dato e dei parametri, per me, fondamentali: gli studenti. Vengono analizzati i dati di ateneo, le statistiche riferite agli studenti e l'attrattività da parte del mondo del lavoro dei corsi di laurea e tanto altro ma vengono trascurate le analisi fatte sulle attività studentesche. Concependo la difficoltà effettiva di raccogliere dati sulle attività studentesche, ho provato ad articolare un'analisi che tenga conto di fonti primarie e secondarie (vedi paragrafo 4.2) collegando tra loro gli input e gli output valutando le specifiche attività studentesche. Le ho valutate in termini di coerenza con gli obiettivi di sviluppo sostenibile poiché anche le classifiche mondiali delle università (Higher Education Ranking) utilizzano degli strumenti di analisi che, sempre più, considerano gli obiettivi dell'Agenda2030 essenziali per una corretta valutazione delle performance. Le motivazioni che mi hanno spinto a scegliere di approfondire proprio questo tema sono legate ad una esperienza personale estera dove ho potuto riscontrare una maggiore attività nelle associazioni studentesche e nella valutazione delle stesse all'interno delle dinamiche della società. Partendo da questo presupposto, ho iniziato ad analizzare in modo generale l'attività di trasferimento tecnologico delle università stesse ed ho notato a mio dispiacere che gli studenti erano poco considerati. Da qui l'idea di offrire un'utilizzare uno strumento di calcolo per studi simili (Data Envelopment Analysis) per indagare su variabili e dinamiche sociali che non sono mai state toccate. L'obiettivo di questa ricerca è riuscire ad analizzare in modo qualitativo le associazioni studentesche che, applicato la DEA, risultano le migliori in termini di efficienza. L'efficienza, nel modello costruito, sarà espressa nella capacità di un'associazione, dati determinati membri che collaborano, di massimizzare l'attrattività del mondo del lavoro attraverso le loro attività studentesche. Per fare questo sono partito dalla letteratura e la modalità di analisi ed applicazione della DEA

(Deniz Koçak , Hasan Türe, 2019) è stata fonte di ispirazione. Dalle valutazioni fatte da Koçak e Türe, ho costruito un database considerando le attività studentesche associazionistiche, prendendo in esame variabili quantitative e qualitative che fossero in grado di misurare specifiche caratteristiche. L'ipotesi dalla quale parto è che c'è una necessità di stimolare la nascita di associazioni studentesche affinché aumenti l'impatto dell'università sulla società. Di conseguenza la necessità di integrare le attività studentesche (intese come svolte in modo attivo e non come partecipanti passivi) nella valutazione della terza missione delle università. Per fare questo però bisogna essere in grado di valutare le attività delle associazioni studentesche per capire il loro valore.

La metodologia utilizzata è la valutazione, attraverso l'applicazione della DEA, dell'efficienza delle associazioni espressa nella capacità di, dati determinati membri, massimizzare l'attrattività da parte del mondo del lavoro grazie alle loro attività studentesche. Nella valutazione della terza missione viene inclusa tra le altre la sensibilizzazione della società attraverso seminari e attività specifiche su determinate tematiche. Per questo gli output si sarebbero potuti calcolare anche su altri tipi di dati ma credo che, parlando di attività studentesca e risorse giovani, il vero trasferimento tecnologico sia in termini di trasferimento di human capital e ideas. Per questo, l'interazione con il mondo del lavoro, è driver principale per la valutazione dell'attività.

La tesi è divisa in 7 capitoli. La prima parte riguarda la contestualizzazione dei temi trattati passando dagli argomenti generali dei Sustainable Development Goals (SDGs) alla terza missione universitaria, trovando le connessioni tra queste due macroaree. La seconda parte entra più specificatamente nella struttura della tesi argomentando la metodologia adottata, gli strumenti utilizzati facendo cenno ancora ad esempi fatti nella letteratura in passato e i criteri di popolamento dei dati. In chiusura della seconda parte, al capitolo 5, abbiamo la spiegazione di ogni singola attività ed i riferimenti sitografia. L'ultima parte vede la valutazione dei risultati, dopo aver applicato il software di analisi DEA ed un'analisi internazionale su come l'Europa si stia muovendo per incentivare le attività giovanili.

Nelle conclusioni possiamo trovare delle riflessioni riguardanti ciascuna associazione ma in particolare possiamo notare che le attività con il più alto coefficiente di

efficienza e di conseguenza anche le associazioni con il più alto coefficiente di efficienza sono quelle che con risorse relativamente ridotte (membri studenti fino ad un massimo di 10) riescono ad avere una frequenza di pochi eventi durante l'anno ma che, rispetto a conferenze e seminari, prediligono le collaborazioni con le imprese e le istituzioni. Si è riscontrata anche una maggior presenza nella parte alta della classifica, di quelle associazioni che hanno una propensione più scientifica che umanistica. Questo dato va sempre letto in relazione alla tipologia di output che è stato scelto, ovvero l'attrattività da parte del mondo del lavoro. Vero altresì che le attività prettamente umanistiche alle quali si potrebbe riconoscere l'onere di favorire il passaggio di conoscenza e cultura alla società civile attraverso seminari, sono spesso indirizzate solo all'università stessa e in poche occasioni i seminari hanno previsto ospiti dal mondo privato e ancor meno workshop pratici sulle specifiche tematiche.

Il punto di forza dell'elaborato sta nell'originalità dell'analisi e di conseguenza nella novità di poter leggere i dati in un modo diverso grazie all'applicazione della DEA a specifiche variabili quantitative. Il risultato mi auspico che apra una riflessione sulla mancanza di coinvolgimento delle dinamiche studentesche nei ranking mondiali e possa, con tutti i limiti del caso, offrire uno spunto per iniziare ad indagare sulle tipologie di analisi per l'impatto delle attività studentesche sulla società civile.

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List of abbreviations, glossary, and general remarks

Abbreviations

- UN: United Nations
- SD: Sustainable Development
- SDGs: Sustainable Development Goals
- MDGs: Millennium Development Goals
- CC: Climate Change
- COP: Conference of the Parties
- IAEG: The Inter Agency and Expert Group
- MGoS: Major Groups and other Stakeholders
- ESG: Environmental, Social, Governance
- CSR: Corporate Social Responsibility
- PNRR: The national recovery and resilience plan
- TM: Third Mission
- DEA: data envelopment analysis
- DMU: decision-making units
- OECD: Organisation for Economic Co-operation and Development
- PNACC: National Plan for Adaptation to Climate Change
- UNFCCC: United Nations Framework Convention on Climate Change
- ASviS: Alleanza Italiana per lo Sviluppo Sostenibile
- MCDA: Multicriteria decision analysis

Introduction

This thesis aims to evaluating the impact of university student activities on the society. Specifically, an analysis was carried out starting from the already present assessments that refer to the impact of the university on society: the third mission TM. The term Third Mission refers to all the activities of scientific, technological and cultural transfer and productive transformation of knowledge, through processes of direct interaction of the University with civil society and the entrepreneurial fabric, with the aim of promoting growth economic and social of the territory, so that knowledge becomes instrumental for obtaining benefits of a social, cultural and economic nature. The Third Mission, as defined by the national assessment agency of the university and research system (ANVUR), is in effect an institutional mission of universities, alongside the traditional teaching and research missions. It is recognized as such by the Legislative Decree 19/2012, which defines the principles of the "Self-Assessment, Periodic Evaluation and Accreditation" (AVA) system, and by the subsequent Ministerial Decree 47/2013, which identifies the indicators and the periodic evaluation parameters together with that research. If education is a task of fundamental importance to exhaustively provide basic skills "by transmitting knowledge", it is research that allows "to produce knowledge", and therefore to transfer it as the objective of the so-called "third mission". In addition to research and education, universities have been expanding their services in recent years and are doing so with the aim of being the driving force of society.

In the international evaluations, which we will analyse later, however, one data and parameters that are fundamental for me are missing: students. University data, student statistics and the attractiveness of the world of work of degree courses and much more are analysed, but the analyses made on student activities are neglected.

The importance of predicting the evaluation of students' active activities within the impact of the university derives from the analysis that universities are mainly composed of students who often create parallel communities within the cities in which they are inserted. Considering the thousands of students who populate each city, it is reasonable to think that young people are the driving force behind a positive university impact on society. Conceiving the actual difficulty of collecting data on student

activities, I tried to articulate an analysis that takes into account primary and secondary sources (see paragraph 4.3) by linking inputs and outputs together by evaluating specific student activities. I evaluated them in terms of consistency with the Sustainable Development Goals as the High Educational Rankings are also moving more and more in the direction of the 2030 Agenda.

The reasons that led me to choose to deepen this issue are related to a personal experience abroad where I was able to find greater activity in student associations and in the evaluation of the same within the dynamics of society. Starting from this assumption, I began to analyse in a general way the technology transfer activity of the universities themselves and I noticed, to my regret, that the students were little considered. Hence the idea of offering a use of a calculation tool for similar studies (Data Envelopment Analysis) to investigate social variables and dynamics that have never been touched. The aim of this research is to be able to qualitatively analyse the student associations which, after applying the DEA, are the best in terms of efficiency. The efficiency, in the constructed model, will be expressed in the ability of an association, given certain collaborating members, to maximize the attractiveness of the world of work through their student activities. To do this I started from the literature and the method of analysis and application of the DEA (Deniz Koçak , Hasan Türe, 2019) was a source of inspiration. From here I started to look for those drivers who could give credibility to the research structure. The hypothesis from which I start is that there is a need to stimulate the birth of student associations in order to increase the impact of the university on society. Consequently, the need to integrate student activities (intended as carried out actively and not as passive participants) in the evaluation of the third mission of universities. To do this, however, one must be able to evaluate the activities of student associations to understand their value.

The methodology used is the evaluation, through the application of the DEA, of the efficiency of the associations expressed in the ability of, given certain members, to maximize the attractiveness of the world of work thanks to their student activities. The evaluation of the third mission includes, among others, the awareness of society through seminars and specific activities on certain issues. For this reason, the outputs could also have been calculated on other types of data, but I believe that, speaking of student activity and young resources, the real technology transfer is in terms of the

transfer of human capital and ideas. For this reason, the interaction with the world of work is the main driver for the evaluation of the activity.

The thesis is divided into 7 chapters which are organized following a logical order. The first part concerns the contextualization of the topics, passing from the general topics of the SDGs to the third university mission, finding the connections between these two macro areas. The second part enters more specifically into the structure of the thesis by arguing the methodology adopted, the tools used, referring again to examples made in the literature in the past and the criteria for populating the data. At the end of the second part, in chapter 5, we have the explanation of each single activity and the website references. The last part sees the evaluation of the results, after applying the DEA analysis software and an international analysis on how Europe is moving to encourage youth activities.

The strength of the report lies in the originality of the analysis and consequently in the novelty of being able to read the data in a different way thanks to the application of the DEA to specific quantitative variables. The result I hope will open a reflection on the lack of involvement of student dynamics in world rankings and can, with all the limitations of the case, offer a starting point to investigate the types of analysis for the impact of student activities on civil society.

Data collection played an important role in this data search. The difficulty in finding every single evaluation parameter required the analysis of primary sources and often this was not enough to complete the analysis which also saw an important use of secondary sources. The database with all the technical and quantitative information is the real added value of this research.

1 Towards a Sustainable Development Goals into Universities

1.1 Path to the UN conference of 2015

The need for environmentally friendly economic growth dates back to the seventies, with the awareness that the traditional model of development would cause the collapse of the terrestrial ecosystem in the long term. Current environmental efforts made by the international community, including the Paris Climate Agreement, demonstrate that

the planet's limits are a reality. Thus the new development model has founded its foundations on respect for the future, both for the planet and for the next generations.

The concept of sustainable development has a complex nature, subject to numerous interpretations, but the universally recognized definition dates back to 1987 and is found in the so-called Brundtland Report entitled "Our Common Future", whose principles of intergenerational and intragenerational equity have attracted the attention of the international community by determining new developments in the concept of sustainability, which has extended not only to the environmental dimension, but also to the social one.

With the adoption in the year 2011 in Gothenburg (Sweden) of the European Union's Sustainable Development Strategy¹, a long-term plan for the coordination of economic, social and environmentally sustainable development policies, concrete measures were envisaged that relate to all dimensions of development. Economic sustainability concerns the ability of an entire economic system to produce income and jobs on a sustainable basis; environmental sustainability concerns the protection of the eco-system and the renewal of natural resources; social sustainability is the ability to guarantee that the conditions of human well-being are fairly distributed.

The establishment of the integrated vision of the three dimensions of Development, also embraced by institutional accountability, came in 2015, the year in which the UN's long process of negotiation on sustainable development came to an end, which led to the birth of the 2030 Agenda for Sustainable Development, a joint commitment by countries to put the world on the path of sustainability.

Millennium Development Goals & Sustainable Development Goals

In September 2000, leaders from 189 countries gathered at the United Nations headquarters and they signed the historic Millennium Declaration, committing themselves to a set of eight measurable goals from reducing extreme poverty and hunger by half to promoting gender equality and reducing child mortality by the target date of 2015.

¹ https://ec.europa.eu/environment/sustainable-development/strategy/index_en.htm#:~:text=The%20overall%20aim%20of%20the,the%20ecological%20and%20social%20innovation Accessed (08/09/2022)

The Millennium Development Goals (MDGs)

Goal 1 Eradicate extreme poverty and hunger

Goal 2 Achieve universal primary education

Goal 3 Promote gender equality and empower women

Target 4 Reduce child mortality

Target 5 Improve maternal health

Target 6 Combat HIV/AIDS, malaria, and other diseases

Target 7 Ensure environmental sustainability

Target 8 Develop a global partnership for development

The MDGs were ground-breaking in providing a common blueprint for reaching a global agreement. The 8 goals were realistic and easy to communicate, with a clear measurement/monitoring mechanism.

Significant progress has been made on the MDGs. The world has already achieved the first MDG of halving the proportion of extreme poverty by 2015. However, results have been inconsistent. The MDGs will come to an end in 2015 and the debate on the post-2015 agenda continues. The focus is now on building a Sustainable World in which environmental sustainability, social inclusion and economic development are of equal value.

The MDG Fund has contributed directly and indirectly to achieving the MDGs. It has undertaken an inclusive and comprehensive approach to the MDGs. The address has been guided by the Millennium Declaration and its emphasis on development as a right, with a focus on traditionally marginalized groups such as ethnic minorities, indigenous groups and women.

1.2 Sustainable Development Goals and European Framework

After the Millennium Declaration was drafted (Nations, 1967), in 2001 the United Nations, together with international actors representing the same organization, issued the Millennium Development Goals (MDGs). These goals were made public with the

time frame to be able to reach them by 14 years. The initiative ended in 2015. These Millennium Goals represented and represented the first step towards a global mobilization for sustainable development. Despite these declarations shared by almost all the members, not all member states have adopted the resolution issued by the assembly (United Nations, 2015).

The achievement of the MDGs, the final report on the MDGs states, has resulted in the most historically successful anti-poverty action and, more broadly, in a number of social improvements. Following the Rio + 20 Summit and on the basis of the outcome of the MDGs, the Member States have decided to further this global initiative and have negotiated the Sustainable Development Goals (SDGs), which were announced in September 2015. The SDGs are the heart of the Global Agenda 2030, an 'action map', agreed by every country, to pursue global sustainable development until 2030. The focus is on the three components of sustainable development: people, planet and prosperity (United Nations, 2014).

Together with the entry into force of the SDGs, during the same year various events crucial for sustainable development took place: in July in Addis Ababa a global project for the financial support of projects with a high social impact was confirmed and approved. an important footprint on sustainable development (Assembly & Representatives, 2010; Torres, 2021) and during the 21st Conference of the Parties (or "COP") in December of the same year, the Paris Agreement was enacted to combat the threat of climate change (CC) was signed by parties to the United Nations Framework Convention on Climate Change (UNFCCC) which brings together all nations for this common cause (Delbeke et al., 2019).

The SDGs originate and are based on the MDGs and like the first objectives emanating from the UN, they are easy to understand and simple to communicate, aspiring (Sustainable Development Goals Fund, 2019)². The differences that are most easily recognized between the SDGs and the MDGs is that the latter have broadened the focus of action to not only developing countries but also to all other countries. Some goals are specific to developed countries. In addition to those social and economic

² Sustainable Development Goals Fund. (2019). From MDGs to SDGs. [online] Available at: <http://www.sdgfund.org/mdgs-sdgs> (Accessed 25 June 2022).

nuances that concerned sustainability, several characteristics were added regarding the environmental development objectives with particular attention to life on land, marine life, climate change and a specific attention to rights was defined. humans. The ambition is to give our children's generations a world that respects all three pillars of society: Social, Environmental and Economic and all three components of sustainable development should be equally weighted. Finally, the SDGs were defined by structuring a further consultation of civil society through the bottom-up method involving scientists, academics, politicians, the entire civil society, and the private sector were actively involved in order to obtain results that are as representative as possible of the wills democratically expressed by citizens. (Sustainable Development Goals Fund, 2019; The Guardian, 2015) (United Nations, 2014))³, as stated in the Rio + 20 final document.

The same kind of implementation and monitoring approach has been chosen for further implementation and follow-up (Smaniotto et al., 2020). In fact, a plurality of bodies was engaged and/or established to support the proposing, framing, implementing, defining and monitoring of this effort, linking the cross-governmental nature of the discussions to the engagement of Major Groups and other Stakeholders (MGoS). (Sustainabledevelopment.un.org, 2019)⁴. The outcome is a set of 17 indivisible, integrated goals, characterised by an interconnected nature necessary to meet interconnected challenges and achieve the Global 2030 Agenda. The latter consists of four sections: 'a policy statement, a set of 17 sustainable development goals, ways of implementation and a framework for the follow-up and review of the agenda' (Ec.europa.eu, 2019).⁵

The idea driving this 'set' of goals shown in the second section of the agenda is to provide a comprehensive and transformative framework. Each goal is laid out and

³ The Guardian (2015). Sustainable Development Goals: all you need to know. The Guardian, 3-92015. [online] Available at: [https://www.theguardian.com/globaldevelopment/2015/jan/19/sustainable-development-goals-united-nations] (Accessed 25 June 2022).

⁴ Sustainabledevelopment.un.org. (2019). About Major Groups and other stakeholders: Sustainable Development Knowledge Platform. [online] Available at: <https://sustainabledevelopment.un.org/mgos> [Accessed 25 June 2022].

⁵ Ec.europa.eu. (2019). The 2030 Agenda for Sustainable Development and SDGs - Environment - European Commission. [online] Available at: https://ec.europa.eu/environment/sustainable-development/SDGs/index_en.htm. (accessed on 30 June 2022)

detailed through additional targets, 169 in aggregate, and 232 more official indicators were proposed by The Inter Agency and Expert Group (IAEG) to measure the national contributions to the overarching goals. The first six targets were part of the MDGs, the next eleven are new ones. Between the goals, targets and Agenda there are crucial interlinkages and several cross-cutting elements to consider (United Nations, 2015a).

In effect, social and environmental goals are mutually complementary: no environmental gain can be attained without considering social issues. For example, trying to erase of poverty without considering that many people abandon natural resources would be a flawed effort. (Commission, 2015; Lozano & Young, 2013) The global agenda will run for 15 years, concluding this initiative in 2030. In these years, all sustainable development actions must be implemented within the framework of the Sustainable Development Goals and the global agenda (United Nations, 2015).

The SDGs are important and useful for several reasons: they represent ambitious goals to make the world a better place, they create a common language to talk about sustainable development and impact investing, they serve as a framework for sustainable development, they increase companies' commitment to sustainability, and they are instrumental in creating new sustainable business models (Rosati & Faria, 2019; Schramade, 2017)

The 2030 Agenda is the action program that the UN member states signed up to in September 2015; it encompasses the 17 Sustainable Development Goals, or SDGs, and their 169 targets or sub-goals. The sustainable development towards which they promise to direct the planet has been defined by the 2030 Agenda in five adjectives: inclusive, universal, integrated, locally localized and driven by technology. This clearly suggests that the preferential direction of action sees a natural and conscious transition from the global to the local: we cannot ignore the SDGs, defined on an international scale, first on a national level, and then of a single urban reality, precisely because of the heterogeneity and multiplicity of individual local realities. In this sense, the 2030 Agenda certainly leads to the need to generate urban planning solutions that take these new perspectives into account. The 17 Sustainable Development Goals are summarized in the so-called five "Ps"

- People. Eliminate hunger and poverty in all forms, guarantee dignity and equality.
- Prosperity. Ensuring prosperous and full lives in harmony with nature.
- Peace. Promote peaceful, just and inclusive societies.
- Partnership. Implement the Agenda through solid partnerships.
- Planet. Protect the planet's natural resources and climate for future generations

The 17 Sustainable Development Goals (United Nations Organization (UN), 2015) are fully reported below:

1. Eradicating poverty. No poverty. End poverty in all its forms.
2. Defeating hunger. Zero hunger. End hunger, achieve food security, improve nutrition, and promote sustainable agriculture.
3. Health and well-being. Good health and well-being. Ensuring health and well-being for all and for all ages
4. Quality education. Quality education. Ensure quality, equitable and inclusive education and promote lifelong learning opportunities for all
5. Gender equality. Gender equality. Achieve gender equality and empowerment (greater strength, self-esteem, and awareness) of all women and girls.
6. Clean water and sanitation. Clean water and sanitation. Ensure the availability and sustainable management of water and sanitation facilities for all.
7. Clean and accessible energy. Affordable and clean energy. Ensure access to affordable, reliable, sustainable, and modern energy systems for all.
8. Good employment and economic growth. Decent work and economic growth. Encourage lasting, inclusive, and sustainable economic growth, full and productive employment, and decent work for all
9. Innovation and infrastructure. Industry, innovation, and infrastructure. Building a resilient infrastructure and promoting innovation and fair, responsible, and sustainable industrialization
10. Reduce inequalities. Reduced inequalities. Reduce inequality within and between nations.

