



UNIVERSITÀ
DEGLI STUDI
DI BERGAMO

Area
Risorse Umane

Servizio Personale TA e
collaboratori

CHANCELLOR'S DECREE

Data that can be deduced from the registration in the protocol:
Repertoire Number, Protocol Number, Title,
Class File Attachments and References

Object: Public selection based on qualifications and interview for the awarding of no. 21 Experienced grants for conducting research pursuant to art. 22 of law no. 240/2010 at the Departments of University of Bergamo - PICA code 23AR029

THE CHANCELLOR

GIVEN Law No. 168 of 9 May 1989 laying down rules on the "Establishment of MIUR";
GIVEN Law No. 240 of 30 December 2010 " *Norms in terms of organization of universities, of academic personnel and their recruitment, as well as mandate to the Government to subsidize quality and efficiency of academic systems* ", in particular art. 22 on research grants;
GIVEN the Statute of the University of Bergamo enacted with Chancellor's Decree Index No. 570/2023 of 01.08.2023;
GIVEN the University's current Regulations for awarding grants for conducting research;
GIVEN Ministerial Decree Prot. No. 102 of 09 March 2011, recorded at the Court of Auditors on 13 May 2011, which revalued the minimum gross annual amount of grants for conducting research;
GIVEN Decree-Law No. 192 of 31 December 2014 " *Extension of terms provided for by legislative provisions* ", converted, with amendments, by Law No. 11 of 27 February 2015 and, in particular, Art. 6 paragraph 2 bis which extended by two years the total duration of grants established under Art. 22 of Law No. 240/2010, taking it from four to six years;
GIVEN the D.L. No. 36/2022, converted, with amendments, into Law no. 79/2022, which in art. 14 paragraph 6-quaterdecies establishes that "for one hundred and eighty days following the entry into force of the decree conversion law, limited to the already programmed resources on the mentioned date, or approved by the respective governing structures within the mentioned term of one hundred and eighty days , universities [...] may call for awarding procedures of research grants pursuant to article 22 of law no. 240, in the current text before the entry into force of this decree conversion law";

Referring also to:

- the University's Code of Ethics issued with Chancellor's Decree. Prot. No. 14405/I/003 of 19.7.2011 and amended with Chancellor's Decree. Rep. No. 262/2018, Prot. No. 60030/I/003 of 12.4.2018;
- the University's Regulations on research integrity and ethics, enacted with Chancellor's Decree Index No. 387/2016 of 18 July 2016;
- the University's Patent Regulations enacted with Chancellor's Decree Index No. 390/2016 of 19 July 2016 and amended with Chancellor's Decree Index No. 158/2018 of 26 February 2018 and with Chancellor's Decree Index No 421/2020, of 9.9.2020;

ACQUIRED the resolutions of the Councils of the Structures involved referred to in Annex A which approved the annual research projects and resolved on the requirements for candidates' admission to the selection;

GIVEN the resolutions of the Academic Senate and of the Board of Directors reported in Annex A which approved the research grants activation in various Departments;



ASCERTAINED the financial backing reported in annex A;
DECREES

Article 1

Call for public selection

21 public selections are launched based on qualifications and interview for the awarding of No. 21 grants for conducting research pursuant to Art. 22 of L. No. 240/2010 with a contract under private law as specified in Annex A to this notice which constitutes an integral part thereof.

Each grant is paid to the contract holder in monthly instalments of equal amount.

The research projects are described in Annex A of this call constituting an integral part hereof.

Article 2

Requirements for admission to the selection

The selection procedure is open to **scholars in possession of a professional scientific curriculum suitable for conducting the scientific research provided for by this call, as well as of the following requirements:**

- **3rd cycle degree: PhD (see the following Annex A).**
- **knowledge of one or more foreign languages (see the following Annex A).**

The qualifications obtained abroad must be recognised as valid in the Italian territory.

As regards qualifications obtained abroad that have not already been recognised in Italy with formal procedure pursuant to the applicable laws, the Commission is competent to assess the equivalence – as to the nature, level and subject correspondence (CUN Area for PhD qualifications) – to the qualifications required by this call, for the sole purposes of admission to the present selection.

As regards qualifications obtained abroad, required by the call for the purpose of admission to this selection, the applicant:

- in the event of qualifications already recognised as valid in the Italian territory, must indicate in the application **the details of the provision attesting the occurred recognition** pursuant to the applicable laws;
- in the event of **qualifications not yet recognised**, must proceed with these indications:

Apply to the University of Bergamo for the equalization of the training course and the release of the final parchment through the instructions published at the following link: <https://www.unibg.it/ricerca/lavorare-ricerca/dottorati-ricerca/iscriversi-dottorato>
The University of Bergamo can recognize a PhD degree just in case of relevance to the ones already activated at the University of Bergamo. For the other PhD degrees offered by Italian Universities, refer to the link: <https://www.universitaly.it/index.php/public/cercaOffPL>.

After obtaining the equivalence, the candidate must request the "Certificate of Comparability" from the CIMEA (Academic Equivalence Mobility Information Center), by registering on the Center's website via the link that will be provided by the undersigned Administration.

In order to ensure the widest participation in the selection, the candidate with a qualification not yet recognised or with the recognition procedure in progress, **must obligatorily attach to the application, under penalty of exclusion, one or more of the following documents:**

- **a certified copy of the statement of qualification equivalence**, issued by the competent Italian diplomatic and consular authorities abroad;
- **the diploma supplement or transcript of record**, legalized and written in Italian or in English;
- **a copy of the qualification** with a translation into Italian or English.

In the event of qualifications not yet recognized, the candidate is admitted with reserve.

If the candidate turns out to be the winner, he must start the equivalence procedure above indicated, within the terms peremptorily established by the Administration following the approval degree, in order to sign the contract.



Moreover, the applicant is also required:

- **to be at least 18 years old;**
- **to be in possession of civil and political rights;**
- **to have no criminal convictions or ongoing criminal proceedings that would prevent, in accordance with the regulations in force, the establishment of an employment relationship.**

The selective procedure does not allow admittance to:

- those who have a degree of kinship or affinity, up to and including the fourth degree, with a professor from the relevant structure, or with the Chancellor, the General Manager or a member of the University's Board of Directors;
- those who have been holders, including any renewals, of research grants awarded pursuant to Art. 22 of Law No. 240/2010 for a period which, added to the duration of the contract provided for by this call, exceeds a total of six years, except for the period in which the grant was used in coincidence with the PhD within the maximum legal duration of the relevant course;
- those who were contracted as research fellow or fixed-term researcher as per ss. 22 and 24 of Law 240/2010 at the University of Bergamo or other Italian public, private or online Athenaeums, as well as any other Body indicated in para 1 of s. 22 of Law 240/2010 for a length of time which, if summed to the duration of the contract in this announcement, exceeds 12 years in total, albeit not consecutive; periods of time spent on maternity or sick leaves do not count to the purpose of the duration of the aforementioned relationships, in accordance with current Laws;

The applicant enrolled in a Diploma di Laurea (DL), Diploma di Laurea Specialistica (LS), Laurea Magistrale (LM), PhD with study grant or medical specialisation in Italy or abroad can participate in the selection object hereof; should the applicant be the winner, the research grant will be awarded subject to withdrawal from studies or PhD study grant.

Pursuant to art. 22 paragraph 2 of Law 240/2010 can not be recipient of the grants the regular personnel at universities, institutions and public entities of research and experimentation, the Italian National Agency for new technologies, energy and sustainable economic development (ENEA) and the Italian Space Agency (ASI) and institutions whose scientific specialization diploma was recognised equivalent to a PhD pursuant to the fourth paragraph under article 74 of Presidential Decree of 11 July 1980, No. 382.

The holder of the grant can attend PhD courses whose subjects are related to the research activities connected with the grant, upon prior evaluation of the Structure of reference. However, the research grant is incompatible with the enjoyment of the PhD study grant.

These requirements must be met on the date of expiry of the deadline for submitting the application for the admission to this selection.

This Administration guarantees equality and equal opportunities between men and women as to access to employment and treatment at work.

Article 3

Exclusion from the procedure

The following reasons are causes of exclusion:

- lack of signature on the application form;
- lack of admission requirements as provided for by Art. 2;
- failure to meet the procedures for submitting the application as mentioned under the following Art. 4.

The applicant is admitted if selected; should additional investigations be necessary, the applicant must regularize his/her application within the time peremptorily established.

The Administration may decide to exclude the applicant from the selection launched with this call, at any time, by reasoned Chancellor's Decree.



Article 4

Terms and conditions for submitting application

Under penalty of exclusion applications for participation in the competition, along with the relevant qualifications held and the relevant scientific publications, shall be submitted online through the following online application procedure:

<https://pica.cineca.it/unibg/>

The candidate will be able to register and access the platform using the Public Digital Identity System (SPID - security level 2). In case the candidate does not have one, he or she can request it according to the procedure indicated on the website www.spid.gov.it. Alternatively, the candidate can register and log in using the credentials released directly by the PICA platform.

It is of utmost importance to provide a valid email address in order to enable the registration process on the electronic procedure.

Applicants shall upload all personal and professional data as requested by the application procedure; all documents must be uploaded in PDF format (.pdf). Each applicant can produce a maximum of no. 40 publications and a maximum of no. 40 other titles and qualifications.

Failure to comply with the online application procedure will result in exclusion of the applicant.

Prior to final submission, and within the given deadline for applications submission, the online application procedure allows to modify and save the inserted information in a draft copy.

Confirmation of final submission date will be certified by an automatic notification email.

Submissions after the given deadlines will not be accepted by the system, as the online application procedure won't be accessible.

Each application will be given a registration number. For all further communications, the registration number shall be quoted along with the code of the research grant competition.

The online application and the submission procedure must be completed by and no later than **12.00 (Italian time) on the thirtieth day** from the notice publication date on the University website. Should the indicated deadline fall on a non-business day, it shall be postponed no later than 12.00 (Italian time) of the next business day.

The submission of the online application must be completed and finalized:

- **no digital signature:** in this case the candidate has to download the pdf file of the application by the system; the PDF file shall not be modified in any way, it is to be printed, signed in original, scanned in a pdf file and uploaded again on the website;
- **sign the application on the server using ConFirma service:** in order to sign digitally the application it is necessary to have a hardware (e.g., smart card or USB with digital signature certificate issued by an approved certification body) compatible with ConFirma service; after signing, applicants can download the signed pdf application;
- **sign the application digitally on your PC:** In order to sign digitally the application it is necessary to have a hardware (e.g., smart card or USB with digital signature certificate issued by an approved certification body) and a software for digital signatures in order to create a pdf.p7m file from the pdf file downloaded from this site. The pdf.p7m file must be uploaded in the website again;
- **in case of submission of the application through SPID,** it will not be necessary to sign the application form as it is automatically acquired by the procedure.

The application must contain all the required data by the system and must be signed and accompanied by a valid identification document of the candidate, under penalty of exclusion.

For any technical problems, contact support through the link available in the footer <https://pica.cineca.it/unibg>.

Article 5

Admission application

The applicant, filling the application, must declare, under his/her own responsibility, pursuant to what provided for by Presidential Decree 445/2000 and following amendments and integrations, as follows:



- his/her citizenship;
- to possess the qualifications mentioned in Annex A, indicating the CUN Area of PhD, the date on which it was obtained, the Institute that issued it and the final vote/assessment achieved; the applicant with qualification(s) obtained abroad must declare to have obtained the relevant recognition indicating in the application the details of the provision or must annex the required documentation according to what specified hereby;
- to possess any other requirements as mentioned in Annex A;
- to possess other qualifications useful for the assessment;
- to know the foreign language required by this call;
- in case of Italian citizenship: to be enrolled in the electoral lists, specifying the Municipality of belonging and possibly specifying the reasons for non-inclusion or cancellation from the same lists; in case of foreign citizenship: to possess civil and political rights in the Country of belonging or provenance, or the reasons for non-possession of the same;
- not to be excluded from the active political electorate;
- to have no criminal convictions, or declare possible convictions undergone, indicating the details of related sentences, and any pending criminal proceedings;
- to be/not to be a state employee, specifying to be/not to be a regular employee at Universities and other bodies as mentioned in Art. 22 of L. No. 240/2010;
- to have no degree of kinship or affinity, up to and including the fourth degree, with a professor from the relevant structure or with the Chancellor, the General Manager or a member of the University's Board of Directors;
- if enrolled in a Diploma di Laurea (DL), Diploma di Laurea Specialistica (LS), Laurea Magistrale (LM), PhD with study grant or medical specialisation, in Italy or abroad, to be aware that, in the event
- of awarding of the grant, attendance at such courses and the use of the PhD study grant are incompatible with the holding of the contract;
- to hold research grants awarded pursuant to Art. 22 of Law No. 240/2010;
- to hold contracts as fixed-term researcher pursuant to Art. 24 of Law No. 240/2010;
- to have attended a PhD indicating the period, University, date on which the qualification was obtained, cycle, exact title of the course and CUN Area;
- period of enjoyment of any PhD study grant;
- address to which communications concerning this competition are to be sent; it is mandatory to indicate a personal e-mail address as well;
- possible request to conduct the interview via videoconference indicating the phone number and motivation.

In the application for participating in the competition, the applicant, pursuant to Law No. 104 of 5 February 1992, must specify any aid necessary in relation to his/her needs as well as any need for additional time for the interview.

When submitting the application for participating in the selection, the applicant must annex the following documents:

1. a photocopy of the applicant's identity document in course of validity;
2. *curriculum vitae* in European format, dated and signed;
3. a list, signed by the applicant, of the publications and other research products, and other titles considered appropriate for the purposes of the selection such as specialisation degrees, certificates of attendance to postgraduate courses, obtained in Italy or abroad, contracts, study grant or research assignments both in Italy and abroad (cf. Annex B);
4. any publications, other research products or other titles that the candidate wishes to assert to the purpose of the procedure, numbered in progressive order matching the relating numbered list;
5. in the event of foreign applicant, it is necessary to annex: a copy of the residence permit (if the applicant is already in its possession).



