AGÊNCIA NACIONAL DE INOVAÇÃO

ANI Observatory

Analysis of the technology transfer activity of TTOs in 2022

Final report

June 2023

Cofinanciado por:

COMPETE 2020

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UNIÃO EUROPEIA
Fundo Europeu de Desenvolvimento Regional

Technical specifications

Title
Análise da Atividade de trasnferenciae tecnológica dos TTOs ano 2022

Promoter / Client
Agência Nacional de Inovação

Author
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Realisation
June 2023

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1/ Introduction

1/ Introduction

1.1. Scope of the project

The National Innovation Agency ("ANI"), with the aim of strengthening knowledge transfer, has requested this report to analyse the technology transfer activity of TTOs.

By means of the results obtained from a study carried out through information obtained from the analysis of indicators and surveys, it is possible to obtain more details about where the main transfer activity of the universities is.

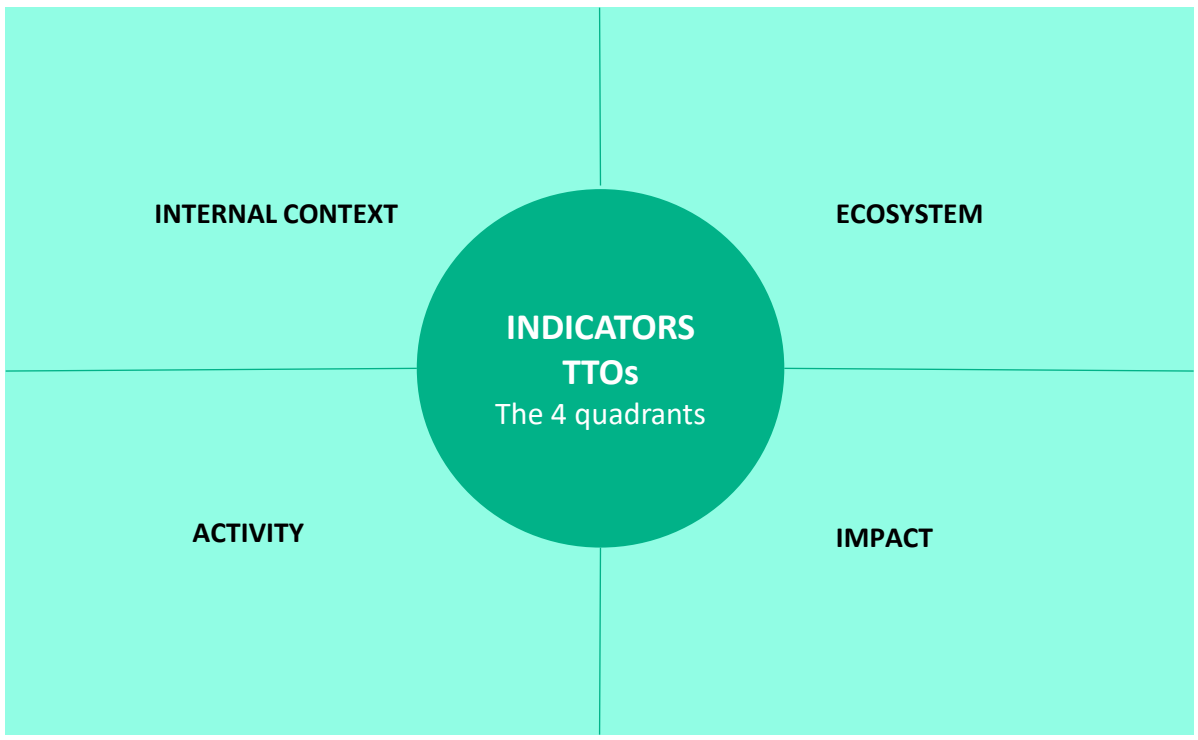
The aim of this report is to analyse and present the aforementioned results for the financial year 2022. It seeks to provide detailed information on the services offered, structures and equipment, financial and technical-scientific indicators, as well as the creation of spin-offs and start-ups. In addition, the report includes conclusions and recommendations to improve the transfer and valorisation of scientific knowledge in the national innovation system.

1.2. Working method

The objective is to help improve technology transfer between universities and the productive sector, the working method began with the analysis of the most relevant indicators for measuring technology transfer. This information allowed the elaboration of a Manual with indicators, which is attached as Annex 1.

For the definition of these indicators, the European document "Knowledge Transfer Metrics" was used as a basis, together with the "Manual of Innovation Indicators of the IMTEMAS health platform". This has made it possible to generate a series of very relevant indicators, both quantitative and qualitative, of great interest, which will be presented throughout this document.

An annual questionnaire was then carried out for the transfer offices in order to carry out an analysis of the results obtained from the respondents. This method has made it possible to identify the strengths and weaknesses of the transfer offices, as well as good practices and areas for improvement. In addition, the information analysed is intended to foster collaboration and exchange of experiences between transfer offices and other actors in the innovation ecosystem.



The indicators focus on four quadrants, which have allowed us to define the information to be analysed by sections of interest to understand the state of technology transfer in TTOs.

1.3. Data analysed

The results obtained are based on the analysis of the information gathered through the surveys and are structured in the following aspects related to technology transfer in TTOs:

1. Internal context: This refers to information related to the TTO, its structure and operation, location, years of activity and its possible transfer strategy. It also analyses the human resources employed and their level of training. It also includes information related to financing, such as expenses derived from innovation projects, annual budget, volume of expenses and volume of income.

2. Ecosystem: Consists of information about the researchers, the TTO's participation in conferences or activities promoting innovation, as well as the collaboration agreements signed and its relationship with other organisations.

3. Activity: Intellectual Property rights over the technologies developed in the TTO are analysed, specifically patents or utility models, trademarks and possible designs. Also the agreements signed with national and international entities for the exploitation of the technology and the different projects by sector of activity, distinguishing those in the initial phase from those already under development.

4. Impact: This section provides information on the creation of technology-based companies and their revenues, showing whether start-ups or spin-offs predominate.

1.4. Surveys conducted

Contact details of eighteen (18) TTOs have been obtained for the sending of the questionnaire.

Specifically, from the following universities:

- Universidade Trás-os-Montes e Alto Douro (UTAD)
- University of Minho
- Instituto Politecnico da Guarda
- Polytechnic Institute of Viseu
- University of Aveiro
- Universidade Católica Portuguesa in Porto
- University of Coimbra
- University of Évora
- University of Lisbon
- University of Algarve
- Beja Polytechnic Institute
- Universidade Nova de Lisboa
- University of Beira
- Polytechnic Institute of Coimbra
- Instituto Politénico de Lisboa
- University of Madeira
- Technician Lisbon
- University of Porto

The questionnaires provided to all of them allow information to be obtained on the needs, demands and expectations of the agents involved in the innovation process, on an annual basis.

1.5. Responses obtained

The sample of entities used for the analysis in this report consists of responses from the following TTOs:

- University of Madeira
- NOVA University of Lisbon
- Polytechnic Institute of Coimbra

As this was a non-mandatory survey process, with a large number of questions, some of which were difficult to answer, especially those related to funding or annual results for 2022, it was not possible to obtain 100% responses on all indicators. Nor has the active participation of all TTOs been achieved. Nevertheless, the information received allows, on the one hand, to obtain conclusions on different aspects of technology transfer in the TTOs; and on the other hand, to raise awareness among the TTOs about the information that is important to know and that has started to be included in indicators at European level.

2/ Survey results

2/ Survey results

2.1. Internal context of TTOs

This section analyses the following requested information:

2.1.1. General information:

- Type of transfer office
- Year of incorporation
- Number of infrastructures/laboratories associated with the OTT ecosystem
- Year of Constitution
- Existence of a TTO strategic plan

2.1.2. Human resources:

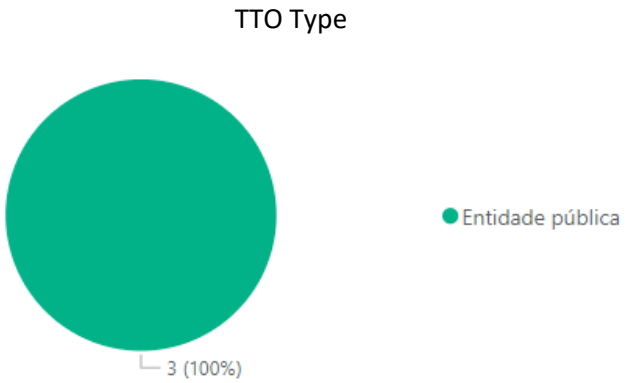
- Number of persons
- HR structure by contractual status
- Existence of a TTO strategic plan
- HR structure by skill level
- HR structure by scientific domain
- Staff training and professional development opportunities

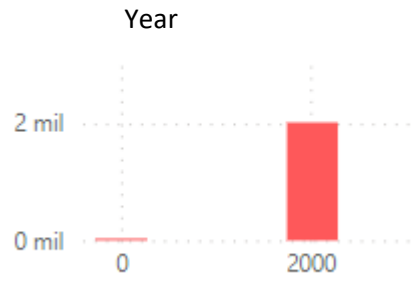
2.1.3. Financing

- Sources of funding (volume)
- Activity by functional area
- Annual budget
- Research expenditure (annual)
- Volume of activity per domain ENEI 2030
- Volume of activity by NUTS II target region

Internal context of TTOs

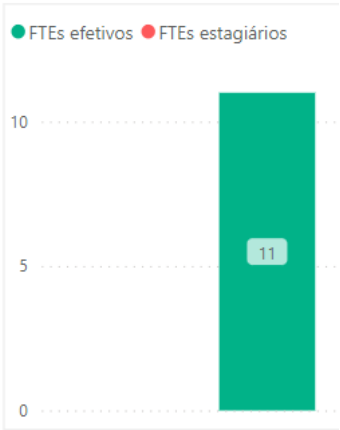
General information

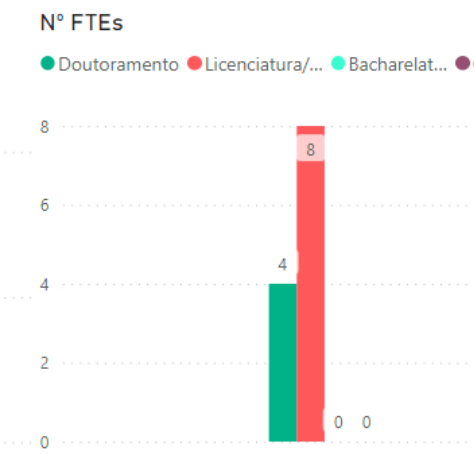


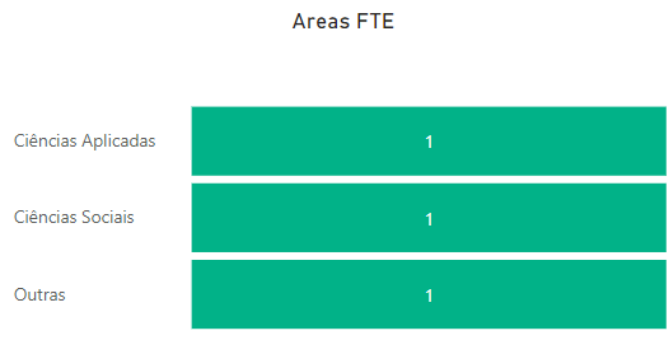


The indicators show that all the TTOs analysed are public entities of the general state administration and have been set up recently, which shows that technology transfer is a public interest that has gained focus in recent years.