11. Sustainable cities and communities. Sustainable cities and communities. Making cities and human settlements inclusive, safe, long-lasting, and sustainable
12. Responsible consumption and production. Responsible consumption and production. Guarantee sustainable models of production and consumption.
13. Fight against climate change. Climate action. Take urgent measures to combat climate change and its consequences.
14. Life underwater. Life below water. Conserve and sustainably use the oceans, seas, and marine resources for sustainable development.
15. Life on earth. Life on land. Protect, restore, and promote sustainable use of the terrestrial ecosystem, sustainably manage forests, combat desertification, halt, and reverse land degradation, and halt the loss of biological diversity.
16. Peace, justice, and institutions. Peace, justice, and strong institutions. Promote peaceful and more inclusive societies for sustainable development; offer access to justice for all and create efficient, accountable, and inclusive bodies at all levels
17. Partnerships for goals. Partnership for the goals. Strengthen the means of implementation and renew the global partnership for sustainable development.

The Italian framework can be correctly represented by the national recovery and resilience plan. In the last update a general overview was made on the situation in Italy regarding the SDGs, in particular the following was underlined.

Social dimension

Goal 1 - Defeat poverty. According to the Alliance, "the health, economic and social crisis caused by the pandemic has slowed the pursuit of the targets on the fight against poverty, threatening the improvements achieved". ASviS therefore proposes to adopt a multidimensional approach, hoping for intervention on income poverty, rather than on that of services. The only measure of the NRP directly linked to this problem is the guarantee of housing for about 25 thousand homeless people, equal to 20% of what was estimated in the last population census.

Goal 3 - Health and well-being. Despite the pre-existing gaps and hospitals put to the test by the pandemic, the ASviS notes that "the National Health Service has shown

considerable positive resilience". The population reacted responsibly to the provisions and the vaccination campaign, and the dedication of health personnel was high. Furthermore, with the Budget Law, the public commitment for the National Health Fund has increased: from 6.8% to 7.9% of GDP, from 121 to 125 billion, with a 13% increase in personnel in the public sector. The NRP also foresees a considerable effort until 2026: thanks to the funding provided by the Next Generation Eu, 17.6 billion euros will be allocated to strengthening local healthcare and technological innovation.

Goal 4 - Quality education. Regarding this Goal, the Alliance records the sufficiency of some targets (completion of primary and secondary education, childhood development and preschool) and the insufficiency of others (equal access to education including the University). It is also recalled that the European Union requires, by 2030, to reduce the rate of early school leaving by 9% and to limit students who do not reach a sufficient level of literacy and mathematics to a percentage below 15% - in addition to reach 50% of graduates in the population aged 30-34. "Commitments that require an acceleration of the Government's action on the matter". On the recruitment of teachers, the Ministry of Education (MI) announced its intention to adopt new hiring and training rules by June, to be able to hire 70,000 new teachers in the next three years, equal to 7.8% of the total. The Alliance also stresses that the support modalities of Target 4.7 (education for sustainable development) emphasize the environmental aspects, but make one lose sight of the social and economic ones.

Goal 5 - Gender equality. In this sector, the interventions envisaged by the NRP respond to specific problems and represent important tools for rebalancing the disparities affecting women in Italy, supporting equal opportunities at work and promoting female leadership. But the EU target of halving the gender employment gap in 2030 compared to 2020 remains far off. "The PNNR focuses on targets that are important for gender equality but does not address the problem of the decline in the birth rate", emphasizes the ASviS: the Plan provides targets that are only indirectly or poorly correlated, such as "the still symbolic mandatory paternity leave".

Goal 10 - Reduce inequalities. The reduction of gender, generational and territorial inequalities will have to be strengthened and monitored as a cross-cutting priority of the NRP, since Italy, as the Alliance points out, "is still far from some objectives",

including reducing income inequality available compared to the highest European levels - distance further aggravated by the effects of the pandemic crisis. However, the NRP has favoured the adoption of the reform of the legislation on disability, also demonstrating its commitment to an organic reform of assistance for the non-self-sufficient elderly.

Environmental dimension

Goal 2 - Defeat hunger. There are some steps forward on Objective 2. Indeed, the PNRR aims to develop a sustainable agri-food chain, capable of improving the environmental performance and competitiveness of farms with investments in logistics, innovation and mechanization of the sector, water management, diversification into Agri solar and Agri voltaic. The PNRR also foresees important allocations for the Fund for organic agriculture, despite the lack of "systemic action for Italian organic".

Goal 6 - Clean water and sanitation. On the other hand, the Plan does not include a systemic view of water resources, aquatic ecosystems and their protection, the dynamics of climate change, irrigation, and civil uses of water. In fact, the NRP is not integrated with "any complementary plan" to face the challenges deriving from the lack of this resource. The Alliance also underlines the criticalities of the distribution systems which, in 2018, lost 40% of the water, against a target of 10%.

Goal 7 - Clean and accessible energy. On this Objective the situation is equally critical. The fight against energy poverty (target 7.1), which became very topical with the war in Ukraine, is not in fact contemplated by the NRP. ASviS proposes to exempt the poorest segment of the population from payment of network charges and consumption for water, electricity, and gas. "We need a multilevel governance system to tackle energy poverty", declares the Alliance, to be implemented "with the involvement of Regions and Municipalities, favouring energy communities within which solidarity practices can be re-established in favour of families and businesses". Furthermore, the NRP does not indicate targets for renewable energy, as is done at a European level, and energy storage remains without specific budgets - except for hydrogen, which is not necessarily a green resource. For energy efficiency, Italy focuses on white

certificates and the 110% Eco bonus, whose energy performance, however, "is in doubt".

Goal 11 - Sustainable cities and communities. According to the ASviS, "the important resources available, in addition to those provided by the PNRR, are shattered into programs that are disconnected from each other". It is therefore necessary to entrust the newly reconstituted Inter-ministerial Committee for Urban Policies (Cipu) with the task of coordinating all programs, also drawing up a national urban agenda. In terms of mobility, zero-emission buses are expected to double by 2026, with three thousand new vehicles which, however, correspond to only 6.8% of the current national bus fleet. The realization of the investment planned for rapid mass transport should increase by 26.1%, without however affecting the gap with the main European countries. The 365 kilometres of extra cycle paths planned for urban areas "contribute in a small part to the achievement of the European goal of doubling by 2030".

Goal 13 - Fight against climate change. The measures are insufficient: according to the Alliance, the NRP must allocate at least 37% of resources to climate action. There is a lack of measures to strengthen resilience and adaptability to climate-related risks and natural disasters (target 13.1). From this point of view, there is an urgent need to adopt the National Plan for Adaptation to Climate Change (Pnacc) with the related funding commitments, as well as to promulgate a Law on Climate (target 13.2) and adopt a new Integrated National Plan. for Energy and Climate (Pniec), capable of conforming to the new European targets 2030 - 2050. There is also a lack of a tax reform that ensures the elimination of environmentally harmful subsidies (Sad) and adopts a carbon tax and a border tax. Finally, the PNRR does not mention the gradual elimination of coal, nor the closure of the endothermic vehicle market.

Goal 14 - Life underwater. "There is a lack of action to contribute to the achievement of the objectives of the European Biodiversity Strategy for the sea", underlines the ASviS, including the protection of at least 30% of coastal marine areas - of which at least 10% are "strictly protected" - and the elimination of overfishing of fish stocks by 2030.

Goal 15 - Life on Earth. The situation of Goal 15 is no better than that of Objective 14. In the NRP, as already highlighted in 2021, the indications of the new European

strategy for biodiversity are lacking, and only fragmented investments are proposed, not up to the challenges. It does not consider the goal of protecting 30% of the national territory, nor that of eliminating land consumption, working towards the restoration of degraded terrestrial ecosystems.

Economic dimension

Goal 8 - Decent work and economic growth. For the ASviS, the NRP does not address the issue of full employment in a systemic way: this Plan "will not have a significant impact on youth unemployment, despite the situation in Italy being among the worst in Europe". To underline the importance of measures in favour of this segment of the population, the ASviS recalls that the NEETs in 2020 are over 23% and that the EU target is to drop to 9% by 2030. To reach 78% of the 2030 employment rate forecast by the EU, it is also urgent to prepare a national strategy for employment.

Goal 9 - Businesses, innovation, infrastructures. The ASviS highlights, among the most significant infrastructural investments envisaged by the NRP, the construction of railways: in fact, Italy plans to build 541 kilometres of high-speed lines by 2026, increasing the current network by 74%. Another significant point is the coverage of the Gigabit network throughout the national territory, which is one of the priority objectives to guarantee coverage of the 1 Gigabit / s network to all families and in 2026 (compared to 30% in 2020). The Alliance also recalls that the NRR does not adequately support the economic and employment growth of companies, while it foresees an increase of 15 thousand doctoral scholarships, with an increase of 50.6% of the total - in line with the EU objective of investing. 3% of GDP in research and development.

Goal 12 - Responsible consumption and production. For responsible consumption, the Alliance recommends, among other measures: a cultural change - which generates virtuous behaviour -, a digital transition for widespread information on the sustainability of products and services, greater responsibility of the public market. While on responsible production, technological, organizational and product innovation must be supported, oriented towards sustainability and the growth of professional skills in companies. Furthermore, the adoption of a national strategy for the circular economy, reparability, reuse, recycling, waste recovery, as well as the investment to

recover the Italian plant engineering gap is essential. It should also be remembered that Italy reached a recycling rate of just over 50% in 2019, while the EU is asking to reach 60%.

Institutional dimension

Goal 16 - Peace and strong institutions. About this Goal, the Alliance positively evaluates the structural reforms and governance mechanisms approved in 2021 in the field of justice and public administration. With respect to justice, the NRP provides for a 40% reduction in the processing times of civil and commercial proceedings and 25% criminal proceedings, directly affecting Italy's ability to achieve the quantitative objective proposed by ASviS. Due to the overcrowding of prisons, it is emphasized that the PNRR does not provide for actions to achieve the target, proposed by the Alliance, of eliminating the overcrowding of Italian prisons by 2030.

Goal 17 - Partnership for the Goals. "The PNRR does not present measures that go in the direction of this Goal", reads the document, "as it lacks an international horizon that places Italy in its interrelation with other countries and companies". A lack that ASviS hopes will be filled quickly, also given the current war in Ukraine, which clearly shows the interdependence between the various factors that affect the functioning of international supply chains. In this regard, the Alliance hopes that effective measures will be planned for the reception and integration of refugees.

1.3 Agenda 2030 and Higher Educations Institutions

The National Agency for the Evaluation of the University and Research System - ANVUR⁶, whose tasks include the "evaluation of the quality of processes, results and products of the activities management, training, research, including technology transfer" (VQR), has made these concepts its own by introducing the third mission as the "opening towards the socio-economic context through the enhancement and transfer of knowledge, which includes to activities for the economic enhancement of research, including initiatives with a socio-cultural and educational value". For this reason, some indicators relating not only to technology transfer, but also to the

⁶ <https://www.anvur.it/attivita/temi/>

activities of the human sciences that have an impact on society have been defined: the third mission was thus effectively recognized in Italy as an institutional mission of universities, alongside those of education and research. What creates impact? Patents and spin offs, of course, together with the creation of intermediation and technology transfer structures, such as incubators, but not only. Social involvement, through cultural activities of public utility, initiatives to involve citizens in research, scientific dissemination, and territorial animation, generates "public understanding of science" and "public engagement", making the community 'aware', i.e., an active and participatory component in the paths of innovation.

Modern economies are increasingly turning to knowledge and information, as knowledge, and in particular human capital, are recognised worldwide as the true know-how that enables society to progress towards proper development. Knowledge is a key factor in productivity, in the growth that allows countries to prosper. The need to invest in knowledge has already been recognised by many governments; moreover, the European Commission's 2020 strategy (European Commission, 2020) gave the EU guidelines and targets in the following five areas of operation: employment, research and innovation, climate change and energy, education and poverty reduction. (Gregersen et al., 2016) the following strategy was identified as the main pathway through which the SDGs can be achieved across Europe.

The United Nations document Transforming Our World: The 2030 Agenda for Sustainable Development, adopted in 2015, is a global agreement that has set the goal and commitment to pursue the eradication of poverty from society, and to achieve sustainable development worldwide by 2030. It contains 17 SDGs and 169 targets. Governments, businesses, various organisations, and civil society should work together with the UN to achieve the agenda by the set year, and universities should be at the forefront of this process of societal modernisation to drive change. Since research and education are included in some of the SDGs, universities should be actively involved in the realisation of these goals. In addition, the role of higher education institutions is crucial since they can support and implement the desired change through their curricula, teaching curricula, research curricula, as well as adopt strategies aimed at the effective realisation of sustainable development by collaborating with territories in, the role of universities in achieving the SDGs is much

broader, as they can support the implementation of the SDGs and initiate social change and prosperity through curriculum, curricula and research as well as by adapting strategies and policies to reflect the SDGs. The role of universities in supporting sustainable development is therefore vital for society, as its students represent a mechanism through which the transformation of society towards sustainable development becomes possible.

(Adick, 2019; UNESCO, 2017) the number of people attending university and more generally high school students in 2014 was around 207 million and it is estimated that there will be around 380 million in 2030 (Perović & Kosor, 2020). Universities, therefore, today have the power to influence 3% of the world population but above all they have the possibility of intercepting that part of society that represents change, the future being the students themselves the future leaders and important people of society. Universities should use their unique strategic position to position certain values as a cornerstone for future generations and play a critical role in achieving the SDGs.

Following the financial crisis of the last decade, many governments around the world are implementing much more restrictive fiscal policies. Since higher education is, in many cases, of public competence, we can obtain the data that characterize university education and more generally tertiary education. According to Eurostat, the part of public expenditure that is destined for tertiary education institutions in Europe in 2015 represented a quarter of the total expenditure on education. In absolute terms it represents 1.23% of GDP. This type of expenditure, being a significant share of the interests of the states, should be subject to greater control to ensure a good level of efficiency and to control the correct allocation to achieve EU objectives. Many European countries point out that higher education systems are inefficient or more specifically they are not aligned with the growing need for updating (Kosor et al., 2019).

the first global attempt to measure and document the activity of universities in terms of safety and environmental impact and cooperation with civil society is recent (2019 - Times Higher Education University Impact Rankings). In addition to the evaluation of the individual universities regarding research, teaching, the impact on civil society, international collaborations, now one of the best journals that deals with periodically

drawing up rankings has included within them the evaluation of 11 of the 17 goals mentioned above. More specifically, this ranking aims to evaluate the activity of universities in addressing sustainable development issues such as: Climate change; Quality education; gender inequality; the achievement of peaceful societies and economic growth, together with its research parameters.

In general, the more universities commit to properly meeting the policies dictated by the 2030 agenda, the higher the score on this list of universities will be. The main objective of this research is to analyse and evaluate the efficiency of university activities not only in terms of data relating to university activities but also considering the active participation of the smallest realities at the student level. The added value of our approach lies in the fact that the efficiency of universities is assessed in general terms without giving space to analysis of student activities which could lead to a review of the funds used or to a greater consideration of spontaneous bottom-up dynamics for favour enrolment rates, student performance, employment rates, better integration of the student social fabric with the local area.

The contributions of this article reside in the fact that we use a database created from scratch by analysing the available data of each reality on the net. Each activity is evaluated according to principles linked to the SDGs and the activities in question and their weight on the entire activity of the association are considered. Furthermore, the approach used is new because we combine these data with various educational inputs, thus acquiring new information with the possibility of being highly questionable but it is a first step to involve students and their positive actions for an evaluation of the efficiency of the universities in achieving the SDGs. This approach has not been used before, to the best of knowledge. This article further contributes to the literature by evaluating this efficiency at two different levels: at the national and university level, thus addressing the same issue in depth, from a macro and micro point of view.

Having underlined this and acknowledging that students are central to the effects of the university on civil society, I set out to investigate the efficiency in achieving the sustainable development goals of student activities in Italy. We take a two-pronged approach in addressing this problem.

From a microeconomic perspective, I analyse the individual activities carried out within an Italian university based on the active participation of students, the involvement of third parties and the weight that these activities have on the generality of the association's activities in order to then compare the aggregated results of individual universities with other universities. At the Macroeconomic level, the expectation of this research is to open a comparative analysis between different states by adopting measurement inputs that are recognized and considered credible by all levels of civil society.

To carry out this analysis I decided to apply the Data Envelopment Analysis (DEA). DEA is a non-parametric method of mathematical programming which, thanks to the assignment of specific weights to precise inputs and outputs, allows us to have an expression value of the basket. This application can be an evaluation method suitable both for measuring the efficiency of the individual associations at the university level and at the national level.

HEI Third Mission & SDGs in the universities

There are three pillars on which the work of a university must be based, all three with a specific and non-exclusive mission: education, research and the third mission. If education is a task of fundamental importance to exhaustively provide basic skills "by transmitting knowledge", it is research that allows "to produce knowledge", and therefore to transfer it as the objective of the so-called "third mission": it is only through knowledge production that the university can fully realize its propulsive role in society. In the Stanford model, "the university at the center" of Silicon Valley development, well described by its historic president John Hennessy, is a university that is a driving force of social and economic development, a generator of opportunities and policies of innovation through scientific research. "Innovation is made by innovators," said Hennessy. They are the innovators that the territory needs for the third mission: once properly educated by providing them with solid basic skills, and trained through scientific research, they are those who possess the values of a sustainable and inclusive society, who have the creativity of good ideas, which are able

to create start-ups by giving job opportunities to themselves and others or to enrich the entrepreneurial and social fabric, whatever the field.

In 2012, for the first time, the European Commission finances a three-year project entitled "European Indicators and Ranking Methodology for University Third Mission", with the involvement of eight European research centers, which produces a "Green Paper" entitled "Fostering and Measuring 'Third Mission' in Higher Education Institutions": an attempt is made in Europe to define and articulate an area considered to be of great potential value for the development of society, which transcends and expands the original role of technology transfer (mainly responsible for the enhancement of research through patents and spin offs, which are companies born from university research), recognizing a new social dimension of the third mission. Thus, in addition to technology transfer, continuous training and social involvement also become macro-dimensions that become part of the broad container that is the third mission.

It has been recognised in many statements that the contribution of universities to the achievement of sustainable development goals and to the social promotion of sustainability in general is crucial. For example, in the declarations of Halifax, Talloires, Tbilisi and Kyoto (Karatzoglou, 2013)

Higher education institutions worldwide and universities are the place where the whole community progresses. In the research and social dynamics created within universities (discourses, lectures, policies) that lead to the development of sustainability practices that can be implemented in various sectors of the civil community. (Ferrer-Balas et al., 2009; Mang & Reed, 2015; Tejedor et al., 2018; Wright, 2005) This happens not only during teaching and research activities but especially in their third mission to increase positive impacts on society. During this mission they can show how the university is the exemplary place for public change by pursuing the SDGs (Sonetti et al., 2016).

At the Italian level, the universities have organized themselves by creating a coordination at the national level to align the objectives and join efforts towards the common goals of sustainable development. This inter-university network is called

RUS (Network of Universities for Sustainable Development) in which more than 80 Italian universities participate. This network is coordinated at national level by a committee composed of 9 representatives who are chosen every 3 years. One of the missions of the RUS is to unite to be able to make its voice heard at the national public level while benefiting from the synergies at the local level between university and territory. The network strongly suggested to its participants to create specific offices within the universities so that each reality has an office dedicated to the university's sustainability activities. In many universities these offices have not yet been established but the work is progressing as is the involvement of a student component within the national committee.

2 Literature Background

2.1 Literature review

The search for the specific analysis began with the use of data mapping software. VOSviewer⁷ allowed me to understand the general allocation of the studies done to date. I applied specific words to the research starting from the most general to the most specific: University for SDGs, university impact for SDGs, European universities, DEA, multi-criteria decision analysis, Sustainable Development Goals, Higher Education Institutions, multi-stakeholders' partnership.

In each of these words analysed some characteristics emerged that led me to direct the research on specific authors that can be found in the bibliography. a consideration on all that can be made from the above analysis is that these topics are treated with little frequency. As the 2030 agenda is relatively young, there are not many studies that continue in university analysis in this sector. The depth of analysis often stops at general considerations, also given the difficulty of collecting data in specific universities.

To find the data relating to student activity and the ways in which this can be analysed, I went through the study and analysis of the impacts that the university has on civil society: the so-called third mission. in this analysis the rankings that are used to assign different scores to universities were mainly based on the analysis of the sphere of research and training. Again, the study of university impact on civil society is relatively young. The difficulty of finding specific data led me to search in specific universities so that we could have a general analysis of student associations.

This paper investigates the effectiveness of universities students' initiative in achieving Sustainable Development Goals (SDGs). We make use of newly published University Impact Rankings that account for SDGs (Perović & Kosor, 2020). Universities are assessed based on scores and those institutions that have achieved the highest performance, in addition to the sphere of research, are those that are devoting themselves most to change: gender inequality, climate change, quality education for

⁷ <https://www.vosviewer.com/>

all, achieving peaceful societies and economic growth. Reading this paper (Perović & Kosor, 2020), two approaches are adopted, at national level by evaluating the impact of public spending on education and at university level for the efficiency, in terms of SDGs, of the use of resources.

Third mission activities of universities are related to the generation, use, application, and exploitation of knowledge with external stakeholders and society in general. Third mission cannot be considered as a residual function but complementary to the other two missions of universities: teaching and research. In the last 20 years there has been a continuous and ever-increasing social pressure towards the university so that it brings back among its main objectives not only research and training but also a positive impact on society. To do this, universities around the world are organizing internally so that there are offices dedicated to the third mission. The social contribution that the university has been called to make in recent years is unprecedented. Universities themselves are often driving social change and science in these years in which governments are being severely tested by the pandemic is the solution to the problems. Therefore, the university must intensify its efforts for ever greater territorial integration. Existing studies focus mainly on universities under construction for their traditional missions and (Compagnucci & Spigarelli, 2020) presents a systemic review of the state and a comprehensive analysis of the heterogeneity of TM functions, constraints, clashes and limitations. The recurring themes are presented, and particular emphasis is given to the stakeholders as it does not happen that universities are able to attract. They are also suggested to future scholars who intend to continue in the analysis of what has been done, measures through which today's challenges can be treated and faced. Policies and measures are proposed that could be implemented by governments in order to increase the positive impact and integration between universities and society. (Compagnucci & Spigarelli, 2020)

In this direction, considering students an essential part of the university, the goal is to find a correlation between student activities included in the university context and the positive impact that these generate on the territory in which they are carried out.