For the abroad qualification, required for the purposes of selection admission, it's also necessary:

- in the event of qualifications already recognised as valid in the Italian territory, to indicate in the application **the details of the provision attesting the occurred recognition** pursuant to the applicable laws;
- in the event of qualifications not yet recognised attach to the application **one or more of the following documents**: a certified copy of the statement of qualification equivalence, issued by the competent Italian diplomatic and consular authorities abroad; the diploma supplement or transcript of record, legalized and written in Italian or in English; a copy of the qualification with a translation into Italian or English.

As regards all other qualifications obtained abroad which the applicant intends to provide for the selection as required by the call, it is necessary to annex to the application a copy of the qualifications. Each annex must be in PDF format and must not be larger than 30 MB.

Pursuant to Law No. 183/2011, the Administration cannot accept or request certificates, but only declarations in lieu of certifications or affidavits submitted in substitution of the actual certificates signed by the applicant and submitted together with an unauthenticated photocopy of the applicant's valid identify document. The Administration has the right to carry out suitable controls on the truthfulness of the contents of the declarations in lieu pursuant to what provided for by Presidential Decree No. 445/2000.

The requirements and the qualifications must be owned on the date of the expiry of the call.

It is mandatory to indicate a personal e-mail address to which the communications concerning this selection will be sent. Any variation of said address must be promptly communicated to the Selections Office and Legal Management (Servizio Personale TA e collaboratori).

Article 6 Examining Commission

The Examining Commission is appointed with Chancellor's decree, upon proposal of the Structure's Council, at the expiry of the deadline for submitting the application.

The Commission is authorized to carry out the on-line procedure, in the understanding that such method can be adopted until the conclusion of the relevant works, guaranteeing the security and traceability of communications.

Article 7 Selection

During its first meeting, the Examining Commission will establish the assessment criteria and procedures explicitly, according to what provided for by the call, fixing a minimum score for admission to the interview.

The overall assessment is expressed in hundredths, as indicated hereafter:

- up to a maximum of 60 points for qualifications and scientific-professional curriculum; to that end, the following will be object of assessment:
 - graduation vote;
 - PhD (if not already provided for as requirement for admission);
 - specialisation degrees and certificates of attendance to postgraduate courses, obtained in Italy or abroad;
 - publications and other research products;
 - documented research activities – as long as the beginning date and duration of the activities are duly certified – carried out at the premises of public and private subjects with contracts, study grants or assignments, both in Italy and abroad;
- up to 40 points for the interview.

Within the context of its autonomy, the Commission can integrate the above, depending on the research project and on what provided for by this call.

The Commission will evaluate, in particular, what is indicated in Annex A

The applicants will be informed before the interview on the results of the assessment of the qualifications.



The Commission reserves the right to carry out the interview via videoconference, through the use of IT and digital tools, guaranteeing the adoption of technical solutions that ensure the publicity of the same, the identification of the participants, as well as the security of communications, and their traceability. Failed connection at the time established or late connection, unless due to force majeure, will be considered as a renunciation to participate in the selection.

During the interview, the Commission will verify the applicant's ability to cover the topics and themes related to the research project and his/her knowledge of at least one foreign language, according to what provided for by the call.

The interview program is indicated in Annex A

The assessment of the knowledge of the foreign language (or foreign languages) as provided for by this call will be carried out during the selection according to the modalities established by the Commission.

The Commission reserves the right to verify the knowledge of the Italian language for foreign candidates; in this case, Italian language knowledge will be ascertained under ineligibility penalty and will not compete for the final score, unless otherwise established by the Commission

The date and place of the interview will be communicated with at least a 20-day notice through a communication published on the website of University of Bergamo <http://www.unibg.it>, under the section "Concorsi e selezioni-Assegni. Borse e contratti di ricerca-Assegni di ricerca" supervised by the Servizio Assegni di ricerca.

This notice is to all intents and purposes an official communication. Any changes related to the date of the interview will be communicated to the admitted applicants with at least a 20-day notice through the publication of a communication on the University's website under the section "Concorsi e selezioni-Assegni. Borse e contratti di ricerca-Assegni di ricerca".

Failure to show up at the interview will be considered as a renunciation to participate in the competition for all practical purposes.

At the end of the works, the Commission draws up the list of the applicants examined, indicating the votes obtained during the interview.

The Commission will draft the merit list in descending order according to the overall final score, which is obtained by adding the score of the qualifications and the score of the interview.

Applicants will be inserted in the merit list if they obtain at least 30 out of the 40 points available for the interview.

In the event of equal score, the PhD or equivalent qualification obtained abroad will constitute a preferential qualification, if not required for admission; in the event of equal merit, the younger applicant will be preferred.

The merit list is approved, under the condition precedent of verifying the requirements provided for by the call, with Chancellor's Decree and published on the website under the section "Concorsi e selezioni-Assegni. Borse e contratti di ricerca-Assegni di ricerca". The term for submitting any appeals will run from the date of publication.

Should the winning applicant renounce to or withdrawal from the contract, the grant can be awarded to successful applicants according to the order of the merit list, upon prior resolution of the Research Structure.

Article 8

Signing of the contract and withdrawal

The winning applicant, in possession of the mentioned requirements, will sign an autonomous work contract under private law with effect, normally, on the first day of the month following the month in which the acts are approved.

As regards foreign applicants needing a residence permit, the date of beginning of the contract will be postponed and subject to the completion of the issuing procedure of said permit.

In the case of conditional admission for the achievement of an abroad qualification not recognized as valid in Italy, the winner, before signing the contract, must produce the required documentation the terms peremptorily established



The winner of the selection, convoked by the Administrative Office to sign the contract, will lose the right to the grant for collaboration in research activities if he/she does not state to accept the contract or does not begin the activity within the established term, without prejudice to health reasons or causes of force majeure duly and promptly documented.

Each grant as mentioned under Art. 1 can be renewed, under the terms and conditions provided for by the above-mentioned Regulations; in any case, the relationship established pursuant to Art. 22 of Law No. 240/2010, including the possible renewal, cannot last more than six years, including the possible renewal, with the exclusion of the period in which the grant was used in coincidence with the PhD within the maximum limit of the legal duration of the relevant course.

Article 9

Rights and obligations of the grant holder

The employment relationship is governed by an individual contract, according to what provided for by the applicable laws and by the University's Regulations.

The research activity is flexible, it has a continuous nature, not merely occasional, and is carried out under the leadership of the Scientific Director, with autonomous conditions as to the research programme and its realisation, without any predetermined working hours.

The grant holder must refer to the Research structure that requested the activation of the contract. The research activity of the grant holder is carried out within the context of the relevant Structure and in other Structures of the University on the basis of the research programme. Any research activities conducted outside of the University must be approved by the Council of the Research structure.

A period of permanence abroad is allowed at one or more qualified universities or research institutes, upon prior authorisation of the Council of the Research structure. During the period spent abroad, the amount of the grant will be increased by fifty percent to be charged to the Structure of reference or to the funds assigned to the Research structure.

The grant holder can participate in all the activities programmed by the Research structure for the promotion of researches and the dissemination of relevant results; he/she can be a member of the profit exams commissions, in quality of expert.

The Research structure must provide the grant holder all necessary support for realising his/her research programme, guaranteeing access to the equipment, the necessary resources and the use of the technical-administrative services.

The grant holder must comply with what provided for by the University's applicable Regulations on research integrity and ethics.

The winner of the selection who is entitled to the grant, at the time of the signature of the individual contract, should be committed, under penalty of forfeiture of the right to the research grant, to confidentiality and preventive transfer to the University of all intellectual property rights relating to the results produced and/or achieved during the research activities carried out at the University and she/he has the right to be recognized as the author of the his/her results achieved and/or products. The University recognizes the application of the same economic conditions that the University Patent Regulation grants to its Professors/Researchers.

The research fellow may participate in activities performed on behalf of third parties pursuant to art. 66 of Presidential Decree 382/80, in the context of issues related to its project, and the distribution of related proceeds, in accordance with the current University Regulations on the subject.

Article 10

Taxes, welfare, insurance and mission

With reference to taxes, the grants are subject to what provided for under Art. 4 of Law No. 476/1984, while as regards welfare, they are subject to what provided for under Art. 2, paragraph 26 and following, of Law No. 335/1995, and following amendments. With reference to mandatory maternity leave, they are subject to what provided for by the Decree of the Ministry of Labour and Welfare of 12 July 2007, published in the Official Gazette No. 247 of 23 October 2007, and, as regards sickness leave,



they are subject to what provided for by Art. 1, paragraph 788, of Law No. 296 of 27 December 2006, and following amendments.

In the period of mandatory maternity leave, the bonus paid by INPS pursuant to Art. 5 of the mentioned Decree of 12 July 2007 is integrated by the University up to the payment of the total amount of the research grant.

The University will cover the grant holder's accident insurance and civil liability toward third parties' insurance within the scope of his/her research activity.

The covering of the grant holder's mission expenses is financed through the funds of the Scientific Director in charge or the Research structure, according to the modalities provided for by the University's regulations as to missions.

Article 11

Processing of personal data

In accordance with articles 13 and 14 of Regulation (EU) 2016/679 (GDPR), on the protection of personal data, and with D. Lgs. n. 196 /2003 and subsequent amendments, it is made known that data is controlled and managed by the legal representative of the University of Bergamo, via Salvecchio 19, - 24129 Bergamo.

Data will be collected exclusively for the present bid purposes and will be kept only for the necessary time to complete the relevant procedures. The data treatment controller will be appointed within the managing unit in charge of bidding procedure, who will carry out the treatment with all due respect of propriety, legitimacy, scope, transparency and confidentiality of the treatment; and data will be used exclusively for purposes connected to the selection and further conferment of the role and possible contract drafting, as well as management of the following employment position, in compliance with current regulations. Data will be kept for the necessary time to accomplish the selection purposes, subject to the application of norms on document retention, and will be transferred uniquely to public administration bodies directly concerned with the juridical and economic position of the selected applicant, treated in compliance with current regulations and used for personal, welfare, insurance and fiscal position management.

The data, not subject to profiling, will be processed by the appointed personnel through the acquisition of documents in paper and electronic form and through archiving procedures, including computerized ones, which will guarantee their confidentiality; the data processing will be carried out with related organization and processing logics and high security standards will be adopted. Candidates who have provided their data will be able to access them and exercise the rights provided for by the art. 16 to 22 from the EU GDPR 2016/679. Any safeguard request can be addressed to the University Data Protection Officer, who can be contacted through the university website (Privacy and Personal Data Protection section), at e-mail dpo@unibg.it. In addition to the right of complaint which can be presented to the Italian Data Protection Authority, Piazza Venezia 11, 00187 Roma.

By presenting their application, candidates thereby authorise and fully consent to publication on the University institutional website of all information concerning the current bid, their own data and the contents of their CV in accordance with 111-bis of D. Lgs.196/2003 stating that, within the scope limits defined by art. 6, par. 1, letter b), of the Regulation, consent is not due for personal data present in a submitted CV.

Article 12

Person in charge of the procedure

The Person in charge of the selection procedure within this call is Dr. Domenico Panetta, manager of Area risorse umane, Viale Papa Giovanni XXIII, 106 - 24121 Bergamo, phone (+39) 035 2052 669 - 594 - 878, e-mail address: assegni.ricerca@unibg.it.

Article 13

Publication

This call is published in the University's Official Registry, on the website of the Conference of the Italian University Chancellors (www.cruai.it), on the website of the Ministry of Education, Research and University (MIUR) at the link <http://bandi.miur.it>, and on the website of the European Union at the link <http://ec.europa.eu/euraxess> in the form of a notice.



The full competition and related annexed forms are available on the website of the University of Bergamo www.unibg.it under the specially devoted section "*Concorsi e selezioni-Assegni. Borse e contratti di ricerca-Assegni di ricerca*".

The call is also published on "Piattaforma Integrata Concorsi Atenei" (PICA) - link <http://pica.cineca.it/unibg/> from which it is possible to fill the application online for participation at the selection.

Article 14

Final provisions

For all matters not provided for by this call, the following will be applied: Law No. 240/2010 and following amendments and integrations, the University's Regulations on the awarding of research grants, the University's Regulations in force, and the Regulations on employment relationships in the public administration.

Bergamo, *as per protocol registration*

THE CHANCELLOR
(Prof. Sergio Cavalieri)
Documento firmato digitalmente ai sensi
dell'art. 24 del D. Lgs. 82/2005



ANNEX A

RESEARCH PROJECT - CODE 1

"Criminal protection of agri-food heritage: between socio-economic sustainability, wellness and cultural identity: From the case of wine heritage to the system of "criminal food law"

Research structure: Department of Law
Department Resolution: 19.09.2023

Resolution of the Academic Senate: 24.07.2023
Resolution of the Board of Directors: 26.07.2023

Gross annual amount: € 25.000,00
Financial coverage: project code ASSEGN12324EXP - CUP: F53C23000190005

Duration of the grant: 24 months

Scientific Area: 12 - Law studies
Competition sector: 12/G1 - Criminal Law
Scientific disciplinary sector: IUS/17 - Criminal Law

Scientific Director: Prof. Pierpaolo Astorina Marino

Entry requirement:
Dottorato di ricerca in Area CUN 12 - Scienze giuridiche.

Knowledge of the language: English

Additional qualifications evaluated by the Commission:
PhD relating to the subject of Academic discipline: IUS/17 - Criminal Law.

Interview schedule:

The interview will be designed to ascertain the competence related to general principles of Criminal Law, the knowledge related to the topics covered by the research project and the candidate's research aptitude. The interview will be held in Italian or English.

Description of the research project:

The Project aims at conducting a wide-ranging analysis on food criminal law, with particular attention to criminal law regarding alcoholic beverages, aimed at observing the possible implications - liberal or paternalistic - of resorting to punishment as an instrument of protection (often anticipated protection, through the category of abstract or presumed danger) of juridical assets that are both "public" and "individual" such as the identity of food and personal food choices.