Human resources

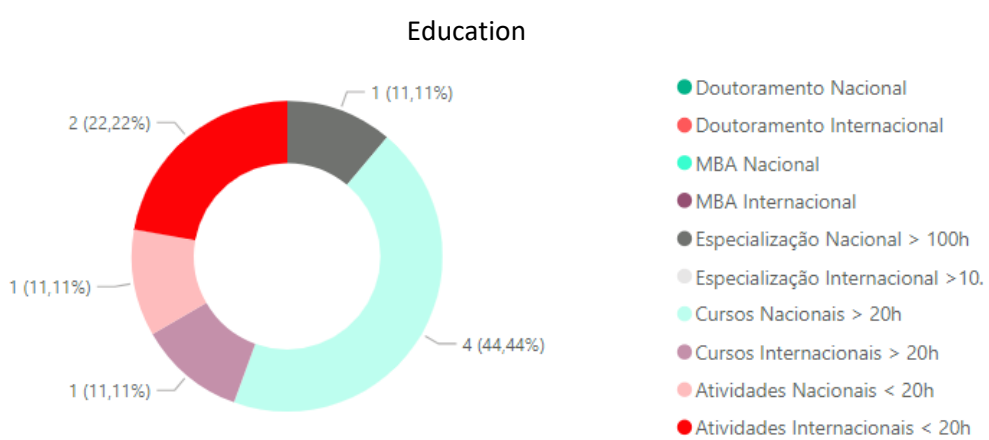






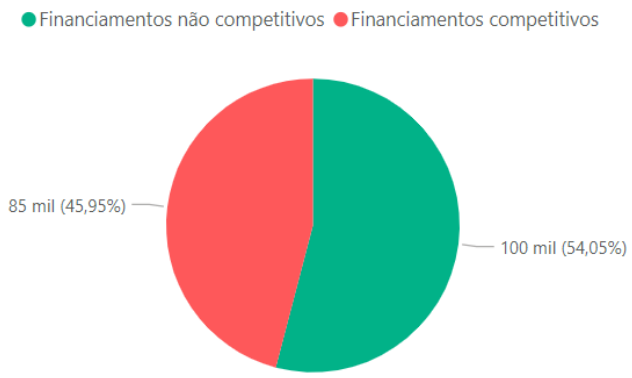
The TTOs analysed do not have interns to support innovation projects. The level of education of the staff shows that most of them are graduates and one third have a doctorate, which indicates that they have highly qualified staff. There are no employees with compulsory education, so we assume that this level of education is a prerequisite for participation in projects.

Staff specialisation is mainly in the areas of applied sciences, social sciences, although due to the low number of answers on training it is not possible to know if there are employees from other areas such as legal sciences. However, applied sciences tend to be the area that currently requires the most innovation.

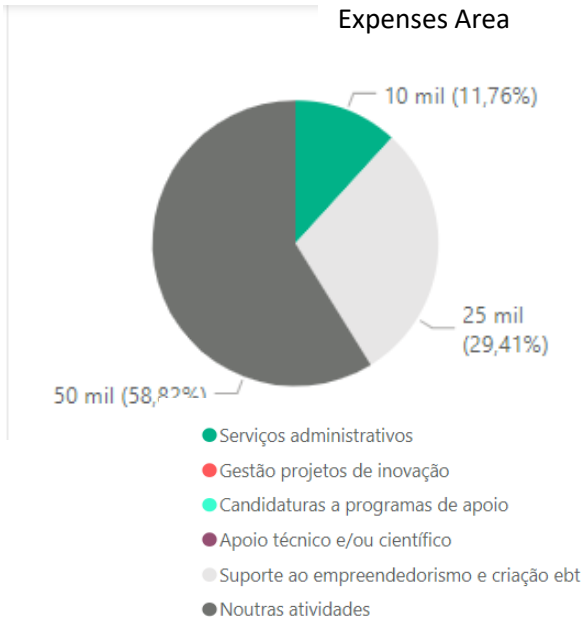


Internal context of TTOs

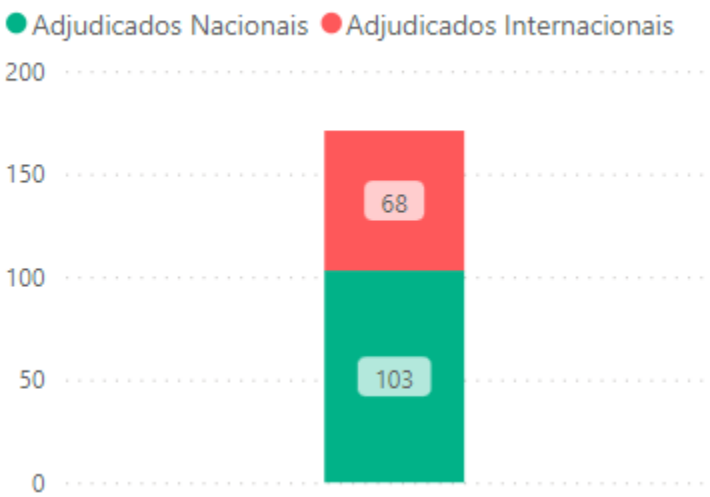
Funding

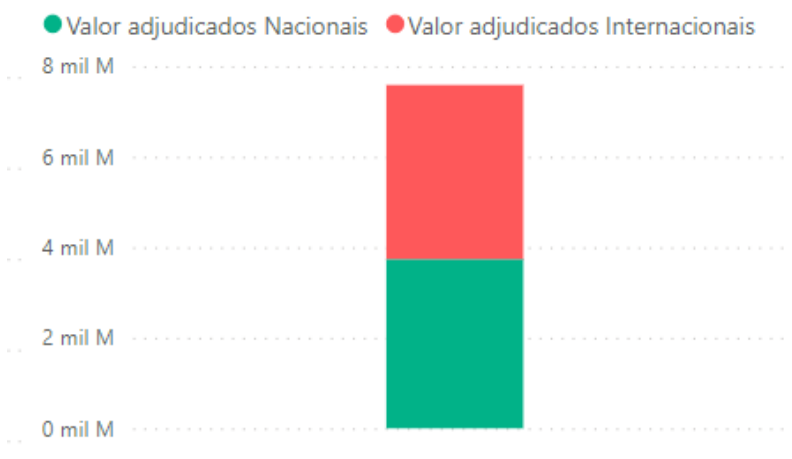


Expenses Area



Year Projects





Activity volumen per region

In 2022, funding was non-competitive, although there is a balance of almost 50% difference between those that were competitive. Expenditure was mainly allocated to the TTO's own activities, although almost 30% is allocated to technology transfer, entrepreneurship and spin-off creation. The rest of the expenses are administrative, with no percentage devoted to innovation project management or researcher support.

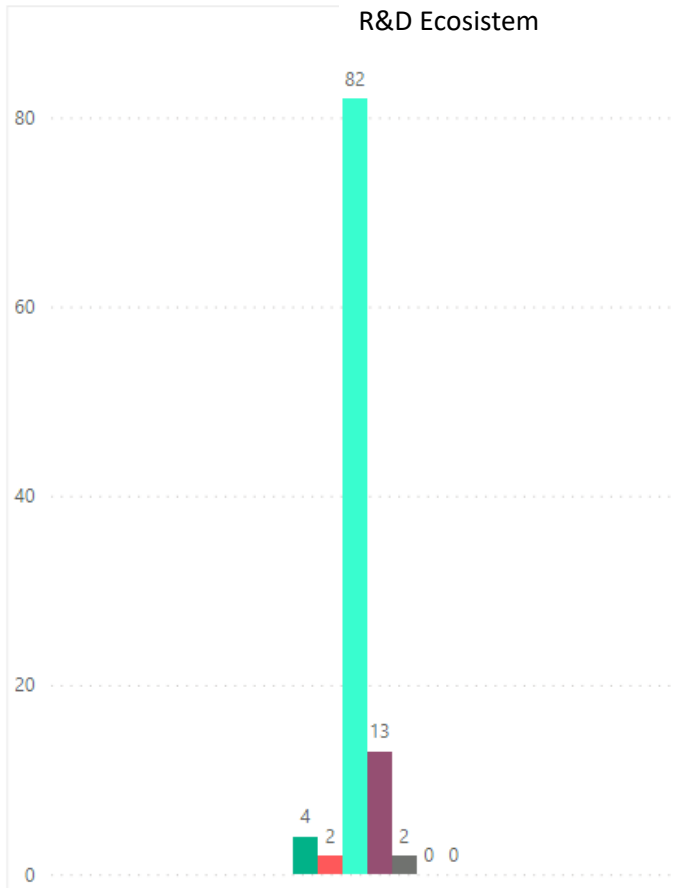
In 2022, 103 national projects and 68 international projects were carried out, with an almost identical volume between them, exceeding 3 billion euros.

2.2. Ecosystem

In this section, the following requested information is analysed:

- Number of researchers contacted
- Internal and external dissemination
- Internal and external conferences and events with staff participation
- Belonging to innovation-oriented organisations
- Number of national and international agreements signed with external actors

Contact with researchers by TTOs in 2022 took place in the development phase of the projects, 87.7%. This reflects that there is awareness of the need for support and training to advance technological developments but not at an early stage of the project.



TTOs participate mainly in TTOs' own events, a total of 82.
The TTOs analysed have indicated that they are part of some national organisations and to a residual extent of some international organisations. This shows that the ecosystem is regional and related to the TTOs' own environment.

2.3. Activity

This section analyses the following requested information:

2.3.1. Intellectual Property Rights (IPR)

- Trade marks, trade names and industrial designs
- Development of industrial models
- Copyright
- Business secrets

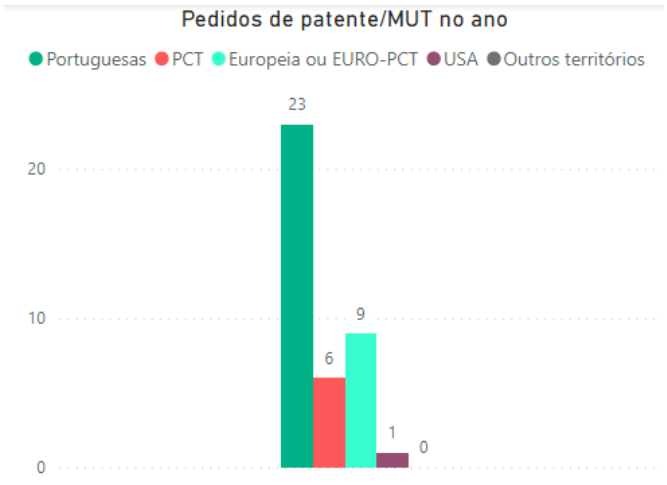
2.3.2. Intangible assets

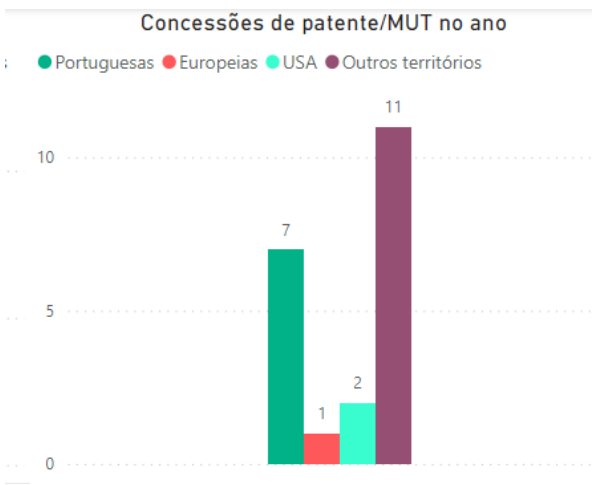
- Creation of technology-based companies
- Technology transfer contracts