The role of universities in supporting sustainable development is, thus, vital for the society, as its students represent a mechanism through which the transformation of the

society towards sustainable development becomes possible. According to UNESCO Data, a number of students in higher education (HE) in 2014 was about 207 million, and is expected to reach 380 million in 2030 (United Nations, 2014)

2.3 Data Envelopment Analysis and Sustainable Development Goals

Evaluating how well the SDGs are integrated into society has become fundamental to understanding the difficulties in progress due to different social conditions. Specifically, speaking of universities, it has become essential to measure the performance of universities not only based on research and training but also on the basis of the relationship they are able to establish with the territory. The third university mission is now largely measured following the guidelines of the 2030 agenda (Times Higher Education, 2020)

Evaluating the performance of a country is fundamental and crucial for determining the current situation and the search for a process that points to the efficiency of the system should always be central to government plans. The good performance of countries in the social, health and economic spheres is also possible through the acquisition of quality education that directly and indirectly influences human development and life from a sustainable perspective. A well-educated population can obtain invaluable benefits and create added value through new ideas, discoveries and new productions (Deniz Koçak , Hasan Türe, 2019). Having said that, it must be considered that in recent years several methodologies have been adopted and different approaches have emerged for measuring the efficiency of universities. The key point to choose the correct and most appropriate methodology lies in the fact of analysing different factors and the types of data analysed. In most cases these data must be translated from empirical experiences to quantitatively measurable phenomena. Studies have generally focused on how to assign resource inputs to improve performance in terms of output efficiency.(Afonso & Aubyn, 2005; St. Aubyn, 2002)

3 Theoretical Framework

3.1 Research question & objectives

Having discussed the previous paragraphs so that a general vision of the phenomenon in question could be given, I would like to bring to the attention of the scientific community a parenthesis of the literature that is not very articulated. The research gap in which the next chapters are to be inserted starts from the analysis that specific studies on the impact of students in the evaluation of the third university mission are lacking.

The original idea when I started the thesis was to analyse the impact of student activities on civil society in terms of sustainable development and technology transfer. When I analysed that these data were never present in the analysis of the third university mission, I began to wonder why. The difficulty of quantifying public awareness activities is one of them, but there were also no studies that dealt with methods of evaluating student activities.

For this reason, I started to analyse the rankings that evaluate the third mission of universities and I started to consider certain variables to build a model of analysis of the efficiency of student associations. The key question I asked myself at the beginning of the research was how to assess the impact of student associations in terms of attractiveness from the world of work in the area. From this question I began to evaluate which aspects, related to student activities, are important to consider creating a satisfactory model of efficiency analysis that reflects reality. I began to investigate the literature but above all in the international institutes that promulgate the rankings relating to the third mission of universities.

As student initiatives are analysed those activities that fall within the services that student associations offer to their members and those that are aimed at the external community. In particular, the activities organized by universities are not considered as administrative offices even if they involve students. The general analysis is carried out following the 2030 agenda promoted by the United Nations and on this we try to articulate a quantitative assessment of specific characteristics of the activities

In fact, the next and more specific objective of this research work is to analyse and investigate the impact of specific dataset students' initiative on the society considered the social features. The final goal of this research thesis is to give an example to literature so that it can create analytical assets to include student associations in the variables that contribute to evaluating the third mission of the university. Given an input, the application of the DEA is a method for evaluating the efficiency of an activity that produces output and which passes through the process of specific intermediary products.

If we want to consider and analyse the activity of students to integrate the assessments of the third university mission, we must also understand what are the nuances that can correctly represent the correlation between the activities and the SDGs themselves. We will go to grasp those quantitative aspects that can act as indicators for the analysis of the state of things. we could summarize the main research question as follows:

What are the characteristics of student associations which, given certain resources, are able to maximize the attractiveness of the world of work through their student activities?

4 Methodology

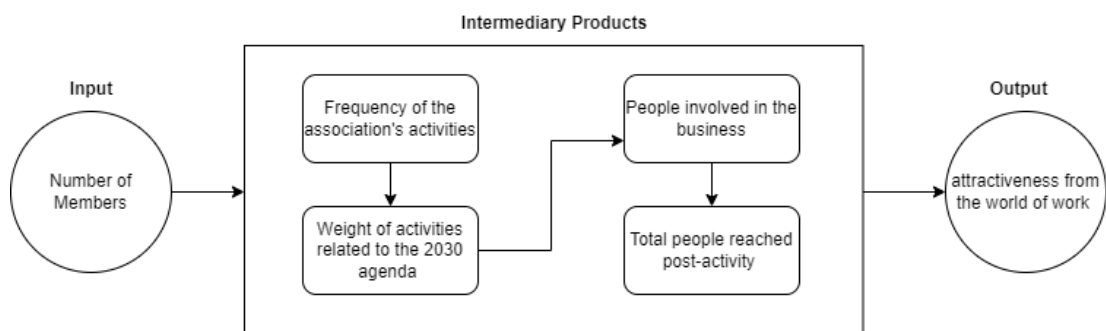
Data Envelopment Analysis is used to evaluate the efficiency of student activities (DMU). Efficiency is defined in terms of the ability of each individual association to, given certain inputs, use intermediate

- Frequency of the association's activities
- Weight of activities related to the 2030 agenda on the general mission of the association
- People involved in the business
- Total people reached post-activity through disclosure in case of events or through benefits obtained in case of concrete initiatives

to have an impact on the outputs.

InputX1-: Number of Members
Intermediary productZ1-: Frequency of the association's activities
Intermediary productZ2: Weight of activities related to the 2030 agenda on the general mission of the association
Intermediary productT1: People involved in the business
Intermediary productT2: Total people reached post-activity through disclosure in case of events or through benefits obtained in case of concrete initiatives
OutputY1: attractiveness from the world of work

Figure 4.1 Methodology



Furthermore, the inputs, intermediates and outputs of the network structure are expressed in numerical data as expressed in the Table 4.1:

In this research, 6 quantitative and 3 qualitative parameters are considered which are used to measure the efficiency of the student associations included in the third university mission. The 80 universities of the RUS were taken and the data available allowed an analysis on 37 universities and 77 activities promoted by 46 different associations. The 76 activities are the DMUs, and the subsequent analyses will lead to aggregate the data for each association and subsequently for each university.

The primary sources used in the creation of the database are statistical data and direct testimonies with the contacts of the associations analysed. It should be emphasized that, in the social sciences, empirical studies are also often defined as primary sources, i.e. research based on the results of an experiment or direct observation of a fact or event. The results of empirical studies are usually available in academic articles or proceedings of conferences and lectures. For this reason, thanks to the in-depth study of literature, I was able to analyse social nuances and give specific weight to the different realities analysed. Specifically, I refer to the assignment of input values (number of associated members) and intermediate products (number of people reached through the activity, frequency of collaborations with companies). The outputs are the result of an analysis of primary sources and an interpretation of secondary sources due to the intersection of other characteristics and social nuances of the activities in question. The secondary sources of this database were considered marginal in the analysis methodology. For example, secondary sources concerned qualitative characteristics of student activities such as the coherence of activities with the 2030 agenda, the sector in which the associations operate (social or scientific), type of activity (Seminars or Collaborations). They are all available in the bibliography for each activity analysed.

4.1 Research Design & criteria

The transition toward sustainable societies implies the search for suitable alternatives at the level of products, technologies, policies, etc. In this regard, supporting decision-

making processes under sustainability criteria is a complex task that requires the consideration of multiple indicators and preferences (Cinelli et al., 2014)

Multicriteria decision analysis (MCDA) methods and tools have arisen in the last decades as decision-support solutions to address complex problems involving trade-offs, uncertainties, different metrics, etc.(Wang, 2015). MCDA involves a process to evaluate alternatives by compiling a set of criteria and stakeholders' preferences and using them to build a preference model that allows the prioritization of alternatives. Within the MCDA tools available, and specifically within the distance-to-target methods, Data Envelopment Analysis (DEA) arises as a trade-off solution between soundness and practicality; (Martín-Gamboa et al., 2017) DEA is used to compute the relative efficiencies of a set of homogenous entities (called decision-making units, DMUs) that use inputs to produce outputs. Because of its nonparametric approach, DEA can be applied to a wide range of fields (healthcare, education, banking, agriculture, energy, etc.) if multiple DMUs are assessed. (Ransikarbum et al., 2021) (Liu et al., 2016)

4.2 Data Envelopment Analysis

DEA (Data Envelopment Analysis) is a data analysis technique based on linear programming that aims to measure the performance of organizational units. The main purpose of the DEA analysis is to identify the efficiency of companies, expressed in terms of the ability to process inputs to obtain outputs and to understand if they are more efficient than the others regarding to this production of inputs and outputs. The companies that, taken considered, will be more efficient will determine a production frontier that can be used for that sector, and it will thus be possible to calculate relative efficiency indices for the other companies as well. The same discourse can be implemented by translating the services of companies to those of the university so that it is possible, according to specific inputs, outputs, and intermediate services, to calculate the efficiency of an institution.

One of the most important aspects of using this type of analysis is to be able to construct efficiency measures based on the simultaneous consideration of multiple inputs and, above all, multiple outputs. DEA therefore becomes an appropriate technique when the units can appropriately evaluate different inputs and outputs and when there is a high uncertainty or discrepancy on the values of some inputs or outputs.

The *modus operandi* of the DEA analysis consists in the use of linear programming methods which aim to maximize the difference or the ratio between output and input of each company / university (or institute) of the whole being studied, under the constraints that for all the units of the set under study the ratio between input and output is less than or equal to one or that their difference is less than or equal to zero. The DEA method provides a complete analysis of the set of institutions considered from the point of view of efficiency, by simultaneously comparing the input and output levels of each. (Measuring et al., 1997)

The DEA model of the relational network considers both the efficiency of a system and the interconnected subcategories and subsets of that system. Thanks to this specificity, it is possible to eliminate the disadvantages of traditional methods using classical DEA models that neglect interconnected sub-phases. Furthermore, it is possible to explain the overall steps of traditional DEA models, which are the so-called

'black box'. This study utilises the DEA model of the relational network which includes a set of three sub-stages under the hypothesis of a production-oriented constant return to scale. The focus on increasing output instead of reducing input in the efficient educational economy shows that the output-oriented model is the proper tool. (Johnes, 2006)

Figure 4.2 presents the relational network DEA structure with inputs, $= 1, 2, \dots, ,$ intermediate products, $= 1, 2, \dots, ,$ and $= 1, 2, \dots, ,$ and outputs, $= 1, 2, \dots, ,$.

We define “Xi” and “Yr” the i th input and the r th output of the j th DMU by noting the indices i, r, j of input, output and DMU. Intermediate products 1, which are the output of the first stage and the input of the second stage, and intermediate products 2, which are the output of the second stage and the input of the DMU. second stage and the input of the 3rd stage, are represented by and by respectively “Zp” and “Tj” denoting the ratios p, l, j of intermediate products 1, intermediate products 2 and the DMU. The efficiencies of the sub-stages calculated from, E_k^1, E_k^2 and E_k^3 , and the overall efficiency of the system can be derived from $E_k = E_k^1 \times E_k^2 \times E_k^3$. The linear programme model of the overall efficiency and its restrictions proposed (Kao, 2009) is:

$$E_k = \max_{u_r, w_p, \gamma_l, v_i} \sum_r u_r Y_r$$

Subject to:

$$\sum_i v_i X_{ij} = 1 \quad \forall k,$$

$$\sum_r u_r Y_r - \sum_i v_i X_{ij} \leq 0 \quad \forall j,$$

$$\sum_l \gamma_l T_{lj} - \sum_i v_i X_{ij} \leq 0 \quad \forall j,$$

$$\sum_p w_p Z_{pj} - \sum_i v_i X_{ij} \leq 0 \quad \forall j,$$

$$\sum_r u_r Y_r - \sum_p w_p Z_{pj} \leq 0 \quad \forall j,$$

$$\sum_l \gamma_l T_{lj} - \sum_p w_p Z_{pj} \leq 0 \quad \forall j,$$

$$u_r, w_p, \gamma_l, v_i \geq 0 \quad \forall r, p, l, i.$$

The aim of the optimal multipliers “Ur”, “Wp”, Yl”, “Vi” is unique, in the first instance the overall efficiency namely Model (1) is calculated.

Education is the core of the factors that improved people for a better lifestyle and increases the level of society’ development. Quality education is one of the most vital goals of Sustainable Development Goals (SDGs) due to actualizing these factors. Using relational network data envelopment analysis (DEA), which have three interrelated substages, the paper analysed computes the educational economy efficiency of the Organisation for Economic Co-operation and Development (OECD) (Deniz Koçak , Hasan Türe, 2019)

Looking for the most appropriate way to evaluate the efficiency of student activities, the literature offered me a wide range of possibilities but specifically in a 2016 study the DEA is used to reveal the relationship between school resources and student achievement. (Ramzi et al., 2016).

Other studies also measured the efficiency of a university faculty in Malaysia using the DEA model and specifically, specific inputs were chosen including the number of people and the economic efforts expressed in university spending. Outputs included the number of graduates, research grants, student services such as scholarships, quantity of publications. (Kashim, R., Kasim, M. M., & Rahman, 2018)

In a study by Yang et al. in 2018, the DEA model was used to study the inefficiency and production capacity of Chinese universities. They adopted a two-phase process three years apart between 2010 and 2013. Initially, in the first phase, staff, research funds and the number of publications were considered as inputs. While after 3 years, further parameters were integrated to complete the analysis. in particular, in 2013 the number of patents and other intellectual properties was also calculated as input. (Saniee Monfared & Safi, 2013)

The first thing to be considered in a DEA study is to decide on the most appropriate area of application. Sometimes the most delicate and essential part is to define how inputs and outputs can best be measured. Measures of outputs and inputs should be as inclusive as possible: not including certain output dimensions will disadvantage organisations that are relatively efficient in producing these outputs. Therefore, the

ideal selection includes the least number of output and input measures that will adequately capture all essential aspects of the organisation's operations. The process of developing a final service model is often iterative, with different combinations of inputs and outputs, and sometimes measures of inputs and outputs, tested before a final model is achieved. This ensures that the most appropriate inputs and outputs are used in the assessment of relative efficiency and allows the sensitivities of different model specifications to be tested.

Data envelopment analysis and different efficiency concepts typically using linear programming, DEA calculates the efficiency of an organisation within a group with respect to the best practices observed inside that group. The organisation can be whole agency (e.g., health departments), separate entities within the agency (e.g., hospitals) or disaggregated business units within separate entities (e.g., departments).¹ To discuss DEA in more detail, it is first necessary to examine the different concepts of efficiency. The most common efficiency term is technical efficiency: the conversion of physical inputs (such as employee) into outputs with respect to best practices. In other terms, given current technology, there is no waste of input in producing the given amount of output. An operation that operates according to best practices is said to be 100 per cent technically efficient. If it works below best practice levels, the technical efficiency of the organisation is expressed as a percentage of best practices. Management practices and the size or scale of transactions affect technical efficiency, and technical efficiency is based on engineering relationships but not on prices and costs. Allocative efficiency refers to how inputs, for a given level of output and set of input prices, are chosen to minimise the cost of production, assuming that the organisations under consideration are already technically efficient. Allocative efficiency is further expressed as a percentage score, with a score of 100 per cent indicating that the organisation is using its inputs in such proportions as to minimise costs. An organisation operating under best engineering practices may still be allocatively inefficient because it is not using inputs in proportions that minimise costs, given the relative prices of the inputs. (Measuring et al., 1997)

4.4 Data

In general, two types of decision-making units (DMU) were used to evaluate the Italian context. In the first group, the individual associations are analysed in relation to each individual activity. The activities analysed are evaluated based on specific criteria (see following paragraphs) each of which is assigned a value based on the analysis of the activity. This analysis is micro for the local DMUs of each single university. The second group is always at the micro economic level as each association contributes to the evaluation of the university itself. in terms of the impact on society through the SDGs.

University

The construction of the database started from the idea of mapping the entire Italian university fabric to give credibility to the data and discern with the awareness of a broad and detailed analysis. For this, I started from the database made available to the RUS on its website where more than 80 universities are listed. this database was chosen over others because these same universities have already internally planned a part of their efforts towards the sustainable development goals. In each university, a sustainability office is being created dedicated to the university which, in an interdisciplinary manner, addresses all the issues of the 2030 agenda. In many universities there is already an office dedicated specifically to the third mission of the university where, often in conjunction with the sustainability office, attempts are made to organize events and initiatives that attract the student population and allow them to integrate into the area. This integration takes place thanks to collaborations with local companies and institutions.

Considering all universities that have been considered, it was not possible for all of them to find data relating to the dynamics of sustainability. Many universities, although not having associations that focus on sustainability, have green offices that aim to coordinate all the associations and university bodies to give an interdisciplinary direction to specific issues such as social, environmental, and economic sustainability. Ultimately, the universities that have returned to the analysis are a total of 37 and the regions of Italy involved are 18. The main sources from which the data were derived

are the specific sites of the university themselves. Subsequently, once the statute of each association had been studied and analysed, the social channels of the specific associations were searched and the activities that had foreseen public disclosure were analysed.

Many data have been obtained directly from the presidents of the realities and the testimonies of specific players in the game have been collected to evaluate the activities more comprehensively.

DMUs

- a) University association's activities
- b) University's associations

The structure of the database is such that two DMUs can be clearly distinguished. The first, the more specific one, concerns the evaluation of the efficiency of each single activity that has been carried out by the associations. Once the efficiency of each company has been analysed according to specific inputs, intermediary products, and outputs, we will move on to the aggregate assessment of the efficiency of each association.

The next step, having assessed the efficiency of the associations, will be to aggregate the values for each university in such a way that individual universities can be assessed in terms of the efficiency of student activities, always with a view to sustainable development objectives.

The research has not foreseen, at least for now, the comparison at an international level but it would be interesting to continue the reasoning at the macroeconomic level to compare the efficiency of one country (and therefore of a university system that stimulates student activities) with another.

Input

1. Number of Members

the number of members who make up the association was chosen as an input and as a reference parameter for an analysis that starts from the consideration of how many students are mobilized to operate on associational activities. Being the calculation of

the associates in some cases difficult, I used 4 intervals to recognize the dimensions of the associations. Specifically, the intervals range from 1-10, 11-50, 51-100 and the last reference are those associations that, thanks to the national networks, exceed 100 people.

Intermediary products

Intermediary products are nothing more than the activities themselves analysed according to different parameters. Specifically, 4 parameters were recognized that were able to express quantitative numbers and 4 other parameters that do not fall within the quantitative calculation of the efficiency score, but which contribute to a clearer and more articulated reading of the results, offering a general view also by components empirical.

2. frequency of the association's activities

The frequency of the activity, once we have assessed how many students participate in associational life, is the data that allows us to understand with what continuity the work group operates in the area. Also, in this case a procedure was used to quantify the activities on a scale of 1 to 10. Assuming that the academic year is divided into semesters and that each semester there are about three / four months free from exams. It has been calculated that if an association operates 5 activities per year, it reaches the maximum score. Evaluated on the academic year with a monthly average between September-October-March-April-May-June. Total of 5 months in which most of the activities are concentrated. From this then the evaluation in decimals.

3. Weight of activities related to the 2030 agenda on the general mission of the association

This score was considered since many associations operate sporadically on activities related to sustainability. Other associations make activities related to sustainability the main part of their mission. With this data we want to exclude those student representatives or associations that organize once a year (or less) activities of interest for the 2030 agenda. How much the analysed activities are main in the general activity of the association. Evaluation in tenths. These details can make us understand how the associations and activities were born and direct their main activity towards specific

themes. A clear example is how it is often noted that many representations work to improve the university and educational conditions but also pursue other purposes unrelated to the 2030 agenda.

4. People involved in the business

People involved refers to the ability to attract people in organizing events. it is different from the number of members, and it is different from the number of people reached on the social channels of the association. With this data we want to effectively measure the presence and active participation of students, professors, businesses, and local and national institutions. it was rated with 4 categories ranging from the smallest 1-10, the average 11-50, 51-100 up to the largest of more than one hundred people.

5. Total people reached post-activity through disclosure in case of events or through benefits obtained in case of concrete initiatives

This figure was calculated based on the association's dissemination capacity. The data were found on the respective social networks and in the database created, for some associations, you can find the respective sources and the division in the channels: Instagram, LinkedIn, Facebook. The data was taken with 4 sections of intervals. 1-100, 101-1000, 1001-10000 and the largest with more than 10 thousand people. In a couple of associations, the data even reaches the threshold of 60 thousand people.

Qualitative features

6. Type of activity analyzed

In this section, four macro areas have been identified that have seen a common activity in all associations. For example, seminars, conferences, workshops, collaborations on the territory and dissemination activities. Some activities do not fall within these 5 categories, and it has been specified in detail in the database such as for example clean ups or fundraising and medicines especially for the war situation in Ukraine. From this data we can deduce a greater propensity towards those seminar dissemination activities.

7. SDGs involved

This data helps us to understand which SDGs are most involved and in which measures to have a clear analysis of what the objectives of the students' activity are.

8. Activity target

This important information allows us to understand how much the university and its students interact on the territory. there are three macro categories that have been identified between universities, civil society, and the world of work.

9. Social capital (faculties involved)

The analysis of the faculties and disciplines involved allows us to understand which activities are linked to specific university areas and to what extent the humanistic area is integrated into the fabric of student associations compared to the scientific one.

Output

10. attractiveness from the world of work

The attractiveness on the part of the labour market and companies is seen as the main objective in the analysis indicated. This data is the output that we try to maximize having limited inputs available. this datum was chosen because it clearly represents how much the university must be linked to the territory and in the third mission of the Italian university there is precisely the need to intensify relations with the outside world. This is also the reason for the decision to take into consideration specific analysis factors to evaluate the national territory. The outputs were assigned in relation to how much interaction the reference association activity had with the companies. For example, if an activity concerned only and exclusively the university environment with a closed-door seminar and that did not have the collaboration of a company: this activity scored lower in the evaluation of its outputs.

This type of output was chosen to direct the final analysis towards a specific purpose. The people involved in the activities refers to the people who, in addition to organizing, have been involved as the final target of the activity. This index allows us to understand the level of participation and the ability to attract people to listen and be actively involved in the initiatives of student associations.

However, the media coverage that these events can have been different. In the era of digitalization, communication is playing a fundamental role and therefore in the data analysis it was also considered how much each activity was able to reach people through social media. To find this data, the social profiles of each reality were analysed and almost in all cases it was possible to calculate the followers who received the contents of the events.