The criminal law protection of the agro-food heritage has long awaited an overall restructuring (as can be seen from the many reform projects on the subject) as can also be seen in the non-systematic nature of the legislative innovations that are progressively introduced in this matter (most recently also by the so-called Cartabia Reform - Article 70, Legislative Decree No. 150/2022 - which introduced a particular form of extinction of certain types of minor offences in food matters). In the perspective of a reform, the legislator is called to deal with the plurality and heterogeneity of the legal interests traditionally involved - health and the public economy, the protection of industrial property rights and geographical indications, denominations of products - and with the thrusts that come from the ongoing socio-cultural and economic change, which do not seem to be easily framed within the legal



interests traditionally evoked by positive law in this matter. In this complex framework, the Project will deal in particular with two problematic lines: on the one hand, the theme of legal paternalism, which leads us to consider to what extent and under what conditions criminal law can intervene, directly or indirectly, to promote healthy lifestyles through food; on the other, the nature of food as a cultural and identity interest, which entails the risk of developing sanctioning strategies without an adequate scientific basis. In this specific perspective, paradigmatic cases are wine products and spirits in general, which certainly belong to the Agriculture and Food Heritage of our country (see for example art. 1, law n. 238/2016). They appear in the penal code (see articles 91 et seq. of the Criminal Code), but also in the sphere of penal protection of excise duties, taxes whose ratio certainly include (also) promotional reasons on individual health, so much so that reflection can be led up to consider the possible interactions between criminal law/sanctions and other "promotional" regulations such as other "health taxes " (think of the so-called fat taxes).

The project moves from a methodologically inductive effort, aimed at obtaining a reconstruction of all the possible sectors of our criminal law that can converge on the phenomenon of food and alcohol in particular, bearing in mind: (i) the relevant case law; (ii) the international aspects of standardisation, such as possible obligations from the European legislator; (iii) the perception of criminal risk by operators in the sector, evaluated from data to be obtained also through interviews. In a second phase, the project will instead have to shift attention to possible alternative protection tools, giving ample space to comparison (both the German and the US system stand out: in the first one the so-called "criminal law of wine" is even older than the more general criminal food law; the second one for the centrality of administrative intervention from a regulatory and executive point of view, and for the peculiarities of the sanctioning law).

The ultimate aim of the project is to arrive at a proposal for the reform of food criminal law, reconsidering the adequacy of the overall sanctioning system in the context of the evolution of the system.



RESEARCH PROJECT - CODE 2

"Measuring multidimensional inequalities in well-being"

Research structure: Department of Economics

Department Resolution: 19.09.2023

Resolution of the Academic Senate: 24.07.2023

Resolution of the Board of Directors: 26.07.2023

Gross annual amount: € 25.000,00

Financial coverage:

project code CUP: F53C23000190005 -UGOV project: ASSEGNI2324EXP

Duration of the grant: 24 months

Scientific Area: 13 - Economics and statistics

Competition sector: 13/D2 - Economic statistics

Scientific disciplinary sector: SECS-S/03 - Economic statistics

Scientific Director: Prof.ssa Annamaria Bianchi

Entry requirement:

Dottorato di ricerca in Area CUN 13 - Scienze economiche e statistiche

Foreign language: English

Additional qualifications evaluated by the Commission:

Knowledge of statistical software such as SAS, Stata or R and experience in the study of inequalities and composite indicators and in the use of complex databases such as EU-SILC are preferential qualifications.

Interview schedule:

Discussion of the publications and topics of the research project.

Description of the research project:

The project aims at making innovative contributions to the problem of measuring inequalities in well-being from a multidimensional perspective. In this regard, the availability of good quality estimates is fundamental for the design of effective policies aimed at combating inequalities. A particularly relevant aspect is the possibility of obtaining estimates at a local level (province or municipality). In relation to territorial well-being and sustainability at the local level, a topic of particular interest in recent years is linked to the phenomenon of depopulation, that affects many Italian and European municipalities.

In particular, the following blocks of topics are addressed:

- With reference to the measurement of inequalities in well-being, a) inequality measures will be defined and calculated for each European country and the corresponding regions (NUTS2), separately. The dimensions considered will include income and wealth, work, housing conditions, health, education, work-life balance, environment, social relations, civic engagement, safety and subjective well-being; b) considering that inequality measures are multidimensional, the construction of aggregate inequality profiles, taking into account different dimensions, will be explored in order to provide a picture of inequalities in well-being in European countries and their regions; c) comparisons will be made between countries and within countries, their evolution over time and the analysis of factors associated with well-being.



- With reference to the analysis at local level (provinces and municipalities), the analysis will be restricted to the Italian case. A measure of well-being at the municipal level will be defined and calculated and the inequalities at the local level in Italy will be explored.
- A particular focus will be dedicated to the topic of depopulation at the local level in Italy. A multidimensional measure of depopulation will be proposed and calculated allowing to evaluate this complex phenomenon taking into account its different dimensions (e.g., demography, territorial isolation, education, labor market, economic well-being of families, etc.); the impact of other possible factors (e.g., presence of businesses and services, actions by municipal administrations) will be assessed to explain the differences observed.

The main phases of the project are:

- 1) Definition of a framework of the issues relating to the objectives of the research accompanied by specific analysis of the literature, both with reference to the methodologies and the substantial results;
- 2) Definition of the approach, both with reference to the statistical method and the source used and the phenomenon considered;
- 3) Methodological developments and analyses; dissemination of results and discussion in an international context.



RESEARCH PROJECT - CODE 3

"Innovation, financial structure and resilience: the effects of the COVID crisis on the survival and performance of companies"

Research structure: Department of Economics
Department Resolution: 19.09.2023

Resolution of the Academic Senate: 24.07.2023
Resolution of the Board of Directors: 26.07.2023

Gross annual amount: € 25.000,00
Financial coverage:
Project code ASSEGN12324EXP – CUP: F53C23000190005

Duration of the grant: 24 months

Scientific Area: 13 - Economics and statistics
Competition sector: 13/A2 - Economic policy
Scientific disciplinary sector: SECS-P/02 - Economic policy

Scientific Director: Prof.ssa Elena Cefis

Entry requirement:
Dottorato di ricerca in Area CUN 13 - Economics and statistics

Knowledge of the language: English

Additional qualifications evaluated by the Commission:
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Interview schedule:
The interview will only focus on the candidate's PhD Thesis and publications to assess their preparation in Economics of Innovation, Industrial Dynamics and Microeconometrics.

Description of the research project:
The COVID-19 crisis can be described as a multidimensional crisis involving different aspects of the economy and businesses. In addition to being, above all, a health crisis, the Covid-19 crisis can be defined as: i) supply crisis: the restrictions imposed to contain the spread of the virus have caused supply-chain disruptions ; ii) demand crisis: lockdown measures and health concerns have reduced the demand for goods and services in many areas of the economy leading to a significant contraction in aggregate demand; iii) liquidity crisis: many companies have found themselves facing liquidity problems due to the decrease in revenues or the temporary cessation of activities. The reduction in liquidity has made it difficult for many companies to meet current expenses, such as the payment of salaries and suppliers, putting their survival at risk; iv) financial crisis: the volatility of the markets, the flight of investors towards safe assets and the difficulties in obtaining financing have negatively influenced the companies. This project aims to examine the effects of the COVID-19 crisis, in its multidimensional aspects, on the survival and performance of companies, in particular on newly formed ones (start-ups), emphasizing the interaction between innovation, financial structure and resilience. As performance indicators, the survival of the enterprises is analyzed first (in the absence of which all the other indicators are null) and subsequently (or rather, conditional on the survival) of the growth of the enterprises both in terms of turnover and number of employees.



Theme 1: The relationship between innovation and survival/performance during the COVID-19 crisis

While some studies suggest that innovation increases the chances of survival (Cefis & Marsili, 2005, 2012; Wagner & Cockburn, 2010; Colombelli, Krafft & Quatraro, 2013; Kato and Honjo, 2015), more recent works have shown that the Innovative activity can sometimes increase the probability of exit, due to the additional risks arising from the innovation (Fernandes and Paunov, 2015; Hyytinen et al., 2015; Howell, 2015). In fact, innovation is uncertain both as regards the overall returns of the innovative activity and the long recovery time of the initial investments (Malerba and Orsenigo, 2000; Klette and Kortum, 2004).

The question of whether the innovative activities carried out during times of prosperity affect the chances of survival of companies in times of crisis is controversial and may depend on the strategic behavior of the company. Some authors have underlined that companies that have a higher structural intensity in R&D tend to persist in their innovative activities, thus developing a superior ability to react to the crisis (Amore, 2015; Archibugi et al., 2013; Arrighetti et al., 2018). Recently, some articles have studied the effects of innovation on the survival of firms during the 2007-2008 financial crisis given the uncertain and risky nature of innovation (Filippetti and Archibugi, 2011; Archibugi, 2017). Among others, Landini et al. (2020), Cefis and Marsili (2019) find that there is still a premium for innovation in terms of survival even if it is different from the one enjoyed in normal times.

The relationship between innovation and firm survival (and contextual performance) thus remains worthy of further investigation, especially when considering periods of high instability. Therefore, the fundamental research question is:

RQ1: Do innovative activities increase the resilience capacity and performance of firms during times of crisis? Have innovative companies shown higher probabilities of survival and performance than non-innovative ones during the Covid19 crisis?

Theme 2: The relationship between innovation and survival during the COVID-19 crisis in start-up companies

To more clearly isolate the above effects, we want to focus on the concept of innovative entrepreneurship, which can be defined as the intersection between the innovation process and the organizational creation process. Innovative start-ups combine two sources of uncertainty: one associated with the nature of the innovation process, which includes experimentation and learning by trial and error (Nelson and Winter, 1982), and the other associated with the process of creating new organizations in the presence of information asymmetries (Amit et al., 1998) and lack of legitimacy (Aldrich and Fiol, 1994). These sources of uncertainty are mutually reinforcing in innovative start-ups. As a result, new firms that seek to innovate from their inception face unique challenges and are more precarious than established firms that innovate regularly (Winter, 1984).

However, entrepreneurial firms, while facing disadvantages related to lack of experience and small size (Aldrich and Fiol, 1994), are also those that benefit most from an "innovation premium" (Cefis and Marsili, 2006), which increases their chances of survival.

The situation of uncertainty at various levels, to which new innovative companies are exposed and which they manage in this initial and critical phase of their life cycle, may not be dissimilar to the uncertainty caused by an external shock such as a pandemic crisis. Since learning takes place in equally uncertain contexts, it is plausible to assume that experiencing true uncertainty in one situation helps to develop flexibility and adaptability to true uncertainty in another situation (Cefis and Marsili, 2019). Based on this, the project aims to analyze how innovative capabilities, especially when developed early in the organizational life cycle, create adaptive capacities for future shocks. Therefore, we ask ourselves:

RQ2: Did the innovative capabilities that start-ups had developed before the outbreak of the COVID-19 crisis influence their survival probability and performance during the COVID-19 crisis?

Theme 3: The role of the financial structure on corporate resilience and performance

The ability to deal with the economic downturn created by the COVID-19 crisis is crucially influenced by the pre-crisis links between investments in innovation and the availability of financial resources



(Cefis, Bartoloni & Bonati, 2019). Innovative firms may be more exposed to exit risk during an economic downturn as they are more indebted to innovation (Barlevy, 2002), and be more severely impacted than their non-innovative counterparts if they do not find adequate resources to carry innovations on the market (Lee et al., 2015). Thus, the presence of possible financial constraints before the crisis can influence how the firm deals with the crisis (Paunov, 2012). The literature on business failure prediction has emphasized that a firm's probability of default is positively influenced by its debt structure and interest burden on the debt, while negatively influenced by its ability to generate profits (Kaplan and Zingales, 1997; Olson, 1980; Bartoloni and Baussola, 2014).

One of the characteristics of the COVID-19 crisis is the credit crunch that has forced many firms out of the market mainly due to financial constraints (Balduzzi et al., 2020; De Vito and Gómez, 2020). If we also consider the importance of the link between firms' financial performance and the decision to innovate (Hubbard, 1998; Himmelberg and Petersen, 1994; Hall, 1992; Chiao, 2002; Bartoloni, 2008), especially in a turbulent macroeconomic context, we find ourselves wondering whether the financial conditions of firms influence the relationship between innovation and firm survival. For which:

RQ3: Has the financial structure of innovative firms affected their resilience and performance during and after the COVID-19 crisis? What was the role of the firm's financial structure on the relationship between innovation and survival during a period of strong instability?

Theme 4: The effects of State's aid on business resilience and performance

Aid from the Italian government (such as the Ristori and layoffs), designed to mitigate the negative effects of the restrictions imposed to contain the spread of the virus (Schivardi and Romano, 2020; Cerqua and Pellegrini, 2022), have been fundamental in promoting the business survival during the pandemic. In general, government aid has helped provide crucial financial support to firms that otherwise would have struggled to maintain their businesses (Halling and Zechner, 2020; Carletti et al., 2020; G30, 2020). However, it is important to underline that government aid may have had different effects between innovative and non-innovative firms. Innovative firms may have benefited more from aid precisely because innovation should be associated with greater resilience and adaptability. From which:

RQ4: Has State's aid been decisive in favoring the survival of companies that otherwise would have exited the market? Did they have different effects between innovative and non-innovative firms?

Scientific and economic impact of the project

The aim of this project is to provide new empirical evidence on the population of corporations in Italy and for the sub-sample of start-ups on the relationships between the characteristics of firms in terms of innovative capacity and financial structure and their resilience in times of multidimensional crisis such as the one just passed by Covid19.

Our economic and social system is cyclically affected by crises of a financial or real nature which turn into liquidity crises, demand crises and supply crises which have devastating effects on the business system. The project aims to provide new empirical evidence so that by elaborating it with the empirical evidence relating to the financial crisis of 2007-08 and with those even more distant in time, it is possible to find empirical regularities on which to base the economic policy actions aimed at helping companies effectively and efficiently to reduce the effects of these crises on the economic and social system. The project outlines the characteristics (especially in terms of innovative capacity and financial structure) of the companies that have managed to overcome the crisis in the best possible way, i.e. that have not simply managed to survive but have been able to recover their productivity levels. The profiling of these companies allows policy makers to make targeted, fast and effective decisions when another crisis occurs again. On the other hand, the results of this project could give clear indications regarding the financial structure that would allow companies to be robust enough to face a multidimensional crisis, without giving up being innovative, a condition that often leads to financial fragility.