2.3.3. Innovation projects

- Type of projects
- Development phase

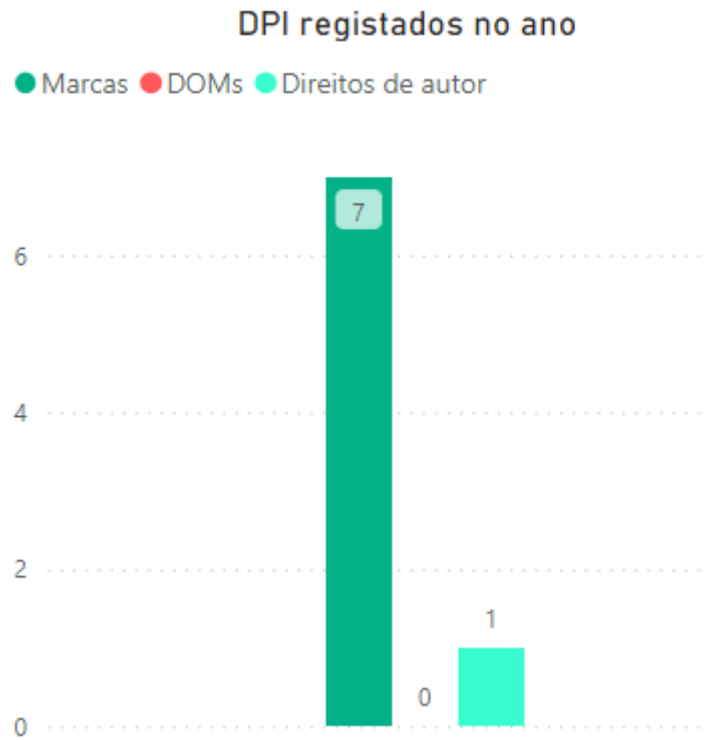
Intangible assets



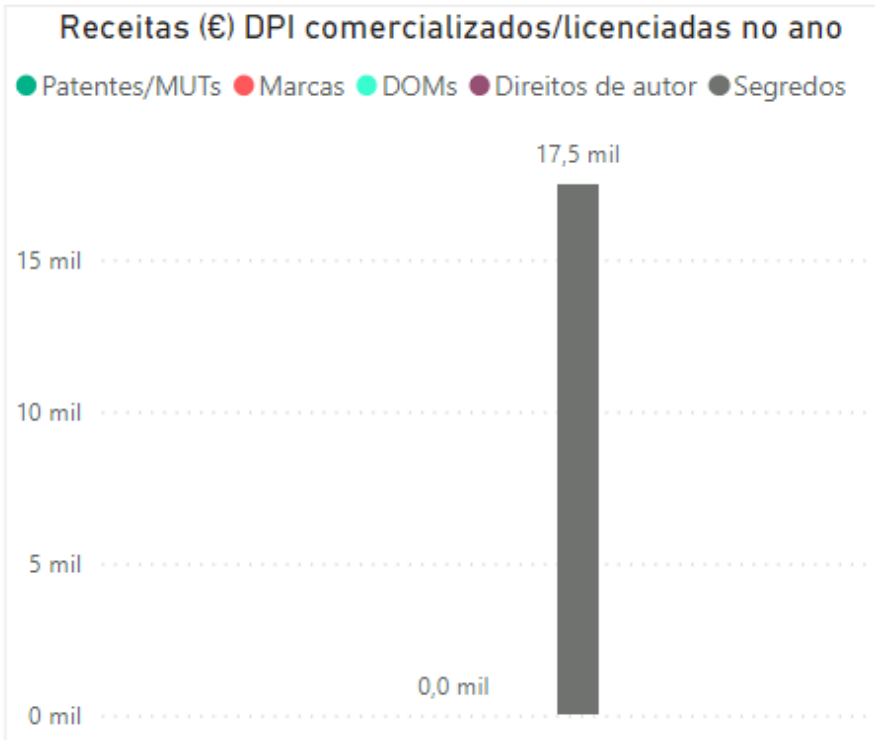


The TTOs in 2022 applied for 23 Portuguese patents, followed by 9 European patent applications and 6 PCT patent applications, with grants being made for other territories and Portuguese patents.

This reflects the fact that technology protection is carried out at the national level, which reflects less internationalisation and that the technology transfer that can take place tends to be for local exploitation. In the case of international exploitation, less scope is sought through national applications or European patent applications and not through PCTs.

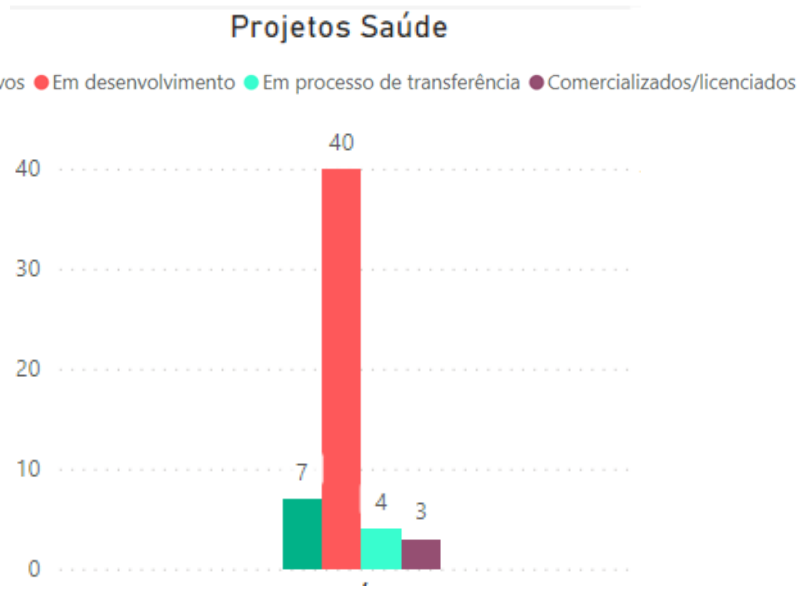


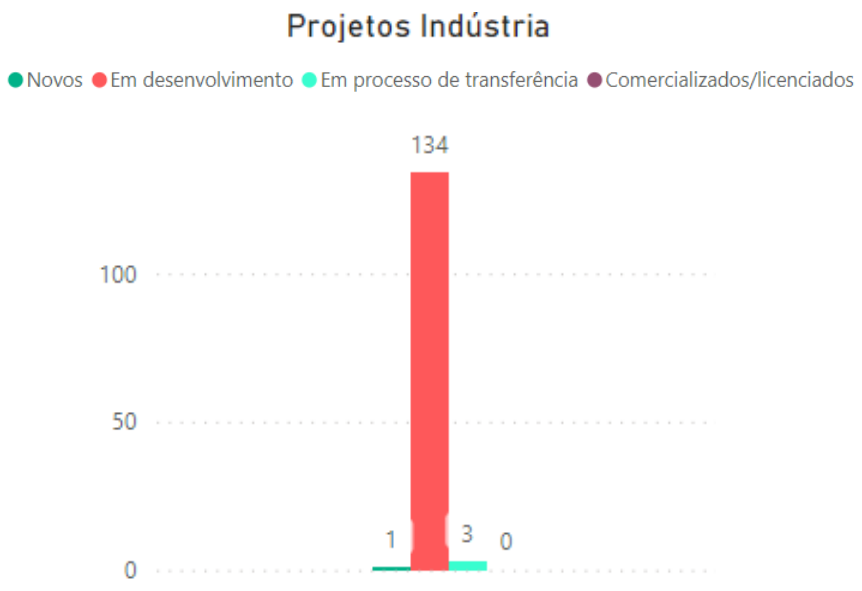
Other types of protected intangible assets include trademarks. Copyrights are not being widely registered, however, as registration is not constitutive in this type of asset, it would not affect their value, provided that the TTOs have established measures to generate evidence of ownership.

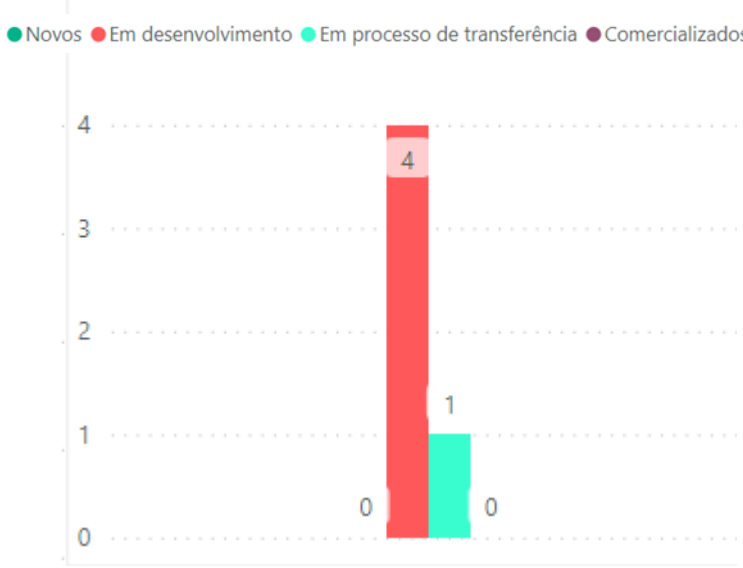


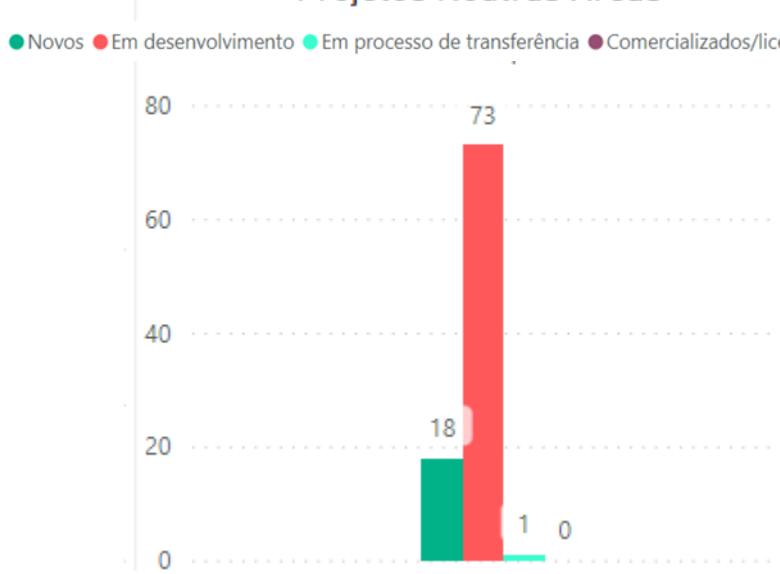
Analysing the exploitation of intangible assets, i.e. those commercialised or licensed in 2022, it can be seen that licences are granted exclusively for business secrets. Therefore, there is no economic exploitation of the other assets. It is recommended that all strategic project information is protected by trade secrets, as well as patentable technology in early stages of development, which shows a high interest in safeguarding knowledge on the part of TTOs.