Last but most important, the attractiveness of the work was evaluated as the main objective in the realization of university activities. The dialogue between the university, institutional and working world is the key to sustainable development and therefore we tried to calculate how much each student association was aimed at the business world. In this case, collaborations with corporate bodies and all the creation of content that were, directly or indirectly, aimed at enriching the university-business relationship were positively evaluated. to underline this, the employment rate as output (*International Journal of Assessment Tools in Education - e -ISSN: 2148-7456, 2019*) (Afonso & Aubyn, 2005; *International Journal of Assessment Tools in Education - e -ISSN: 2148-7456, 2019*) are the important factors in measuring the efficiency of the educational economy.

5 Association's activities data

For the University of Turin⁸, the activities of 4 associations were analysed for a total of 8 initiatives. The Alter.Polis⁹ association has had an intense associational activity during the last few years and only activities related to the objectives of the 2030 agenda have been considered. With these objectives, the research considered 3 activities with the following characteristics:

1. Decision Making Unit 1 (DMU1 Sources)

This activity, which takes place once a year, provides that particular attention is paid through a seminar to a specific representation of discriminated categories. Pre-established sessions are opened within the association for the discussion of issues related to gender inclusion and one of the objectives is to encourage the university to implement an internal university desk dedicated to this type of needs. this activity involves several members that is around 20 units and proposes this type of activity frequently throughout the year. The association in question makes these issues the centre of its activities by organizing similar activities during the year. The activity specifically involves SDGs number 5 and number 10. The composition of the association is purely humanistic and the reference targets for university activities are exclusively university students and the implementation of the services of the same. Although with a small number of organizers, the reality can involve more than 100 people in these conferences and seminars and then have a media coverage through the social channels (LinkedIn, Facebook, and Instagram) of more than 10,000 people. The attractiveness on the part of the world of work remains limited since there are issues that concern and are increasingly present in the work dynamics, but specifically the activity analysed remains within the walls of the university.

2. DMU2

⁸ <https://didattica.polito.it/associazioni/associazioni.html>

⁹ https://didattica.polito.it/associazioni/associazioni_ALTER.html <http://alterpolis.it/>

The second activity analysed for the Alter.Polis association changes the focus nuance of sustainability. If in the previous activity the social sphere was the subject of discussion and debate, with this second activity the group of boys and girls aims to create a service that helps environmental sustainability and that always focuses within the university. The goal is to increase bicycle parking spaces made in collaboration with the competent university bodies, to intensify the distribution of water bottles made with sustainable material and to add a bike-sharing station near the university to allow students to they have no means available to use the university's service. The members of the association remain the same and the frequency of these activities decreases slightly during the year as projects that have been completed have achieved the purpose for which they were designed. This specific activity, unlike the activities of seminars and conferences, involves collaboration on the territory with bodies outside the university. In this case, the bike-sharing stations are located by the municipal administration. The SDGs involved this time are number 11 and number 12. The working group within the association that deals with these specific projects can generally be referred to as scientific as it is itself an activity that aims at concrete things. The activity does not require a particularly high number of people to carry it out (as is necessary for a conference) while the benefit that is derived from these initiatives is calculated in terms of the university and therefore the target of this activity is a very large number. high of students. The attractiveness on the part of the world of work is relatively low since the collaborations are mainly of an institutional type to favour the distribution of the services provided.

3. DMU3

The third and last activity analysed on the many initiatives proposed by the association in question focuses mainly on student service. Once again and for almost all of the activities of this association, the target audience is students

and the university inter community. There is a collaborative activity but always with an eye towards the inside of the university. Specifically, the activity involves SDGs number 3 when the boys and girls of Alter.polis want to intensify the activity of the listening desk. They would like to foresee for all students an increase in the presence of psychologists offered by the university and the creation of listening spaces. The same activity aims to reduce inequalities when there is mobilization to offer everyone good Internet coverage by including Sim cards in the university offer to overcome connection problems. In this case, the target objective is number 10. Last but which includes all the objectives previously mentioned is objective number 4 through the total coverage of scholarships. Often in the Italian system it happens that students have the requisites to be able to benefit from subsidies and scholarships but there are not enough funds to cover the application.

Again, at the Polytechnic University of Turin, the second association analysed is called RUN Polito -APS -ETS¹⁰. This association is a sort of student representation that sets specific objectives for itself and pursues them together with all its associates within the Turin university dynamics. Three specific activities were considered which have as macro topics the conscious tourism, the correlation between science and women and an in-depth study on the use of nuclear energy for the review "dialogues 2021-2022". Below in order:

4. DMU4

Tour Turin: is an initiative aimed at the many international students of the Polytechnic. During these two days the members organized visits to the Valentino Park and to the city centre in English and Chinese, with the aim of giving greater awareness of what the city offers by taking the opportunity of a walk to inform participants about various topics related to the city itself. During the day there was also a visit to the Urban Lab of the city of Turin, where there was a real lesson on the urban transformations of Turin. The type of activity is

¹⁰ https://didattica.polito.it/associazioni/associazioni_RUN.html & <http://runpolito.it>

a cross between a classic seminar and an activity on the territory with the collaboration of local institutions. The SDGs involved are those related to education (number 4), infrastructure and sustainable cities and communities (9 and 11). The activity took place only once during the year and therefore the frequency calculated for this type of activity is low even if the consistency with the sustainable development goals has reached a 7/10. Participants who have an interdisciplinary background, are less than 50. the people involved in dissemination activities through online and offline channels is about two hundred units. If these activities are linked to the territory and collaborations have been established at the local level, there are no particular signs that make us understand a specific attractiveness from the world of work.

5. DMU5

The conference held at the Turin university saw the participation of authoritative speakers, who were able to each convey a precious message. the aim was to bring the importance of the role of women in science to the attention of the participants. Seminar activities of this kind are carried out regularly by the association and the weight that these objectives have on the entire association activity is substantial. The number of participants is the same as previously considered, being the same association but the aims change as the target objectives in this case are the number 4, 5 and 8. Starting from the belief that the same opportunities should be offered to both genders, it was emphasized that much still needs to be done to bridge the gender gap that involves the world of work. Hence the objective of dealing with the issue of decent work and gender equality at work. As a target we see in this conference, all three shades: University, civil society, and work. the participants in the activity are more than 100 and the people involved through the dissemination are almost 6 thousand. Although of a certain collaborative importance with regard to the world of work, this type of activity is rated 5/10 towards those students who intend to increase the attractiveness of their profile towards the corporate world.

6. DMU6

The last activity analysed by the RUN-Polito APS-ETS association is a conference on the future of nuclear power. This conference is part of the "Dialoghi 2021-2022" review, promoted by Run-Polito with the patronage of the Polytechnic of Turin.

The event was held in the afternoon of December 15, 2021, in classrooms R and R1b of the polytechnic citadel, and saw the participation of the physicist and scientific populariser Luca Romano (the "Atom Advocate") and the young researchers of DENERG, members of the "Nucleare e Ragione" committee, Giuseppe Francesco Nallo, Simone Bleynat, Samuele Meschini, Stefano Segantin and Domenico Valerio. Specifically, the conference wanted to deal with energy issues thus analysing the pros and cons of a different adoption to traditional energy supply systems. The activity involved about fifty students and saw the dissemination of materials on the university's video and YouTube channels, thus reaching more than ten thousand people. The reference target in this case is the university itself but with particular attention also to extra-university dissemination, trying to get the reflections of scientists to civil society as much as possible. The objectives involved are the numbers 4, 12 and 13. Responsible production and the analyses made on climate change show the first real conference (so far analysed in our research) with purely scientific technical nuances. The composition of the association is interdisciplinary, but the event analysed was planned by the more scientific area.

The third of the four associations of the Turin Polytechnic analysed is called Polyenergy¹¹. This association is internally focused on energy and environmental issues. Of the many activities carried out, there is not a large amount of data available on the web but of one it was possible to trace the characteristics as follows:

7. DMU7

¹¹ https://didattica.polito.it/associazioni/associazioni_PoliENERGY.html & <http://polyenergy.org>

Polienergy is a student association recognized by the Turin university which sees the participation of about 30 students who alternate every year between those who graduate and those who enter as a freshman. The frequency of the activities is about one initiative per month and the consistency with their action with the 2030 agenda is particularly high. They organize various kinds of activities including collaborations with local companies, seminars, and workshops. The mainly involved SDGs are related to quality education and responsible production and consumption. Among the main activities there are the challenges proposed by the association to collect new ideas on different entrepreneurial themes. As well as universities and civil society, the association's targets are therefore various business branches. Composed of most students attending scientific disciplines, it manages to reach about seven thousand people with the disclosure of its plans. It communicates a lot with the industrial business world to make the most of the collaboration between the university and the student world. Therefore, it has an attractiveness rating for the world of work of 9/10.

The latest association to be considered for the Turin Polytechnic is called Social Innovation Teams Polito¹². For a better understanding of the general dynamics of the association, the activity was evaluated thanks to the statutory analysis and the notions found on their social networks.

8. DMU8

With the aim of finding new solutions to social problems, the association organizes and encourages activities such as the development of ideas on social and sustainability projects, advocacy, and awareness on social and environmental issues, promotes educational and cultural activities to create opportunities for integration and socialization among students. There are about 40 students who make up the association and the frequency of the activity during the semester is

¹² https://didattica.polito.it/associazioni/associazioni_SITP.html & <https://www.linkedin.com/company/sitpolito/?originalSubdomain=it> & <https://socialinnovationteams.org/chi-siamo/> & https://www.linkedin.com/posts/sitpolito_cambiato-activity-6935657419234545664-uEqU?utm_source=linkedin_share&utm_medium=member_desktop_web

about two months of operation. although very focused on the social nuance of sustainability, this association is evaluated with 9/10 as regards the consistency of its activities with respect to the 17 sustainable development goals. It organizes seminars, workshops, and collaborations on the territory with various companies to intensify the connection between universities and the world of work. The topics covered, in addition to quality education, are linked to objective number 8 and 9. In fact, Decent work and economic growth is at the centre of their activity as the proposal of sustainable infrastructures and companies. The association is composed of groups of students from different faculties and who could reach over 10,000 people with dissemination activities thanks to the close collaboration with the university and its channels. Evaluated with the highest scores for attractiveness from the world of work, she manages to weave an intense relationship with the territory and its businesses.

The Bicocca University of Milan¹³ is the second university analysed in the data collection. Specifically, 3 student associations are taken into consideration on all of them and the sources can be found on the official website of the Milanese university. For this analysis, the nuances of student activities were carefully evaluated starting from the statutes made available to the public by the university. In some cases, it was possible to find sources on the web and the information was completed with oral interviews with specific representatives.

9. DMU9

The ASB Association aims to promote cultural and artistic activities.

Take part in various volunteer camps such as those of E!State Liberi and Legambiente. Furthermore, for several years, he has been committed to collaborating with Libera in the fight against the mafias, participating in various social initiatives. The association has about 30 students from different faculties and thanks to the continuous collaboration with other associations in

¹³ <https://www.unimib.it/ateneo/bacheca/associazioni-studentesche>

the area, it has a high frequency of activities. The assessment of the consistency of the general activities with respect to those analysed is also high. Specifically, among Collaborations, clean ups, Seminars & Workshops, the SDGs involved are many: From education (4) to sustainable communities and cities (11); from climate change with the collaboration of the Legambiente association (13) to the fight against mafias and therefore institutions (16 strong institutions). The target audience is civil society and with their activities they can involve about 100 people in attendance and another 1000 in the dissemination of the work. Rated 8/10 for its attractiveness from the world of work, it is one of the few associations composed mainly of humanities faculties that organizes

10. DMU10

Bicocca Independent Students is an association that organizes cultural events open to all on topics such as the Right to Education, Education, Feminism, Migrants, LGBTQIA + community, Environment, Anti-Mafia, and Anti-Fascism, with the aim of helping to create critical thinking in students. The association is made up of more than 50 students and has an intense organizational activity within the university and on the territory. The weight of the activities analysed in relation to the United Nations plan disclosed in 2015 through the 2030 agenda is respected for almost all the initiatives. Seminars and workshops are mainly organized covering a wide range of SDGs. Specifically, the number 4, 5, 13 and 16.

For the second time and in the same university, activities related to raising awareness of issues such as corruption and mafias can be found. In fact, in the city of Milan, this peculiarity of the activities linked to "strong institutions" was found as if the territory had needs in satisfying this type of information. Territory which, however, often does not see the interaction with the university as the activities are often directed to the students themselves. The composition is interdisciplinary even if there are some components of the legal aspect. The people involved offline are around a hundred but thanks to the dissemination and communication networks of the university, they manage to reach about

10,000 people with the contents they emit through social networks. Specially to note an important Instagram profile with more than 10,000 people reachable. There is little collaboration with the business world.

11. DMU11

Bicocca Rainbow, abbreviated to "B.Rain", is an inclusive, multicultural and horizontal student association that is proposed as a safe place for meeting and aggregation for all people belonging to the LGBT + community of Bicocca University. This type of association is monothematic with respect to those associations that have different aims and objectives. Specifically, Bicocca Rainbow, is made up of about a dozen people who keep their presence active throughout the year but who organize few activities (at least those available from the information available). Although monothematic, a maximum coherence is assessed for the themes linked to the 2030 agenda and with the objectives number 5 and 10 to fight and raise awareness of gender equality and reduce inequalities. the main activities are seminars and workshops with a mainly university target. For this reason, the relationship with the world of work is assessed with low scores. The composition of the faculties involved in these activities are mostly humanistic and manage to reach about a thousand with the dissemination of the contents of the same.

Sapienza University of Rome¹⁴ is the third university considered and specifically there are two student associations that are included in the database of this research: BEST and wisdom in movement.

12. DMU12

To gather student opinions, BEST organizes BEST Symposia on Education (BSE), conducts surveys, and interacts with local students through Local Best Groups. The objective of the association is to bring to the attention of student's issues of particular importance for our days through academic conferences. The

¹⁴ https://www.uniroma1.it/it/pagina/albo_associazioni_studentesche_2021-2023

Rome section is part of an international network that involves more than a hundred universities. In the Rome section there are about 50 associates who are active all year round through the creation of seminars and scientific dissemination. The core of the activities focuses on SDG 4 education and the target is the university one. Made up of young students from all faculties, thanks also to the network behind it, it reaches about ten thousand people. The attractiveness of the world of work is around eight decimal points as there are many figures who interact with the national and international dynamics of BEST from the world of work.

13. DMU13

Sapienza in Movimento is made up of about 50 students from all faculties of the university. It has the distinction of being the largest Italian representative association with more than 54,000 followers on Instagram alone. Therefore, the activities they do vary a lot with each other. I specifically analyzed the activity linked to sustainability. “L'abecedario della sostenibilità” is a blog where the main news about sustainability is posted. The activities are frequent even if the consistency with the 2030 agenda is evaluated with a 7/10, being a large student representation before an association aimed at these specific issues. There is no shortage of collaborations with local authorities, as well as conferences related to sustainability issues. In fact, the SDGs dealt with across the board are number 2 on the management of food surpluses, number 4 on education, 8, 9 and 11 with particular attention to the dynamics in the Lazio region and finally 13 on climate change. The students that compose it are from all faculties and as already mentioned, the media coverage of their activities manages to involve more than fifty thousand people.

In the Italian capital there are two universities considered in this research and the University of Rome TorVergata¹⁵ is the second. Specifically, two associations are analysed in its entirety: Yourfuture¹⁶ and BEST¹⁷.

14. DMU14

Yourfuture organizes meetings with secondary school students in Rome and Lazio. The intent of Yourfuture is to raise awareness among young people on issues of general interest by making them aware of their future choices in the university, work, and training fields. Yourfuture also promotes the importance of road safety and more generally of public safety, legality and the prevention of the use and abuse of alcohol and drugs. student activity is made up of a small number of students (less than 10) and operates infrequently but is always present in the area. Coherence with the UN's sustainable development plan is low as the main objective of the Association is to develop, especially among young people, those transversal skills useful for inclusion in social life, to contribute to the progress of society. SDG number 4 involved and as a target it aims, as well as within the university, to disseminate to secondary schools. Students from all faculties make up the association with an attraction from the mid-rated business world.

15. DMU15

Although in a National Network, each specific reality is made up of specific activities dedicated to its students. There are three activities analysed.

¹⁵ https://web.uniroma2.it/index.php/it/contenuto/associazioni_studentesche

¹⁶ <http://www.youarefuture.it/category/eventi/>

¹⁷ <https://bestorvergata.it/>

EBEC: engineering competition held in two days, Case Study and Team Design.

Hackathon: competition that tests skills in finding a solution to an IT problem

BEST Course: 22 students from European universities with a BEST group within them, participate in a scientific-technological course.

the frequency of the activities is high, and the SDGs treated are mainly numbers 4 and 9. Mainly composed of scientific faculties, the association group manages to involve more than 100 students in their activities, having a subsequent media coverage on their social channels of almost it's people. Rated to the maximum for the attractiveness of the world of work, it organizes and coordinates with businesses and companies to offer courses in universities that are required in the world of work.

Two associations were analysed from the University of Brescia¹⁸, with 5 activities and one activity respectively. Unibs for SDGs and AIESEC are the only two associations that have an affinity with the 2030 agenda.

16. DMU16

Unibs for SDG is a recently founded association that aims to work under the range of 17 sustainable development goals. In particular, the association operates in all heads according to the needs of the territory. We will analyse five activities, the first of which deals with Unibosco. The association is made up of about 25 members and carries out frequent activities throughout the academic year. The consistency of its activities with the sustainable development goals is rated 10/10 for all its initiatives since the association's goal is to work on 17 goals. In this case, the activity is a collaboration that involves SDGs 3, 13 and 15. The target is purely university but also with attention to civil society. Made up of members of all faculties, it involves more than 100 people in promotional activities in the area and reaches more than 10 thousand people with the dissemination of their events using the national

¹⁸ <https://www.unibs.it/it/albo-associazioni-studentesche>

network. Attractiveness of the world of work specifically for Unibosco has an average rating.

17. DMU17

The second activity we analysed is biciok. The project involves the installation of 2 bicycle maintenance columns in the University spaces (one in the north and one in the centre). The aim is to allow everyone to be able to use the bicycle to reach the universities, but without the need to personally have specific tools, difficult to find by off-site who rent a house in the city. The aim of the project is to provide the entire university community with a useful tool to improve their transport habits. In recent years, the number of cycle paths in the city and the users of the BiciMia service have increased. The university, in view of Brescia capital of culture 2023, sponsored the project "Brescia in step with the times" which provides for an increase in pedestrian areas and the use of soft mobility. The funds necessary for the realization of this work can be found through a call for proposals, or through sponsors. The bicycle remains one of the most sustainable and healthy ways to get around, to encourage its use it is necessary to offer users all the infrastructures and means necessary to be able to make the most of it. The numbers and the frequency are the same as the previous analysis since we always speak of the same association. Also in this case, it is a collaboration made on the territory with the university and local authorities to achieve objectives 9 and 11. The people involved and reached with the advertising of the event are the same for the entire association for this reaches 10 thousand people after the event and involves more than a hundred. Attractiveness from the world of work rated 7/10.

18. DMU18

The third activity analysed is Health Waste and Sustainability. The seminar saw the presence of scientists and members of the university bodies to talk about water as a public good and everything that can arise from poor water

management. The coherence of the activity with the 2030 agenda is at its maximum and the seminar, followed by the workshops with the students, addresses the issues related to SDGs 3, 11, 12, 13. The target is university and civil society. Attractiveness of the world of work evaluated in 8/10 since the presence of companies in the dynamics of associations was positively considered.

19. DMU19

The fourth activity was called Un filo Naturale which illustrates the climate transition strategy of the municipality of Brescia in a seminar. Activity done in collaboration with the municipality of Brescia, it is evaluated with 9/10 for the consistency dealt with respect to the 2030 agenda. It was planned and organized by the scientific group present in Unibs for SDGs with a high attractiveness from the world of work.

20. DMU20

Engineering and Sustainability is the latest activity analysed for the Unibs for SDGs association and has the characteristics of a seminar that aims to bring students closer to the jobs dedicated to engineers. The conference involved about 50 people and the dissemination of the event took place on all the channels of the university and partner companies. For this reason, the project has an excellent rating in terms of attractiveness from the world of work. SDGs 11, 12, 13 were treated by the speakers, emphasizing the importance of a dialogue between universities and the world of work.

21. DMU21

AIIESEC is a national network of student associations that offers cultural exchanges to give participants a global vision of reality. It develops a network of international exchanges and aims to achieve peace and the

development of human potential, developing leadership characteristics among young people through experiences abroad in stimulating contexts. Together with other partner organizations, AIESEC facilitates volunteering experiences, internships, and paid internships abroad. It involves more than 100 students in its activities and the consistency and frequency of activities is high. The association is based on collaborations with the entities of each state. There are many projects that deal with important issues and among the most famous the presence of SDGs 4, 10, 17 is emphasized. Made up of students from all universities, interdisciplinarity is common in people who participate in cultural exchanges. The national network allows students to have a media coverage of more than 10 thousand people and the world of work sees people who have experience abroad very well

The University of Venice¹⁹ has 3 associations analysed specifically and 7 are the activities taken into consideration. Two out of 3 associations are part of a national network and the data collected on post-event disclosure relate to the numbers of the entire association network.

22. DMU22

The association, through the Veneter for schools' project, aims to create alternative tourist itineraries for school groups visiting Venice through the creation of "sustainable" routes. The school groups will be guided by the students of Ca 'Foscari for SDGs through itineraries that include various stops both in symbolic and fragile places in the city. At each stage, certain SDGs will be addressed in interactive mode with the children and there will be the opportunity to visit lesser-known realities in Venice such as artisan shops, shops that have made sustainability the centre of their activity and places that are generally overlooked by usual tourist itineraries. The SDGs involved are numbers 4, 8, 11, 13 and the objective of the activity is to involve the university, the world of work and civil society. An interdisciplinary group, it involves more than 100 people in the activity that occurs very frequently. The

¹⁹ <https://www.unive.it/pag/43269/>

disclosure takes place through the channels of the national network and therefore reaches more than 10 thousand people. High attractiveness of the world of work.