At the same time, the knowledge gained from the development of the project gives policy makers the possibility of "tailoring" the aid to be disbursed to businesses in times of recession. In fact, there are quite a few who have expressed their discomfort regarding the "Ristori" or other forms of aid provided to businesses during the pandemic (G30, 2020). In fact, the hypothesis has been put forward that this aid was used by companies which should have already exited the market because they had not been



productive, profitable and had been making losses for some time (companies defined as "zombies" and which have been estimated to be around 10% of Italian companies) to extend their presence on the market. If zombie companies persist in the market they create an inefficient situation, but if they persist thanks to State's aid, then the situation represents a double cost to society.

The results of the analysis of the effects of State's aid (theme 4) on the survival and performance of firms offer direct tools for the evaluation of such policies which should be used by policy makers to study and propose ever more efficient and effective policies.

Ultimately, the project would lead to the advancement of academic knowledge in the context of the mechanisms and characteristics that allow the survival of companies in situations of crisis and recession. The study places itself on the frontier and aims to contribute to the debate in the field of economic-managerial disciplines on the interrelationship between innovation/financial structure (financial constraints) and the resilience and performance of companies in times of recession. The project involves the use of a new database and the application of new methodologies (described below) which will allow a frontier analysis on the most important parameters to identify the relationship between innovation, financial structure, and business resilience during crises.

The methodologies and data that will be used to analyze the themes in which the project is articulated constitute an element of originality that contributes to the scientific impact of the project.

Methodology

Quantitative methodologies supported by qualitative cases and examples will be used to analyze the above topics.

Data

The analyzes will be carried out using a relational database already developed by the proponent for the pre -Covid 2011-2019 period and which will first need to be updated. This dataset contains the balance sheets of the population of corporations and limited liabilities companies active in Italy, originating from the Centrale dei Bilanci (Revenue Agency). The data was acquired through AIDA of the Bureau van Dijk to which the University of Bergamo has access. Balance sheet indicators, synthetic sustainability indices and indicators for the analysis of the cash flows of the investments were elaborated on the acquired data. This database has been integrated with company-level patent data from Patstat. Patstat (to which the proponent has acquired access by purchasing the subscription for the year 2022 on her own research funds) provides data regarding the patents requested from the European Patent Office. Through an arduous work of disambiguation, the patents requested by all the companies present in the database of financial data were identified and data concerning these patents were extracted from Patstat, such as the total number of patents requested each year by the company, the classification codes technology of these patents, how many times each patent has been cited by successive patents, etc. Subsequently, for each individual company and for each year of the observation period, the data thus found supply patents information for all the firms.

The database thus set up provides for all companies active in Italy for at least one year from 2011 to 2019, balance sheet data, economic and financial sustainability indices, data on investments in intangible assets (investments in R&D, patents, and licenses) and data concerning the patent activity etc. Thus, measures are available which concern the innovative activities carried out within the company, the financial structure and the status of the activity (active company, in liquidation or exit from the market). Once the dataset will be updated to include the years of the pandemic and arrive at the latest available data, all the indicators and proxies will be available to carry out the analyses to develop the themes proposed in the project.

Quantitative methods

To analyze the first three themes, for the part focused on resilience, survival analysis based in particular on Cox models will be used. "Piece-wise exponential hazard models" will also be estimated which allow to analyze the relationship between innovation and survival and between innovation/financial structure and survival by distinguishing between the different sub-periods, i.e. between the pre-crisis, crisis and post-crisis periods, given that the macro (or systemic) conditions to operate in the market change drastically from the transition from one to another.



A new methodology (landmark analysis) will also be introduced in the economic field which comes from epidemiology (Van Houwelingen , 2007; Cortese and Andersen, 2010; Putter and Van Houwelingen , 2017), which highlights the relationships of interest in a "specific" way (landmark), rather than reporting "average" effects over the entire analysis period (such as the standard estimators of Cox models or parametric survival models such as log-log complementary regressions), taking into account different causes of output. In this way, we go beyond the current state of the art of survival analysis methodology in economics (for a review see Josefy et al., 2017) by improving the Competing Risk Models (CRM) which represent the current frontier in studies of survival.

As regards the role of government support in the context of the pandemic crisis (theme 4), ex-post evaluation methodologies of economic policies will be applied through the use of Propensity Score matching, Difference -in- Differences and Regression Discontinuity techniques, etc.

Contribution to the internationalization of Unibg research

The proponent has been collaborating continuously and constantly for several years with some professors of the University of Bath (Prof. Panos Desyllas) and of the University of Bristol (Prof. Orietta Marsili) who are interested in the themes proposed by the project and could collaborate on its development. The Applicant has a (free) Visiting Professor position at the University of Bath from July 2022 to the end of July 2025. Collaboration with the Management School of the University of Bath could lead to the development of comparative analyses. Certainly, it offers the possibility of presenting research results to an international audience.

Another contribution to internationalization could derive from the fact that the post-doc position would be offered on the international job market giving the possibility to recruit a foreign researcher who would help to extend the network of international contacts.

Lastly, the proponent is included in a particularly strong international research network in the economics of innovations, in industrial dynamics and in the evaluations of industrial policies.

(SPRU – University of Sussex, UK; Université Côte d'Azur – Nice, FR; Friedrich-Schiller- Universität Jena – Jena, D; etc.)

Dissemination of research results

The final products of the research will be articles to be published in the main international journals of the economic/managerial sector.

The articles will be presented at seminars organized by the economics/management departments of Italian and foreign universities, at international conferences and at specialized international workshops.

Furthermore, it is planned to organize a final international workshop at the University of Bergamo for the presentation of the results. The workshop will be focused on the effects of the COVID crisis on business performance.



RESEARCH PROJECT - CODE 4

“Space-time graph convolutional neural networks (ST-GCN): learning and predicting time-varying graph relationships with applications to the air transportation sector.”

Research structure: Department of Economics
Department Resolution: 19.09.2023

Resolution of the Academic Senate: 24.07.2023
Resolution of the Board of Directors: 26.07.2023

Gross annual amount: € 25.000,00
Financial coverage:
project code ASSEGN12324EXP – CUP: F53C23000190005

Duration of the grant: 24 months

Scientific Area: 01 - Mathematics and informatics
Competition sector: 01/B1 - Informatics
Scientific disciplinary sector: INF/01 - Informatics

Scientific Director: Prof. Stefano Coniglio

Entry requirement:
Dottorato di ricerca in Area CUN 01 - Scienze Matematiche e Informatiche

Knowledge of the language:
Italian, English

Additional qualifications evaluated by the Commission:

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Interview schedule:

The interview will ascertain the applicant's qualifications, knowledge of the English language, and expertise in the project's subject matter, with a focus on the areas of neural networks, deep learning, and machine learning.

Description of the research project:

The project aims at extending the theory and practice of spectral Graph-Convolutional Neural Networks (GCNs), of the underlying convolution operator, and of the related graph Laplacian to the case of dynamic (time-varying) graphs - graphs whose topology and nodal/edge information evolves dynamically over time. Among others, the project will also see the prediction of air traffic as its key practical case study. The successful postdoctoral researcher will work on the theoretical aspects of the project as well as on its implementation in machine-learning frameworks such as PyTorch and TensorFlow.



RESEARCH PROJECT - CODE 5

"T. AGRIF Remote Sensing for AGRIFood"

Research structure: Department of Engineering and Applied sciences
Department Resolution: 09.10.2023

Resolution of the Academic Senate: 23.10.2023
Resolution of the Board of Directors: 25.10.2023

Gross annual amount: € 25.000,00
Financial coverage:
project code ASSEGN2324EXP - CUP F53C23000190005

Duration of the grant: 24 months

Scientific Area: 08 - Civil engineering and architecture
Competition sector: 08/A4 - Geomatics
Scientific disciplinary sector: ICAR/06 - Surveying and Mapping

Scientific Director: Prof.ssa Maria Grazia D'Urso

Entry requirement:
Dottorato di ricerca in Area CUN 08 - Ingegneria civile ed architettura.

Knowledge of the language: English

Additional qualifications evaluated by the Commission:

- Research activity carried out.
- Participation as a speaker to the conferences and symposia related to Geomatics Topics.
- Academic and research experiences.
- Tutoring carried out in the strictly, geomatic context.

Interview schedule:

Research activities with particular relevance to the Geomatics aspects, remote sensing applied to different study cases, the treatment of satellite images and the construction of DTM.

Description of the research project:

The integration of information related to the effects of climate change to support decision-making in the different strategic sectors of a country's economy has become an essential tool in recent years to link scientific knowledge of climate change and technological innovations typical of the observation of the earth and its ecosystems to plan adaptation intervention policies that are resilient to Climate Change and risk reduction from extreme weather events such as excessive rainfall and/or heat waves. One of the strategic sectors of the global economy is the agri-food system, which, in addition to being inevitably affected by climate change, has also resulted in the indiscriminate exploitation and irreversible deterioration of natural resources erroneously considered unlimited and inexhaustible over the past fifty years. The costs paid in environmental and social terms due to intensive agriculture have been enormous, especially in the aspect of pollution, loss of biodiversity, reduction of soil fertility, and abandonment of marginal lands creating obvious sustainability problems. One possible response to the negative trend described above could come from the development of technologies and the implementation of so-called Precision Agriculture (PA), which got its start in the 1990s in the United States, where to this day it continues to have the widest technical and technological diffusion and evolution. AP or Precision Farming represents an integrated approach aimed at coordinating a wealth



of scientific knowledge, satellite and digital technologies, and next-generation sensor technology suitable for the positioning, acquisition, storage, and processing of satellite data and images, physical data, spatial, environmental, and crop information. This approach contains within it some fundamental aspects: agriculture is precision agriculture when it minimizes costs, maximizes yields, minimizes environmental impacts, especially in relation to the use of additives and fertilizers, or optimizes available environmental resources, e.g., water, uses advanced technologies to selectively intervene on crops in time and space. The adoption of precision agriculture techniques and technologies makes it possible to modulate agronomic interventions in a targeted manner and reduce pressure on the environment and health. Then again, food security and environmental conservation are two of the greatest challenges of the contemporary era. In relation to the projected growth of the world population to 9 billion by 2050, the FAO estimates that food and food needs will increase by 60 per cent from the annual average analyzed in 2017. However, the area under cultivation globally will increase to an extent trascurabile. In addition, factors such as technological evolution, increasing environmental degradation, water shortages, increased energy needs, the presence of new pests and diseases, and socio-political changes represent some current trends that are different from the past and affect agricultural production. The increase in farm size and structure, automation strategies along with climate change are also pushing the need to necessarily integrate echnological innovation in a consolidated way into the production processes of modern agriculture, trying to make it more productive and sustainable. The need to improve productivity, competitiveness and environmental performance is not just about economics. Finally, the medium- and long-term challenges related to sustainable agriculture should be addressed by a joint approach of industrialized countries to ensure support for technological innovation, as well as a regulatory framework that is risk-based, supported by scientific evidence, continuity of applied basic research, and development of agricultural expertise. In this context, remote sensing systems mounted on unmanned aerial platforms, UAV platforms, more commonly known as drones, can provide a complementary tool to conventional satellite-based remote sensing solutions, especially in many precision agriculture applications. UAV platforms, equipped with next-generation optical sensors (RGB, thermal, NIR, multi-spectral cameras) and low weight, offer great flexibility to rapidly acquire data in the field with adequate spatial and spectral resolution at lowcost. Knowledge of the spatial and spectral variability of an agricultural crop is a highly relevant aspect for identifying agronomic stress in a crop, i.e., one of the main factors influencing farm management decision-making processes aimed at increasing its production. Satellite images are widely used to solve this problem because of the possibility of being able to derive data from them on large spatial and temporal scales especially in relation to parameters put in relation to land morphology, solar irradiance, land use and the presence of green areas, reflectance, albedo and sky view factor. However, in this perspective, there are still some fundamental limitations. The first is related to the inability to capture information during the critical growing season of a crop, when cloudy skies make image capture in the acquisition window problematic. The second, conversely, is related to the difficulty of achieving an advantageous trade-off between spatial and spectral resolution and data cost. For these reasons, UAV platforms offer a useful and advantageous complementary support to satellite remote sensing. To demonstrate the potential of UAV platform imagery to precision agriculture applications, it is possible to derive growth indices from maps of a crop using spectral signature processing and, thus, also comparison with satellite imagery, as the corresponding growth indices (NDVI, normalized NDVI, NDRE) can also be calculated from high-resolution satellite imagery. However, even in the use of this technology, there is no shortage of problems: one of the biggest is the high instability due to the use of low-end systems and instrumentation and the harsh environmental conditions that, in most cases, allow the optical sensor to be operational in highly unstable configurations. Therefore, a UAV platform requires accurate calculation of spatial orientation, large spatial and spectral distortion, and low signal-to-noise ratio. In this context, a key aspect of image processing is the generation of mosaics that can be aligned with the map for later integration into a GIS system. Image mosaicking is a very common method of generating broad views by aligning sequence of images or videos in a predefined reference system to create panoramic images. In the sequence, images are transformed into a plane mosaic through a perspective plane transformation called homography. Typically, the correspondence in the



image and the mosaic plane as well as the measurement of similarities according to spatial relationships between different representations are used to calculate a homography. In accordance with this concept a mosaic consists of the following steps: identification of characteristic elements and their matching, estimation of the transformation model, and transformation of the image. It is possible to spatially calibrate the image through knowledge of the flight altitude of the platform and the geometric relationships of the sensor model; in addition, the correspondence between the image and the terrain can be determined through knowledge of the digital terrain model (DTM). The image can be directly projected into the mosaic plane. Although commercial remote sensing and photogrammetry software works with this type of image calibration and provides accurate sensor parameters (roll, drift, pitch, and sensor coordinates), robust calibration has not yet been achieved due to the complexities of the measurement system and terrain. Therefore, the two-year research project consists of the following phases:

Year I: study of aerial photogrammetry principles and measurement procedures (sensor types, metric and semi-metric chambers), calibration procedure; theoretical study of dataset aggregation and classification methods; acquisition of environmental data;

Year II: continue theoretical study and update bibliographic research; conduct trials and tests on presumably cultivated areas, vineyards and/or citrus groves, crops important in our country's agri-food chain and national economy; processing of test results; validation of results and writing of final report.