Type of projects



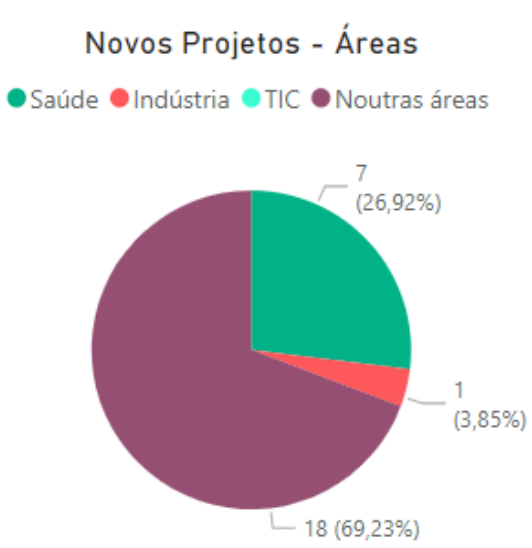


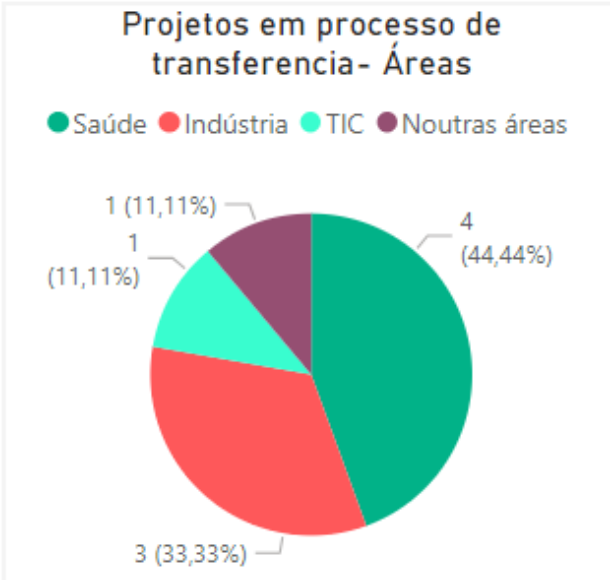


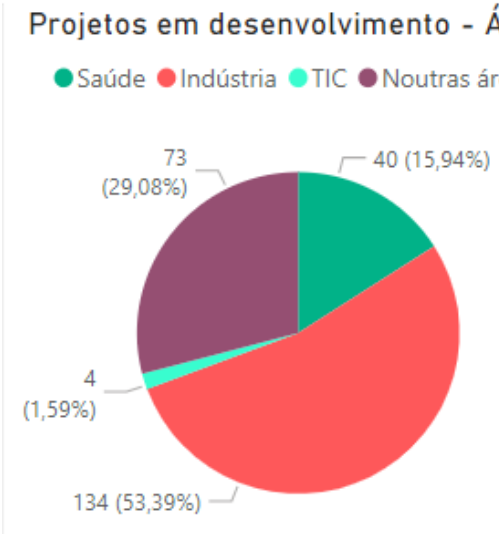


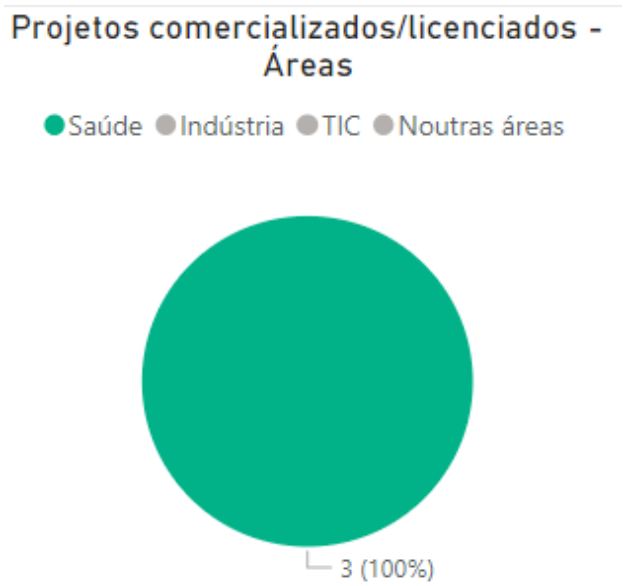
Most of the projects being carried out in TTOs are in industry. In relation to other types of projects such as health or ICT (practically non-existent), there is a notable difference, indicating that almost all investment is focused on technologies for application in industry. Projects in other areas also generate high interest for TTOs, although they are half the number of industry projects, which shows a clear specialisation in certain areas or focuses of interest.

Development phase









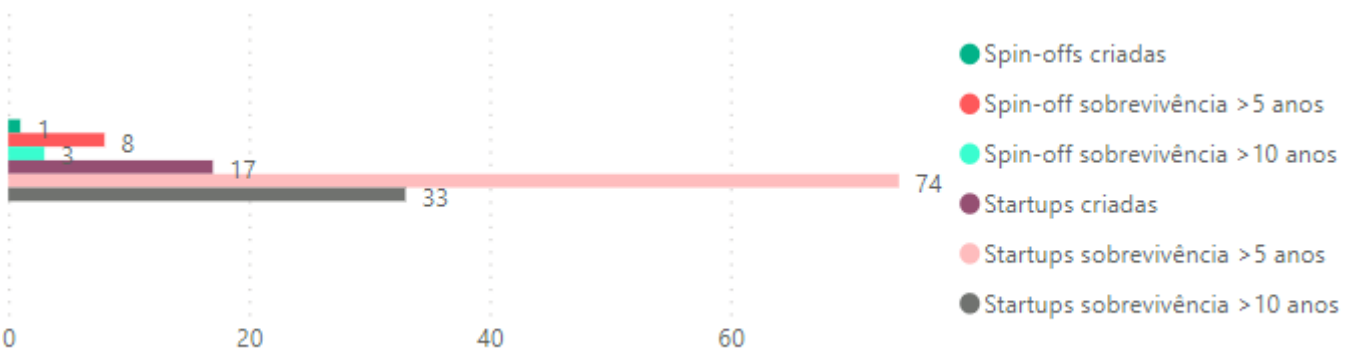
Analysing the development phase of the different types of projects being carried out in the TTOs, in the areas of health, industry, ICT and other areas, it can be seen that new projects focus more on other areas (69.23%), compared to 26.92% in health and 3.85% in industry. However, the projects under development are 53.39% in industry, 29% in other projects and 15.94% in health. Those in the process of transfer are 44.44% from health, 33.33% from industry and 11.11% from ICT and other areas.

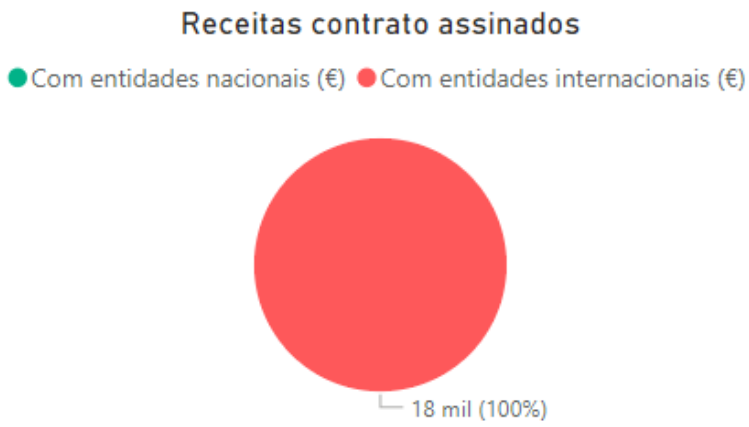
This reflects the fact that too many projects are initiated in other areas which are then not further developed, let alone transferred. Health projects also have little focus, with few projects under development compared to the volume of transfer and commercialisation capacity. In industry, few projects are initiated but the vast majority continue to be developed and there is a high success rate in technology transfer. Finally, ICT projects are practically non-existent, no projects are initiated in this area and only 1.59% are under development; however, they have the same results in terms of transferability as other areas, where there are numerous projects initiated.

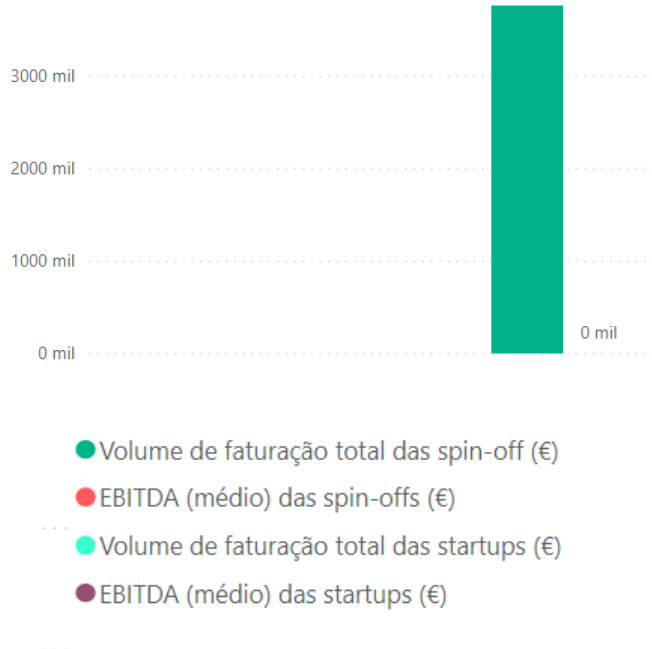
3. Impact

This section analyses the following requested information:

- Impact of technology-based companies: spin-offs and start-ups
- Relationship of spin-offs and start-ups with the university







The difference between the technology-based companies created will be analysed. There is only one spin-off created in 2022. With more than five years, there are 8 and with more than 10 years, 3.

There were 17 start-ups set up in 2022. With more than five years, there are 74 and with more than 10 years, 33. This shows that most of the technology-based companies that have emerged end up as independent companies, in the form of start-ups, without the direct transfer of technology or knowledge that spin-offs entail.

As far as turnover is concerned, details are only known for the spin-offs, so a comparison cannot be made.

Finally, we see that the contracts assigned during the year are mostly with international rather than national entities.

3/ Conclusions and recommendations

3/ Conclusions and recommendations

3.1. Conclusions

- The importance of technology transfer for TTOs: It is reflected that despite the great relevance of technology transfer, TTOs have little time to analyse issues in this field and therefore it has been difficult to achieve participation, as they have limited time to participate in many events. This shows the need for a comprehensive approach within each university and across the whole system, since knowledge transfer is an objective and a commitment of the entire university community. This requires greater awareness and a structure that allows different aspects to be covered simultaneously, such as obtaining funding, IP protection or interaction in the ecosystem, which works through systematised internal procedures.

- Contribution to the economy: Technology transfer offices play a crucial role in generating economic value by promoting the commercialisation of technologies, facilitating licensing agreements and encouraging the creation of new research-based companies.

- Promoting collaboration: TTOs are seen to devote resources to promoting collaboration between academic institutions and industry, facilitating knowledge transfer and joint research and development projects. They also proactively participate in many innovation events.

- IP protection: To secure their rights to inventions and technologies developed, they carry out patent registration processes. They also protect their trademarks. But the most exploited assets are trade secrets, demonstrating the high value of knowledge.

