



Segretariato Generale

Direzione Generale della Ricerca

PRIN: PROGETTI DI RICERCA DI RILEVANTE INTERESSE NAZIONALE – Bando 2022 PNRR
Prot. P2022LJN2N

***PART A***

*1. Line of intervention*

Main line/Linea Principale

*2. Research project title*

ETHICS (ElecTronic Health In ContextS).
The alliance and cooperation between telemedicine and home therapies towards personalized socio-technical treatments

*3. Duration of the project (months)*

24 months

*4. Strategic emerging Topics - 5. Related Cluster*

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|---|
| Strategic emerging topic: HUMAN WELLBEING |
| Cluster: Health |
| Sub Cluster:<br>5. Health technologies, new tools and digital solutions are applied effectively thanks to their inclusive, secure and ethical development, delivery and integration in health policies and health and care systems. |

*6. Main ERC field*

SH - Social Sciences and Humanities

*7. Other ERC field*

## 8. ERC subfields

| | |
|---|---|
| 1. | SH3_14 Social studies of science and technology |
| 2. | |
| 3. | |

## 9. Keywords

| nº | Testo inglese |
|---|---|
| 1. | E-health and telemedicine |
| 2. | Home Therapies |
| 3. | Digital technologies and ICT |
| 4. | Knowledge co-production |
| 5. | Professional expertise |
| 6. | Mixed and multi-methods research |

## 10. Principal Investigator

| | |
|---|---|
| **GOBO**<br>(Surname) | **GIAMPIETRO**<br>(Name) |
| **Professore Ordinario**<br>(Qualification) | |
| **19/03/1961**<br>(Date of birth) | **GBOGPT61C19Z133D**<br>(Personal identification code) |
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## Declarations

☑ I declare that I have not participated as PI in PRIN 2022 call (n. 104 02/02/2022)

☐ I declare that I have participated as associated PI in PRIN 2022 call (n. 104 02/02/2022)

Current funding and applications submitted

*Age limits derogation*

The principal investigator and or the substitute are over 40 at the time of the publication of the call. They do not intend to benefit from the derogations to the age limits for the amount allocated to under 40 PI;

## *11. List of research units (RU)*

| nº | Associated Investigator | Qualification | University/ Research Institution | Registered office (address) | e-mail address |
|---|---|---|---|---|---|
| 1. | GOBO Giampietro | Professore Ordinario | Università degli Studi di MILANO | Via Festa del Perdono, 7 - MILANO (MI) | Giampietro.Gobo@unimi.it |
| 2. | SENA Barbara | Professore Associato (L. 240/10) | Università Telematica UNITELMA SAPIENZA | Viale Regina Elena, 295 - ROMA (RM) | barbara.sena@unitelmasapienza.it |
| 3. | MATTEUCCI Nicola | Professore Associato (L. 240/10) | Università Politecnica delle MARCHE | P.zza Roma, 22 - ANCONA (AN) | n.matteucci@univpm.it |

## *12 - Substitute Principal Investigator (PI)* (To be identified among one of the associated PIs participating in the project).*

| | |
|---|---|
| **SENA**<br>(Surname) | **BARBARA**<br>(Name) |
| **Professore Associato (L. 240/10)**<br>(Qualification) | |
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## *13. Brief description of the proposal*

The proposal aims to explore the possibilities of a socio-technical and patient-centered interpretation of telemedicine, within a systemic approach to health. The proposal is in line with the interventions envisaged by the National Recovery and Resilience Plan (or PNRR) which, in coherence with the reform of territorial care, aims at reducing territorial inequalities and improving the integration between regional health services and national platforms through innovative solutions. The development of telemedicine