RESEARCH PROJECT - CODE 6

"Personalizable Artificial Pancreas: Development of data-driven strategies for personalizing Model Predictive Control algorithms for blood-glucose regulation in type 1 diabetic patients"

Research structure: Department of Management Engineering, of Information and Production
Department Resolution: 15.09.2023

Resolution of the Academic Senate: 24.07.2023
Resolution of the Board of Directors: 26.07.2023

Gross annual amount: € 25.000,00
Financial coverage:
project code ASSEGN2324EXP - CUP: F53C23000190005

Duration of the grant: 24 months

Scientific Area: 09 – Industrial and information engineering
Competition sector: 09/G1 – Systems and control engineering
Scientific disciplinary sector: ING-INF/04 – Systems and control engineering

Scientific Director: Prof. Antonio Ferramosca

Entry requirement:
Dottorato di ricerca in Area CUN 09 – Ingegneria industriale e dell'informazione

Knowledge of the language: English

Additional qualifications evaluated by the Commission:
Previous experience in the field of automatic control, mainly Model Predictive Control and dynamic system identification from experimental data. Previous experience in the blood-glucose regulation control problem for T1D patients.

Interview schedule:
Fundamentals of Model Predictive Control.
Fundamentals of Artificial Pancreas control algorithms for blood-glucose regulation.

Description of the research project:
The main objective of the project is to design, develop and test a data-driven MPC, to be used as a controller in the PA, in order to calculate the amount of insulin injections in T1D patients, obtaining a personalized therapy, thus facilitating the disease management. This controller, based on patient data, must be able to correctly predict each patient's future blood glucose level values and, based on these, calculate the right amount of insulin to reach the target level of glucose, respecting all the desired constraints. In addition, he must avoid hyperglycaemic and, above all, hypoglycaemic events (due to the dangerous short-term consequences) by keeping the blood glucose level within a safe range (i.e., 70-180 mg/dL) for as long as possible.
To achieve this fundamental goal, many sub-goals must be achieved.
Theoretical research: several theoretical aspects need to be investigated, in particular:
- Data-based methods: identify which data-based method is best suited to insulin-glucose management in the case of patients with type 1 diabetes.
- MPC stability: the model of the system is unknown and this can affect the stability of the MPC, for this reason the stability of learning-based MPCs needs to be investigated.



- MPC robustness: due to the nature of the data-driven approach, prediction errors can affect the feasibility, and therefore the stability, of the closed loop. Therefore, the robustness of learning-based MPC needs to be investigated.

Practical activities: From a practical point of view, the development of the final goal can be divided into several intermediate objectives:

- Data collection and pre-processing: the first objective is to obtain a good dataset, by carrying out experiments on the virtual patient UVA/Padova. In particular, the data collection phase is crucial as it affects the quality of the therapy, which is based on the data-driven method. The data pre-processing stage is also crucial and therefore must be done accurately.

- Data-driven glucose predictions: Once the data is selected, the goal is to use it to predict future glucose behavior.

- MPC Scheduling and Evaluation: Implementation of data-driven method for glucose predictions within the MPC, to obtain future insulin injections to reach the final target, by setting cost function and constraints.

- Virtual Patient Testing: Verify the accuracy of the data-driven MPC by running tests on the VA/Padova virtual patient.



RESEARCH PROJECT - CODE 7

"The Nature of the Void: actions for de-sealing and renaturalisation of soils in the regeneration processes of large brownfield sites"

Research structure: Department of Engineering and Applied Sciences

Department Resolution: 19.09.2023

Resolution of the Academic Senate: 24.07.2023

Resolution of the Board of Directors: 26.07.2023

Gross annual amount: € 25.000,00

Financial coverage:

Project code: ASSEgni2324EXP - CUP: F53C23000190005

Duration of the grant: 24 months

Scientific Area: 08 - Civil engineering and architecture

Competition sector: 08/F1 - Urban and Territorial Planning and Design

Scientific disciplinary sector: ICAR/20 - Urban and Regional Planning

Scientific Director: Prof. Emanuele Garda

Entry requirement:

Dottorato di ricerca in Area CUN 08 - Ingegneria civile ed Architettura

Knowledge of the language: English

Additional qualifications evaluated by the Commission:

- Doctoral thesis related to the research topics.
- Research experience acquired in the analysis of urban regeneration processes and the reuse of existing built spaces.

Interview schedule:

The interview provides for the evaluation of the candidates' theoretical knowledge and applicative skills with respect to the topics presented in the research project. In particular, the following themes will be addressed: i) characteristics, forms and effects of the decommissioning of built spaces with particular reference to urban contexts; ii) policies and tools of territorial and urban planning for the recovery of decommissioned areas; iii) projects and experiences of urban regeneration; iii) characteristics, aims and examples of the application of Nature-based Solutions and sustainable urban drainage measures.

Description of the research project:

The phenomena of the dismissal of built spaces have initiated a complex season of reflection that has focused on the reuse of this vast asset. In addition to the refunctionalisation of existing structures, projects have emerged that have acted through "demolition without reconstruction" interventions, generating a new permeability of the soil that has created the conditions for the renaturalisation of the areas. The analysis of some experiences of regeneration of brownfield sites, characterised by the recourse to soil de-impermeabilisation, NbS construction and the formation of new 'green infrastructures', makes it possible to confront both the different effects (spatial, ecological, social, etc.) produced by these processes and the variety of policies and planning tools adopted for their promotion and implementation.



The research project intends to propose an in-depth theoretical and applicative study of a topic relevant to the governance of urban areas, i.e. the regeneration of 'derelict places', which has been the subject of a major renaissance in recent years due to the interest in the negative impacts produced by climate change and the different measures to be taken to fight them.

Starting from this wide reflection, the research will mainly focus on the capacity of de-impermeabilisation and renaturalization interventions promoted within urban regeneration processes, to respond to real community needs, supporting the scientific and institutional debate on actions for adaptation and urban resilience.

The research will deal with different innovative experiences, also from the point of view of the urban policies and planning tools adopted, focusing on issues that are part of the international debate on strategies for improving the urban environment, safeguarding the health of inhabitants (especially the most vulnerable categories) and combating climate change. The main research activities will concern:

- Collection and critical analysis of the bibliographical references inherent to the most relevant concepts of the research
- Identification, mapping (GIS software), and classification of relevant experiences of brownfield regeneration focused on renaturalisation (total or partial). This specific activity will aim to present the characteristics of the areas and urban contexts of reference
- Identification, analysis, and interpretation of the documentation and technical/design documents relating to a more limited sample of cases that will be the subject of further investigation and comparative analysis
- Surveys and photographic analysis of the areas in the sample of cases
- Structured and semi-structured interviews with qualified subjects, including researchers, planners, public administration officials, institutional representatives, etc.
- Definition of interpretative and synoptic frameworks, also supported by cartographic and infographic representations, obtained through the interpretation and comparison of the case studies
- Organisation of at least two seminars and moments of discussion with different subjects
- Drafting of summary reports and guidelines for the dissemination of research results
- Participation in the drafting of scientific products for the sharing and presentation of research results.



RESEARCH PROJECT - CODE 8

"MISAI - Software Engineering Methodologies of Intelligent Autonomous Systems"

Research structure: Department of Management Engineering, of Information and Production
Department Resolution: 15.09.2023

Resolution of the Academic Senate: 24.07.2023
Resolution of the Board of Directors: 26.07.2023

Gross annual amount: € 25.000,00
Financial coverage:
project code ASSEGN12324EXP - CUP: F53C23000190005

Duration of the grant: 24 months

Scientific Area: 09 - Industrial and information engineering
Competition sector: 09/H1 - Information Processing Systems
Scientific disciplinary sector: ING-INF/05 - Information Processing Systems

Scientific Director: Prof. Angelo Michele Gargantini

Entry requirement:

Dottorato di ricerca in Area CUN 01 - Scienze matematiche e informatiche o in Area CUN 09 - Ingegneria industriale e dell'informazione.

Knowledge of the language: English

Additional qualifications evaluated by the Commission: Scientific publications, including doctoral thesis and experience in research relating to the topics of software engineering, testing of complex systems, validation of algorithms and artificial intelligence programs.

Interview schedule:

The interview will focus on these topics:

- Software engineering, principles and methodologies with particular reference to AI-based software.
- Use of AI to create complex software systems.
- Use of AI to support the design and validation of complex software systems.

Description of the research project:

Intelligent autonomous systems engineering is an interdisciplinary field that combines principles of software engineering, computer science, and artificial intelligence to design, develop, and validate systems that possess machine learning capabilities, adaptability, and decision-making autonomy.

The main objective of intelligent systems engineering is to establish the best processes for creating and developing systems that can internally employ artificial intelligence components. This discipline involves a series of activities ranging from the definition of system requirements and specifications, to the choice of algorithms and artificial intelligence techniques to be used, up to the realization and practical implementation of the system and its validation. The project will explore innovative solutions in different fields, focusing on a rigorous approach with strong methodological and formal foundations. In conclusion, intelligent systems engineering is a discipline that aims to create methodologies and techniques for the realization of autonomous, adaptive and intelligent systems. This rapidly growing field offers ample opportunity for innovation and the application of advanced technologies.



RESEARCH PROJECT - CODE 9

“Technological innovation and criminal justice: new perspectives for the precautionary control of the suspect with digital tools in proceedings for crimes with a high risk of violent escalation”

Research structure: Department of Law
Department Resolution: 19.09.2023

Resolution of the Academic Senate: 24.07.2023
Resolution of the Board of Directors: 26.07.2023

Gross annual amount: € 25.000,00
Financial coverage:
project code ASSEGN12324EXP - CUP: F53C23000190005

Duration of the grant: 24 months

Scientific Area: 12 - Law studies
Competition sector: 12/G2 - Criminal Procedure
Scientific disciplinary sector: IUS/16 - Criminal Procedure

Scientific Director: Prof. Francesco Bartolo Morelli

Entry requirement:
Dottorato di ricerca in Area CUN 12 - Scienze giuridiche.

Knowledge of the language: English

Additional qualifications evaluated by the Commission:
PhD relating to the subject of Academic discipline: IUS/16 - Criminal Procedure.

Interview schedule:

The interview will be aimed to ascertain the candidate's competence with regard to the general principles of criminal procedural law and to the knowledge of the topics covered by the research project, especially the discipline of precautionary measures, and the candidate's aptitude for research. The interview will be held in Italian and English.

Description of the research project:

The project starts from the investigation on the digital monitoring of the defendant under precautionary measure of the house arrest. The Code of Criminal Procedure provides that the judge, while applying the measure just mentioned, may prescribe the use of "electronic or other technical means" (so-called electronic bracelet, art. 275 bis Code of Criminal Procedure).

Such an opportunity of control could be more functional if untied from other measures and made an independent precautionary instrument. It is precisely this issue that the project intends to investigate: it is necessary and urgent to verify the wide spaces for the use of electronic control also outside the prospect of replacing the custodial measure, i.e., the most restrictive one, with house arrest accompanied by electronic control. The field of application to which the project refers is represented by proceedings for offences of family violence, which often see repeated conducts having a twofold characteristic: firstly, this conduct sometimes expresses an objective seriousness that does not allow the certainly suitable measure, prison, or even any measure at all; secondly, this conduct, although not intrinsically serious from the perspective of criminal law, is often highly predictive of very rapid and uncontrollable escalation, which can result in offences that offend physical integrity or life. The



aim of the project is to exploit the predictive potential of such conducts for the protection of the victim in the pre-trial context, without twisting the system of restrictive measures to such an extent as to entail undue compressions of the defendant's freedom.

The project will be divided into five stages: 1) examination of the milestones reached so far about the electronic precautionary monitoring of movements 2) digital configuration of the instrument 3) examination of the rights involved by the continuous monitoring 4) configuration of the specific dangers that the measure is intended to avert 5) structuring of an independent precautionary case in order to protect the victims of 'predicate' offences. The research will have to start from the knowledge acquired on precautionary issues and on the real right drawn from the electronic instrument in order to configure the extension of control also outside the application of a different precautionary measure. The method to achieve these objectives will be to shape the proposal around the rights drawn with the measure, so as to ensure an intervention that can be placed within the limits imposed by the constitutional and ECHR rights referred to the suspect, so that the electronic control can become functional, compatible with the Constitution and, therefore, long-lasting.

First of all, it will be necessary to sound out the actual technical functioning of the medium, and then to derive the construction of a control measure that is independent of other measures, that can emancipate itself from the consent of the defendant and that can guarantee the imminent notification of the violation not only to the authority but also to the victim, who can thus have time to save him/herself. It will be necessary to define the prerequisites of the specific measure of electronic monitoring, and to verify that the precautionary system allows the use of presumptions on danger that may make the measure applicable also in cases of proceedings for offences of low objective gravity, but predictive of escalation.

It will then be necessary to configure a case to regulate the management of geolocation data (storage and deletion), to prevent their dissemination and ensure that they are kept in confidential files, and to establish the regime for their use in the cognitive process.

Finally, limits to monitoring must be guaranteed, since a total compression of the right to private privacy is not allowed, but this right must survive in its hard core.



RESEARCH PROJECT - CODE 10

"Investigating Salience: econometric models and methods for macroeconomic forecasting."