- Support for innovation: The support provided to researchers and entrepreneurs in the process of exploiting technologies results in the creation of technology-based companies, the most common being start-ups and with international exploitation contracts.

- Barriers and challenges: Lack of knowledge about financing, the complexity of legal and administrative processes for IP protection, the lack of alignment of projects by area with the possibility of commercialisation, and the need to establish a culture to optimise transfer processes and further promote business creation and collaboration, especially at the international level.

3.2. SWOT analysis

The SWOT analysis identifies the weaknesses, threats, strengths and opportunities detected in the TTOs.

WEAKNESSES	STRENGTHS
There is a great lack of knowledge about financial reporting and investment in projects.	They have highly trained staff in technical areas related to technology transfer.
Legal uncertainty when drawing up transfer agreements.	Protect intellectual property
Communication of university success stories to society needs to be improved.	Establish collaboration agreements

THREATS	OPPORTUNITIES
The importance of technology transfer is not prioritised or fully understood.	There is an opportunity to establish strategic partnerships with companies, academic institutions and research centres to promote technology transfer.
Lack of funding may affect the activity.	For the growing demand for innovation, instruments can be developed to support the "demand orientation" of research results from the needs of business.
Lack of institutional support to boost technology transfer	External funding opportunities, such as grants, investment funds or technology transfer support programmes.
Lack of interest in reaching international markets and achieving supranational cooperation.	There is an opportunity to expand transfer activities internationally,
Failure to adapt to market requirements may result in projects remaining at the initial stage.	Technology transfer offices can play a key role in fostering entrepreneurial culture and entrepreneurship.

3.3 Recommendations

- A section related to financing has been included in the questionnaires sent to the TTOs. However, it turned out to be data that the TTOs do not have. This information was requested in line with European indicators that do require such information to be provided. Therefore, it is highly recommended that in the coming years the TTOs have information on their funding, as this is an objective measure to know the scope of innovation and technology transfer projects, as well as the size of the Transfer Offices.

- It is essential that TTOs develop a sound and well-defined strategy for technology transfer. This involves identifying clear objectives, defining the sectors of interest and establishing selection criteria for transfer projects.

- TTOs should promote collaboration between researchers, companies and other relevant stakeholders and be more proactive in participating in surveys or providing relevant information on their performance for statistical purposes.

- It is important that TTOs establish indicators and monitor the impact of their technology transfer activities. This allows them to evaluate their effectiveness, identify areas for improvement and communicate the results achieved to stakeholders, and should therefore be an activity included in their objectives.

- Before embarking on technology transfer, it is essential to carry out a thorough assessment of the technical and commercial viability of the project. This involves analysing the intellectual property involved, the potential market, the competition and the resources needed to carry out the transfer successfully. To this end, it is recommended that the personnel involved should attend periodic training sessions on these aspects in order to gain an understanding of the various aspects involved.

- TTOs should work on simplifying and streamlining technology licensing processes. This implies establishing clear, transparent and efficient procedures internally.

- Researchers should be made aware and sensitised to the importance of protecting their intellectual property. This may include providing advice on patent registration, copyright or other forms of protection, as well as promoting a culture of intellectual property within the institution.

4/ Annexes

ANNEX 1
/Indicator Manual

Clarke Modet +

AGÊNCIA NACIONAL DE INOVAÇÃO

MONITORING SYSTEM

Methodology for the design of the monitoring system

Cofinanciado por:

COMPETE 2020

PORTUGAL 2020

UNIÃO EUROPEIA
Fundo Europeu de Desenvolvimento Regional

April 2023

Technical Data Sheet

Client: ANI - National Innovation Agency

Programme: SIAC - Knowledge Transfer Initiative
CPV 72224000-1 Project management consultancy services
Prior Consultation PSC 04/2022
- Implementation of a *Technological Scouting* Programme and
- Support to the promotion, management and dynamisation of the Technology Transfer Network

Elaboration: ClarkeModet

Realisation: April 2023

Contenido

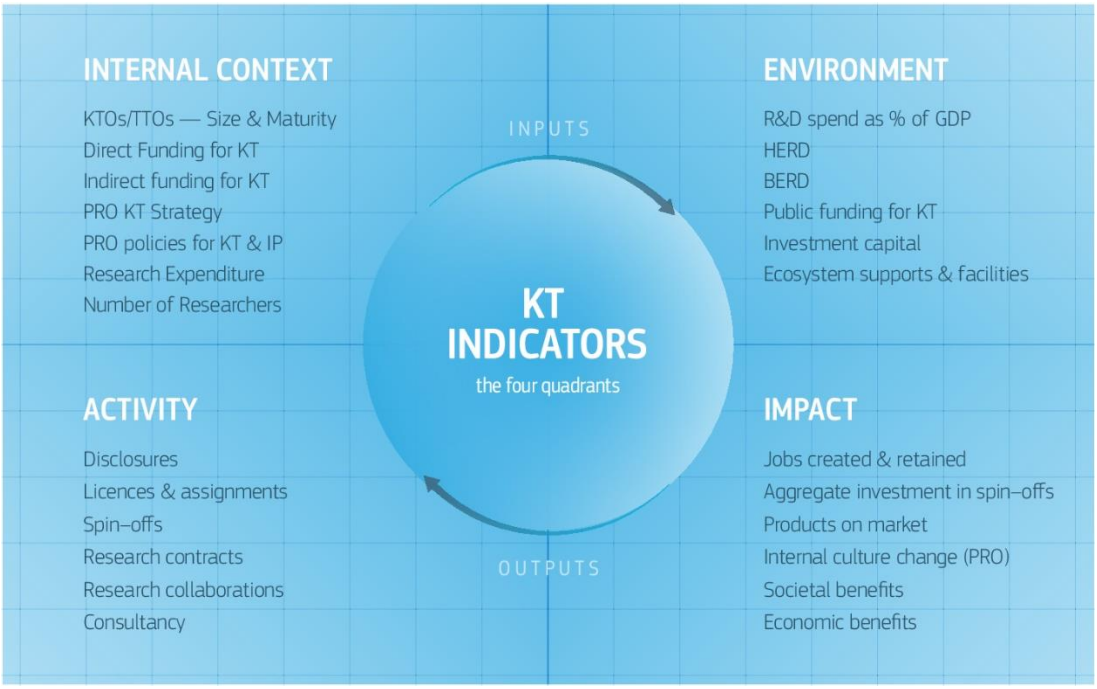
INTRODUCTION

Technology transfer aims to maximise the two-way flow of technology, intellectual property and ideas. This in turn enables businesses (existing and new) or other non-academic organisations, together with the public sector, to drive economic and social innovation. It also allows universities to advance research and teaching.

Technology transfer is now a recognised activity that universities across Europe are expected to engage in as part of their "third mission", alongside teaching and research. For many of them, technology transfer is a key source of innovation and a mechanism for disseminating research results.

The purpose of this document is to describe how the data collected from OTTs through the annual survey will be handled.

The structure of the indicators collected follows the structure established in the European document "*Knowledge Transfer Metrics*", together with the "*Innovation Indicators Manual of the ITEMAS health platform*".



STRUCTURE OF THE INDICATORS

The proposed indicators are as follows:

Internal context indicators. These indicators collect information on the context in which the TTO activity is developed and the minimum necessary to create a fertile and effective environment to develop technology transfer.

1.1 Characterisation. This section includes the data of the TTOs. information stable over time, no identification codes are added.

1.2 Environment. This section includes the indicators that indicate the University's involvement in the transfer process and the support received by the TTO to address its challenges.

1.3 Resources. This includes the research, human and financial resources available to the TTO to carry out its activities, as well as training issues.

1.4 Financing. This includes the financial data of the TTOs

2. Environment:

2.1 Ecosystem. One of the most important aspects to be assessed is the presence and visibility of the HEI, through its TTO, in innovation ecosystems. This section defines the indicators for monitoring this task.

3. Output activity indicators. This is the most classic set of indicators in measuring transfer activity. It involves measuring the activity of the TTO in the three most important tasks that are contemplated in the TT:

3.1. IPR with indicators that allow measuring both the protection activity and the income generated by the exploitation of the assets generated in all their forms: patents, utility models, software, industrial designs, industrial secrets, etc.

3.2 Spinoffs and start-ups in which, in addition to the usual indicators, some specific indicators related to the future profitability and success of the company are included. In this section we only include indicators that measure the direct involvement of TT in the results, leaving for the impact section issues that are internal to the company itself (number of employees hired or investment made, among others).

3.3 Transfer contracts are another important way of developing transfer activity. These contracts focus on research and experimental development work or also include professional work aimed at introducing new technologies. Indicators are incorporated to be able to measure this activity which, due to its ease of implementation, is also of great importance in the development of transfer activities.

3.4. Ideas y Projects the measurement we have seen so far is done partially through each of the previous sub-chapters, but it is also important to measure the efficiency and effectiveness of the TTO in responding to the researchers that come to the office. The indicators of this activity allow us to measure the time that elapses from the appearance of the first idea to its arrival on the market as a clear exponent of the TTO's performance.

4. Impact of results. Understanding and measuring the impact generated by the third mission of the university is becoming increasingly relevant. In most cases, research is carried out with public money and it is increasingly necessary that this investment generates quality of life and wealth for society. Hence the importance of defining indicators that reflect this social and economic impact.

Table of indicators for the survey

Information on indicators and metrics is collected in a series of sheets like the one below, which clearly describes the information to be obtained, identified by a code. This code is generated with the first three letters of the area to which they belong and the following three letters of the sub-area. For example, for the first area "Internal context indicators" and the sub-area "Environment", the indicator code would be ICI.ENV. The remaining elements of the table are explained in the same descriptive table below.

Acronym Name of indicator	
Code	Alphanumeric code identifying the indicator
Type of indicator	Type of data
Why do we need this data?	What it should be used for
Description	Basic concepts for understanding data with inclusion and exclusion criteria
Metric	All indicators are included to be reliable: periods and units of measurement, among others.
Information required to obtain it	Suggested sources of information to obtain the indicator

Clarke + Modet

INDICATORS MANUAL

1. Internal context indicators

1.1. Information about TTO

As this block does not contain indicators to be evaluated, but is informative, as it is stable information over time, no identification codes are added to it.