23. DMU23

Ecotips has the ambition to actively involve people close to the association (and not only) in the work of promoting and raising personal and collective awareness of a more sustainable lifestyle in line with the SDGs of the 2030 Agenda. Through all its social channels, therefore, Ca 'Foscari for SDGs invites everyone to share sustainable advice (called "ecotips"), based on the thematic focus proposed at different times of the year (Christmas, Carnival, but also exam sessions), taking charge of the collection and enhancement of these participated councils on its page. The project acts by pursuing the targets of SDG 13 (Climate Action), with the ambition that this initiative can have a large-scale impact and thus touch more and more SDGs. All associations agreeing to this approach and purpose are invited to build together and expand the project format, so that it is increasingly participated. The goal is active and participatory sensitization of people of all age groups to sustainability and the SDGs, both on a personal level with respect to their own habits, and at a community level with respect to the habits of others through emulation Diffusion of a thought about sustainability that is not occasional, but rooted in the lives of everyday people Achieving a real sustainable impact thanks to the small daily gestures of the community involved in the project.

24. DMU24

The seminar in question dealt with the topic of quality education. Specifically, in addition to SDGs number 4, the theme of number 8 was dealt with. Entirely dedicated to students, the video seminar offered a clearer view on foreign

university dynamics. Attractiveness of the world of work estimated at 8/10 and 1000 people reached after the event.

25. DMU25

The Blog was born from the need to make students' voices heard. The objectives covered are many. Target of academics and civil society. The articles reach an average of about 500 people and are visible on the net. Low attractiveness from the world of work since there is no real collaboration.

26. DMU26

Ca Foscari for SDGs warmly welcomes the call to action of the Network of Universities for Sustainable Development (RUS) for the creation of a video montage containing ideas and opinions of the students themselves on how the sustainable university of the future should be. Thanks to the collaboration between RUS and the Italian Pavilion at EXPO 2020 in Dubai, the video made is broadcast on the forum "Universities in Action for the UN 2030 Agenda", allowing students to participate in an international debate on the future of the university world, making the voice heard. The video produced will deal with the three key themes proposed by RUS - people, prosperity, planet - imagining how the university of 2030 can act to promote a more sustainable future not only for the academic world, but for society. Affected SDGs: # 17 - Partnership for Goals. Be active participants in the international dialogue on the future of the academic world, make contacts with other realities and associations like ours, in order to be able to develop possible future activities, in line with the intent to promote the achievement of the SDGs

27. DMU28

Venice diplomatic society organizes every year a simulation of the UN conference where topics related to international issues are dealt with. Special

attention to the climate which has always played a major role in recent years. The event is held once a year and more than 100 people participate. The disclosure of the results reaches about a thousand people. Being a conference purely within university dynamics, it does not attract the world of work and there is no collaboration with specific companies.

For the University of Verona²⁰, 3 associations were analysed for a total of 7 activities.

28. DMU29

The individual can make a difference is the translated name of the first seminar of the Univr for SDGs association. The association is made up of about 30 students and their frequency of activity covers the whole academic year with maximum consistency on all its initiatives. The seminar, which becomes a workshop in the afternoon, saw the participation of an influencer who touched on the issues related to SDGs 4, 8 and 13. The target of this event is the university and civil society. Offered by a group of students from different scientific and humanistic faculties, it has reached about a thousand people through disclosure. The seminar was attended by one hundred students and did not see the participation of companies.

29. DMU30

A medicine for war is an activity that involved the collection of medicines to be sent to Ukraine. The association has collaborated with other realities in the area and has created a network together with other organizations for the dissemination and purchase of pharmaceutical products. The objective was totally aimed at civil society and the SDGs involved were on the 16th and 17th. Many drugs were collected and despite the collaboration with the territory, this activity saw the attractiveness of the world evaluated with a low score. of work.

30. DMU31

²⁰ <https://www.univr.it/it/i-nostri-servizi/futuri-studenti/benefici-borse-di-studio-e-agevolazioni/associazioni-e-gruppi-studenteschi/gruppi-studenteschi>

The clean-up, organized in collaboration with 4 other realities, saw the boys of the association collect and clean up an area near the river. About 50 people were involved in this initiative and there was total coherence with the sustainable development goals. Specifically, the number 12 and the number 13. The activity was mainly aimed at the environment and the outside of the university. Consistency with the 2030 agenda is high and with the social disclosure of the results achieved, more than 1000 people have been reached.

31. DMU32

The second-hand market is a student initiative that saw the participation of about 50 students. The goal was to raise awareness among participants in the responsible use of clothing by encouraging the exchange of products that are no longer used. The SDGs involved is number 12 and civil society was the target when the disclosure of the initiative was made. Low correlation with the world of work.

32. DMU33

The forest festival was the name of the seminar held by the Univr for SDGs association. We talked about the theme of climate change, and we tried to tell topics of life through the reading of poems. There was no real collaboration with the world of work, but the attractiveness of companies was assessed as high because many local authorities collaborated in the implementation. The media coverage reached more than 500 people, involving almost a hundred participants in the reading evening. The topics covered are mainly on education and climate change, dealing with SDGs 4 and 13.

33. DMU34

The student group SUV - Veronese University Students intends to propose to the student community a path of approach and "literacy" to the mountains,

developed over 4 meetings, each with a specific goal: to educate to a responsible approach to the world of nature, taking into consideration its ancestral vocation as a "wild land". All the associational activity was analysed, evaluating the seminars that are organized with a high frequency. Made up of about 50 students, SUV is an association that manages to involve more than one hundred students in its activities. The topics covered are summarized by SDGs 4, 13 and 15. The latter is the main focus of the activity. Life on earth, nature are the main themes that the interdisciplinary group deals with. Low attractiveness because they are initiatives that often remain within university borders.

34. DMU35

The student group "Students for the university" was created for the promotion and organization of cultural and educational activities dedicated to students, who deal with topics concerning current affairs. The group also aims to create moments of common sharing to discuss and address issues that today influence the lives of students. The group organizes seminars and is active in dissemination. The SDG mainly dealt with the number 4, managing to reach about a thousand people. The attractiveness of the world of work is low as it is always directed towards students.

Two associations were analysed at the University of Bergamo²¹ and the entire activity was assessed for each.

35. DMU36

Unibg for SDGs joins the national network in January 2021 to raise awareness and create awareness about the issue of Sustainability, understood as both environmental and social and economic. The association wants to give life to concrete projects that have a positive impact on the territory and allow present and future students to study and grow in a more sustainable place. The basic

²¹ <https://www.unibg.it/servizi/vita-unibg/associazioni-e-attivita-culturali/associazioni>

project started to show everyone what the SDGs are and therefore consistency is assessed at the highest level with the 2030 agenda. The activity is frequent, and many people can be reached since the national network helps in the dissemination of the contents. The group formed is interdisciplinary and does not have a high attractiveness from the world of work since the targets of this initiative are mainly students.

36. DMU37

Students for Equality is a student association of the University of Bergamo founded in 2018 with the aim of bringing the theme of equality within the university environment and beyond. The administrative nucleus gathers volunteer students from different university departments who try to contribute to the project by bringing different points of view and sensitivity. The main issues that are addressed (through conferences, workshops, and other meeting initiatives) aim to raise awareness of minorities, social and individual issues, discrimination, and the peculiarities of equal treatment.

37. DMU38

At the University of Bolzano²², the activity of an association was analysed only because it is the only one that deals with issues such as sustainability. k! kero is the association that organizes cultural and recreational activities on the Bolzano campus, including university parties, evenings with debate groups, seminars on various topics, film club evenings, concerts and much more. Since 2016 it has organized the Sustainability Festival, an annual event that includes a series of conferences, debates, film screenings and practical workshops. The goal is to spread awareness on issues related to sustainability with a broader perspective than just the environmental issue, also embracing economic and

²² <https://www.unibz.it/it/services/orientation/student-associations/>

social aspects to spread and increase the practice of a more respectful lifestyle for our ecosystem.

In Rome, 3 associations were analysed at the LUISS²³ private university and were positively evaluated with respect to their general work.

38. DMU39

ASP- Association of Political Sciences is a group of about 50 students who organize seminars and workshops. The main SDGs dealt with are numbers 16 and 17 with a target that goes to the entire civil society as well as university students. The aims of the association are the promotion of cultural and recreational activities, which increase communication and discussion between students, the dissemination of universal concepts of peace and respect for the person and peoples, through collaborations with bodies and associations sensitive to these issues and cooperation with political science associations at national and international level. Composed mainly of young people who come from humanistic faculties, it has a good attractiveness from the world of work.

39. DMU40

The association was born from a volunteer experience of the founders in Tanzania, Africa, at an orphanage of Ursuline Sisters. It pursues purposes of social solidarity, in the sectors of charity and humanitarian aid, with particular attention to children from foreign communities. In addition to designing and implementing projects aimed at improving the living conditions of the most disadvantaged and / or needy communities; prepare material aid and supports deemed useful in the education and health sectors; collaborate with rural communities in developing countries for the realization of projects that enhance local realities and traditions. Papango reaches almost a thousand people and involves about a hundred in their activities. The reference SDGs are 3, 4 and 16.

²³ <https://www.luiss.it/servizi-agli-studenti/associazioni-studentesche#asp>

40. DMU41

Rethinking Economics is a student association that aims to change the teaching of economics by making it more open to different theoretical and methodological approaches, and by promoting greater interaction between economics and other subjects such as history, philosophy, political science, and ethics. Luiss Guido Carli's Rethinking Economics group is part of the international network Rethinking Economics Italia, with which it shares a blog. Rethinking Economics also participates in the annual international conference of the International Student Initiative for Pluralism in Economics (ISIPE). It organizes its activities infrequently but being a national network, it can reach many people with the few activities carried out during the year. About a hundred people are involved with a strong attraction from the world of work because the boys of the association focus a lot on collaborations.

41. DMU42

Another association of the Polytechnic of Turin that is present throughout Italy was analysed. BEST A BEST Course is an international event where students of technology from universities around Europe get the chance to complement their fields of study, discuss educational matters, learn, and take their first steps into an international career, increase their international experience, set up contacts, improve their English level and have fun. The association reaches more than one hundred students and is active in Seminar & Workshop, dissemination activities. It mainly deals with the theme number 4 (education to sustainability) and number 9, creating a close collaboration with local companies.

42. DMU43

The Alpine Meeting is one of the biggest events in BEST. This event takes place only once per year and it involves many Local BEST Groups from all around Europe! The Alpine meeting is a long weekend in the Alps near Turin where we take trainings and workshops with our associates with also free time and playful evenings. But it doesn't end here: the AM is the perfect chance for Besties to get to know with each other, get some new friends, share opinions, information's and, most of all, have a good time together! It's the Realization of the BEST Spirit!)

43. DMU44

It is an architecture competition organized by students for students of the Polytechnic of Turin. It is a one-day event completely free and after two years online, this year it will be back in attendance. BAC is an opportunity to improve your skills to work in a team, to meet new people with whom to share ideas about an innovative topic. The competition will take place in one day, in which the participants, divided into groups of 3 people, are invited to develop their project linked to a specific theme, which will be announced at the beginning of the competition.

The University of Milan²⁴ with the Polytechnic sees two associations involved in this report. For the first, 5 activities were analysed while for the second the entire associational activity.

44. DMU45

Resilient GAP is an association made up of students of the Politecnico di Milano: the university has inherited the love for knowledge and quality information. For this reason, the original goal is to raise awareness as many people as possible on the various facets of the environmental and climate issue. Since the founding of the association, organizing conferences has seemed one of the best ways to achieve this goal. The students have always tried to find

²⁴ <https://www.polimi.it/studenti-iscritti/rappresentanti-e-associazioni>

prepared and engaging speakers, often professors from the Polytechnic, who talked about current issues with in-depth content. In this way, they want to contribute to forming the environmental awareness of those who participated. The conferences are usually held in the autumn semester of the school year and have now become a traditional appointment dealing with the following issues related to the 2030 agenda. Here are some of the topics covered: The new geography of water, with Emanuele Bompan, journalist, and writer: on water as a fundamental right of the human being and on the deviations generated by considering it only as a strategic geopolitical resource. Report from the COP25, with prof. Stefano Caserini and the experts Francesca Casale and Giulia Persico: like the year before, direct testimonies from the COP and reflection on the influence it will have on future environmental policies. Sustainable development: Energy for the planet, with Prof. Emanuela Colombo and the students of the Honors Program Engineering for Sustainable Development: on the theme of sustainable development, its limits, and possibilities. Wasted Italy: the challenge of waste management in Italy, with prof. Mario Grosso and the students of the Honors Program Engineering for Sustainable Development: criticalities and future challenges of the waste management system in Italy, with the final intervention of two of our members who took part in the Zero Waste Challenge. From urgency to action: IPCC report and global warming, with prof. Stefano Caserini and Giacomo Marangoni, researcher: on the fundamental IPCC report published in October 2018, which highlights the importance of keeping global warming below 1.5 ° C at the end of the century. News from COP24: action against climate change, with prof. Caserini, Francesca Casale, graduate student, and two of our members: testimonies on the UN climate conference and discussion of its possible future consequences. Geopolitics and climate change: agreements and disagreements, with prof. Stefano Caserini: on the relations between international geopolitics and national climate policies of the main world powers. Agriculture and sustainability: is agroecology inevitable? with Daniel Coret and Pietro De Marinis, respectively professor and researcher at the State University of Milan: on the ecological unsustainability of the intensive industrial agriculture model

and its agroecological alternatives. Ebola: risks and dangers, with prof. Renato Casagrandi and Gina Portella of Emergency: direct evidence of the Ebola epidemic in Sierra Leone and discussion on the risks of spreading tropical diseases in temperate areas due to climate change. The activity attracts many people and manages to have a high media coverage thanks to collaborations in the area.

45. DMU46

The "cleaning expeditions" are a dynamic and 'sporting' activity: armed with gloves, brooms, rakes and all the useful tools, the boys set off on an expedition to clean particularly polluted green areas in Milan and its surroundings. In addition to improving the environmental conditions of the sites identified, the cleaning expeditions also aim to inform and raise awareness of the importance of urban green care and social assets, and of what now more than ever - in a state of Climate and Environmental Emergency - it is important to encourage socially and ecologically useful jobs: you can't always go through volunteering! The first cleaning expedition took place on 21 September 2019, during the International Climate Week, at Parco Lambro: over 60 people of all ages joined, enthusiastic, to clean the park, each according to their own strength. The second, on the other hand, took place on 19 September 2020 at the Parco delle Cave, as part of "Quarta Parete" - a series of cultural events in the quarters of Quinto Romano, Baggio, Figino, and Quarto Cagnino, organized by the Milanese associations Le Malviste and Asisa Companies. What was found is an authentic illegal and organized landfill: electronic waste, irons, clothes, and various junk were so many that they required a full day of work, without the wood being completely cleaned. It is hoped that with these awareness-raising activities, in the future the administration of Milan Metropolitan City will pay more attention to the care of urban green, as well as to its defence from the various ongoing overbuilding projects!

46. DMU47

Climate Change Conference Simulation (CCCS) is a role-playing game that explores the science and geopolitics of the environmental issue, experimenting with the dynamics negotiators face in UN climate negotiations to reach a global agreement. By organizing CCCS, you could help participants acquire knowledge about the causes of climate change, understand the complexity of the phenomenon and its consequences, as well as tackle the climate challenge in practice, aware of the difficulties and possibilities of success. CCCS has been played by thousands of people, from high school students to UN officials, in dozens of countries on all continents, thanks to a special software, C-Roads, which simulates the dynamics of the climate system. Resilient G.A.P. it proposes it in high schools and universities, according to the formula "by young people for young people", without sacrificing scientific reliability and reliability, guaranteed by software sources and developers.

47. DMU48

Biblio GAP - The Sustainability Library. If you want to hope to solve the climate crisis, being well informed is essential. We need a lot of culture and knowledge, as well as intelligence and willpower, to rethink the world in which we live. Fortunately for us, sharing knowledge is an impulse that the community that cares about our planet has always felt from Rachel Carson to Vandana Shiva, passing through local names such as Luca Mercalli, many environmentalists have left enlightening texts, and continue to do it. In personal training, why not start with what our university already makes available to us? The Sustainability Library, a project with which particularly interesting books are published. Each week we share one of these books, with its description, adding a photo of it to a photo album called BiblioGAP: there is a brief description of the themes of each book recommended by us, plus the indication - if you are a student of the Polytechnic - from where it is in the library!

48. DMU49

Resilient GAP Seeks to bring and form an environmental awareness in as many social contexts as possible. For this reason, one of the first activities was the Itinerant Cineforum, to bring documentaries and films to different places in Milan that tell the different nuances of the socio-environmental realities near or far from our experience, creating moments of sharing and debate in full spirit of growth. individual and social. The range of themes analysed by the films that are screened is wide and complete: from the climate crisis to plastic pollution, from the circular economy to the flaws in the current production system ... all themes are linked by a thin green line that links different SDGs.

49. DMU50

PoliEdro strives to create a more inclusive environment and is based on the respect and appreciation of each person. We actively seek to support, raise awareness, and connect. The association is present in the university and tries to work on SDGs 5 and 10 by helping students in difficulty. The group is made up of students from all degree courses. The activity is not frequent, and conferences are not organized during the year. It is an association that supports students by carrying out social dissemination activities.

For the University of Insubria²⁵ we analysed four activities of the same association.

50. DMU51

The projects that the association creates are many, from film clubs to workshops, from field trips to scientific dissemination activities with seminars and conferences. Although small in size, the association manages to have an important echo in the area thanks to its collaborations with external entities. Attendance has decreased in recent years but the attractiveness from the world of work is high. The topics mainly dealt with are related to the environment

²⁵ <https://www.uninsubria.it/siti-tematici-o-federati/associazioni-studentesche-riconosciute>

and sustainability education (SDGs 4, 13, 15). The target of the activity is civil society and the university. It is made up of a good scientific component of students.

51. DMU52

Evening appointments at the cinema, with projections of great classics and denouncing documentary films. Always with the environment as the main actor. The proposed films give the opportunity to reflect on fundamental themes after the screening. The activities involve about one hundred people specifically dealing with the sustainable development goal number 15 "life on earth"

52. DMU53

External collaborations are the main extra-university activities that see the association create a connection with the local and national territory. Partnerships allow the university and students to have greater connections in the area. The sector is scientific and from a small group of students it is possible to create a good added value in the area by moving large numbers of people.

53. DMU54

Going out on the field is an activity that is always done in collaboration by a small group of young people from the association, but which sees the involvement of many actors. The numbers of media coverage are high even if the target is civil society.

From the University of Basilicata²⁶, 2 associations were considered with 2 activities and 4 activities analysed respectively.

54. DMU55

GeoBas is not just an association: it is a place for dialogue, study, sharing, university, and emotional support. It is an opportunity to meet new people and make friends, a refuge after a bad (but also after a good) day. GeoBas is that "home" where there will always be someone ready to help you.

From an early age, students and students must answer the exams with one word: "present". It is a way of saying that you are there, that you are physically in a place. The events of the war, however, require us to be present also humanly, active in a complicated reality where there is a need for solidarity as a distinctive feature of daily life. Providing aid to the war-affected population in Ukraine is a necessary gesture. For this reason, "PRESENTI. Unibas Students X Ukraine ", a fundraiser organized by the Student Council and student associations of the University of Basilicata, which will allow the University of Basilicata to become an engine of solidarity. The offices of the student associations are open to those who wish to make financial donations. The proceeds will be taken over by the diocesan Caritas of Potenza, organizer of assistance initiatives both on Ukrainian soil and towards refugees who have arrived in Italy.

55. DMU56

GeoZoom: science Gender and sexual identity: The sciences and social studies, united by the attempt to describe reality, are making great contributions to the reduction of inequalities relating to sexuality generated within societies over the centuries. Among others, cognitive neuroscience and social psychology provide us with important tools to recognize the origin and evolution of certain judgments and behaviours. In the hope of practically contributing to greater

²⁶ <https://portale.unibas.it/site/home/studenti/associazioni-studentesche.html>

information, deconstructing some of the thoughts that we are led to have during life, a chapter entirely dedicated to science, gender and sexual identity is included in the GeoZoom seminar cycle.

56. DMU57

the cultural and student association UNIDEA will carry out the "Another brick in the wall" project. The project consists of two seminar days of meetings and debates, during which students, doctoral students, professors from the University of Basilicata and external guests will participate. Among these, prof. Iain Chambers, professor of Cultural and Postcolonial Studies of the Mediterranean at the University of Naples L'Orientale, and the Hon. Eleonora Forenza, MEP, and Italian researcher. To enrich the theoretical scope of the seminars, there will be the participation of Arcigay Basilicata, hosted for the first time by the University and represented by Vice President Antonella Giosa. The photographic exhibition "Human (P) Rights" by the sociologist and photographer Marco Tancredi will also be presented and the screening of the famous German film "Goodbye, Lenin!" Will follow. The leitmotif of the entire project is to provide "alternative narratives", to offer a space for reflection, provocation, and transversal analysis, touching on some of the hottest and most innovative issues of recent decades. As suggested by the title, the top priority of the initiative is to encourage, through the information and clarity of the experts, the development of critical thinking and to generate a possibility of comparison within the city environment and academic. The events arise from the idea that only through updated and supportive knowledge it is possible to stimulate a sustainable thought compatible with the livability of all human subjects, breaking down the walls of sexism, xenophobia, and intolerance.

57. DMU58

A series of meetings open to all Unibas students, including some with external guests, to instil in the mind of those who want to start (or have already started independently) a literary and human journey the desire to devote themselves to writing in all its possible forms: from poetry, to prose, passing through lyrics to musical pieces. Fully taking up the motto of the Russian author Anton Pavlovič Chekhov, it will be writing not for "fame" or "money", but for pure love of literature, a writing of which no "teaching" will be given in any way, but in which we will collaborate for the realization of texts together, taking advantage of the, albeit relative, experience of the curators.

58. DMU59

"On the road": Evening of readings on the theme of travel by the Unidea Student Association. Photo exhibition

59. DMU60

an opportunity to talk together about the great authors of the past (and not only) in the company of one of the most trusted friends ever: alcohol. Knowing the existentialist soul and enjoyment of their friends and colleagues, the Unidea Association and the Besito Bar have in fact decided to collaborate to combine in a single evening the love for knowledge and the beauty of the time spent together having fun. The surprises and promotions don't end there. We will reveal them to you day by day.