Research structure: Department of Economics

Department Resolution: 19.09.2023

Resolution of the Academic Senate: 24.07.2023

Resolution of the Board of Directors: 26.07.2023

Gross annual amount: € 25.000,00

Financial coverage:

project code ASSEGN12324EXP - cup. F53C23000190005

Duration of the grant: 24 months

Scientific Area: 13 - Economics and statistics

Competition sector: 13/A5 - Econometrics

Scientific disciplinary sector: SECS-P/05 - Econometrics

Scientific Director: Dott. Emilio Zanetti Chini

Entry requirement:

Dottorato di ricerca in Area CUN 13 - Scienze Economiche e Statistiche

Knowledge of the language: English

Additional qualifications evaluated by the Commission:

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Interview schedule:

Illustration of the Research project, verify of knowledge of English proficiency

Description of the research project:

Motivation

The increase in macroeconomic uncertainty in the current geopolitical and economic context tests the forecasting capabilities of any economic agent called upon to make decisions: households and investors, who must make costly consumption or investment choices based on a certain amount of information; and professional analysts, who must provide accurate visions of economic uncertainties. If all experts have perfect knowledge of economic fundamentals and their dynamics, their forecasts should coincide with the data. Otherwise, the differences between forecasts and data should be limited to random noise. However, forecasts of major macroeconomic variables are still characterized by recurrent and systematic biases (and potentially predictable), even in world-renowned institutions like the Survey of Professional Forecasters owned by the Federal Reserve Bank (SPF-FED). Croushore and Stark (2019) and others have found these biases in both temporal and cross-sectional dimensions. These divergent biases over time and among individuals (the "two biases") challenge traditional econometric axioms. These are:

Axiom 1: data-based estimation - the probability distribution of an economic variable is predicted using data only;

Axiom 2: linear iterative scheme - following the Box-Jenkins approach, forecasters collect data, maximize their utility (or minimize their disutility) using likelihood-based or similar methods, then



diagnose the resulting estimates so that the outcome (or quote) (publicly available) incorporates a certain estimate based on external sample information (judgment).

The two biases are based on the assumption of rational inattention (RIH). The economic agent must choose between gathering and processing new information and saving effort, according to RIH. Consequently, the static and dynamic costs of information must be minimized. Consult Mackowiack et al. (2021) for an updated overview of the literature on this topic starting from Sims (2003). We are interested in the RIH strategy. In a model assuming strategic interactions among agents to explain their choices, information can be an endogenous variable if it represents a constraint. However, data on the attention of professional forecasters are scarce, making it difficult to study the two biases and their relationship with other economic variables. This is what drives my research.

Research Questions

This project uses available (limited) datasets and a new line of literature on the Theory of Saliency, developed by Gennaioli and Shleifer (2010) and at the intersection of Cognitive Psychology and Microeconomics, to better understand the microeconomic foundations of the two biases and provide a practical tool to empirically verify some of the most recent findings in economic theory. Saliency is a human behavior that links the degree of judgment to the direction in which a part of the environment is observed (Taylor and Thompson, 1982). This theory explains the excessive reaction of professional forecasters, as well as many other economic phenomena such as credit cycles, anomalies in expected stock prices, and financial bubbles, by explaining that forecasting agents have "diagnostic expectations" in the sense of Kanheman and Tversky (1983), meaning they overestimate the frequency of certain events when they receive additional information (possibly non-substantive). Overweighing the informative content of limited information leads to judgment, potentially distorting the entire forecasting process (over time). Despite the extensive and impactful literature on this topic, two issues remain open. Strategic behavior and diagnostic expectations: Bordalo et al. (2021) explain the systematic divergence among forecasters through strategic adjustments by traders with time-varying incentives to trade based on risk expectations and speculative returns. The literature on saliency has not yet formalized the strategic behavior of economic agents.

Our first research question is:

RQ1: How to test strategic behavior in an econometric model based on inattention to saliency?

The dynamics of macroeconomic and financial saliency are another open issue. Bordalo et al. (2018, 2019, 2020) use the Diagnostic Kalman Filter (DKF) to measure excessive reaction as a power transformation of the Bayesian posterior distribution of the private signal. Standard regression (aggregate or individual) can estimate excessive reaction after DKF estimates the signal-to-noise ratio and variance of revisions. Most time series support excessive reaction.

However, a time period for the evolution of such excessive reaction is not provided.

Our second research question is:

RQ2: How long will strategic excessive reaction last?

These research questions will advance macroeconomic theory. Indeed, a time series of saliency dynamics based on forecasts would allow economists to measure its correlation with phases of the economic cycle, both at the aggregate and individual levels. For empirical issues, understanding this correlation is essential to justify a structural modeling strategy of the economic cycle that takes into account revisions and excessive reaction to shocks.

Consult Coibion and Gorodnichenko (2015) for ex-ante and ex-post correlation. Our hypothesis is that strategic forecasting behavior and effective measurement of the temporal evolution of strategic judgment will produce different results compared to recent literature, such as Bianchi et al. (2020).

Methodology and Implementation

This project introduces the "Saliency Structure" (SS) to relax Axioms 1 and 2. The SS considers the forecasting environment as a game among (at least) three agents: Forecast Producer (FP), Forecast User (FU), and Reality, who interact strategically according to a Forecast Protocol to avoid unfairly favoring FP or FU. This protocol tests structural coherence or coincidence (or statistically insignificant difference) between observed forecasts and model-based forecasts.

If FP and/or FU fail this test, the other agents will suspect a spurious quote and will have a similar suspicion in the subsequent period. Consequently, they will update their judgment in future quotes,



endogenously and excitingly biasing the forecasting system (SJB). The "Judgment Filter" (JF) introduced by Zanetti Chini (2022) can estimate this peculiar dynamic by partitioning the time series of observed forecasts into two components in each period: that of non-sample-based estimation and that of sample-based estimation using a weighted likelihood approach. The dynamics of SJB appear to be nonlinear and imperfectly correlated with the economic cycle. These results are important, but this methodology needs improvements. The parametrization of the SS model for forecast revisions is still unknown.

Empirical evidence of SJB is limited to RGDP. This project develops the SS analysis in both directions. This project produces a paper for the following activities:

Activity 1: Revised SS data representation: the state-space representation can be used to rewrite the class of (V)ARIMA models in an SS and vice versa, even with an ex-post revision bias.

Activity 2: SS estimation through a new retrospective algorithm called "Judgmental Smoother" (JS).

Activity 3: Experimenting SS-JS on US economic variables and comparing the estimated distortion parameter with the literature

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RESEARCH PROJECT - CODE 11

“Development of advanced dynamic cell culture systems for unraveling the mechanobiology of intimal hyperplasia in vascular diseases”

Research structure: Department of Management Engineering, of Information and Production
Department Resolution: 15.09.2023

Resolution of the Academic Senate: 24.07.2023
Resolution of the Board of Directors: 26.07.2023

Gross annual amount: € 25.000,00
Financial coverage:
project code ASSEGN12324EXP - CUP: F53C23000190005

Duration of the grant: 24 months

Scientific Area: 09 – Industrial and information engineering
Competition sector: 09/G2 – Bioengineering
Scientific disciplinary sector: ING-IND/34 – Industrial Bioengineering

Scientific Director: Prof. Andrea Remuzzi

Entry requirement:
Dottorato di ricerca in Area CUN 09 – Ingegneria industriale e dell'informazione.

Knowledge of the language: English

Additional qualifications evaluated by the Commission:

- Proven knowledge of data processing and analysis methodologies (e.g., statistical techniques).
- Proven knowledge of cell behavior analysis methodologies.
- It is an advantage, but not necessary, to have publications in the disciplinary sector IND-IND/34 – Bioingegneria industriale.

Interview schedule:

During the interview, the candidate must demonstrate his/her knowledge and skills pertinent to the project topic. English language level will be assessed during the interview.

Description of the research project:

There is a critical need to mechanistically understand the role of dynamical mechanical stresses acting on all types of cells comprising the vascular wall in the field of vascular access for hemodialysis (AVF: arteriovenous fistula).

The topic remained almost unexplored and the multiple knowledge gaps in this field still need to be filled. In order to take a significant step forward, it is essential to understand the adverse remodeling of the vascular wall. It is therefore essential to shift the focus from stresses at the vessel wall in isolation, to stresses occurring both at and within the wall in combination, and to isolate the effects of the latter. More specifically, we need to: i) determine the range of vibration frequency and amplitude in patient's AVFs; ii) understand the effects of different vibration frequencies and amplitudes on endothelial (EC) and smooth muscle (SMC) cells biology, both separately and combined; iii) provide evidence on the interplay between ECs and SMCs and the mechanotransduction of the stimuli. Therefore, the project aims to elucidate the role of vascular wall vibrations in AVF stenosis development, by experimentally studying the effects of vibrations in two complementary purpose-designed systems for cell stimulation and ex-vivo AVF perfusion where the response of SMCs to vibrations can be studied deeply in isolation.



RESEARCH PROJECT - CODE 12

"Public value creation through strategic planning in universities: a field study"

Research structure: Department of Management

Department Resolution: 21.09.2023

Resolution of the Academic Senate: 24.07.2023

Resolution of the Board of Directors: 26.07.2023

Gross annual amount: € 25.000,00

Financial coverage:

Project cod. ASSEGN2324EXP - CUP: F53C23000190005

Duration of the grant: 24 months

Scientific Area: 13 - Economics and statistics

Competition sector: 13/B3 - Organization and human resource management

Scientific disciplinary sector: SECS-P/10 - Organization and human resource management

Scientific Director: Dott. Luca Carollo

Entry requirement:

Dottorato di ricerca in Area CUN 13 - Scienze economiche e statistiche o in Area CUN 14 - Scienze politiche e sociali.

Knowledge of the language: English, Italian

Additional qualifications evaluated by the Commission:

Skills in qualitative research, evidenced by publications in organizational and social sciences in national and international journals, with an empirical approach involving data collection and analysis/interpretations.

Interview schedule:

The interview will focus on the knowledge of qualitative research techniques and methodologies, and on candidates' previous knowledge or experiences pertaining to organizational and/or business contexts. Although it is not an essential prerequisite, familiarity with Action Research methodologies will be considered a plus by the Selection Committee.

Description of the research project:

The concept of public value refers to the value that an organization is able to generate for society and has become one of the cornerstones of organization studies and public administration literature in recent years. However, the concept of public value remains somewhat elusive and challenging to define in precise terms. Each public administration must find a way to identify, define, and operationalize its contribution to society to ensure its proper functioning in alignment with principles of efficiency and effectiveness. Recently, in Italy the concept of public value gained particular relevance in the planning activities of public administrations with the implementation of the Integrated Plan of Activities and Organization (PIAO), which came into effect on June 30, 2022. This measure establishes that the activities of every public administration have to be oriented towards generating "objectives of public value (...), understood as the increase in economic, social, educational, and environmental well-being in favor of citizens and the productive forces" (art. 3, paragraph 1 of the Decree of the Department of the Public Function No. 132/2022).

Universities represent a particular and, in some ways, exceptional case of public administration,



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characterized by a multiplicity of objectives and by a highly professionalized and diversified workforce. Through a literature review and one or more case study(ies), the research project aims to investigate the way in which Universities, through their internal processes of strategic planning and strategy-implementation, contribute to generating public value. The project is also designed as an 'Action-Research' initiative, simultaneously serving the purpose of intervention and organizational development in the studied context(s), while also aiming to contribute innovatively to scientific knowledge.



RESEARCH PROJECT - CODE 13

“Social network, entrepreneurship and industrialization process: building a data-base for the Bergamo area (1850-1950)”

Research structure: Department of Management
Department Resolution: 21.09.2023

Resolution of the Academic Senate: 24.07.2023
Resolution of the Board of Directors: 26.07.2023

Gross annual amount: € 25.000,00
Financial coverage:
Project cod. ASSEGN2324EXP – CUP: F53C23000190005

Duration of the grant: 24 months

Scientific Area: 13 - Economics and statistics
Competition sector: 13/C1 - Economic history
Scientific disciplinary sector: SECS-P/12 - Economic history

Scientific Director: Prof.ssa Stefania Licini

Entry requirement:

Dottorato di ricerca in Area CUN 11 - Scienze storiche, filosofiche, pedagogiche, psicologiche o in Area CUN 13 - Scienze economiche e statistiche o in Area CUN 14 - Scienze politiche e sociali

Knowledge of the language: English, Italian (for foreign applicants)

Additional qualifications evaluated by the Commission:

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Interview schedule:

- A solid research experience in archives.
- Proficiency in reading 19th-century manuscripts.
- Good knowledge of computer tools, databases, and Excel.
- Excellent ability in bibliographic research, including coeval print sources.
- Adequate methodological preparation in the field of economic and business history studies.

Description of the research project:

The research aims to reconstruct a collective biography of entrepreneurship in the Bergamo area during the process of industrialization (1850-1950). Already in the aftermath of the First World War, Bergamo, the fourth province in Lombardy in terms of industrialization rate, was particularly advanced within the Italian landscape (Licini-Zamagni, 2015). Studies conducted on early manufacturing growth areas, districts, and regions in Europe have identified widespread entrepreneurship, cohesion within local communities, and strong bonds of trust among economic actors (Barker, 2017) as key determinants of development. Numerous international studies on the subject have revealed the effectiveness of using serial sources, such as company registers and succession records, to investigate the role played by "minor" enterprises and entrepreneurs in supporting local economies (Amstrong, 1991; Tweedale, 2013; Owens, 2002). These types of archival sources, scarcely accessible elsewhere in Italy, are available in Bergamo and form the focus of the first part of the research. In particular, the researcher is tasked with verifying the exact correspondence between documentary materials and records entered into two databases implemented some years ago, concerning A) the



Historical Trade directories of Bergamo, Imberg-db, and B) The probate records registered in Bergamo from 1862 to 1951, Succe-bg. The trade directories records are preserved at the Legler Foundation for Economic and Social History of Bergamo in Ponte San Pietro, while the succession papers are held at the State Archive of Bergamo. Following the verification and correction phase of the two databases, the research moves on to defining the biographical profile and socio-familial relationships of owners and financiers of manufacturing, commercial, and banking enterprises.

Having gathered information from the extensive available archival documentation, possibly supplemented by numerous contemporary printed sources, the research continues by combining descriptive statistics (Vasta-Toninelli, 2016) with qualitative research tools, aiming to synthesize findings through a prosopographical approach, recently appreciated not only by historiography but also by management disciplines (Felman, 2014; Rinaldi, 2021).

Among the expected outcomes of this work, there is both a significant increase in knowledge regarding the timing and methods of local and national economic growth, and a noteworthy contribution to the international debate on the causes, methods, and protagonists of the industrialization process (De Jong, Higgins & Van Driel, 2015). Given the locations of primary source preservation, it is also anticipated that the research will contribute to the digitization of the archival heritage of the involved institutions, thereby enhancing its usability and accessibility.