Identification of the entity: name of the TTO	
Code	
Type of indicator	Open text
Why do we need this data?	To identify TTO
Description	TTO name
Metric	[name]
Information required to obtain it	TTO general data

Identification of the member organisation: Name of the Higher Education Institution (HEI)	
Code	
Type of indicator	Open text
Why do we need this data?	To identify the member organisation
Description	Name of Higher Education Institution (HEI)
Metric	[name]
Information required to obtain it	TTO general data

Identification of the person responsible for completion	
Code	
Type of indicator	Open text
Why do we need this data?	So that we can contact you if necessary
Description	Name and position of the person responsible for completing the form
Metric	[name; position]
Information required to obtain it	TTO contact details

Location

Code	
Type of indicator	Open text; numerical
Why do we need this data?	To know the location and be able to contact if necessary.
Description	TTO Location
Metric	(address(head office); postcode; municipality; district; NUTS III; NUTS II; other location 1(address, postcode; municipality); location 2; location 3; location 4; location 5)
Information required to obtain it	TTO contact details

Contact	
Code	
Type of indicator	Numeric
Why do we need this data?	So that we can contact you if necessary
Description	Telephone number and e-mail address
Metric	[T/TM; email]
Information required to obtain it	TTO contact details

CAE	
Code	
Type of indicator	Numeric
Why do we need this data?	
Description	Portuguese Classification of Economic Activities
Metric	[principal; secondary 1; secondary 2; secondary 3].
Information required to obtain it	TTO general data

Membership structure	
Code	
Type of indicator	Text options
Why do we need this data?	Know the type of entity involved and evaluate the transfer in each one of these entities
Description	
Metric	[companies; business and sector associations; public entities of the Central State Administration; public entities of the Central State Administration - Higher Education; other public entities; entities of the Scientific and Technological System;

	entities of the Scientific and Technological System - Private higher education; others;]
Information required to obtain it	TTO general data

Number of infrastructures/laboratories associated with the TTO ecosystem	
Code	
Type of indicator	Numeric
Why do we need this data?	To know the number of infrastructures/laboratories in order to know the capacity to carry out the practices
Description	Number of infrastructures/laboratories
Metric	[number of infrastructures/laboratories].
Information required to obtain it	TTO general data

ICI.INF1.1.1 Year of establishment of TTO	
Code	ICI.AMB1.2.1
Type of indicator	Numeric
Why do we need this data?	To know the level of maturity in order to correctly assess the development of its infrastructures, relationships, etc.
Description	Year of its official creation
Metric	ICI. AMB1.2.1 Year Established
Information required to obtain it	TTO general data

ICI.INF1.1.2 Existence of a TTO strategic plan	
Code	ICI.AMB1.2.2
Type of indicator	Y/N
Why do we need this data?	To have information about the objectives and priority areas to know the alignment between the University and its TTO.
Description	The purpose of this indicator is to determine whether the TTO has an active strategic plan.
Metric	AMB1.2.2 A strategic plan exists
Information required to obtain it	N/A

ICI.INF1.1.3 Is there any compilation (portfolio) of projects under development in the TTO ecosystem	
Code	ICI.INF1.1.3
Type of indicator	The existence of a portfolio may indicate the level of organisation and preparation of the TTO to strengthen the projects it has under development
Why do we need this data?	N/A
Description	ICI.AMB1.2.4 A portfolio exists
Metric	Y/N
Information required to obtain it	N/A

1.2. Human resources

ICI.REC1.2.1 Total number of persons (FTE) at TTO	
Code	ICI.REC1.2.1
Type of indicator	Numerical
Why do we need this data?	To find out the size of the TTO
Description	Total number of full-time equivalent (FTE) persons at TTO
Metric	[number]
Information required to obtain it	Number of people

ICI.REC1.2.2 HR structure by contractual status	
Code	ICI.REC1.2.2
Type of indicator	Text options; numeric
Why do we need this data?	It provides insight into the type of employment being generated by TTOs.
Description	Number of persons in each contractual situation
Metric	ICI.REC1.2.2.1 [effective]; ICI.REC1.2.2.2 [trainees/scholarship holders];
Information required to obtain it	

ICI.REC1.2.3 HR structure by qualification level	
Code	ICI.REC1.2.3
Type of indicator	Text options; numeric
Why do we need this data?	To find out what kind of profiles exist in TTOs

Description	Number of people by qualification level
Metric	ICI.REC1.2.3.1 Ph; ICI.REC1.2.3.2 bachelor/master degree; ICI.REC1.2.3.3 Bachelor's degree or equivalent; ICI.REC1.2.3.4 compulsory academic qualification;
Information required to obtain it	

ICI.REC1.2.4 HR structure by scientific area	
Code	ICI.REC1.2.4
Type of indicator	Text options
Why do we need this data?	To find out what kind of profiles exist in TTOs
Description	Areas of activity of the human resources that make up TTO
Metric	Sciences Ingeniería Social and Legal Sciences Humanities Other
Information required to obtain it	

ICI.REC1.2.5 Training and professional development opportunities for TTO staff	
Code	ICI.REC1.2.5
Type of indicator	Numeric
Why do we need this data?	The professional qualification of TTO technicians can improve skills and competencies in innovation management, technology transfer and commercialisation activities.
Description	Specific training received by the TTO in matters related to innovation management, IPR, valorisation, creation of technology-based companies, negotiation, financing, transfer of results, creativity, etc. • All TTO workers are considered, even if they do not work all year round and even if they work part time. • Only the specific training for the transfer activity is considered
Metric	Table 1
Information required to obtain it	CVs of the TTO members

Table 1 Type of training	National	International
PhD (related to TTO activity)	ICI.REC1.2.5.1	ICI.REC1.2.5.2
MBA/Master's	ICI.REC1.2.5.3	ICI.REC1.2.5.4
Specialisation courses (+ 100 hours)	ICI.REC1.2.5.5	ICI.REC1.2.5.6
Other courses (+20 hours)	ICI.REC1.2.5.7	ICI.REC1.2.5.8
Other activities (duration less than 20 hours)	ICI.REC1.2.5.9	ICI.REC1.2.5.10

1.3. Funding

ICI.FIN1.3.1 *Volume of activity by source of funding*	
Code	ICI.FIN1.3.1
Type of indicator	Currency (€), currency (€)
Why do we need this data?	Fundraising indicates that the TTO has the capacity to generate revenue from partners outside its university.
Description	Specific funding obtained for the transfer activity • Uncompetitive financing • Competitive financing
Metric	ICI.FIN1.3.1.1 Non-competitive financing revenues ICI.FIN1.3.1.2 Competitive financing revenues
Information required to obtain it	University management report or system

ICI.FIN1.3.2 Volume of activity by functional area	
Code	ICI.FIN1.3.2
Type of indicator	Coin (€), coin (€), coin (€), coin (€)
Why do we need this data?	The distribution of expenditure indicates the activity of the TTO.
Description	
Metric	ICI.FIN1.3.2.1 Management and control activities and administrative services; ICI.FIN1.3.2.2 Spending on planning and management/control of innovation projects; ICI.FIN1.3.2.3 Expenditure on activities to fund TTO and applications for support programmes; ICI.FIN1.3.2.4 Expenditure on technical and/or scientific support activities; ICI.FIN1.3.2.5 Spending on activities to support entrepreneurship and the creation of spin-offs; ICI.FIN1.3.2.6 Expenditure on other activities.

Information required to obtain it	

ICI.FIN1.3.3 Annual budget of the TTO that specifies the breakdown for patents, proofs of concept, ...	
Code	ICI.FIN1.3.3
Type of indicator	Currency (€), currency (€), currency (€), currency (€), currency (€) ,currency (€), %, %, %, %
Why do we need this data?	TTO financial resources that inform TTO priorities
Description	Detailed budget for TTO activities • Staff Budget • Budget for external consultancy services, innovation management, etc. • Budget for intellectual property rights, licences, etc. • Budget for the proof of concept • Other (including marketing, communication and any other activity that makes the University's offer more visible). • Increase in the total budget in relation to the previous year
Metric	ICI.FIN1.3.3.1 Personnel budget ICI.FIN1.3.3.2 Budget for external services ICI.FIN1.3.3 IPR related budget ICI.FIN1.3.3.4 Budget for proof of concept ICI.FIN1.3.3.5 Other associated budgets ICI.FIN1.3.3.6 Increase of IP budget in relation to previous year (%) ICI.FIN1.3.3.7 Increase of the total budget in relation to the previous year (%)
Information required to obtain it	University accounting data

ICI.FIN1.3.4 University research expenditure in the year	
Code	ICI.FIN1.3.4
Type of indicator	Numeric, numeric, currency (€), numeric, numeric, currency (€)
Why do we need this data?	This indicator provides information on the level of research and innovation expenditure and gives an idea of the transfer potential of research and innovation.
Description	All funded research and innovation projects are included, distinguishing them: • Nationally competitive public research projects • Internationally competitive public research projects

Metric	ICI.FIN1.3.4.1 Total number of national projects applied for in the year. Only projects for which a decision is taken in the same year will be included, in order to check the rate of acceptance of projects. ICI.FIN1.3.4.2 Total number of national projects awarded in the year. As with the previous indicator, the date of resolution determines the inclusion of the action in each period. ICI.FIN1.3.4.3 Amount/value of national projects awarded, in the year under review ICI.FIN1.3.4.4 Total number of international projects submitted in the year. Only projects for which a decision is taken in the same year will be included, in order to check the rate of acceptance of projects. FIN1.3.4.5 Total number of international projects awarded in the year. As with the previous indicator, the date of resolution determines the inclusion of the action in each period. ICI. FIN1.3.4.6 Amount of international projects awarded
Information required to obtain it	University management report or system

ICI.FIN1.3.5 Volume of activity by ENEI 2030 domain	
Code	ICI.INF1.3.5
Type of indicator	Coin (€), coin (€), coin (€), coin (€), coin (€)
Why do we need this data?	This indicator provides information on the level of expenditure by area of activity
Description	TTO financial resources that inform TTO priorities
Metric	ICI.FIN1.3.5.1 Digital switchover ICI.FIN1.3.5.2 Production materials, systems and technologies. ICI.FIN1.3.5.3 Health, Biotechnology and Food ICI.FIN1.3.5.4 Major natural assets: forest, sea and space ICI.FIN1.3.5.5 Green transition ICI.FIN1.3.5.6 Society, Creativity and Heritage
Information required to obtain it	University management report or system

ICI.FIN1.3.6 Volume of activity by recipient NUTS II region

Code	ICI.FIN1.3.6
Type of indicator	Coin (€), coin (€), coin (€), coin (€), coin (€), coin (€), coin (€)
Why do we need this data?	It provides information on the regions with the highest volume of activity.
Description	Volume of expenditure on activities according to the different regions
Metric	ICI.FIN1.3.6.1 North ICI.FIN1.3.6.2 Centre. ICI.FIN1.3.6.3 Alentejo ICI.FIN1.3.6.4 Algarve ICI.FIN1.3.6.5 Azores ICI.FIN1.3.6.6 Madeira ICI.FIN1.3.6.7 European regions ICI.FIN1.3.6.8 Non-European regions
Information required to obtain it	University management report or system

2. Environment

2.1. Ecosystem

AMB.ECO2.1.1 Number of researchers contacted by TTO	
Code	AMB.ECO2.1.1
Type of indicator	Numerical, numerical and %.
Why do we need this data?	The number of researchers contacted by the TTO can indicate the extent and collaboration of research staff in departments and faculties. These data are very important for assessing the evolution of TTO activities over time.

Description	University researchers who contacted the TTO • **Stage 1 researcher:** researchers who have had ideas, but have not yet moved to the next stages of the innovation funnel. • **Stage 2 researchers:** researchers whose ideas/projects have passed the evaluation or are in any of the different stages of getting to the market. • All authors/inventors of an idea or project who have a contract of any kind with the University are counted. • The same researcher can add up at both stages because he has two different ideas at different stages of maturity. To calculate the total increase in researchers approaching TTO, it will be necessary to subtract researchers who are at both stages because they have submitted multiple ideas at different stages of maturity.
Metric	AMB.ECO2.1.1 Number of stage 1, early stage researchers AMB.ECO2.1.1.2 Number of stage 2 researchers, developing projects AMB.ECO2.1.1.3 Increase in total number of researchers contacting/collaborating with TTO
Information required to obtain it	TTO information system

AMB.ECO2.1.2 Internal and external dissemination of TTO	
Code	AMB.ECO2.1.2
Type of indicator	Numeric, numeric
Why do we need this data?	The dissemination and communication that the TTO carries out are crucial to achieve the objectives it has to cover, as well as to involve researchers in its activities and to have an important presence in the innovation ecosystem.
Description	Internal dissemination conferences and events are those intended exclusively for the University's researchers. • This includes meetings, sessions or visits to University departments and research groups, internal conferences, training sessions given by TTO staff or by teaching staff external to University researchers. • Training received by TTO staff is excluded. Conferences and external dissemination events. These are organised by the TTO and are open to the participation or presence of professionals from other research centres, universities, entities, companies or institutions.