is one of the strategic interventions envisaged to 'make the home the first place of care'. Further, beside contributing to the cluster “Health” of Horizon Europe, the proposal concerns many key activities featured in the 2021-27 Italian NRP (National Research Plan - PNR in Italian), because they require a higher understanding and development of telemedicine.
Currently, a technical and biomedical approach still prevails in telemedicine practices. This approach frames technologies as mere (and neutral) tools to support care, and holds a reductionist view of illness as biological accidents or biochemical imbalances. However, for some time now, complementary approaches have been developed. They consider health and illness as a property of the social system rather than individual conditions, pointing to the role of the communities of practice (Lave & Wenger 1991) of doctors, patients, their families, nurses, administrators, volunteers, paramedical and psychological support associations (Mol 2002). All these interrelated social worlds contribute to individual patients' health, illness, and recovery.
In this perspective, the performance and effectiveness of e-health technologies depend on their embeddedness in enabling contexts. The material and symbolic resources, which the health professionals and patient's social world are able or not to mobilize, are constitutive of such enabling contexts. Drawing on a socio-technical and patient personalized approach, commonly adopted in Science and Technology Studies (STS) and Sociology of Health and Medicine (SHM), the proposal aims to study some innovative cases of implementation of remote therapies related to two diseases: oncological and COVID-19. The study will apply a mixed-and-multi-methods approach, using three different methodologies:
• a web survey (on attitudes and practices towards telemedicine) addressed to the whole population of the Italian General Practitioners - GPs
• 4 case studies
• a Delphi group, with experts in public health and telemedicine.
Besides the academic communities, the proposal aims at stimulating the creation/aggregation of clinical and healthcare-centred communities, dealing with single morbidities. One of the outcomes of the proposal stands as a community of practice, sharing experiences of successful e-health practices. If they are replicable and adaptable in other contexts, they could represent a model of innovative technology transfer and medical practice.

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*14. Total cost of the research project identified by items*

| Associated Investigator | item A.1 | item A.2 | item B | item C | item D | item E | item F | Total |
|---|---|---|---|---|---|---|---|---|
| GOBO Giampietro | 35.125 | 81.375 | 0 | 7.000 | 17.475 | 0 | 6.000 | **146.975** |
| SENA Barbara | 24.000 | 81.375 | 0 | 0 | 15.806 | 0 | 0 | **121.181** |
| MATTEUCCI Nicola | 24.000 | 0 | 0 | 0 | 3.600 | 0 | 0 | **27.600** |
| **Total** | **83.125** | **162.750** | **0** | **7.000** | **36.881** | **0** | **6.000** | **295.756** |

N.B. The Item D and TOTAL columns will be filled in automatically

- item A.1: enhancement of months/person of permanent and temporary employees
- item A.2: cost of contracts of non-employees, specifically to recruit
- item B: cost of equipment and tools
- item C: cost of consulting and other services
- item D: overhead
- item E: materials cost
- item F: other costs

## *PART B*

*B.1*

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*1. State of the art*

With “Digital Health Technologies” (DHT) we refer to a wide range of computing platforms, connectivity, software, and terminal devices (e.g. smartphones/tablets, social media, sensors, apps) that support telemedicine in the context of care practices (Marent & Henwood, 2021). Telemedicine in its various forms (e.g. televisit, teleassistance, tele referral) is a relevant element of organisational innovation in care processes, even for the treatment of severe conditions (such as the oncological ones), involving different healthcare settings (hospital, territorial and primary care). DHTs are only one of the many facets of the digitisation of society, institutions and the economy, driven by the spread of ICTs and general-purpose technologies (Bresnahan & Trajtenberg 1995, Matteucci 2019 & 2020).

In the last two decades, the adoption of DHTs has been explicitly promoted as one of the key instruments to tackle a series of structural challenges faced by most industrialised countries, because of economic crises, population aging, and increase in chronicity (Topol 2019) and, more recently, pandemics (Hollander & Carr 2020). Also in the EU, support and harmonisation measures for the diffusion of e-health and telemedicine have been issued (e.g the EU e-health Action Plans).

Both the European Commission and the Italian government have been trying for over a decade to increase the role of DHTs, by setting out a series of measures and guidelines aimed at fostering a greater integration of e-health services in clinical practice, also allocating dedicated funding (see https://bit.ly/3VvdELO). Recently, the Italian Ministry of Health drew up the organisational guidelines on the “Digital model for the implementation of home care” (G.U., 24 May 2022), as part of the implementation of Mission 6 (Health) “Component 1 - Proximity networks, facilities and telemedicine for territorial healthcare assistance” of the PNRR, thereby illustrating the crucial importance of this issue for the Country's development. Telemedicine is also framed as a key enabler for most of the key activities implementing the “Health” domain of the 2021-27 Italian PNR.