RESEARCH PROJECT - CODE 14

"I-FROB: An Inclusive Family of Robots"

Research structure: Department of Humanities and social sciences

Department Resolution: 13.09.2023

Resolution of the Academic Senate: 24.07.2023

Resolution of the Board of Directors: 26.07.2023

Gross annual amount: € 25.000,00

Financial coverage:

ASSEGN2324EXP CUP - F53C23000190005

Duration of the grant: 24 months

Scientific Area: 11 - History, philosophy, pedagogy and psychology

Competition sector: 11/D2 - Methodologies of Teaching, Special Education and Educational Research

Scientific disciplinary sector: M-PED/03 - Methodologies of Teaching and Special Education

Scientific Director: Prof.ssa Serenella Besio

Entry requirement:

Dottorato di ricerca in Area CUN 11 - Scienze storiche, filosofiche, pedagogiche, psicologiche o in Area CUN 09 - Ingegneria industriale e dell'informazione.

Knowledge of the language: English

Additional qualifications evaluated by the Commission:

- Knowledge of the topics indicated in the program.
- Ability to express concepts clearly and coherently.
- Relevance and exhaustiveness of the issues and arguments presented, in relation to the questions posed by the Commission.
- PhD in one of the following scientific areas according to the Italian law (or equivalent according to other countries' legislation): 11-D2 (Didactics and Special Education); 09/G2 (Bio-engineering); 09/H1 (Information processing systems)

Interview schedule:

- The development and use of robotic artifacts to support children with disabilities, with particular reference to the field of play: existing and tested models and tools.
- The functional obstacles to play activities encountered by children with motor impairment and with autism spectrum disorders; the environmental obstacles that hinder the development of their play skills.

Description of the research project: The project intends to encourage "play for the sake of play" (Visalberghi, 1958) in children with disabilities (CwD) in inclusive contexts, through the implementation and use of innovative modular robots called I-FROB (Family of Robots). The I-FROBs are systems whose modularity is described as: a) the possibility of composing and defining different types of interaction in order to support an independent activity; b) the possibility of carrying out play activities that ensure participation for both CwD and typically developing children and/or adult playmates. Furthermore, modular robot systems can be designed for cooperative play, so that adults or peers can set up an appropriate system for everyone, for example by helping to build a robot that



can achieve a shared goal. The specific objectives are: 1- The production of I-FROB through a co-design process. 2- The definition of adequate settings (space/adult/peer interaction) to promote inclusiveness through robotic systems. 3- The definition of criteria to evaluate the quality of play and of inclusion in the play activity. The project sets at the crossroads of three study and experimental areas: play, disability and robotics and it envisages interdisciplinary collaboration between the Department of Human and Social Sciences of Unibg (which brings into play the long experience of studies and research of a mainly pedagogical nature of play for children with disabilities) with the Artificial Intelligence Laboratory of the Politecnico di Milano (which has a long experience in the development and experimentation of playful robots).



RESEARCH PROJECT - CODE 15

"Statistics and mathematics anxiety: measurement, profiling, and association with academic performance and mindfulness-based intervention strategies"

Research structure: Department of Humanities and social sciences

Department Resolution: 13.09.2023

Resolution of the Academic Senate: 24.07.2023

Resolution of the Board of Directors: 26.07.2023

Gross annual amount: € 25.000,00

Financial coverage:

ASSEGN2324EXP CUP - F53C23000190005

Duration of the grant: 24 months

Scientific Area: 11 - History, philosophy, pedagogy and psychology

Competition sector: 11/E1 - General psychology, psychobiology and psychometrics

Scientific disciplinary sector: M-PSI/03 - Psychometrics

Scientific Director: Prof. Andrea Greco

Entry requirement:

Dottorato di ricerca in Area CUN 11 - Scienze storiche, filosofiche, pedagogiche, psicologiche.

Knowledge of the language: English

Additional qualifications evaluated by the Commission:

- Carrying out a documented national and international research activities relevant to psychometrics - as long as they are duly certified as effective and lasting - in public and private subjects with contracts, scholarships or appointments, both in Italy and abroad;
- The scientific quality of publications and other research products with particular reference to those relating to psychometrics.

Interview schedule:

The interview will be aimed at ascertaining and verifying, also through the discussion of the qualifications presented and the research carried out by the candidate, the aptitude and experience of collaborating on the research project and, furthermore, to evaluate the candidate's knowledge in the field of the research project. The interview will focus on these topics and on the candidate's scientific production in order to evaluate the candidate's knowledge in this regard. Knowledge of the English language will be verified and to also will be verified the Italian language for foreign candidates.

Description of the research project:

Academic students in non-STEM disciplines (i.e., Science, Technology, Engineering, and Mathematics) often experience anxiety in learning mathematics and statistics (Jenny & Field, 2023). The first has been defined as "feelings of tension and anxiety that interfere with the resolution of mathematical problems in ordinary life and academic situations" (Richardson & Suinn, 1972, p. 551); the latter has been defined as "a negative state of emotional arousal experienced by people following encounters with statistics in any form and at any level" (Chew & Dillon, 2014, p. 199). From the two definitions it can be seen that appears to be a fair amount of overlap between the two constructs. In any case, the scientific literature does not agree on this aspect and it has not yet been determined whether these two forms of anxiety are two different constructs, as initially hypothesized, or simply two shades of a



more generic anxiety for the manipulation of numerical information (Jenny et al., 2023). In fact, to date, few studies have attempted to study the distinctiveness of the two constructs and, despite this, no agreement has yet been found on the matter (Baloğlu, 2002; Birenbaum & Eylath, 1994; Paechter et al., 2017; Zeidner, 1991). Therefore, the general objectives of this project are the following:

- Psychometric validation: Conduct the psychometric validation of an Italian version of the Stars scale (Cruise et al., 1985), which measures anxiety about statistics, and of the Mars scale (Baloğlu & Zelhart, 2007), which measures anxiety about mathematics;
- Evaluate whether statistics anxiety and mathematics anxiety have actually been transmitted to a single construct also in the Italian cultural context, through a replication study based on the studies conducted by Terry and Field (2023);
- Identify risk profiles for statistics and mathematics anxiety;
- Explore the protective effect of mindfulness exercises in reducing anxiety about statistics and mathematics, evaluating its impact on students' well-being and their academic performance.



RESEARCH PROJECT - CODE 16

“Enhancing competence in English for Specific Purposes via augmented reality: a prototype platform for educational and professional contexts”

Research structure: Department of Foreign Languages, Literatures and Cultures
Department Resolution: 19.09.2023

Resolution of the Academic Senate: 24.07.2023
Resolution of the Board of Directors: 26.07.2023

Gross annual amount: € 25.000,00
Financial coverage:
ASSEGNI2324EXP CUP - F53C23000190005

Duration of the grant: 24 months

Scientific Area: 10 - Antiquities, philology, literary studies, art history
Competition sector: 10/L1 - English and Anglo-American Languages, Literatures And Cultures
Scientific disciplinary sector: L-LIN/12 - Language and Translation - English

Scientific Director: Prof.ssa Patrizia Anesa

Entry requirement:

Dottorato di ricerca in Area CUN 01 - Scienze matematiche e informatiche o in Area CUN 09 - Ingegneria industriale e dell'informazione o in Area CUN 10 - Scienze dell'antichità, filologico-letterarie e storico-artistiche o in Area CUN 11 - Scienze storiche, filosofiche, pedagogiche, psicologiche.

Knowledge of the language: Excellent knowledge of both English and Italian

Additional qualifications evaluated by the Commission:

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Interview schedule:

The interview will focus on topics such as:

- ESP.
- ELT.
- Immersive technologies.
- Materials design.
- User experience.
- Learning analytics.
- The commission will evaluate competences such as collaboration skills and previous experience in fields related to the content of the project, also through the discussion of qualifications, research and professional experiences carried out by the candidate. The theoretical and practical skills related to the key aspects of the project, and the knowledge of the Italian and English languages will be ascertained.
- The interview will be conducted both in Italian and in English.



Description of the research project:

Theoretical framework:

Computer-Assisted Language Learning (CALL) is witnessing a constant growth in the use of mobile devices and free XR creation apps, which represent affordable opportunities to master the AR experience and create authentic real-life situations. These aspects are particularly salient in ESP communication, but there is a profound, often ignored, need to adopt clear theoretically driven and pedagogically sound approaches. Following Hockly's (2019) claim that the affordances of technology in building situational interest is still under-researched in language acquisition studies, this project also aims to explore how situational interest is enhanced by XR technologies.

Description of the research project:

The first part of the project aims to provide a review of currently available XR technologies with the aim to offer reflections on their potential for different types of users. Some of the key issues of the analysis are: The notion of XR in its various meanings; the nature of teaching processes involving new technologies; the role of specialized language in academic and professional contexts. The specific materials will be developed and will be tested. The user experience will be analyzed in order to improve system usability. During and after the trialing phase, feedback will be collected from enrolled users. Learning analytics techniques will be employed to provide personalized user feedback.

Key words: ESP, ELT, Immersive technologies, Materials design, User experience

Time:

The project is divided into three main phases: a. Preparatory; b. Developmental; c. Disseminating and conclusive. The three phases include:

- A) Literature review; Lessons design; Materials preparation/adaptation/creation/evaluation
- B) App development; teaching selected lessons; testing; evaluation
- C) Project report; update of website and other social media channels. Publication of two articles or book chapters and presentation of the results at least one conference or seminar.

Expected results:

The project will provide the following resources and products, which will be made freely accessible in order to encourage information sharing and a vivid scientific debate:

- Resources for the analysis of how AR can be implemented in ESP teaching, training, and learning and in the design of educational materials which can favor the acquisition of language skills (with particular reference to users with disabilities and special needs)
- Guidelines for curriculum and materials design in the field
- Training/ teaching/learning materials for the acquisition of Business, Legal and Medical English via AR

The results will be disseminated via at least one conference/seminar presentation and two publications. Social media will also be regularly updated.

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RESEARCH PROJECT - CODE 17

“Bergamasco dialect on the web (DiaBerg). Preserving, enhancing and disseminating the intangible cultural heritage of the area of Bergamo”

Research structure: Department of Foreign Languages, Literatures and Cultures
Department Resolution: 19.09.2023

Resolution of the Academic Senate: 24.07.2023
Resolution of the Board of Directors: 26.07.2023

Gross annual amount: € 25.000,00
Financial coverage:
ASSEGNI2324EXP CUP - F53C23000190005

Duration of the grant: 24 months

Scientific Area: 10 - Antiquities, philology, literary studies, art history
Competition sector: 10/G1 - Historical and general linguistics
Scientific disciplinary sector: L-LIN/01 - Historical and general linguistics

Scientific Director: Prof.ssa Valentina Pionno

Entry requirement:
Dottorato di ricerca in Area CUN 10 - Scienze dell'antichità, filologico-letterarie e storico-artistiche

Knowledge of the language: Italian and English

Additional qualifications evaluated by the Commission:
Knowledge of an Italo-Romance dialect

Interview schedule:
Language contact and multilingualism. Linguistic variation and dialectology. Corpus linguistics and computational text analysis.
The interview will be conducted in Italian and, partly, in English.

Description of the research project:

Objective:

The DiaBerg project aims at creating a web resource containing authentic texts in a Gallo-Italian dialect, Bergamasco, which are representative of local cultural traditions. Oral, transcribed, and written textual content will be digitalised and processed by means of computational technologies and made freely accessible on an online platform. The web resource will allow consultation primarily - but not only - for linguistic research and for the protection and promotion of local traditions, and will also be accessible to non-local users.

DiaBerg pursues several purposes. On a theoretical level, it leads to the advancement of knowledge about local varieties by fostering the study of both internal and extralinguistic phenomena. From a methodological viewpoint, it fosters the development of information technologies and automatic language processing.

Theoretical framework:

The area of Bergamo is characterised by a considerable linguistic-cultural richness (cf. at least Guerini 2006, 2009, 2013, 2016). As a matter of fact, it includes Italian as the national language, the native



languages of immigrants, as well as indigenous local languages or dialects. This represents an intangible cultural heritage of great value. This project aims at documenting, protecting and enhancing it.

Several Italian universities are currently involved in the documentation of dialect varieties. Mention should be made, for example, of Vinko and CLiMAIp, for the valorisation of minority dialects/languages; VaRiOpInTA, on changes in the dialects of Italy; NavigAIS, on lexical variants. UniBg has devoted much attention to the territorial varieties of the medieval and recent period (Guerini 2001 on anthroponymy; Guerini 2021a, Guerini/Lo Conte 2023 for the Glossario Bergamasco Medioevale by A. Tiraboschi; Dal Negro/Ghezzi/Guerini/Trovesi 2002, Guerini 2019 on toponymy, Guerini 2021b on exposed scripts).

Despite this, the varieties of Bergamo are still poorly represented in digital form. DiaBerg aims to fill this gap by creating a tool based on a sample of spontaneous and representative data from several text genres. In order to make the heritage more representative, the archiving and documentation will not be limited to textual content, but will include images (scans of the selected texts) and audio tracks.

Research project description:

The DiaBerg project has both a theoretical and an applied dimension. Its results, which are primarily technological, will fill a gap in the online resources for the dialect of Bergamo and may serve as a model for the analysis of other local languages, envisaging significant practical applications.

As a matter of fact, DiaBerg's primary goal is the development of a web resource aimed at preserving, enhancing and disseminating the intangible cultural heritage of the area of Bergamo. The platform will collect texts produced over a wide time span (1928-present), which are representative of different textual types.

On a theoretical level, the project leads to the advancement of knowledge about local varieties by favouring the study of internal as well as extralinguistic phenomena.

On the methodological level, it favours the development of information technologies and automatic language processing.

DiaBerg will also integrate the theoretical-applicative dimension with strategies of dissemination of its results to non-specialist users. The platform will make the findings available to the general public in open access, in order to accomplish goals of valorising/promoting the local cultural heritage. This will foster the preservation of local varieties, increasing awareness of the linguistic-cultural richness of the multilingual context.

Finally, the collaboration with external organisations will allow the realisation of a prototype of pedagogical/methodological tools for the promotion of the use of Bergamasco among school-age speakers.