60. DMU61

From the University of Cagliari²⁷, the only association analysed is Unica LGBT. The UniCa LGBT Student Association was born on 1st September 2014 thanks to some students at the University of Cagliari. The primary objective is the creation of a space where you can socialize and interact quietly

²⁷ https://unica.it/unica/it/studenti_s09_ss01.page

not only between LGBT people, but with all those who, while not recognizing themselves in this acronym, share the principles of mutual freedom and respect regardless of individual differences. that can characterize a person. A space where everyone feels encouraged to put their skills to good use to be able to organize events, courses, shows, sports tournaments and much more to show how many benefits are gained when prejudices are abandoned. Thanks to the collaboration of the organizing members, and to the precious contribution of the user members, we want to help who are still a victim of violence, bullying and discrimination by offering them an example of how much any peculiarity can be a source of strength.

61. DMU62

Even in the University of Ferrara²⁸ only one association was analysed. Phoenix Factory is a community of young people that aims to propose innovative projects to accelerate the sustainable development goals. Consistency with the 2030 agenda is maximum and the association is made up of students from all faculties. It is an interdisciplinary and inter-university network of young people. Phoenix Factory was born from the desire to create a network of young people for young people, capable of promoting the birth of new projects. The activities range from Events, Outdoor activities such as clean ups and walks, Podcasts, columns and blogs, competitions to generate new ideas. The association is made up of nearly a hundred people and manages to reach more than a thousand people in the dissemination activity. It has the maximum attractiveness from the world of work because I work on projects and collaborations with companies to carry out the projects.

The University of Florence²⁹ has many associations that have activities related to the 2030 agenda.

²⁸ <https://www.unife.it/it/studiare/vivere-unife/le-associazioni-studentesche/associazioni-studentesche-albo>

²⁹ <https://www.unifi.it/vp-6697-associazioni-studentesche.html>

62. DMU64

Youth and University Section of the Amnesty International Organization. We are a movement of people determined to create a more just world, in which every person can enjoy the human rights enshrined in the Universal Declaration of Human Rights. The Organization's motto is: "Better to light a candle than curse the darkness"

63. DMU65

The association - made up of students, researchers and teachers of disciplines related to agriculture, development, and cooperation - aims to enhance the professional peculiarity of the tropicalist agronomist and of those who work at the management and executive level in the development projects of tropical and subtropical areas. It promotes and organizes conferences and seminars and deals with job orientation

64. DMU66

The University Association of Forestry Students is a meeting point, socialization and dialogue between students and graduates. It creates opportunities for discussion, expanding the possibilities offered by the University to acquire knowledge and above all experiences. It promotes the organization of excursions, courses, seminars, workshops and establishing relationships with teachers, institutes, university bodies, public bodies and private companies.

65. DMU67

The Student Platform for Engineering Education Development (SPEED) is a worldwide non-profit student organization where you can share ideas, knowledge, and cultural experiences in learning and education around

engineering. This independent platform is a space for dialogue between students, academia, civil society, and industry. This exchange promotes cooperative / network work and experiences towards a common goal: generate a positive effect of engineering on society and the environment, and the participation of students in the decision-making process. Global non-profit student organization that functions as an interdisciplinary network of engineering students. Every year a global forum is held, GSF - global student forum where it is possible to meet with colleagues from various cultures, languages, and experiences, enriching one's knowledge base and creating an impact on the future development of engineering education and its effect on society. and the environment.

66. DMU68

For the University of Genova³⁰ only UNIGECO was considered. The Ecologist Association was born as a student branch of Sustainable Unige, with the aim of introducing and supporting environmental issues within the University of Genoa, also, and not only, through the involvement of students. The mission has a dual direction: internal (awareness raising, seminars, workshops, and ecological policies) and external (third mission, dissemination, activism and cooperation with local realities).

There are two associations considered for the state university of Milan³¹.

67. DMU69

QueerStatale Milano is the LGBTQIA + group of the University of Milan, successor of the historic GayStatale student group. It aims to create inclusive spaces in university environments and brings together students interested in information and activism related to the LGBTQIA + world, transfeminism, and

³⁰ https://www.studenti.unige.it/attivita/ass_stud/

³¹ <https://www.unimi.it/it/studiare/vivere-luniversita/organizzazioni-studentesche>

intersectionality and to organize recreational events both in the university context and outside.

68. DMU70

“Statale a zero impact” is an autonomous, non-party, non-denominational and non-profit group. The Group aims to reduce the environmental impact of all components of the University, promoting eco-sustainable university projects inspired by national, supranational, and global policies aimed at developing an eco-sustainable society and fighting climate change.

The University of Padua³² has a high membership activity. There are many associations present at the university and only three of these have been chosen to have greater consistency with the 2030 agenda.

thir

69. DMU72

AUSF Padova (Associazione Universitaria Studenti Forestali di Padova APS) è un'organizzazione apolitica e senza scopo di lucro, fondata nel '90 da un gruppo di studenti di Scienze Forestali dell'Università di Padova ed istituzionalizzata nel 1996. AUSF Padova oltre ad essere l'associazione italiana più grande di studenti universitari di Scienze Forestali, è membro di AUSF Italia e dell'IFSA (International Forestry Student Association). L'iscrizione è libera a tutti gli studenti delle facoltà di Agraria e a tutti coloro i quali siano interessati ai molteplici servizi e prodotti generati dalle foreste. AUSF, attraverso la multidisciplinarietà e l'interdisciplinarietà delle proprie attività, vuole creare dialogo e apertura verso tutti i settori pertinenti le scienze forestali e le scienze agrarie.

70. DMU73

³² <https://www.unipd.it/associazioni>

The group was formed in the spring of 2016 with 5-6 "boys". At the time, certain situations had arisen in which citizens complained about the deterioration of some squares and streets. The group started operating there. Participants increased gradually, always in compliance with the basic rule: make Bella Padova. In the group there is no politics or religious activity, everyone can participate. We are all volunteers who, with mutual respect, enjoy achieving the shared goal. The group operates in a proactive, creative, and constructive way: there is no free criticism. If you observe something that is not right, you study it to see how it can be solved. The goal is to improve the city's neighbourhoods together, cleaning them of those abandoned waste (bottles, cans, plastic plates, litter, etc.) that degrade the environment, embellishing them with passion and giving life to constructive moments of aggregation and sharing.

The last reality analysed is the University of Trento³³ with two associations and three activities.

71. DMU74

Parvis is a community of students and professionals with different skills and fields of study, united by the ambition to create the future suitable for society. The goal is to do business with a high social impact, ensuring that everyone's work is a source of professional and personal enrichment. This allows collaborators to train in the field and have a better chance of finding the desired job, whatever it is. Parvis therefore represents an opportunity for all those who wish to cultivate their passions and wish to make them their job. Specifically, Parvis operates in BUSINESS FOUNDING: in search of innovative ideas and new business opportunities and IDEA DEVELOPMENT: from genesis to sales, through design. The heterogeneity of skills and the flexibility of the organization allow us to adapt to market changes, operating in different sectors according to the needs and opportunities that this offers us. The UMANIX project is under development thanks to a highly multidisciplinary group of

³³ <https://www.unitn.it/servizi/222/associazioni-studentesche>

graduates and students, from different faculties across Europe. This variety in member training and membership in various institutes allows the team to have a unique and lateral approach to the various problems that arise in the daily life of each student. Together with Parvis, they bring an application to the market that is cutting-edge and affordable for all students.

72. DMU75

Remida will be a diverse group of students and professionals in the fields of information technology, finance, statistics, mathematics, and artificial intelligence. We are constantly working with statistics and probability on the markets. We develop indicators, mathematical models and artificial intelligences that help us to have an advantage on the financial markets. Together, thanks to the different academic paths, knowledge can be brought together in a team eager to be victorious in the fierce financial markets. Both projects, although still in the pilot phase, have been evaluated to the maximum for their attractiveness by the world of work

73. DMU76

Elsa is a national network that focuses on training, competitions, and internships. Since 1994 ELSA Italia has paid tribute to those who have been able to distinguish themselves in the Italian legal landscape for their contribution to the development of living law, in doctrinal debates as well as in the courtrooms, with the Jurist of the Year Award (GdA). The Association has been the protagonist in Italy of various initiatives that have allowed students and young graduates in law to participate in activities that national universities very often do not provide. There are several universities that have experienced trial simulations thanks to ELSA: Lecce and Taranto, but also Modena and Naples like many others have offered practical simulations to their

students only thanks to ELSA for the first time, as has ELSA Rome since years now he organizes the final of the Moot at the Supreme Court of Cassation.

6 DEA application

6.1 Result evaluation

Using the GAMS software for linear programming as in figure 6.1, it is possible to reflect on many aspects of the database.

An important note before continuing with the reading of the data is the ration that was used to insert certain values in the linear programming of the DEA. three of the six data analysed were expressed in ranges of values. To overcome the problem of inserting values that fluctuate, everything was brought in percentage quantities. Each parameter reported below was evaluated in percentage terms considering the twenty-fifth percentile, the fiftieth, the seventy-fifth percentile and the unit when the interval considered was evaluated as maximum. Number of Members, People involved in the business, Total people reached post-activity through disclosure in case of events or through benefits obtained in case of concrete initiatives, were the three parameters translated to the percentile following this reasoning. Attached are the table (table 4.1) with the values in intervals and the table (Table 6.1) with the values in percentages.

From the results (table 6.2) found in the calculation model, it can be clearly deduced that the general scores assigned to individual activities are not that high. Only in about ten cases, the score exceeds the 0.50 threshold and very few are the realities above 0.80.

We can see how the best performances are made by realities that have few members and that have a very intense relationship with the world of work. The Parvis association (DMU74 and DMU75) stands out above all at the University of Trento, which with its two activities in the initial phase has conquered the primacy. Respectively Remida and Humanix are two projects created in complete collaboration with the business world. The association calls for a few university students to work but it is very projected towards the outside world. Both realities come from a sector of the scientific university and do not have a great media coverage of the activities carried out. The interdisciplinary nature of the activity is also rewarded as Parvis with its two projects touches five different SDGs: 4, 8, 9, 11, 12. Unlike many other realities, Parvis focuses on the world of work, making company collaboration the main point. The media

coverage is a little neglected as they are specific projects that are often not accompanied by public disclosure except to collect initial support.

Always starting from the analysis of the best performances, even the second student association managed to get the maximum score and this activity calls few people to participate but an intense relationship with the territory and the companies in question. From the University of Insubria with its "Environmental" association and the specific activity DMU53 it brings to attention interesting analysis. The universities are all small universities and the associations in question do not have many participants. The frequency of the association itself is not high but the collaboration that these realities have managed to bring to the territory is important. For example, the goals dealt with by EnviroMental are number 15 Life on land and number 17 or the partnership for the achievement of the objectives. The media echo does not exceed a thousand people and at the same time the people involved in the activity do not exceed the threshold of fifty students.

The fourth activity evaluated with ninety percent efficiency is from the University of Florence and is called ASAT - Association of Agricultural and Environmental Tropical Sciences for cooperation and development. This activity has the peculiarity with the others previously analysed with a high efficiency coefficient that has few members and does not have a frequent activity. The only one among all those dealt with which is mainly dedicated to the social nuance as the activities analysed are seminars, conferences, and workshops. Once again, the SDGs are very technical, and we are referring to the number 15. The total score for attractiveness by the world of work is 9 out of 10. Lower than other realities that have instead obtained much lower efficiency scores. It reaches a maximum of one thousand people with its dissemination activity but manages to involve more than a hundred people. It is interesting to note how all these four realities operate on scientific SDGs as if the attractiveness of the world of work were somehow positively connected to the more scientific and less humanistic dynamics. Although there are many universities that with many students are active on the more social SDGs such as number 4, 5, 10, among the best four activities none provide awareness activities on the social nuances of sustainability.

The student association with the lowest efficiency coefficient is (DMU 56) of the University of Basilicata with a coefficient of 1.75. Specifically, a conference activity was negatively evaluated, albeit consistent with the themes of the 2030 agenda, the lack of attractiveness on the part of the world of work weighed on the final evaluation. The Goals dealt with are precisely the humanistic ones and which often recur in the dynamics of other associations, namely the number 4, 5 and 10. The number of participants in the life of associations is high and the sector in which the association operates is interdisciplinary. The disclosure reaches almost a thousand people even if the attractiveness from the world of work stops at 7 points out of 10.

We have two realities that stop at 0.20 and that have in common the huge amount of people who are part of it. In the first case, AIESEC of the University of Brescia (DMU21) which, when analysed with a critical eye, scored the same score as the other AIESEC realities present on the Italian territory. The National Association that calls more than one hundred people among its members and has a continuous activity on the Italian territory with a very high consistency with the themes of the 2030 agenda. The SDGs dealt with specifically by the projects of the Brescia section deal with SDGs 4, 10, 17. In addition to number 17 on international cooperation, number 10 on the reduction of inequalities occurs. The second reality that has totalled the coefficient of 0.20 is Bicocca Independent Students. The association is made up of several members approaching a hundred, has a high membership and activity frequency and scores 8 points out of 10 on the consistency of the association's objectives with those of the 2030 agenda. As an activity it remains far from the working dynamics by offering Seminars and Workshops touching SDGs 4, 5, 13, 16. Also in this case the limit of this association is that it directs its activities within the university without seeking collaborations with the university. external. Although it involves almost a hundred people in its activities and reaches more than ten thousand people with social dissemination (10500 Instagram), it is considered marginal compared to the scarce presence of collaborative dynamics with companies.

The fourth with the lowest coefficient is K!Ero from the University of Bolzano (DMU38). In this case, the SDGs covered are very scientific (4, 13, 15) even if the activity is confirmed on the seminar and workshop with subsequent dissemination activities. Attendance is reduced since the association's main purpose is to follow the

sustainability festival held once a year. It collects many memberships in its association from various scientific faculties. Despite calling more than one hundred people to work and almost ten thousand in the disclosure for the event, it reaches a vote of eight tenths on the attractiveness of the world of work.

To obtain the data on the efficiency of the associations and subsequently of the universities, I adopted the simple average. This system has many limits such as, for example, not counting how many activities have been considered for a single association and if it is aggregated according to universities, the limits increase. For example, if a university like Trento has only two activities, both of which are rated very positively, the average of the university itself is high. In this case, the universities that have served more than one activity to civil society run the risk of not seeing those activities that are carried out with efficiency criteria during the multitude.

Having made this premise on the limits of this calculation system, I think that even these limits would apply equally if a different system were applied, i.e., that smaller universities have the possibility of obtaining higher scores with much more ease. This is another limitation of the rankings that evaluate the third mission and for which I have not been able to untie myself.

The associations with the best scores are all from medium-small universities. In fact, Parvis (Table 6.3) of the University of Trento is confirmed in the lead with a coefficient of 1.00. In second place EnvironMental of the University of Insubria on a par with another association of the University of Trento called Elsa with a coefficient of 0.80. In fourth place we have more associations such as Yourfuture of the University of Rome TorVergata, AUSF Forestali of the University of Padua and Florence with a coefficient of 0.70. All these realities have a scientific nuance and operate on the territory seeking collaborations with private and public bodies in order to proceed with their technical initiatives.

GEOBAS, AIESEC and K!Ero also confirm with the aggregate data the associations that with these decision-making schemes to evaluate the efficiency coefficients, have expressed the worst data, settling around 0.20.

Always aggregating with the same arithmetic mean we see how the University of Trento has totalled an efficiency coefficient in student activities by calculating the inputs and trying to maximize the outputs with the intermediary products, it is the University of Trento with 0.90 (table 6.4). Second with the same size as the University of Trento, the University of Insubria. Third, which however suffers the weight of the dimensions is the University of Rome TorVergata. Analysing two associations with respectively 0.70 and 0.5, the final score is 0.60.

The universities at the bottom of the ranking are the University of Basilicata with 0.2375, the University of Bolzano with 0.2667 and the University of Brescia with 0.3050.

The goal of future research is to consolidate the credibility and motivations behind the choice of inputs, intermediary products, and outputs to proceed with country aggregation and proceed with an international comparison. To date we can deduce the aggregate Italian data which without the comparison of the same foreign analyses remains only an absolute value but still a starting point.

Italy: 0.4164. From this data in the next chapter, we want to make a general overview and start comparing the international dynamics to understand which dynamics are behind the analyses of foreign countries and prepare the work for the future.

6.2 Result interpretation

From the database, and above all from the qualitative characteristics, various reflections can be deduced.

The activities are often carried out by student representatives, and it is also for this reason that these activities have received a lower rating on the index "Weight of activities related to the 2030 agenda on the general mission of the association". The activities are almost in all cases made towards the university and little towards the outside civil society. Even less towards the world of work: few collaborations with companies. Many themes dealing with the social nuance of sustainability are composed of universities and humanities groups through seminars and dissemination. The recurring themes are Gender Equality 5, Reduction of Inequalities 10, and Sustainable Cities 11. The SDGs involved are mostly related to the general orientation

of the university. For example, the Polytechnics work a lot on infrastructures and collaborations with companies. Technical universities, forestry and environmental sciences are more focused on meeting the needs of their territory as in the universities of Florence and Padua. The collaboration in some associations with the territory is very well evaluated but there are still few universities that dialogue with companies. In Milan, the presence of anti-mafia associations is emphasized. The universities that have associations within them that interact with companies are mostly of a scientific nature.

After analysing the results of the best student activities and the worst ones in terms of optimizing the use of resources to obtain outputs, student associations are those formed by a small group of people (less than ten), who carry out activities not necessarily with continuity, but it is sufficient that they are always present on the territory. Furthermore, to have an important attraction on the part of the world of work, it is important to create collaborations and direct one's services outside the university. This is also the goal of the technology transfer to which the entire university system aims in the coming years. Compared to what was imagined before conducting this research, it is not enough to move tens of thousands of people for their activities, but it is important that there is a strong coherence with the sustainable development goals and that there is an interdisciplinary component in the dynamics of the association.

7 Comparative international frameworks

7.1 General worldwide overview

The objective of this comparative analysis is to give the reader a general view of the phenomena occurring abroad and more specifically to understand how young university students are organizing themselves in relation to the 2030 agenda which has been around for longer. 7 years which came into effect. Young people around the world are gathering under the banner of climate change and trying to influence the choices of politicians by showing up and demonstrating. In recent years, the “Friday For Future” movement has been famous and has seen a rise in the world of young and very young people.

Student advocacy has a major role to play in reaching the Sustainable Development Goals (SDGs) and Agenda 2063 - including the Africa Continental Education Strategy 2016-25 - as articulated by the United Nations and the African Union respectively. As HEIs are leaders in innovation, education as well as research, they also play an influential role in fostering sustainable development through well-articulated student voices as a driver for social and economic development change. Across the world, student activism is a characteristic of higher education. On the African continent, first student activism focused on national policies to gain independence in former colonised countries. After independence, African citizens engaged in a secondary liberation struggle for social justice and democracy and against apartheid in South Africa. In Asia, starting from the Second World War, workers organised protest movements that overthrew authoritarian regimes in some countries and threatened governments in others.

In Latin America, the students organised and joined the Cordoba Reform protest motion of 1918, which travelled throughout Latin America to bring changes in university governance. Later, the inclusions of students in university governance in African, Asian, and Latin American nations were politically institutionalised in their public universities. Despite this, student militancy continues to be prevalent and student activists continue to organise to defend and extend their achievements. In South America, the Cordoba protest movement of 1918, which started at the University of Córdoba, Argentina, was the first major student revolt on the continent and led to changes in university governance. In Western countries, the 1960s was a decade of

troubled student activism: students were involved in civil liberties struggles in the United States, fought against the Vietnam War and demanded student representation in university decision-making processes. In European countries, student activism was widespread: students in France fought against the De Gaulle regime, while students in West Germany organised an anti-establishment opposition to the regime. The main drivers of student activism in all European countries in the 1960s were issues that went beyond the campus politics.

The SDGs encapsulate three approaches to human well-being: economic development, environmental sustainability, and social inclusion. The United Nations has set the path for sustained development by providing the framework, targets, and indicators. Students and young people in general are tasked with using creativity, technology, and interconnectedness to bring innovative ideas to the fore to achieve the SDGs. Recently, African studies students participated in the Africa Students' and Youth Summit 2018 (ASYS), that attracted thousands of students and youth to Kigali, Rwanda in the year 2018 to contribute to the SDGs and the African Union's Agenda 2063. In addition, African learners joined a global protest under the banner of #ClimateAction in an international effort to spur world leaders to act on global climate change. Students worldwide took to the streets during a strike as part of a Global Day of Student protests. They demanded action on climate change and criticised their governments for not taking global warming seriously. Social media were used to mobilise students all over the world in what Manuel Castells would call a networked movement of the Internet age. They have assisted student movements to help increase access to quality higher education, provide decent work and economic growth, promote gender parity, and reduce inequality in countries. The South African Student Movement #FeesMustFall was a testimony to the role of student activism in social Transformation and the realization of the SDGs and Agenda 2063.

There are many ways in how students and youth can fully and productively participate in debates focused on reaching the SDGs, focusing on matters of both national and global concern. No one should be abandoned along the way. Governments now should involve young people from various backgrounds in the planning, implementation, and monitoring at the national level. The literature shows that young people and learners can be considered critical thinkers, innovators, and effective communicators.

Furthermore, they can be agents of change. Student activism can lobby governments to support the significant inclusion of students and youth in decision-making and implementation of the post-2015 agenda.

Although the United Nations has adopted 17 SDGs that set the global development agenda until 2030, these are not legally binding, and each country can decide how to implement the ambitious goals according to its country context. Moreover, the monitoring of a country's progress towards the goals is strictly voluntary. In this framework, well-informed and organised student activism can play an important role in pressurising, if not compelling, political leaders and governments to get serious about these goals.

The SDGs can be attained if governments realise the value of collaborating and teaming up with students and students as partners. Countries that develop clear pathways for a meaningful involvement of students from the outset may be better positioned to achieve the SDGs and the related goals.

Student activists can serve as pressure groups for the fulfilment of the SDGs. Through participation in protest dialogues or movements and using social media tools to mobilise support, students can demand the enforcement of sustainable developments plans. Higher education institutions have a significant role to play in promoting the SDGs through well-articulated student voices as levers of social and business movements. This can include engaging students' innovative ideas, promoting the tech tools available to them, and sustaining and nurturing student activism by imparting and inculcating in students' certain skills and values as part of capacity building.

7.2 Legislative European framework on high educational institutes

The European Union, through its education, training, youth, and sport programmes, develops and strengthens the European dimension, encouraging mobility and supporting international cooperation through two main programs: Erasmus+ and the European Solidarity Corps.