However, to date, such promises to improve health and care systems have not always been fulfilled. In fact, over the years, we have witnessed several failures in the deployment of DHTs or cases of only partial fulfillment of the promises made at the planning stage (Hyysalo 2010). The main reason for this failure lies in the lack to recognise that the lasting adoption of a technological device (however advanced it may be) requires 'artful integration' (Karasti & Syrjänen 2004) by the users with the joint and coordinated actiovation of medical, social, organisational, individual and family processes as well. STS and SHM have unraveled the 'social contours of technological change' (Marent & Henwood 2022), underlying as it can be analysed and understood only by exploring how technologies come to matter and generate possibilities through their enactment in practices (Orlikowski 2007; Oudshoorn, 2012). Drawing on a socio-technical approach, the analytic focus lays on how functionalities and meanings of technologies shift continuously across spatiotemporal situations (Henwood & Marent 2019).

Hence, distant care practices can be regarded as semiotic or socio-technical networks (Latour 2005), consisting of people, expert knowledge, non-professional knowledge, organisations, protocols, pathogens, diseases, and technologies, constantly interacting with each other. Their implementation and use are the result of constant tension and negotiation involving various actors; their neglect would increase the likelihood of failure.

It is no coincidence that to fill the gaps of a (technologically deterministic - and thus) naive and unsuccessful use of DHTs, alongside institutional efforts to promote telemedicine in its various instances, grassroots services have sprung up (often spontaneously). The latter services bypass the formal communication systems of institutions, and use personal communication devices based on generalist applications (Mars & Scotts 2016).

In conclusion, DHTs present us with a challenge: while they envisage health, social, and economic benefits, they also become the material and symbolic space for the redefinition of care relationships, professional relationships, and new forms of articulation of healthcare organisations. Therefore, to function properly, DHTs must interact and engage in dialogue with these redefinitions to become personalized technologies in their specific and unique social world.

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*2. Detailed description of the project: methodologies, objectives, and results that the project aims to achieve; indicate deliverables and milestones outlining the project coherence as to the strategic themes, indicating clear and innovative objectives, setting out the project sector relevance and its positioning with reference to the state of art, describing the role and contribution of each research unit*

Objectives

The overall aim of the project is to unpack telemedicine processes (within the broader field of e-health) focusing on their enactment in practice, drawing on a socio-technical approach to DHTs (Henwood & Marent 2019; Marent & Henwood 2021; Pols 2012; Piras & Miele 2017; Greenhalgh et al. 2017).

The study objectives are articulated into three heuristically distinct levels (macro, meso and micro), each with their milestones, targets, and deliverables.

1. Macro level (national)

At the macro level, we identify a twofold objective: institutional and professional.

Institutional. The first objective is to understand how the recent legislation regarding telemedicine at the national and regional levels has implemented policies focused at the introduction of technology-based care practices; and how these policies have favoured or, conversely, hindered the promotion of self-organised (bottom-up) activities. The recent organisational guidelines on the "Digital Model for the implementation of home care" (see above) of the PNRR promote the introduction of innovative processes for home care services and the enhancement of multi-professional and multi-disciplinary care teams. The regulatory framework thus represents the institutional background to understand expectations and policy claims towards telemedicine.

The scarce statistics available depict a laggard status of supply, adoption and usage of e-health solutions in selected EU countries. Early contributions (Di Carlo & Santarelli 2012) showed the Italian delay, while recent comparative evidence (such as the EU-wide DESI index https://bit.ly/2Pmlt8T) confirm its persistence. In general, cross-country studies (e.g. Seri et al. 2014; Matteucci & Marcatili 2019) show that demand-side factors driving e-health adoption and effective usage are life expectancy, (tertiary) education and ICT skills; among the supply-side factors, there are institutional quality, digitalisation/broadband availability, and GDP. Over the years, e-health pilots and fully-fledged experiences also encountered patent failures, concerning both insufficient adoption and effective usage. This situation also concerns telemedicine, which is the oldest form of e-health and could wrongly lead to thinking that it has reached a mature and successful stage of adoption and usage. Updated studies on telemedicine are in urgent need, since the received wisdom may not apply to “late comer” countries and recent technologies. Findings show that both country and regional heterogeneity remains large, and this may point to unobserved drivers of diffusion, such as national health system characteristics, regional institutional factors, and GPs organizational features. Further, individual-level studies (for an updated review, see Almathami et al. 2020) become more valuable for advancing the research frontier, since remote consultation at patients’ homes is both the type of telemedicine which was most requested by the Covid-19 pandemic, and which is expected to bring the highest socio-economic impact (Drago et al. 2021).