Key word: digital corpus of texts, dialect of Bergamo, linguistic and computational processing

Time schedule:

DiaBerg is developed over the following actions:

- ACTION 1 (months 1-3): Exploratory study of the main theoretical and empirical contributions on the dialects of Bergamo. Identification of computational tools for data processing.
- ACTION 2 (months 4-16): Construction and computational processing of the database.
- ACTION 3 (months 17-18): Creation of the web platform and database query mask.
- ACTION 4 (months 19-24): Data extraction and analysis. Dissemination of results.

Main outputs:

- Contributions for a volume or an international scientific journal (fascia A);
- DiaBerg website;
- Organisation of public events for the presentation of the platform.

Expected results:

The dissemination of the research results will take place through several actions.

For the dissemination of the outputs within the scientific community, publications in (inter)national scientific journals and/or volumes will be produced and participation in conferences will be promoted. The dissemination of the products in the non-specialist environment will be aimed at publicising the web resource, in order to offer maximum visibility to the project outputs.

Public events will be organised for the presentation of the resource and its local dissemination.



Lastly, DiaBerg envisages the creation of a network of contacts and collaboration with Italian and foreign universities that have promoted the creation of web platforms and that share the aims of documenting and valorising dialectal or minority varieties.

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RESEARCH PROJECT - CODE 18

"Decision making in aging and MCI patients: support from neurostimulation techniques"

Research structure: Department of Humanities and social sciences

Department Resolution: 13.09.2023

Resolution of the Academic Senate: 24.07.2023

Resolution of the Board of Directors: 26.07.2023

Gross annual amount: € 25.000,00

Financial coverage:

ASSEGN2324EXP CUP - F53C23000190005

Duration of the grant: 24 months

Scientific Area: 11 - History, philosophy, pedagogy and psychology

Competition sector: 11/E1 - General psychology, psychobiology and psychometrics

Scientific disciplinary sector: M-PSI/02 - Psychobiology and physiological psychology

Scientific Director: Prof.ssa Maria Luisa Rusconi

Entry requirement:

Dottorato di ricerca in Area CUN 11 - Scienze storiche, filosofiche, pedagogiche, psicologiche.

Knowledge of the language: English

Additional qualifications evaluated by the Commission:

Previous research experience of the candidate in areas inherent and/or related to the research project (including publications and presentations at national and international conferences).

Knowledge of using neuro-stimulation techniques

Interview schedule:

The interview will be aimed at ascertaining and verifying, also through the discussion of the titles presented and the research carried out by the candidate, the ability and experience to collaborate in the research program covered by this competition notice. The interview will focus on the research project and the scientific production of the candidate and will also ensure knowledge of the English language.

In particular, the interview will focus on the following topics

- contemporary theories of decision making and creativity in relation to active ageing
- literature on decision making in patients with MCI
- any empirical research carried out by the candidate on topics related to the research project.

Description of the research project:

The research project focuses on decision-making (DM) in the healthy elderly with mild cognitive impairment and the possible effects of stimulation (in particular, the use of tDCS, a direct transcranial stimulation tool, is included). Decision-making is a crucial determinant of health and well-being throughout life, especially in old age (Boyle et al., 2012), when the older adult has to make crucial decisions in areas such as finance or health and safety, in conjunction with possible cognitive decline (Hammond et al., 2016). This is even more evident in the diagnosis of Mild Cognitive Impairment-MCI, a condition characterised by partial deficits in cognitive function that do not (yet) impair the performance of daily activities and the individual's autonomy. This study aims to investigate whether tDCS in everyday decision-making tasks, not only in the laboratory, can influence, and in what way,



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DM in healthy elderly and MCI patients. The principal aim is to investigate whether the use of tDCS during a behavioural task may favour more functional choices than in more participatory and elderly-attended contexts, as stimulating the DLPFC (dorsolateral prefrontal cortex) seems to decrease the tendency to take risks in ambiguous situations by increasing the effectiveness of decision-making.



RESEARCH PROJECT - CODE 19

"Curing and caring for dying: ethical-sociological analysis of the management and care of the dying patient in the health sector"

Research structure: Department of Letters, philosophy, communication

Department Resolution: 19.09.2023

Resolution of the Academic Senate: 24.07.2023

Resolution of the Board of Directors: 26.07.2023

Gross annual amount: € 25.000,00

Financial coverage:

project code ASSEGN2324EXP CUP - F53C23000190005

Duration of the grant: 24 months

Scientific Area: 14 - Political and social sciences

Competition sector: 14/C1 - General sociology

Scientific disciplinary sector: SPS/07 - General sociology

Scientific Director: Prof.ssa Barbara Sena

Entry requirement:

Dottorato di ricerca in Area CUN 6 - Scienze mediche o in Area CUN 11 - Scienze storiche, filosofiche, pedagogiche, psicologiche o in Area CUN 14 - Scienze politiche e sociali.

Knowledge of the language: English

Additional qualifications evaluated by the Commission:

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Interview schedule:

The interview will focus on the topic of the research project, the candidate's research experiences and his/her methodological skills. Knowledge of the English language will also be tested during the interview

Description of the research project:

The management of the dying patient represents a thematic area that is still relatively little explored. The topic is receiving increasing attention, not only due to the spread of chronic-degenerative diseases and the progressive aging of populations, but also due to the spread of health emergencies caused by catastrophes or pandemics, as in the recent case of Covid-19.

Despite the growing interest in this area of care and the interdisciplinary development of the palliative approach to the dying patient, however, a series of prejudices still exist, not yet sufficiently demystified by literature and healthcare practice. They aim to decrease the relevance of end of life care because they conceive such activities lead "by definition" to the death of the patient, or to what in the principles of medicine is essentially seen as a "failure" of the treatment itself or, even worse, as something to be reduced to a sort of "buffet of choices" or "menu à la carte", to be presented to family members when they have to decide on end of life treatments for a relative.

The research aims to analyze the topic of the dying patient from the holistic point of view of care and cure, in order to identify the social, ethical, philosophical, cultural and medical factors that determine differences in approaches and practices, policies and health services in different national and international contexts.

The analysis will have to be carried out through both theoretical and empirical research work.



In particular, the theoretical work will concern a systematic review of the existing literature in the sociological, ethical and health fields on the topic of dying management, aimed at deepening the factors studied up to now (theoretically and empirically) and the main results achieved.

In particular, the analytical study will try to identify the more complex and controversial aspects that emerge from the literature on this topic, increasingly characterized by a growing ethical-social pluralism. This no longer allows us to take for granted that the patient, the physician, and the broader socio-medical and institutional context in which they are located must share a single and unilateral attitude and vision towards living and dying. At the same time, the research will try to explain why medicine today still finds hard to accept the management of the dying patient as a form of "cure" in all respects.

The empirical work will consist of a mixed methods investigation of some significant case studies (health services such as hospices, intensive care, emergency rooms) in which it will be analyzed how the context of dying is concretely experienced and managed by health workers (doctors and professionals), by family members, and by patients in relation to the most relevant factors identified in the theoretical work.

The research will be conducted mainly through the categories of sociological analysis but will also make use of philosophical and bioethical categories.

The results of the research will be carried out through conferences, seminars, training courses for physicians and healthcare professionals, aimed at promoting knowledge and relevance of social, ethical-moral, philosophical as well as medical aspects related to the care of the dying patient and the support to a good death.

In particular, it is expected to achieve the following objectives in terms of scientific impact and contribution to internationalization:

- Construction of a dossier that will be disseminated in open access mode, which collects the results of the work with a view to:

- 1) further interdisciplinary research developments related to end-of-life management;
 - 2) development of innovative socio-health protocols for the management of dying patients. - organization of a final conference to present the results of the research, in which experts from the academic and healthcare sectors, associations and foundations dealing with the end of life will be involved.
- Publication of the research results in Italian and international scientific journals.
 - Planning of a specific advanced training course on the topic of dying management to be addressed to healthcare professionals.
 - Construction of a network of universities, research centers, Italian and international foundations dealing with the topic of end-of-life and palliative care, aimed at initiating collaborations for publications and joint research projects on the topic of the project.



RESEARCH PROJECT - CODE 20

"Europe of Dissent: Jan Patočka and the Experience of Charta 77"

Research structure: Department of Letters, philosophy, communication

Department Resolution: 19.09.2023

Resolution of the Academic Senate: 24.07.2023

Resolution of the Board of Directors: 26.07.2023

Gross annual amount: € 25.000,00

Financial coverage: project code ASSEgni2324EXP - CUP F53C23000190005

Duration of the grant: 24 months

Scientific Area: 14 - Political and social sciences

Competition sector: 14/A1 - Political philosophy

Scientific disciplinary sector: SPS/01 - Political philosophy

Scientific Director: Prof. Santino Raffaele Maletta

Entry requirement:

Dottorato di ricerca in Area CUN 11 - Scienze storiche, filosofiche, pedagogiche, psicologiche o in Area CUN 14 - Scienze politiche e sociali.

Knowledge of the language:

Oral and written Italian language

Oral and written English language

Additional qualifications evaluated by the Commission:

Translation and editing of philosophical writings from Czech into Italian language. • An additional merit will be represented by the knowledge of the centers of philosophical production in the present Czech Republic and by any possible connections with them

Interview schedule:

History of Czechoslovakia in the Twentieth century, particularly of Charta 77 and anti-Communist dissident movements. Knowledge of the phenomenological tradition, particularly of the works of Jan Patočka. Reading and translation of a philosophical or historical text in English language

Description of the research project:

In contemporary thought the dissent as a historical phenomenon has often been seen only from a moral and/or political stance. The consideration of the anti-Communist dissent in the European center-eastern countries during the Seventies and the Eighties of the last century makes possible to add a new viewpoint. The dissidents in fact focused a lot on the cultural dimension of their words and actions – and here culture means the critical conscience of our own experience on the bases of our basic needs and beliefs. It is this very cultural work which produces the acknowledgment that dissent goes beyond the totalitarian horizon because it understands totalitarianism as one of the possible expressions of modernity. This is the reason why the core of dissent is the question of the identity and crisis of Europe in the Modern era.

Patočka was one of the first speakers of Charta 77, a movement characterized by that cultural awareness and generated also and above all by the great Central European phenomenological reflection, whose major protagonists are E. Husserl and M. Heidegger, together with Patočka. V.



Havel's work *The Power of the Powerless* will 'urbanize' that cultural awareness without trivializing it and transmit it to the peoples of dissent and beyond the Iron Curtain too.

Even if some remarkable publications appeared in the last decades, the state of the art of the research on Czech dissent is quite incomplete, particularly in Italy. We have no proper research on the artistic and cultural underground networks (*samizdat*, *tamizdat*) that played a crucial role. We do not have yet adequate research on the peculiarity of religious dissent and on the relations among dissent and the Christian churches. The role played by the Czech artistic, philosophical, and literary tradition is not clear yet.

The research will be conducted by analyzing the major works of the Czech underground during the Seventies and the Eighties. It will examine moreover the connections among dissent and the Christian churches. But the focus of it will be represented by the analysis of the unpublished material preserved in the Patočka Archive in Prague.

The main theoretical goal of the research will be to have good new reasons to support the thesis that the reflection on the crisis of Europe developed by the Czech dissident thinkers and by Patočka and the resulting acts can still shed light on the present political and cultural distress characterizing Europe and to enable actions rooted in the theoretical and moral human experience, in what Patočka calls 'the care of the soul'.



RESEARCH PROJECT - CODE 21

“Romance Enumeration Repertory (REnumR)”

Research structure: Department of Letters, philosophy, communication

Department Resolution: 19.09.2023

Resolution of the Academic Senate: 24.07.2023

Resolution of the Board of Directors: 26.07.2023

Gross annual amount: € 25.000,00

Financial coverage: project code ASSEgni2324EXP - CUP F53C23000190005

Duration of the grant: 24 months

Scientific Area: 10 - Antiquities, philology, literary studies, art history

Competition sector: 10/E1 - Medieval latin and romance philologies and literatures

Scientific disciplinary sector: L-FIL-LET/09 - Romance philology and linguistics

Scientific Director: Prof. Nicola Morato

Entry requirement:

Dottorato di ricerca in Area CUN 10 - Scienze dell'antichità, filologico-letterarie e storico-artistiche

Knowledge of the language:

Italian and French

Additional qualifications evaluated by the Commission:

Documented experience in the field of Romance lexicography or in digital humanities applied to lexicographic research are positively valued. Knowledge of other cultural languages, in particular Medieval and Modern Romance and Germanic languages, is positively valued.

Interview schedule:

The interview will focus on the following key-points:

1. the candidate presents his or her doctoral work and publications and current projects;
2. the candidate presents the procedures and methods he or she intends to follow in the realization of the research programme;
3. the committee asks questions on various aspects of the research planned for the two-year grant period.

Description of the research project:

This two-year research grant is aimed at developing the project «Repertory of Romance Enumerations (REnumR)» (coordinator Nicola Morato). REnumR studies the medieval production of lists and enumerations in the Romance languages, interpreted as a portion of the Western textual and linguistic culture to be investigated with philological and linguistic methodologies. REnumR will contribute to a better knowledge of this textual and rhetorical typology which is understudied and lacking in methods and tools from DH.

REnumR is articulated along two research axes. The first axis consists of the philological and linguistic analysis and understanding of the types of enumerations repertorised, their functions and uses. The second axis consists in the realization of the REnumR database from a survey of early Romance texts (9th-12th centuries). The proposed research foresees a launch phase for the project to begin with the design and implementation of the REnumR database, the exploration of a pilot corpus consisting of Romance texts, and the development of an enumeration analysis grid.



The researcher's work during the two years will be distributed in the following phases:

1. conception and design of the REnumR repertory (in collaboration with technical experts);
2. survey of lists and enumerations in early (9th-11th century) Romance texts based on modern editions of copies made before the 12th century;
3. survey of lists and enumerations in a sample of 12th-century Romance texts;
4. enumerations in Chrétien's works;
5. classification of data and database entry; 6. analysis of the distribution of repertoried specimens in subsequent literary production.

Finally, the project includes an impact and dissemination programme, which, together with the scientific aspects, will be discussed during the interview.