The Union supports and integrates the actions of Member States in conformity with Articles 165 and 166 of the Treaty on the Functioning of the European Union (TFEU). According to Article 165 TFEU, the Union's action shall be aimed at fostering the

development of youth exchanges and of exchanges of socio-educational instructors and encouraging the participation of young people in the democratic life of Europe. Article 166 permits the Union to conduct a vocational training policy to enhance and complete the actions of the Member States. It confers on the Union the mission of simplifying access to professional training and facilitating the mobility of instructors and trainees, in particular young people. In addition to these articles, young people also benefit from the Union's policies in other areas, such as in the fields of education, training and health, or in relation to the rights and protection of children and young people.

While Europe fully respects the competence of the Member States for the content of education and the organisation of education systems, it aims to create an education system that is based on a shared vision, to ensure that by 2025 all European citizens have access to quality education and training in a genuine common European learning area.

In 2018, the Council adopted a resolution on the new EU Youth Strategy 2019-2027. The document suggests a focus on encouraging young people's participation in civic and democratic life. It also commits to connecting young people across Europe and the rest of the world to promote voluntary participation, educational mobility, solidarity and intercultural understanding. To achieve this, the Union should be able to support youth empowerment through quality, innovation and recognition of youth work.

Although Europe has been working towards this goal for years, it cannot be overlooked that the COVID-19 pandemic and the long period of school closures have highlighted the need to address new challenges and opportunities including that of digital education. Indeed, with the Digital Education Action Plan 2021-2027, the Union has decided to support the sustainable and effective adaptation of Member States' education and training systems to the digital age.

7.3 European HEI programmes

All this must be filtered from a European perspective, which is the shared value perspective of our wider community, carefully looking at the research framework

programs and the main EU directives on development. The references are the thematic "Macrotrends" (from environmental sustainability to demographic aging, digitization, energy transition, transmigration), the sustainable development goals of the UN 2030 Agenda (a global call to face global challenges and end poverty, protect the planet, combat inequality and improve everyone's life and prospects), the Fifth "Human-Centric" Industrial Revolution of total sustainability, the framework programs of European research such as Horizon Europe 2021-2027 which contains the indications of the European Innovation Council (EIC), the body of the European Commission responsible for supporting and disseminating disruptive innovation in Europe, on the "Innovation Ecosystems": a network of interactions through which information, knowledge and talent flow into sustainable systems of co-creation of value.

Each innovation ecosystem must be based on the "3Cs", which are the basis of the third mission: Competence (the new skills generated by the university capable of responding to social and economic challenges and building the future), "Connectedness" (a term coined on purpose by the European Community to express the ability to create networks) and Capital (which goes where there are skills and aggregations). The definition of Innovation Ecosystem is also contained in the Recovery and Resilience Plan - PNRR - Mission 4 Education and research: "Places of contamination of advanced teaching, research, public-private laboratories and third sector to strengthen the social and economic effects of research activities ". The third mission is, in essence, this.

European Solidarity Corps (Regulation (EU) 2021/888)

Other projects include the European Solidarity Corps, which offers young people the opportunity to volunteer or work in projects in their own country or abroad for the benefit of people and local communities throughout Europe. The European Solidarity Corps provides funding in the form of grants to organisations through calls for proposals. Other projects include the European Solidarity Corps, which offers young people the opportunity to volunteer or work in projects in their own country or abroad for the benefit of people and local communities throughout Europe. The European Solidarity Corps provides funding in the form of grants to organisations through calls for proposals. Organisations applying to participate in the initiative must share the

values promoted by the Union, in particular that of solidarity and respect for human dignity and human rights and believe in promoting a just and fair society in which pluralism, non-discrimination, tolerance, justice, solidarity and equality prevail.

If it is true, therefore, that the Union encourages the participation of non-profit organisations and bottom-up associations by giving them tools and incentives to carry out projects, it is also true that all this aid has no place in the university sphere, where access to the above-mentioned programmes (Erasmus + and European Solidarity Corps) seem to be referred to the individual European citizen and not to groups of individuals and student associations.

Erasmus for Young Entrepreneurs

Erasmus for Young Entrepreneurs is a cross-border exchange program that offers new entrepreneurs - or would-be entrepreneurs - the opportunity to learn the secrets of the trade from established professionals who manage small or medium-sized enterprises in another participating country. The exchange of experiences takes place within a period of work at the headquarters of the experienced entrepreneur, who helps the new entrepreneur to acquire the skills necessary to manage a small business. activities from new points of view, collaborate with foreign partners and find out about new markets.

In 2009, the European Union started funding the Erasmus for Young Entrepreneurs programme, which was an innovative response to the challenge of stimulating entrepreneurship and encouraging cross-border trade in Europe. It was also designed to boost youth mobility and create the synergies needed to create a sense of community. By staying with an experienced entrepreneur in another European Member State, would-be entrepreneurs gain skills and insights that will prove invaluable during the start-up phase of their business. At the same time, new businesspeople use their refreshed entrepreneurial mindset and knowledge of their home market and culture as a source of new ideas and as a sounding board for host entrepreneurs.

The aim of this European project is to facilitate business exchanges between new and experienced entrepreneurs. Exchanging experiences and knowledge about obstacles in

starting and developing young businesses. To create a network of contacts attentive to local needs by enriching experiences and backgrounds with international mindsets.

The programs just mentioned are an example of what Europe is doing but they do not explicitly concern academics and universities. Students can participate freely but the calls are open to all. On the other hand, it is different for the following European programmes:

Erasmus + (Regulation (EU) 2021/817)

Based on the cardinal principle of supporting quality education and training while fostering social cohesion, the European Union has always fostered youth participation by activating programmes aimed at supporting individuals and organisations by providing funding, tools, and resources. In particular, the instruments implemented by the EU are intended to foster study, training and further education activities for students, trainees, and teachers abroad, to promote stays abroad for young people and educators, to initiate partnerships for innovation in the field of education, training and youth, and to generate knowledge exchange and policy reform in order to support growth, employment, equity and integration in Europe.

One of the most important programmes is the Erasmus + that has been a widely shared success and has evolved just as widely. Since 2014, it has been called Erasmus+ and allows for many other activities in addition to the mobility of university students. It can be said to act as an academy of EU cooperation and is structured in a simplified way to allow the widest possible audience access to EU funding. Erasmus+ is divided into several key actions, depending on the activities allowed and the intended beneficiaries. The main sectors are schools, training, universities, youth, adults and sport. For each sector, there are calls for proposals concerning: mobility, exchanges of good practice, strategic partnerships (enabling the creation of innovative solutions to a shared problem), and traineeships for the training of young people. In addition to schools and universities, training agencies, non-profit associations and private companies, public and private research centres, and chambers of commerce can therefore participate in Erasmus+.

One example of how Europe aims to promote youth empowerment and active citizenship among young people is the **project Youth Social Changers**, Reshaping youth role in societies and fostering social cohesion through bottom-up solutions generation (Project No. 2021-2-IT03-KA210-YOU-000049530). This is a project funded by the Erasmus + program under the KA2 Small Scale Cooperation Partnership action that aims to promote both the empowerment of minors and the resilience of local communities as participants, after an initial training phase, will compete in a contest dedicated to developing initiatives dedicated to improving the welfare of the communities in which they live.

Conference on the Future of Europe

The Conference on the Future of Europe offers European citizens a unique opportunity to think about Europe's challenges and priorities. Anyone, regardless of their origin or their activity, can use this tool to reflect on the future of the European Union. The European Parliament, the Council and the European Commission have undertaken to listen to the voice of Europeans and to follow up, within their respective competences, on the recommendations received. Activities are targeted at European, national, regional and local authorities, as well as civil society and other organizations wishing to organize events and provide ideas.

Once again the European program does not foresee the specific participation of the university world but Italy with the delegation and the department of European policies has started a series of events in the universities to talk with the student associations. Specifically, the events took the name of "let's meet A ..." and saw the possibility of giving a voice to students on specific issues which, even if not expressly connected to the 2030 agenda, are very correlated:

- Climate Change and the environment
- Health
- A stronger economy, social justice, and jobs
- EU in the World
- Values and rights, rule of law

- Digital transformation
- European democracy
- Migration
- Education, culture, youth, and sport

Considerations

The starting point is that for which the public dimension of most European universities cannot be ignored, which makes responsibility towards the territories in which they operate an objective that can be applied to every activity. The ethical, cultural, social growth and civil development values that the university can determine are how much it creates value for the community. A university that does not feel the social responsibility of actively intervening as a protagonist in the growth policies of its country is a one-off university. For this reason, the third mission is an area that must be carefully structured like the other two, those of education and research, both as activities and as resources, even if many Italian universities do not yet even contemplate delegation (and much less structured personnel).), although in this case too it is an area subject to evaluation by national and international rankings.

In Berkeley, which was the forerunner of the concepts of third mission, they called it "multiversity" rather than "uni-versity", referring to the university community as one capable of breaking with the past and self-referentiality, and that rather than standardize academic traditions were able to enhance the differences in society and multiculturalism, declining itself on several meanings to respond to the different and complex cultural and economic needs. A conservative university is not open to the new, it does not generate but reiterates. Being "disruptive" even in own models can allow a new university to fulfil the task of assuming the responsibility of "saving society", serving it in the industrial, cultural and political sphere, to transform it into a community that creates economic as well as social value: new jobs, new technologies, through the decisive impulse to develop a human capital ready for challenges.

The university does not limit itself to "teaching" but creates a "vibrant" cultural and innovative "ferment", which can provide new ideas, new networks, new connections with the territory in relation to its vocations, and therefore to the related specific sectors on which to intervene as a priority to prepare young people, generate impact and transform vocations into internationally recognized excellence. The third mission contributes to the constitution of the Common Good, converting the production of Knowledge by universities into useful results for the improvement of the world in which we live. How do we want to make a difference for our world? It is a question that any public institution should ask itself, intervening directly on everything that contributes to finding solutions to the problems that afflict our society, in the field of migration and hunger, innovation and social justice, climate change, disability and inclusion, in the 'formation of conscious consciences' on what is happening around us so that we can contribute to it. From solidarity to the creation of solid foundations for sustainable development: not being an ivory tower, but a beacon of knowledge. Quoting Lewis and Maslin *The human planet*, if we consider that human capital, ideas and agency are the engine of transitions, I think Europe is doing a lot but it serves even more to encourage the transition and communication between the university world and society so that young scientists are the driving force of sustainable development.

Conclusions: contributions and future research

As already mentioned in the introduction and analysed in chapter 4.3, the processing of the results from the application of the DEA was completed by using the data gathered during the database creation. In fact, having only the data that each association produced was not necessary to have a complete view of the reality of things. For this reason, the results were cross-analysed between the efficiency coefficient resulting from the DEA analysis and the qualitative features often gathered from secondary data.

Therefore, from the DEA, the general analysis carried out, the searches in the scientific literature and the official websites of the universities, one thing is clear: We still need to do a lot to encourage bottom-up movements and give young students a voice. The goal is to have a university that communicates with the world of work to keep up to date with market demands. In the university, change and direction towards sustainable development must be born. To do this, in such hard years, the institutions and universities themselves must make the most of what they have, and their most precious asset is the students. In the United Nations 2030 agenda, a driver to be able to give direction to future activities that need a greater incentive to look outside.

The rationale that was used is easily attacked as are all the rankings used by the largest universities. In my opinion, the goal is to build a system of evaluation as broad as possible by involving the contribution of students in the measurement of the third university mission. Contribution that must take place not in passive form as participation in events organized by the university. But the contribution is evaluated as active in the very moment that the students organize themselves, propose and decide the topics on which to work together.

Awareness raising activity is very important, but we should also try to detach ourselves from the rhetoric and bring something concrete and real to society through even small actions.

future research

In general, two types of decision-making units ((DMU) were used to evaluate the Italian context. In the first group, the individual associations are analysed in relation to each individual activity. The activities analysed are evaluated based on specific criteria (see following paragraphs) each of which is assigned a value based on the analysis of the activity. This analysis is micro for the local DMUs of each single university. The second group is always at the micro economic level as each association contributes to the evaluation of the university itself. in terms of the impact on society through the SDGs.

The objective of future research, also in relation to the international study that aims at this final thesis, is to analyse the situation of HEIs at a macroeconomic level by measuring the efficiency of student activities at a national level, comparing it with the analysis of other realities. This research finds the limits in finding data since being a new research area and for which there are no large databases available, it is difficult to continue with the analysis.

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<http://alterpolis.it/>

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<https://socialinnovationteams.org/chi-siamo/> &
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Università di Roma TorVergata:

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Università degli studi di Brescia: <https://www.unibs.it/it/albo-associazioni-studentesche>

Università Ca' Foscari <https://www.unive.it/pag/43269/>

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Università di Genova: https://www.studenti.unige.it/attivita/ass_stud/

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Università di Padova: <https://www.unipd.it/associazioni>

Università di Trento: <https://www.unitn.it/servizi/222/associazioni-studentesche>

d DMU Sources³⁴

DMU1 <http://alterpolis.it/3660/transfemminismo-ed-inclusivita/>

DMU2 <http://alterpolis.it/3575/sostenibilita/>

DMU3 <http://alterpolis.it/3909/diritto-allo-studio/>

DMU4 <https://runpolito.it/attivita/>

DMU5 <https://runpolito.it/2022/04/07/evento-donne-e-scienza/>

DMU6 <https://runpolito.it/2021/12/22/il-futuro-del-nucleare/>

DMU7 <http://ww1.polienergy.org/>

DMU8 <https://www.linkedin.com/company/sitpolito/> &
https://www.linkedin.com/posts/sitpolito_cambiato-activity-6935657419234545664-uEqU?utm_source=linkedin_share&utm_medium=member_desktop_web

DMU9/10/11 <https://www.unimib.it/ateneo/bacheca/associazioni-studentesche>

DMU12 <https://www.best.eu.org/educationalInvolvement/welcome.jsp> &
<https://www.best.eu.org/aboutBEST/structure/lbgView.jsp?lbginfo=ro> &
<https://www.bestroma.org/category/news/eventi/altri-eventi/>

DMU13 <https://sapienzainmovimento.it/abecedario-della-sostenibilita/>

DMU14 <http://www.youarefuture.it/category/eventi/>

DMU15

<https://www.best.eu.org/aboutBEST/structure/lbgView.jsp?lbginfo=tv>

DMU16 <https://www.universityforsdgs.it/projects> (Unibosco) &
<https://www.youtube.com/watch?v=uJ8OLoh746I>

DMU17 <https://www.universityforsdgs.it/projects> (Biciok)

DMU18 <https://www.universityforsdgs.it/projects> (Salute Sprechi e Sostenibilità)

DMU19 <https://www.universityforsdgs.it/projects> (Un filo naturale)

DMU20 <https://www.universityforsdgs.it/projects> (Ingegneria e Sostenibilità - Strategia transizione climatica comune di Brescia)

DMU22 <https://www.universityforsdgs.it/projects> - Veniter for school

DMU23 <https://www.universityforsdgs.it/projects> - Eco tips social media initiative

³⁴ (Accessed between 01st Jun – 10th Jun 2022)

DMU24 <https://www.universityforsdgs.it/projects> - Seminar on PhD

DMU25 <https://www.universityforsdgs.it/projects> - SDGs Blog

DMU26 <https://www.universityforsdgs.it/projects> - University in action

DMU29 <https://www.universityforsdgs.it/projects> - Il singolo può fare la differenza?

DMU30 <https://www.universityforsdgs.it/projects> - Una medicina per la guerra

DMU31 <https://www.universityforsdgs.it/projects> - Clean Up Day

DMU32 <https://www.universityforsdgs.it/projects> - Swap Party

DMU33 <https://www.universityforsdgs.it/projects> - Festival delle Foreste

DMU42 <https://www.bestorino.com/home/projects.html> - Courses

DMU43 <https://www.bestorino.com/home/projects.html> - Alpine Meeting

DMU44 <https://www.bestorino.com/home/projects.html> - Competition

DMU45 <https://resilientgap.org/conferenze/>

DMU46 <https://resilientgap.org/spedizioni-pulitive/>

DMU47 <https://resilientgap.org/cccs-simulazione-delle-conferenze-onu-sul-clima/>

DMU48 <https://resilientgap.org/la-biblioteca-della-sostenibilita/>

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DMU57 <https://assocunidea.wixsite.com/unidea/progetti>

DMU58 <https://assocunidea.wixsite.com/unidea/progetti>

DMU59 <https://assocunidea.wixsite.com/unidea/eventi>

DMU60 <https://assocunidea.wixsite.com/unidea/eventi>

DMU66 <https://ausffirenze.wordpress.com/eventi-passati/>

DMU67 <https://worldspeed.org/events>

DMU72 <https://ausfpadova.altervista.org/events/>

DMU73 <https://www.retake.org/app-retake/>

DMU74 <https://www.parvishub.com/>

DMU75 <https://www.parvishub.com/>

Appendix Table and figures

Figure 4.1 Methodology

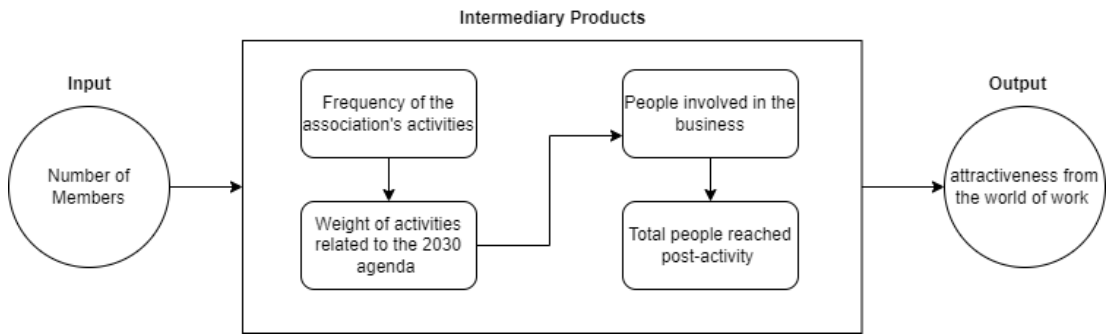


Figure 4.1 (Measuring et al., 1997) DEA

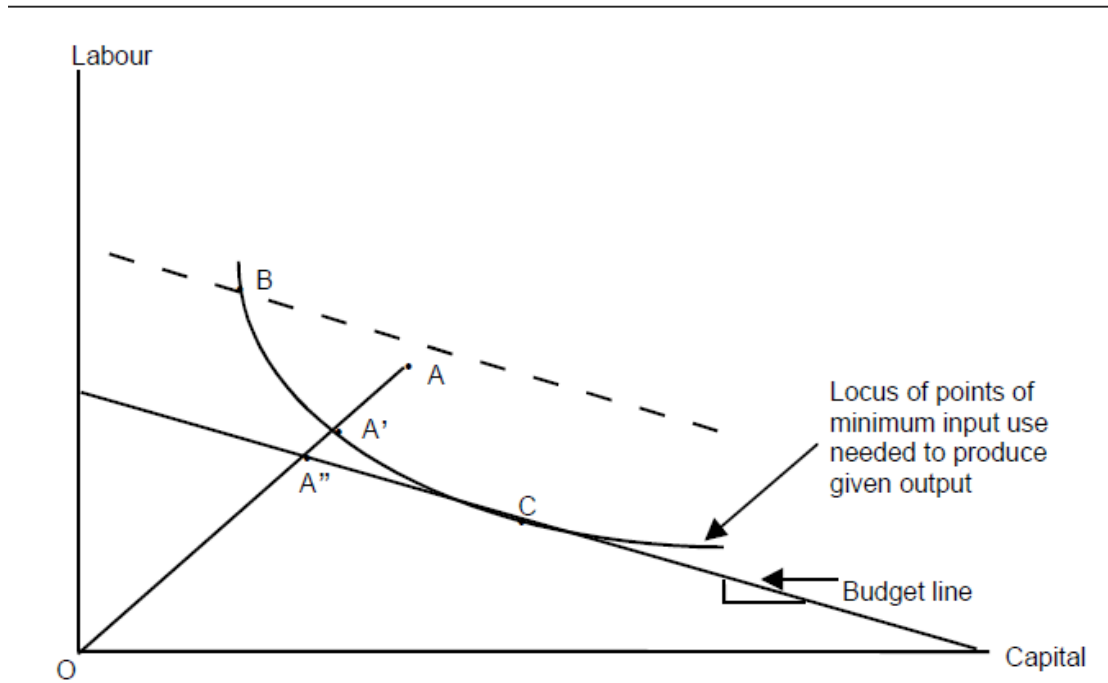


Figure 4.2 Relational network DEA structure (Deniz Koçak , Hasan Türe, 2019)

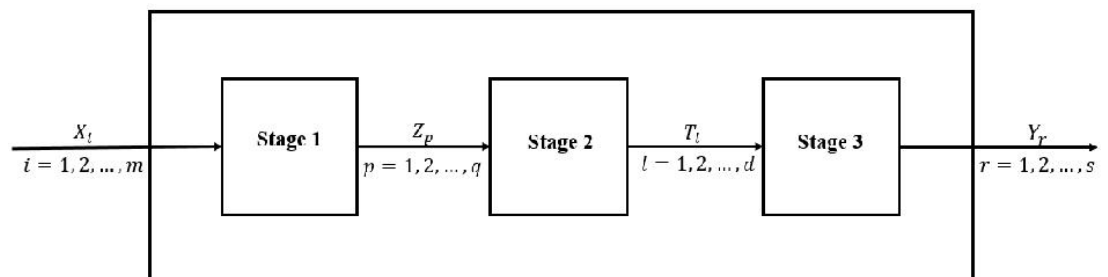


Figure 6.1 Data envelopment analysis in GAMS³⁵

Set

```
j      'number of DMUS' /DMU1*DMU76/  
i      'number of inputs' /X1/  
r      'number of outputs' /Y1/  
p      'number of intermediates1' /Z1, Z2/  
l      'number of intermediates2' /T1, T2/;
```

TABLE X(j,I)"input matrix"