Professional. General Practitioners (GPs) are the most important actors in the socio-technical network. Their attitude towards telemedicine is crucial for implementing these innovative care practices, and the Italian delay has been mostly attributed to them and their poor networking with other health system actors (Di Carlo & Santarelli 2012). Therefore, it is crucial to inquire their perceptions, knowledge and experiences of telemedicine, mapping the possible existence of organisational and professional tensions that mark the relationships between them and other professionals, their patients, and local and national health care systems. The pandemic crisis has exacerbated and made these tensions more visible. This is reflected, on the one hand, by the top-down approach of healthcare institutions concerning the introduction of care services (e.g. 'continuity of care units' or 'community houses') and, on the other hand, by the widespread do-it-yourself or self-organised approach, which marked the various pandemic waves, when voluntary bottom-up efforts and spontaneous telemedicine initiatives have brought important and original contributions to the unmet demand for emergency care.

2. Meso level (organisational)

A third research objective is the investigation of the organisational factors that facilitate or hinder the implementation of telemedicine projects. These conditions are explored by focusing on the relationship between technology and social organisation, which cannot be reduced to a simplistic cause-and-effect relationship. Instead, it is to unravel the non-deterministic interweaving of technology and the complex social context, as they cooperate and retroact, and mutually construct each other. Therefore, the focus will be on the situated and socially organised character of the working practices underlying the implementation of telemedicine processes. In this perspective, "technological artefacts" are considered actors at play in a complex "socio-technological system" (Akrich, 1993; Heath & Luff, 1992, 2000; Luff, Hindmarsh and Heath 2000; Licoppe, 2002).

3. Micro: (relational)

A fourth objective is to investigate the changes in medical practices, patient-doctor relationships, and interprofessional communication brought about by the implementation of telemedicine in the organisation and care delivery. The daily practices are understood as the assembly of human, technological and social elements, within contexts in which DHTs have been applied in different ways that are not always consistent with the institutional and regulatory framework of reference. At this micro level, complementing the previous two levels, special attention will be devoted to patients, their families, and social contexts.

Research questions

The proposal sets several research questions, linked to the three heuristic levels above described, to be investigated through different methodologies (see the Methodologies section below):

Macro level (institutional):
• What expectations and political claims (towards telemedicine) emerge from the national and regional regulatory framework?
• How have telemedicine projects been concretely promoted or constrained by this regulatory framework?
• What tacit assumptions lie behind the concept of telemedicine in government and regional documents?
• What metaphors are mainly used to describe telemedicine in ministerial documents?

Macro level (professional):

• What is the diffusion and usage of telemedicine by Italian GPs, before and during the pandemic period?
• Which forms of telemedicine are mostly used by GPs, and for which health conditions and types of patients?
• Which factors (e.g. institutional, socio-demographic, organizational, and scientific) favour its use, and which ones hinder it?
• What are the perceived steps needed to increase DHTs acceptance and usage by patients and medical staff?

Meso (organisational)
• What are the political dimensions and power relations inherent in the use of telemedicine?
• What tensions/negotiations are enacted in the attempt to institutionalise telemedicine within a top-down logic or, vice-versa when a bottom-up approach is proposed?
• What is the role, if any, of the professional orders and associations (e.g., FNOMCeO, SIMG etc.) in order to institutionalise telemedicine?
• What are the experience of bottom-up informal network of GPs in telemedicine?

Micro (relational):
• How are (inter)professional relations being redefined and what new forms of cooperation emerge?
• Does telemedicine favour the rise of new professional segments?
• Is there the creation of new work micro-collectives, whose activities will sometimes extend beyond the system's frame of use?
• Have there been changes in professional identities (e.g. GPs, hospital physicians, nurses)?
• How does telemedicine impact decision-making autonomy and how is information recombined in physicians' decision-making processes?
• How is workflow redistributed between professionals and technological artefacts (e.g. wearable devices, sensors, apps)?
• Are new forms of digital proximity emerging?
• How is telemedicine reconfiguring the various types of workflow (e.g. sentimental work, on machines, on safety)?
• How have the difficulties of patients and their relatives in dealing with technologies been responded to?
• Have the technologies been modified (and in which ways), to make them fit with the needs of patients and their social worlds?

Research design

The proposal intends to use a mixed and multi-methods approach, which integrates qualitative and quantitative methods within the same research design, with the goal of overcoming the well-known limitations of single-method research (Fielding & Fielding 1986, Brannen 2003, Tashakkori & Creswell 2007).