Metric	AMB.ECO2.1.2.1 number of internal dissemination events organised by the TTO AMB.ECO2.1.2.2 number of external outreach events organised by the TTO
Information required to obtain it	TTO information system

AMB.ECO2.1.3 Internal and external conferences and events with the participation of TTO staff	
Code	AMB.ECO2.1.3
Type of indicator	Numeric, numeric
Why do we need this data?	The organisation of events, conferences and workshops by TTO staff enables the level of engagement, networking and visibility in the innovation ecosystem.
Description	Conferences, events and seminars attended by TTO staff • Events organised by the University itself and in which the presence of the TTO favours the relationship with researchers. • External events that give the University visibility in transfer
Metric	AMB.ECO2.1.3.1 number of internal events, congresses or workshops AMB.ECO2.1.3.2 number of external events, congresses or conferences
Information required to obtain it	TTO information system

AMB.ECO2.1.4 Membership of innovation-oriented organisations (networks, clusters, platforms, business associations, etc.)	
Code	AMB.ECO2.1.4
Type of indicator	Numeric, numeric
Why do we need this data?	The aim of this data is to find out how the TTO is linked to the different actors in the ecosystem, in particular the company that is the main target of the TTO's activities.
Description	Innovation-oriented organisations are considered where there is a business presence with the aim of strengthening relations with industry. • Participation in national innovation organisations, be they clusters, platforms, associations, etc. • Participation in international innovation organisations, whether clusters, platforms, associations, etc.

Metric	AMB.ECO2.1.4.1 Number of national innovation organisations in which TTO participates AMB.ECO2.1.4.2 Number of international innovation organisations in which TOT participates
Information required to obtain it	TTO information system

AMB.ECO2.1.5 Number of national and international agreements signed with external actors	
Code	AMB.ECO2.1.5
Type of indicator	Numerical and numerical
Why do we need this data?	The purpose of this indicator is to determine the capacity of the TTO to relate to the external agents necessary for the development of its activity.

Description	• National external actors are all bodies, entities and companies based in the country.
	• International external actors are all organisations, entities and companies based abroad.
	• Innovation agreements that have been signed by external actors and are directly managed by the TTO will be counted. Agreements need not involve a financial contribution or funding.
	• These include: alliances, framework and specific agreements, non-disclosure agreements (NDA) and memoranda of understanding (MOUs).
	• The following are excluded
	  ○ IPR transfer contracts which are accounted for elsewhere
	  ○ Agreements signed by the TTO in a field other than innovation
	  ○ Donations, patronage and sponsorship

Metric	AMB.ECO2.1.5.1 Number of agreements signed in the year with national external actors AMB.ECO2.1.5.2 Number of agreements signed in the year with international external actors
Information required to obtain it	TTO information system

3. Activities

3.1. Intellectual Property Rights (IPR)

ACT.DPI3.1.1 Patents	
Code	ACT.DPI3.1.1
Type of indicator	Numerical, Numerical, Numerical, Numerical, %, Numerical, Numerical, Numerical, %, numeric, currency (€)
Why do we need this data?	Number of patents applied for, granted and licensed
Description	• Patents applied for: Application filed in any national or international office. If applications for the same patent are filed at several offices, each application is counted as a separate application. PCTs are included, but not renewals. • ACT.DPI.2.1.1.6 Percentage of patent applications/MUTs co-owned with companies (%) • Patents granted: includes all the grants received by the different offices where a patent application was made. Also included are those that were not in force at the time of the survey. • ACT.DPI3.1.1.12 Percentage of patents/MUTs granted out of total patent applications finalised, in the year under review: (granted) / (granted + (refused; abandoned)) (%) • ACT.DPI3.1.1.13 Numbers of patents/MUTs commercialised/licensed, in the year under review • ACT.DPI3.1.1.14 Total revenues (cumulative) patents/MUTs commercialised/licensed, in the year under review (€)
Metric	Table 2 Table 3
Information required to obtain it	TTO research report and TTO information system

Table 2: Patent applications/ MUT	INPI	WIPO	EPO	USA	Other

Requests	ACT.DPI3.1.1.1	ACT.DPI3.1.1.2	ACT.DPI3.1.1.3	ACT.DPI3.1.1.4	ACT.DPI3.1.1.5

Table 3: Patents/MUTs granted	INPI	EPO	USA	Other
Granted	ACT.DPI3.1.1.7	ACT.DPI3.1.1.8	ACT.DPI3.1.1.9	ACT.DPI3.1.1.10

ACT.DPI3.1.2 Trademarks, trade names and industrial designs	
Code	ACT.DPI3.1.2
Type of indicator	Numeric, numeric, currency (€)
Why do we need this data?	Number of brands, trade names
Description	**Number of trademarks registered in the year**: Trademark application in any institute **Number of brands marketed/licensed** in the year under review. **Total revenues (accumulated) of brands marketed/licensed** in the year under review
Metric	ACT.DPI3.1.2.1 Number of trademarks registered in the year: ACT.DPI3.1.2.2 Number of brands marketed/licensed, in the year under review. ACT.DPI3.1.2.3 Total revenues (accumulated) from brands marketed/licensed in the year under review
Information required to obtain it	TTO research report and TTO information system

ACT.DPI3.1.3 Industrial design or models (DOMs)	
Code	ACT.DPI3.1.3
Type of indicator	Numeric, numeric, currency (€)
Why do we need this data?	Number of Industrial Designs (DOMs)
Description	**Number of DOMs registered in the year**: Trademark application in any office **Number of DOMs marketed/licensed,** in the year under review. **Total revenues (accumulated) of DOMs marketed/licensed** in the year under review

Metric	ACT.DPI3.1.3.1 Number of DOMs requested in the year: ACT.DPI3.1.3.2 Number of DOMs registered in the year: ACT.DPI3.1.3.3 Number of DOMs marketed/licensed, in the year under review. ACT.DPI3.1.3.4 Total revenues (accumulated) from DOMs marketed/licensed, in the year under review
Information required to obtain it	TTO research report and TTO information system

ACT.DPI3.1.4 Transferable intellectual property (copyright)	
Code	ACT.DPI3.1.4
Type of indicator	Numeric, numeric, currency (€)
Why do we need this data?	Know the intellectual property that can be transferred and the amount of royalties for its exploitation.
Description	Included in this indicator are all the results of intellectual property and software, which have been transferred generating returns.
Metric	ACT.DPI3.1.4.1 Number of copyrights registered in the year under review ACT.DPI3.1.4.2Number of copyrights marketed/licensed in the year under review ACT.DPI3.1.4.3 Total (cumulative) copyright revenue marketed/licensed, in the year under review
Information required to obtain it	TTO research report and TTO information system

ACT.DPI3.1.5 Trade secrets (know-how)	
Code	ACT.DPI3.1.5
Type of indicator	Numeric, currency (€)
Why do we need this data?	These data include results that cannot be protected by intellectual or industrial property, but which have a high potential to be transferred or commercialised.
Description	**Trade secret:** means any technical knowledge that, due to its competitive value, the owner wishes to keep hidden and confidential.
Metric	ACT.DPI3.1.5.1 Number of trade secret licences ACT.DPI3.1.5.2 Total amount invoiced during the year for trade secret licences

Information required to obtain it	TTO research report and TTO information system

3.2. Spin-offs and start-ups

ACT.SPIN3.2 Creation of technology-based companies: spinoffs and start-ups	
Code	ACT.SPIN3.2
Type of indicator	Numeric, currency (€), %, %
Why do we need this data?	To get to know the entrepreneurial initiatives that emerge at the University from innovative ideas and based on research results.
Description	**Spin-off:** A company created and owned by the university **Start-up:** A company in which the institution has no stake. • ONLY knowledge-based enterprises whose purpose is the commercialisation of the knowledge or technology developed in the centre are considered. Both spin-offs and start-ups must have a licensing/transfer agreement. • For each of the companies, the following information will be requested: turnover, EBITDA and survival rate at 5 and 10 years.
Metric	Table 4
Information required to obtain it	TTO research report and TTO information system

Table 4	Spinoff	Startups
Number of companies	ACT.SPIN3.2.1	ACT.SPIN3.2.6
Invoicing	ACT.SPIN3.2.2	ACT.SPIN3.2.7
EBITDA	ACT.SPIN3.2.3	ACT.SPIN3.2.8
5-year survival rate	ACT.SPIN3.2.4	ACT.SPIN3.2.9
10-year survival rate	ACT.SPIN3.2.5	ACT.SPIN3.2.10

3.3. Transfer contracts

ACT.CON.2.3 Transfer agreements	
Code	ACT.CON3.3

Type of indicator	Numeric, currency (€),numeric, currency (€),
Why do we need this data?	To know the activity that is developed through public-private collaboration contracts and that allows the transfer of technology between the two entities.
Description	Includes: • Contracts for R&D services, consultancy and technical assistance, innovation management advisory services • R&D service contracts in national and international public calls for proposals aiming at public-private collaboration for technology transfer. Excluded: • IPR licensing agreements in all their forms • Contracts with spin-offs and start-ups Training
Metric	ACT.CON3.3.1 Number of contracts signed with national entities during the year ACT.CON3.3.2 Total amount of contracts signed with national entities during the year ACT.CON3.3.3 Number of contracts signed with international entities during the year ACT.CON3.3.4 Total amount of contracts signed with international entities during the year
Information required to obtain it	TTO research report and TTO information system

3.4. Innovation funnel

ACT.FUN3.4 Ideas/Projects	
Code	ACT.FUN3.4
Type of indicator	Numeric ,numeric, numeric, numeric, numeric, numeric
Why do we need this data?	To know the evolution of the maturity of ideas in the university and the time spent in each of these phases

Description	**Phase 1 Idea**: A practical solution to a problem that is new. They do not include the mere identification of a problem. They should contain ideas that are reasonable and contain novelty. **Phase 2 Ideas capturing procedure:** **Considered are** the ideas that are presented to the TTO by university researchers by filling in descriptive information in some support. Also included are those selected in the innovation committees set up for this purpose and those collected directly by the TTO proactively and identified in the results of research and innovation projects with public or public/private funding. Ideas can go straight into stage 2. For the purposes of quantification, the state on 31/12 of the year in which the survey is carried out is considered. Ideas are classified into the following 5 phases: 1. **Idea capture: Ideas that** have been captured during the year and still need to be developed, including in previous years, and which have not moved on to the next stage by 31/12, are considered. 2. **Evaluation:** Projects or ideas for which market studies, patentability (or other protection) reports, valuation or technical feasibility reports are being carried out. 3. **Development process: This** includes the development of prototypes, homologation and tests. 4. **Transfer:** ideas **that have** already reached a sufficient level of maturity to be able to start commercial actions through the establishment of contacts with potential companies or entities that compete for the technology. 5. **Market:** projects in one of the following situations: a) Graduated in the sector b) Creation of a spinoff or start-up c) It is part of contracts with a financial consideration for the University. All data will be collected in table 4.
Metric	Table 5
Information required to obtain it	TTO information system