	X1
DMU1	50
DMU2	50
DMU3	50
DMU4	50
DMU5	50
DMU6	50
DMU7	50
DMU8	50
DMU9	50
DMU10	75
DMU11	25
DMU12	50
DMU13	50
DMU14	25
DMU15	50
DMU16	50
DMU17	50
DMU18	50
DMU19	50
DMU20	50
DMU21	100
DMU22	50
DMU23	50
DMU24	50
DMU25	50
DMU26	50
DMU27	100
DMU28	50
DMU29	50
DMU30	50
DMU31	50
DMU32	50
DMU33	50
DMU34	50

³⁵ https://www.gams.com/latest/gamslib_ml/libhtml/gamslib_dea.html

DMU35	50
DMU36	50
DMU37	50
DMU38	75
DMU39	50
DMU40	50
DMU41	25
DMU42	50
DMU43	50
DMU44	50
DMU45	50
DMU46	50
DMU47	50
DMU48	50
DMU49	50
DMU50	50
DMU51	25
DMU52	25
DMU53	25
DMU54	25
DMU55	100
DMU56	100
DMU57	50
DMU58	50
DMU59	50
DMU60	50
DMU61	50
DMU62	75
DMU63	100
DMU64	50
DMU65	25
DMU66	25
DMU67	50
DMU68	50
DMU69	50
DMU70	50
DMU71	100
DMU72	25
DMU73	50
DMU74	25
DMU75	25
DMU76	25;

TABLE Y(j,r) "output matrix"
Y1

DMU1	70
DMU2	50
DMU3	90
DMU4	50
DMU5	50
DMU6	50
DMU7	90
DMU8	100
DMU9	80
DMU10	60
DMU11	40
DMU12	80
DMU13	80
DMU14	70
DMU15	100
DMU16	70
DMU17	70
DMU18	80
DMU19	90
DMU20	100
DMU21	80
DMU22	100
DMU23	70
DMU24	80
DMU25	70
DMU26	80
DMU27	80
DMU28	70
DMU29	70
DMU30	60
DMU31	70
DMU32	70
DMU33	80
DMU34	70
DMU35	60
DMU36	70
DMU37	60
DMU38	80
DMU39	80
DMU40	60
DMU41	70
DMU42	80
DMU43	70
DMU44	100
DMU45	80
DMU46	80
DMU47	80

DMU48	80
DMU49	80
DMU50	70
DMU51	70
DMU52	70
DMU53	100
DMU54	80
DMU55	70
DMU56	70
DMU57	60
DMU58	60
DMU59	60
DMU60	60
DMU61	70
DMU62	100
DMU63	80
DMU64	70
DMU65	90
DMU66	70
DMU67	90
DMU68	90
DMU69	60
DMU70	70
DMU71	80
DMU72	70
DMU73	70
DMU74	100
DMU75	100
DMU76	80;

TABLE Z(j, p) "intermediate1 matrix"

	Z1	Z2
DMU1	100	80
DMU2	60	60
DMU3	100	90
DMU4	20	70
DMU5	80	90
DMU6	40	70
DMU7	100	90
DMU8	60	90
DMU9	100	90
DMU10	100	80
DMU11	40	90
DMU12	100	90
DMU13	100	70
DMU14	40	70

DMU15	100	80
DMU16	100	90
DMU17	100	90
DMU18	100	100
DMU19	100	90
DMU20	100	90
DMU21	100	90
DMU22	100	100
DMU23	100	90
DMU24	100	90
DMU25	100	90
DMU26	100	90
DMU27	100	90
DMU28	60	100
DMU29	100	90
DMU30	40	90
DMU31	80	100
DMU32	40	100
DMU33	100	100
DMU34	80	90
DMU35	80	80
DMU36	100	100
DMU37	100	100
DMU38	20	100
DMU39	80	100
DMU40	80	100
DMU41	60	80
DMU42	100	80
DMU43	100	80
DMU44	100	80
DMU45	100	100
DMU46	100	100
DMU47	100	100
DMU48	100	100
DMU49	100	100
DMU50	60	100
DMU51	20	100
DMU52	40	100
DMU53	40	100
DMU54	40	100
DMU55	20	90
DMU56	80	90
DMU57	80	90
DMU58	80	60
DMU59	80	50
DMU60	80	50
DMU61	80	100

```

DMU62 100 100
DMU63 100 90
DMU64 100 90
DMU65 20 100
DMU66 40 100
DMU67 60 100
DMU68 60 80
DMU69 40 80
DMU70 80 100
DMU71 100 90
DMU72 40 100
DMU73 80 100
DMU74 40 100
DMU75 40 100
DMU76 60 80;

```

TABLE T(j, l) "intermediate2 matrix"

	T1	T2
DMU1	100	80
DMU2	60	60
DMU3	100	90
DMU4	20	70
DMU5	80	90
DMU6	40	70
DMU7	100	90
DMU8	60	90
DMU9	100	90
DMU10	100	80
DMU11	40	90
DMU12	100	90
DMU13	100	70
DMU14	40	70
DMU15	100	80
DMU16	100	90
DMU17	100	90
DMU18	100	100
DMU19	100	90
DMU20	100	90
DMU21	100	90
DMU22	100	100
DMU23	100	90
DMU24	100	90
DMU25	100	90
DMU26	100	90
DMU27	100	90
DMU28	60	100

DMU29	100	90
DMU30	40	90
DMU31	80	100
DMU32	40	100
DMU33	100	100
DMU34	80	90
DMU35	80	80
DMU36	100	100
DMU37	100	100
DMU38	20	100
DMU39	80	100
DMU40	80	100
DMU41	60	80
DMU42	100	80
DMU43	100	80
DMU44	100	80
DMU45	100	100
DMU46	100	100
DMU47	100	100
DMU48	100	100
DMU49	100	100
DMU50	60	100
DMU51	20	100
DMU52	40	100
DMU53	40	100
DMU54	40	100
DMU55	20	90
DMU56	80	90
DMU57	80	90
DMU58	80	60
DMU59	80	50
DMU60	80	50
DMU61	80	100
DMU62	100	100
DMU63	100	90
DMU64	100	90
DMU65	20	100
DMU66	40	100
DMU67	60	100
DMU68	60	80
DMU69	40	80
DMU70	80	100
DMU71	100	90
DMU72	40	100
DMU73	80	100
DMU74	40	100
DMU75	40	100

DMU76 60 80;

Parameter

Xo(i) 'input vector of DMUo'
Yo(r) 'output vector of DMUo'
Zo(p) 'intermediate1 vector of DMUo'
To(l) 'intermediate2 vector of DMUo';

variables

thetaall "efficiency score all"
v(i) "input weights"
u(r) "output weights"
w(p) "intermediate1 weights"
q(l) "intermediate2 weights";

free variables

thetaall;

positive variables

v(i)
u(r)
w(p)
q(l);

Equation

EQA
EQB
EQC
EQD
EQE
EQF
EQG
OBJ;

EQA.. SUM (i, v(i) * Xo(i)) =E= 1;
EQB (j).. SUM (r, u(r) * Y(j,r)) - SUM (i, v(i) * X(j, i)) =L= 0;
EQC (j).. SUM (l, q(l) * T(j, l))- SUM (i, v(i) * X(j, i)) =L= 0;
EQD (j).. SUM (p, w(p) * Z(j, p))- SUM (i, v(i) * X(j, i)) =L= 0;
EQE (j).. SUM (r, u(r) * Y(j, r))- SUM (p, w(p) * Z(j, p)) =L= 0;
EQF (j).. SUM (r, u(r) * Y(j, r))- SUM (l, q(l) * T(j, l)) =L= 0;
EQG (j).. SUM (l, q(l) * T(j, l))- SUM (p, w(p) * Z(j, p)) =L= 0;
OBJ.. thetaall =E= SUM (r, u(r) * Yo(r));

*-----

* *Koffy overall efficiency score*

*-----

```

model overall /
EQA
EQB
EQC
EQD
EQE
EQF
EQG
OBJ
/;

ALIAS (j,o);

LOOP (o,

    LOOP (i, Xo(i) = X(o, i));
    LOOP (r, Yo(r) = Y(o, r));
    LOOP (l, To(l) = T(o, l));
    LOOP (p, Zo(p) = Z(o, p));

    SOLVE overall USING LP maximizing thetaall;
);

```

Table 4.1 input, output, intermediary products

		X1	Y1	Z1	Z2	T1	T2
DMU	1	11-50	7	10	8	100+	+10000
DMU	2	11-50	5	6	6	11-50	+10000
DMU	3	11-50	9	10	9	11-50	+10000
DMU	4	11-50	5	2	7	11-50	101-1000
DMU	5	11-50	5	8	9	+100	1001-10000
DMU	6	11-50	5	4	7	11-50	+10000
DMU	7	11-50	9	10	9	11-50	1001-10000
DMU	8	11-50	10	6	9	11-50	+10000
DMU	9	11-50	8	10	9	51-100	101-1000
DMU	10	51-100	6	10	8	51-100	+10000
DMU	11	1-10	4	4	9	11-50	1001-10000
DMU	12	11-50	8	10	9	11-50	1001-10000
DMU	13	11-50	8	10	7	100+	+10000

DMU	14	1-10	7	4	7	100+	101-1000
DMU	15	11-50	10	10	8	100+	101-1000
DMU	16	11-50	7	10	9	100+	+10000
DMU	17	11-50	7	10	9	11-50	+10000
DMU	18	11-50	8	10	10	100+	101-1000
DMU	19	11-50	9	10	9	100+	101-1000
DMU	20	11-50	10	10	9	11-50	101-1000
DMU	21	+100	8	10	9	+100	+10000
DMU	22	11-50	10	10	10	100+	+10000
DMU	23	11-50	7	10	9	11-50	+10000
DMU	24	11-50	8	10	9	100+	101-1000
DMU	25	11-50	7	10	9	100+	101-1000
DMU	26	11-50	8	10	9	100+	101-1000
DMU	27	+100	8	10	9	+100	+10000
DMU	28	11-50	7	6	10	+100	101-1000
DMU	29	11-50	7	10	9	51-100	1001-10000
DMU	30	11-50	6	4	9	11-50	1001-10000
DMU	31	11-50	7	8	10	100+	101-1000
DMU	32	11-50	7	4	10	100+	101-1000
DMU	33	11-50	8	10	10	100+	+10000
DMU	34	11-50	7	8	9	100+	101-1000
DMU	35	11-50	6	8	8	100+	101-1000
DMU	36	11-50	7	10	10	100+	101-1000
DMU	37	11-50	6	10	10	100+	101-1000
DMU	38	51-100	8	2	10	100+	1001-10000
DMU	39	11-50	8	8	10	100+	101-1000
DMU	40	11-50	6	8	10	100+	101-1000
DMU	41	1-10	7	6	8	11-50	101-1000
DMU	42	11-50	8	10	8	100+	101-1000
DMU	43	11-50	7	10	8	100+	101-1000
DMU	44	11-50	10	10	8	100+	101-1000
DMU	45	11-50	8	10	10	100+	1001-10000
DMU	46	11-50	8	10	10	100+	1001-10000
DMU	47	11-50	8	10	10	100+	1001-10000
DMU	48	11-50	8	10	10	100+	1001-10000
DMU	49	11-50	8	10	10	100+	1001-10000

DMU	50	11-50	7	6	10	100+	1001-10000
DMU	51	1-10	7	2	10	11-50	101-1000
DMU	52	1-10	7	4	10	11-50	101-1000
DMU	53	1-10	10	4	10	11-50	101-1000
DMU	54	1-10	8	4	10	11-50	101-1000
DMU	55	+100	7	2	9	+100	101-1000
DMU	56	+100	7	8	9	+100	101-1000
DMU	57	11-50	6	8	9	+100	101-1000
DMU	58	11-50	6	8	6	+100	101-1000
DMU	59	11-50	6	8	5	+100	101-1000
DMU	60	11-50	6	8	5	+100	101-1000
DMU	61	11-50	7	8	10	+100	101-1000
DMU	62	51-100	10	10	10	+100	101-1000
DMU	63	+100	8	10	9	+100	+10000
DMU	64	11-50	7	10	9	+100	101-1000
DMU	65	1-10	9	2	10	+100	101-1000
DMU	66	1-10	7	4	10	+100	0-100
DMU	67	11-50	9	6	10	+100	101-1000
DMU	68	11-50	9	6	8	+100	101-1000
DMU	69	11-50	6	4	8	51-100	101-1000
DMU	70	11-50	7	8	10	51-100	1001-10000
DMU	71	+100	8	10	9	+100	+10000
DMU	72	1-10	7	4	10	+100	0-100
DMU	73	11-50	7	8	10	+100	1001-10000
DMU	74	1-10	10	4	10	11-50	0-100
DMU	75	1-10	10	4	10	11-50	0-100
DMU	76	1-10	8	6	8	11-50	101-1000

Table 6.1 input, output, intermediary products (percentage data)

		X1	Y1	Z1	Z2	T1	T2
DMU	1	50,00	70,00	100,00	80,00	100,00	80,00
DMU	2	50,00	50,00	60,00	60,00	60,00	60,00
DMU	3	50,00	90,00	100,00	90,00	100,00	90,00
DMU	4	50,00	50,00	20,00	70,00	20,00	70,00
DMU	5	50,00	50,00	80,00	90,00	80,00	90,00
DMU	6	50,00	50,00	40,00	70,00	40,00	70,00
DMU	7	50,00	90,00	100,00	90,00	100,00	90,00
DMU	8	50,00	100,00	60,00	90,00	60,00	90,00
DMU	9	50,00	80,00	100,00	90,00	100,00	90,00

DMU	10	75,00	60,00	100,00	80,00	100,00	80,00
DMU	11	25,00	40,00	40,00	90,00	40,00	90,00
DMU	12	50,00	80,00	100,00	90,00	100,00	90,00
DMU	13	50,00	80,00	100,00	70,00	100,00	70,00
DMU	14	25,00	70,00	40,00	70,00	40,00	70,00
DMU	15	50,00	100,00	100,00	80,00	100,00	80,00
DMU	16	50,00	70,00	100,00	90,00	100,00	90,00
DMU	17	50,00	70,00	100,00	90,00	100,00	90,00
DMU	18	50,00	80,00	100,00	100,00	100,00	100,00
DMU	19	50,00	90,00	100,00	90,00	100,00	90,00
DMU	20	50,00	100,00	100,00	90,00	100,00	90,00
DMU	21	100,00	80,00	100,00	90,00	100,00	90,00
DMU	22	50,00	100,00	100,00	100,00	100,00	100,00
DMU	23	50,00	70,00	100,00	90,00	100,00	90,00
DMU	24	50,00	80,00	100,00	90,00	100,00	90,00
DMU	25	50,00	70,00	100,00	90,00	100,00	90,00
DMU	26	50,00	80,00	100,00	90,00	100,00	90,00
DMU	27	100,00	80,00	100,00	90,00	100,00	90,00
DMU	28	50,00	70,00	60,00	100,00	60,00	100,00
DMU	29	50,00	70,00	100,00	90,00	100,00	90,00
DMU	30	50,00	60,00	40,00	90,00	40,00	90,00
DMU	31	50,00	70,00	80,00	100,00	80,00	100,00
DMU	32	50,00	70,00	40,00	100,00	40,00	100,00
DMU	33	50,00	80,00	100,00	100,00	100,00	100,00
DMU	34	50,00	70,00	80,00	90,00	80,00	90,00
DMU	35	50,00	60,00	80,00	80,00	80,00	80,00
DMU	36	50,00	70,00	100,00	100,00	100,00	100,00
DMU	37	50,00	60,00	100,00	100,00	100,00	100,00
DMU	38	75,00	80,00	20,00	100,00	20,00	100,00
DMU	39	50,00	80,00	80,00	100,00	80,00	100,00
DMU	40	50,00	60,00	80,00	100,00	80,00	100,00
DMU	41	25,00	70,00	60,00	80,00	60,00	80,00
DMU	42	50,00	80,00	100,00	80,00	100,00	80,00
DMU	43	50,00	70,00	100,00	80,00	100,00	80,00
DMU	44	50,00	100,00	100,00	80,00	100,00	80,00
DMU	45	50,00	80,00	100,00	100,00	100,00	100,00
DMU	46	50,00	80,00	100,00	100,00	100,00	100,00
DMU	47	50,00	80,00	100,00	100,00	100,00	100,00
DMU	48	50,00	80,00	100,00	100,00	100,00	100,00
DMU	49	50,00	80,00	100,00	100,00	100,00	100,00
DMU	50	50,00	70,00	60,00	100,00	60,00	100,00
DMU	51	25,00	70,00	20,00	100,00	20,00	100,00
DMU	52	25,00	70,00	40,00	100,00	40,00	100,00

DMU	53	25,00	100,00	40,00	100,00	40,00	100,00
DMU	54	25,00	80,00	40,00	100,00	40,00	100,00
DMU	55	100,00	70,00	20,00	90,00	20,00	90,00
DMU	56	100,00	70,00	80,00	90,00	80,00	90,00
DMU	57	50,00	60,00	80,00	90,00	80,00	90,00
DMU	58	50,00	60,00	80,00	60,00	80,00	60,00
DMU	59	50,00	60,00	80,00	50,00	80,00	50,00
DMU	60	50,00	60,00	80,00	50,00	80,00	50,00
DMU	61	50,00	70,00	80,00	100,00	80,00	100,00
DMU	62	75,00	100,00	100,00	100,00	100,00	100,00
DMU	63	100,00	80,00	100,00	90,00	100,00	90,00
DMU	64	50,00	70,00	100,00	90,00	100,00	90,00
DMU	65	25,00	90,00	20,00	100,00	20,00	100,00
DMU	66	25,00	70,00	40,00	100,00	40,00	100,00
DMU	67	50,00	90,00	60,00	100,00	60,00	100,00
DMU	68	50,00	90,00	60,00	80,00	60,00	80,00
DMU	69	50,00	60,00	40,00	80,00	40,00	80,00
DMU	70	50,00	70,00	80,00	100,00	80,00	100,00
DMU	71	100,00	80,00	100,00	90,00	100,00	90,00
DMU	72	25,00	70,00	40,00	100,00	40,00	100,00
DMU	73	50,00	70,00	80,00	100,00	80,00	100,00
DMU	74	25,00	100,00	40,00	100,00	40,00	100,00
DMU	75	25,00	100,00	40,00	100,00	40,00	100,00
DMU	76	25,00	80,00	60,00	80,00	60,00	80,00

Table 6.2 Efficiency score

DMU	Efficiency scores per activity	DMU	Efficiency scores per activity	DMU	Efficiency scores per activity	DMU	Efficiency scores per activity
1	0,3500	20	0,5000	39	0,4000	58	0,3000
2	0,2500	21	0,2000	40	0,3000	59	0,3000
3	0,4500	22	0,5000	41	0,7000	60	0,3000
4	0,2500	23	0,3500	42	0,4000	61	0,3500
5	0,2500	24	0,4000	43	0,3500	62	0,3333
6	0,2500	25	0,3500	44	0,5000	63	0,2000
7	0,4500	26	0,4000	45	0,4000	64	0,3500
8	0,5000	27	0,2000	46	0,4000	65	0,9000
9	0,4000	28	0,3500	47	0,4000	66	0,7000
10	0,2000	29	0,3500	48	0,4000	67	0,4500
11	0,4000	30	0,3000	49	0,4000	68	0,4500
12	0,4000	31	0,3500	50	0,3500	69	0,3000
13	0,4000	32	0,3500	51	0,7000	70	0,3500
14	0,7000	33	0,4000	52	0,7000	71	0,2000
15	0,5000	34	0,3500	53	1,0000	72	0,7000
16	0,3500	35	0,3000	54	0,8000	73	0,3500
17	0,3500	36	0,3500	55	0,1750	74	1,0000
18	0,4000	37	0,3000	56	0,1750	75	1,0000
19	0,4500	38	0,2667	57	0,3000	76	0,8000

Table 6.3 Association efficiency score

Association name	average Efficiency Scores per association	Association name	average Efficiency Scores per association
Alter.Polis	0,35	Papango	0,30
RUN Polito – APS – ETS	0,25	Rethinking Economics	0,70
PoliEnergy	0,45	BEST	0,42
Social Innovation Teams Polito	0,50	Resilient G A P	0,40
ASB	0,40	Poliedro	0,35
Studenti Indipendenti Bicocca	0,20	Associazione "EnvironMental"	0,80
Bicocca Rainbow	0,40	GEOBAS	0,18
BEST	0,40	Unidea	0,30
Sapienza in Movimento	0,40	Unica LGBT	0,35
You are future	0,70	Phoenix Factory	0,33
BEST	0,50	AIESEC	0,20
Unibs for SDGs	0,41	Amnesty International Unifi	0,35
AIESEC	0,20	ASAT - Associazione Scienze Agrarie e Ambientali Tropicali per la cooperazione e lo sviluppo	0,30
Ca' Foscari for SDGs	0,40	AUSF	0,70
AIESEC	0,20	Speed - Student Platform for Engineering Education Development	0,45
Venice Diplomatic society	0,35	UNIGECO - Unige Ecosostenibile	0,45
Univr for SDGs	0,35	QueerStatale Milano	0,30
SUV - Studenti Universitari Veronesi	0,35	RStatale a Impatto Zero	0,35
Studenti per l'Università	0,30	AIESEC	0,20
Unibg for SDGs	0,35	AUSF - forestali	0,70
Students for Equality	0,30	retake	0,35
k!kero	0,27	Parvis	1,00
Politiche	0,40	ELSA	0,80

Table 6.4 University efficiency score

university name	average Efficiency Scores per university	university name	average Efficiency Scores per university
Politecnico di Torino	0,3933	Politecnico di Torino	0,4167
Università degli Studi di Milano-Bicocca	0,3333	Università degli Studi dell'Insubria	0,8000
Università degli Studi di Roma "La Sapienza"	0,4000	Università degli Studi della Basilicata	0,2375
Università degli Studi di Roma "Tor Vergata"	0,6000	Università degli Studi di Cagliari	0,3500
Università degli Studi di Brescia	0,3050	Università degli Studi di Ferrara	0,3333
Università Ca' Foscari Venezia	0,3167	Università degli Studi di Firenze	0,4000
Università degli Studi di Verona	0,3333	Università degli Studi di Genova	0,4500
Università degli Studi di Bergamo	0,3250	Università degli Studi di Milano	0,3250
Libera Università di Bolzano	0,2667	Università degli Studi di Padova	0,4167
Libera Università Internazionale degli Studi Sociali "Guido Carli" - LUISS	0,4667	Università degli Studi di Trento	0,9000