Moreover, this choice stems from the need to develop a more pragmatic approach to research and to provide the best possible answer to the research questions of a specific research problem (Tashakkori & Teddlie 1998, Morgan 2007, Greene 2007, Creswell 2014). The mixed methods approach also allows for methodological triangulation, in which different techniques can be used to analyse the same type of information from different perspectives or obtain different meanings and interpretations; at the same time mixed methods achieve data quality and control in order to mitigate errors from individual or biased sources of information (Flick 1992 and 2018, Denzin 2012).

The literature highlights a wide use of mixed and multi-methods research designs within the health studies (Creswell et al. 2011, Tariq & Woodman 2013, Tritter 2019), as well as, more specifically, in the study of telemedicine applications (see Salisbury et al. 2015, Caffery et al. 2017, Davidson et al. 2020).

Our mixed and multi-methods research design will make use of three different methodologies: the web survey, the case study and the Delphi group technique. They will be used to feed (with the collected data) the three different levels (macro, meso and micro).

These three methodologies will be used according to a "funnel mixed-methods design", a sequential logical development (Cataldi & Sena 2021): it starts from the macro level (institutional analysis and statistical inquiry of the population of Italian GPs); then focuses on narrower and more specific contexts (meso and micro); up to a dialogue with a selected group of experts, to outline telemedicine scenarios, gather some recommendations for future health policies, and establish some community of practice related to specific diseases and treatments, on the basis of the research results.

Methodologies

The choice of this articulated and complex strategy stems from the need to:
• combine an exploratory perspective with an explanatory one (web-survey), to better understand some concepts, variables, and dimensions at a quantitative and general level;
• to investigate thoroughly the quantitative results, establishing a link with the specific context (through case studies) to produce an "analytical generalisation" (or "theoretical inference" - see Mitchell 1983, Danziger 1990, Gomm, Hammersley & Foster 2000, Flyvbjerg 2011, Thomas 2011, Yin 2018) of the obtained results;
• to offer (through the Delphi method) the outcomes of case studies to both a group of experts and healthcare professionals, in order to identify further elements of support for the existing model of analysis at the national level, and to reach a consensus on actions to be taken for improving the development of technology-based care approaches.

Macro level (institutional): qualitative textual analysis
The analysis of governmental and regional regulatory documents and guidelines, concerning tele-medicine and healthcare services will be done by means of a qualitative textual analysis, aided by one of the available softwares (CAQDAS) such as NVIVO 12.

Macro level (professional): web-survey

We plan to design a CAWI (Computer-Assisted Web Interview), addressed to the Italian population of GPs (42.428 units), regionally distributed. The aim is to collect questionnaires from a stratified sample of at least 10% of them. The questions will pertain to their past and current telemedicine usage and practices, their individual attitudes and behaviors, and the perceived drivers and obstacles for telemedicine, at the various levels. The participants will be recruited by matching professional lists gathered from multiple registries (regional health systems, professional orders and associations - e.g., FNOMCeO, SIMG). The web-survey will be tailored to the actual technological, professional, and institutional configurations assumed so far by telemedicine in Italy, and will complement the qualitative evidence gathered by the case studies in order to extend and generalize their local and contextual heuristic value.

The full questionnaire will be finalised after a preliminary pilot study, where a draft questionnaire will be submitted to a limited set of experts and stakeholders with relevant knowledge on remote clinical care (GPs and professional associations), technologies (industry suppliers and technicians of the regional health bodies), and other experts (consultants).
Prospective variables to be surveyed include socio-demographic characteristics of the GP (e.g., age, gender, cv), years of usage of telemedicine, kind of practice (solo or group practice), organisational resources (e.g. number and type of personnel available, organizational structure), presence of connections or joint projects with other telemedicine stakeholders (e.g. specialist physicians, hospital-based professionals).

The quantitative (statistical and econometric) analysis will be descriptive and inferential. The first part will provide an updated overview of past and current telemedicine practices. In the inferential part, regression techniques (e.g. Discrete Response models, see Wooldridge 2010) will explain the usage of telemedicine (both qualitative and quantitative) by connecting it to the socio-demographic, organisational and institutional (regional) variables, describing the GP's identity and operative context. We expect an inverse relationship between usage and GP's age and a positive one with organisational resources. Conversely, for contextual enabling factors (e.g. regional health system quality), we expect a positive relation with usage.

The platform used to submit the questionnaire will be Limesurvey (or equivalent); the statistical and econometric analysis will be carried out through the software STATA (whenever necessary, other packages might be used).