Table 5:	Health	Industry	ICT	Other
New ideas	ACT.FUN3.4.1	ACT.FUN3.4.5	ACT.FUN3.4.9	ACT.FUN3.4.13
Ideas in development	ACT.FUN3.4.2	ACT.FUN3.4.6	ACT.FUN3.4.10	ACT.FUN3.4.14
Transfer projects	ACT.FUN3.4.3	ACT.FUN3.4.7	ACT.FUN3.4.11	ACT.FUN3.4.15

Products on the market	ACT.FUN3.4.4	ACT.FUN3.4.8	ACT.FUN3.4.12	ACT.FUN3.4.16

4. Impact

IMP.SPIN4.1 Impact of technology-based companies: spin-offs and start-ups	
Code	IMP.SPIN4.1
Type of indicator	Numeric, currency (€)
Why do we need this data?	To get to know the entrepreneurial initiatives that arise at the University from innovative ideas and based on the results of research.
Description	**Spinoff:** company created and owned by the university **Startup: A** company in which the institution has no stake. • ONLY knowledge-based companies whose objective is the commercialisation of the knowledge or technology developed at the centre are considered. Both spin-offs and start-ups should have a licensing/transfer agreement in place. • For each of the companies, the following information will be requested: jobs created and funds raised.
Metric	Table 6
Information required to obtain it	TTO research report and TTO information system

Table 6	Spin-off	Startups
Number of jobs created	IMP.SPIN4.1.1	IMP.SPIN4.1.3
Investment funds raised (seed capital, *business angels, venture capital,* ...)	IMP.SPIN4.1.2	IMP.SPIN4.1.4

IMP.SPIN4.2 Relationship of spin-offs and start-ups with the University	
Code	IMP.SPIN4.2
Type of indicator	Numeric, numeric, numeric, numeric, numeric, numeric, currency (€)
Why do we need this data?	To find out what impact these new ventures have on other academic and research activities at the University.

Description	This heading covers teaching activities related to the company during the year: • Grants initiated in the year. Subsequent years will not be counted for the purposes of this indicator. • Undergraduate projects started in the year. Subsequent years will not be counted for the purposes of this indicator. • Final Masters projects started in the year. Subsequent years will not be counted for the purposes of this indicator. • Doctoral theses started in the year. Subsequent years will not be counted for the purposes of this indicator. • Joint publications between start-ups and research groups In addition, another clear impact that should be measured is the number of R&D projects that the spin-off or start-up company contracts with the university and the amount of these projects.
Metric	IMP.SPIN4.2.1 Number of scholarships given by spin-offs and startups to academic researchers IMP.SPIN4.2.2 Number of projects contracted by spin-offs and startups to HEIs IMP.SPIN4.2.3 (Cumulative) revenues from projects contracted by spin-offs and startups to HEIs
Information required to obtain it	TTO research report and TTO information system

QUESTIONNAIRE FOR DATA COLLECTION

Technology Transfer Offices

In the scope of the programme PROMOTION, MANAGEMENT AND DYNAMISATION OF THE TECHNOLOGY TRANSFER NETWORK, promoted by the National Agency for Innovation, this questionnaire aims at developing a system of indicators to assess the activity of technology transfer, between academia and industry, in Portugal.

The quantitative and qualitative indicators that make up this system were defined based on the European document "*Knowledge Transfer Metrics*", together with the "*Innovation Indicators Manual of the ITEMAS health platform*", in order to allow international benchmarking according to the best practices used in the evaluation of the results of the activities of a Technology Transfer Office (TTO).

Based on the fact that "what cannot be measured cannot be managed" (Peter Drucker), it is fundamental to identify the strengths and weaknesses of the national innovation system in order to improve the activity of the whole technology transfer network.

Year in review: 2022

ANNEX 2
/Survey sent to TTOs

1. INTERNAL ENVIRONMENT

1.1. Information about TTO

1. TTO Name:
2. Name of the Higher Education Institution (HEI):
3. Responsible for completion:
4. Position:
5. Location
    - Address:
    - Postal Code:
6. Contact
    - T/TM:
    - Email:
7. CAE:
8. Membership structure:

• Public entity of the Central Administration of the State - Higher Education;	
• Other public entity;	
• Entity of the Scientific and Technological System;	
• Entities of the Scientific and Technological System - Private higher education;	
• Another	

9. Available Infrastructures
    - Number of associated infrastructures/laboratories:
    - Identification of laboratories and purpose:
10. Number of years of TTO:
11. Is there a strategic innovation plan: Yes__No__
12. There is a compilation of on-going projects within the HEI (portfolio): Yes__No__

1.2. Human resources

13. Total number of *full-time equivalent* (FTE) persons at TTO:

14. Number of FTEs / typology of link to TTO

- No. of employees:
- No. trainee/scholar:

15. Number of FTEs / Level of academic qualifications

- PhD:
- Higher (Bachelor/Master's degree):
- Average (bachelor's degree or equivalent):
- Mandatory:

16. Number of FTEs / scientific field

- Applied sciences:
- Engineer:
- Social sciences and humanities:
- Legal sciences:
- Other: Which?

17. Number of training/professional development opportunities for TTO HR:

	National	International
PhD (related to TTO activity)		
MBA/Master's		
Specialisation courses (+ 100 hours)		
Other courses (+20 hours)		
Other activities (duration less than 20 hours)		

1.3. Financing and economic resources

18. External income obtained by the TTO by source of funding:

- Income from non-competitive financing:
- Competitive funding revenues:

19. Volume of expenditure by functional area:

- Administrative services:
- Planning and management/control of projects and innovation:
- Activities for TTO funding and applications for support programmes:
- Technical and/or scientific support activities:
- Activities to support entrepreneurship and the creation of spin-offs:
- Other activities: Which ones?

20. Annual TTO budget for:

- HR:
- External services:
- Protection and maintenance of IP rights:
- Proof of concept:
- Other budgets:
- Change in IP budget compared to previous year (%):
- Change in the total annual TTO budget compared to the previous year (%):

21. University research expenditure in the year:

- Total number of national projects applied for, in the year under review *(only projects for which a decision is taken in the same year will be included, in order to check the rate of acceptance of projects):*
- Total number of national projects awarded, in the year under review *(as with the previous indicator, the date of resolution determines the inclusion of the action in each period)*:
- Amount/value of national projects awarded, in the year under review:
- Total number of international projects submitted, in the year under review *(only projects for which a decision is taken in the same year will be included, in order to check the rate of acceptance of projects):*
- Total number of international projects awarded, in the year under review *(as with the previous indicator, the date of resolution determines the inclusion of the action in each period)*:

- Amount/value of national projects awarded, in the year under review:

22. Volume of spending on activities by scientific domain:
    - Digital transition:
    - Materials, systems and production technologies:
    - Health, biotechnology and food:
    - Great natural assets: forest, sea and space:
    - Green transition:
    - Society, creativity and heritage:
23. Volume of activity by recipient NUTS II region:
    - North:
    - Centre:
    - Alentejo:
    - Algarve:
    - A. Region of the Azores:
    - Madeira A. Region:
    - European regions:
    - Non-European regions:

2. ENVIRONMENT

2.1. Ecosystem

24. Number of researchers
    - Projects in the initial phase:
    - Project under development:
    - Total number of researchers contacting/collaborating with the TTO:
25. Internal and external dissemination
    - Number of internal outreach events organised by the TTO :
    - Number of external outreach events organised by the TTO :

26. Internal and external conferences and events with the participation of TTO HRs

- Number of internal events, congresses or workshops:
- Number of external events, congresses or workshops:

27. Participation in innovation-oriented organisations

- Number of national innovation organisations in which the TTO participates:
- Number of international innovation organisations in which the TTO participates:

28. Number of agreements signed

- With national *players*, in the year under review:
- With international *players*, in the year under review

3. ACTIVITIES

3.1. Intellectual Property Rights

29. Number of patents/utility models (MUT)

	INPI	WIPO	EPO	USPTO	Other
No. of patent applications/MUTs, in the year under review					
No. of international patent applications, in the year under review					
Number of European patent applications (direct or EURO-PCT), in the year under review					
Number of patent applications in the US (direct or national PCT phase), in the year under review					
Number of patent applications/MUTs in other territories (direct or national PCT phase), in the year under review					

- Percentage of patents applied for in co-ownership with companies:
- Percentage of patent applications/MUTs co-owned with companies:
- Number of Portuguese patents/MUTs granted, in the year under review:
- Number of European Patents granted in the year under review:
- Number of EUA patents granted, in the year under review:
- Number of patents/MUTs granted in other territories, in the year under review:

- Percentage of patents/MUTs granted out of total patent applications finalised, in the year under review: (granted) / (granted + (refused; abandoned)):
- Number of patents/MUTs commercialised/licensed, in the year under review:
- Total revenues (accumulated) patents/MUTs commercialised/licensed, in the year under review:

30. Number of brands

- Number of trademarks registered in the year (in any Office):
- Number of brands marketed/licensed in the year under review:
- Total revenues (accumulated) of brands marketed/licensed, in the year under review:

31. Number of Designs (DOM)

- Number of design (DOMs) applied for in the year under review (at any institute):
- Number of DOMs granted in the year under review (in any institute):
- Number of DOMs marketed/licensed in the year under review:
- Total revenues (accumulated) of DOMs marketed/licensed, in the year under review:
- Number of copyrights registered in the year under review
- Number of copyrights marketed/licensed in the year under review
- Total (cumulative) copyright revenues marketed/licensed, in the year under review:
- Number of know-how licensed in the year under review:
- Total revenues (cumulative) of trade secrets (know-how) marketed/licensed, in the year under review:
- Total revenues (cumulative) of trade secrets (know-how) marketed/licensed, in the year under review:

3.2. Spin-off and start-up companies

Spin-off: Company created by members of the academic community, participated by the HEI;
Startup: Company created by members of the academic community, not participated by the HEI
(only those created up to 31 December of the year under review are counted)

32.	Spin-off	Startup
Number of enterprises, in the year under review		
Turnover, in the year under review		
EBITDA (average), in the year under review		
Average survival over 5 years		
Average survival rate over 10 years		

3.3. Licensing agreements

33. Number of contracts signed with national entities, during the year under review:
34. Total revenue from contracts signed with national entities:
35. Number of contracts signed with international entities during the year under review:
36. Total revenue from contracts signed with international entities:
37. Innovation *funnel* by technological area

	Health	Industry	ICT	Other
New projects identified:				
Projects under development:				
Projects in the process of technology transfer:				
Commercialised/licensed projects (with solutions in the market) in healthcare:				

4. IMPACT

38. Impact of the companies created (spin-offs and start-ups) under the projects identified by the TTOs

	Spin-off	Starup
Number of HR created		
(Cumulative) volume of funding raised		

39. Relationship of spin-offs and start-ups with the University

a. Number of scholarships given by spin-offs and startups to academic researchers:

b. Number of projects contracted by spin-offs and startups to HEIs:

c. (Cumulative) revenues from projects contracted by spin-offs and startups to HEIs:

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