Meso (organisational) and Micro (relational): case study

The meso and micro levels will be investigated through a "case study" methodology (Yin 2018, adapted to social research by Sena 2021). Case study is not a technique, but rather a general approach or research strategy, consisting of different and integrated techniques. It allows a case to be studied in depth in relation to a specific problem, exploring it through a multiplicity of quantitative and qualitative techniques (e.g. discursive interviews, document analysis, quantitative data analysis, focused observation, focus groups).

The case study is a systemic or holistic research practice (Swanborn 2010, Tight 2017), based on two characteristic elements: a) the processual aspect (looking at the historical, social, cultural, and institutional evolution of a case – see George & Bennett 2005); 2) connecting different analytical levels or dimensions of a case: the macro level (historical-cultural and institutional context), the meso level (the organisation of the health facility or service and the specific technology within which it develops), and the micro level (social roles and group interactions). Since multiple information collection and analysis techniques are used, the case study also allows for a within-method triangulation of the results obtained, ensuring a more complete and qualitatively valid and reliable picture (Yin 2018).

Although carried out on different samples, the web-survey and case studies aim to provide a complementary view of the whole phenomenon.

Our research will examine four empirical cases (identified by an informal check among experts) that have operated within a socio-technical and systemic approach to illness. The cases, in fact, will be chosen from those experiences which have been able to combine technology and personalized care, starting from an analysis of the social contexts of the patients themselves (see tab. 1).

The four cases-study are the result of the intersection of two dichotomous variables:
• institutional (top-down) versus self-organised (bottom-up) telemedicine projects;
• telemedicine projects based on established knowledge and therapies (where randomised studies have been in place for some time - as in the case of oncological therapies) versus experimental and innovative projects carried out under conditions of great cognitive and therapeutic uncertainty, where no evidence-based medicine studies even exist (as in the case of anti COVID 19 therapies).

| | Variable 1: Telemedicine (top-down vs. bottom-up) | |
|---|---|---|
| Variable 2: Knowledge and therapies (established vs. experimental) | 1<br>**Cancer care**<br>(remote monitoring of patients) | 2<br>**Cancer care**<br>(informal teleconsultation among physicians ) |
| | 3<br>**Anti-Covid-19 Therapies**<br>(televisit and remote monitoring performed by GPs' and hospital physicians) | 4<br>**Anti-Covid-19 Therapies**<br>(early home therapies network) |

Tab. 1: case studies classification

Case 1. Top-down telemedicine services / established knowledge - This category includes the gold standard for institutional telemedicine services. Information and communication technologies, both general purpose or crafted around a specific need, are formally adopted by healthcare institutions to deliver telemedicine services based on state-of-the-art knowledge on specific domains of intervention. These cases represent the final goal of institutional efforts to deliver formally recognized evidence-based healthcare through validated technologies. Several such initiatives were pushed or initiated during the pandemic to comply with the social distancing measures.

Case 2. Bottom-up telemedicine services / established knowledge – This category includes the non-formalized telemedicine service created by healthcare professionals. While general-purpose communications systems (e.g. smartphone, emails) have been extensively used to establish informal services (e.g. impromptu consultations, second opinions), instant messaging systems made it possible to extend the range and scopes of such services. During the pandemic, healthcare professionals were allowed, if not encouraged, to explore alternative ways to deliver evidence-based services leveraging on the widely available personal communication systems. The bottom-up services created inhabit the gray area of the non-formally recognized services offered by healthcare institutions; the latter, however, may consider the benefits of providing support to such practices thus turning them into fully-fledged services offered to healthcare professionals and patients.

Case 3. Top-down telemedicine service/epistemic uncertainty –This category includes those cases in which hospitals and territorial healthcare institutions initiated anti-COVID-19 early home treatment projects. Despite the high uncertainty generated by the pandemic and in light of the impossibility to rely on evidence-based medicine, these projects pursued treatments based on the clinical knowledge then available, also through the cooperation of general practitioners in e-networks. In all cases, the role of telemedicine was crucial: in some of them, specific applications were developed, while in others general-purpose technologies were used. The results of some successful experiences have also affected regional health policies.

Case 4. Bottom-up telemedicine services/epistemic uncertainty – This category includes cases where general practitioners, without the mediation of health care institutions, organized self-training and coordination networks that provided anti-COVID-19 early home care services. Again, as it was impossible to rely on evidence-based medicine, it was necessary to follow a clinical approach based on the direct experience of doctors and the knowledge of the pathophysiology of COVID-19. The technology used was predominantly general purpose and has been consistently implemented both to share knowledge about the development of the disease as well as throughout the care process. The e-networks were in some cases structured into associations while most maintained their informal nature.

For each case-study we will:
• trace the process of how they came about (e.g. contexts, needs, organisational pressures) and were put into practice;
• identify to which organisational model they can be ascribed and their relation to traditional care services and the guidelines formulated by Mission 6 - Health of the NRP, which divergences or uniformities can be highlighted;

• illustrate how the functionalities and meanings of technologies have changed in space and over time;
• describe if and how technologies have been subject of negotiation, especially in the early stages (Henwood & Marent 2019);
• show how traditional models of healthcare have been changed by the new technologies; with what benefits and criticalities, also in relation to the creation of personalised and multidimensional approaches by the different professionals involved (Granström et al.2020, Dyb et al. 2021).

The criteria for the selection of the four cases were identified in accordance with what STS and SHM have long assumed and then emphasised: that telemedicine phenomena can only be analysed and understood by exploring how technologies gain relevance and generate opportunities through their implementation (Orlikowski 2007, Oudshoorn 2012, Gherardi 2010). In this context, the pressure to introduce telemedicine systems can be read as an attempt to configure users (Grint & Woolgar 2013) by inscribing within technical devices certain types of scripts that make the relationship between hospitals and the territory stronger (Greenhalgh & Swinglehurst 2011).

On the contrary, grassroots telemedicine practices can be seen both as a reclaim of a sphere of autonomy by healthcare professionals in the definition of new care practices, and as an expression of patients' need for a more personalised treatment.

Within this tension, telemedicine loses its purely functional connotation of neutral technology to become a space of negotiation and conflict, confrontation and cooperation, among different actors and institutional levels (Marent & Henwood 2021).

Public engagement: Delphi group technique

The Delphi group technique involves selecting a panel of experts with distinctive characteristics and experiences, who are consulted to obtain an "expert" opinion on a specific topic by offering future scenarios and possible solutions (Hasson et al. 2000, Turoff 2002, Cataldi et al. 2022).

The Delphi technique will be adopted in the last phase of the project to present the results of the research and create an applicable, workable and directly implementable summary. The panel of experts, selected from across the Country, will consist of approximately 50 people, selected within healthcare managers, physicians, and healthcare professionals.

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*3. Detailed description of the project team and planning; indicating the research team components – PI and associated PIs - and their relative expertise/track record, gender equality of the composition, the interrelation and coherence of the team components. RUs- and the feasibility of the project, thus outlining the congruity between objectives, timing and costs*

The project team is composed of three Research Units, which have both distinct and complementary tasks. The team fulfils the requirement of "gender parity in composition" as it is composed of two women (one of whom acts as team leader of a research unit) and three men. The proposal stands at the intersection of STS and SHM, so the team also fulfills the requirement of "interrelation and consistency of team members", since all these competencies are within the team, and the milestones, objectives, and deliverables are distributed among the research units (see below). The proposal envisages close collaboration and integration between the three research units, each of which will take responsibility for specific tasks thus ensuring the feasibility of the project.

The two researchers hired for the proposal will have the following tasks, related expertise and background:

| | **tasks** | **methodological expertise** | **background** |
|---|---|---|---|
| Researcher 1 | | | STS and social sciences |
| | 2 case-studies | Qualitative methods (discursive interviews, focus group and ethnography) | |
| | Delphi | Delphi method | |
| | Textual analysis | CAQDAS software | |
| | | | |
| Researcher 2 | | | SHM and social sciences |
| | 2 case-studies | Qualitative methods (discursive interviews, focus group and ethnography) | |
| | Web-survey | Mixed Methods and Quantitative data collection | |

1. Università degli Studi di Milano (UNIMI)

UNIMI has two members - with expertise in both methodological (qualitative and quantitative methods) and theoretical and substantive (STS) - as well as a researcher who will be hired at the beginning of the project and will work on it for its whole duration.
The PI is Giampietro Gobo, full professor of sociology of science (ssd SPS/07), with expertise in research methods, evaluative research, and controversies in health policies. He is the director of the LASAS (LAboratorio di Sociologia e Antropologia della Scienza) and the Workplace Studies Lab, both at the UNIMI (see cv).
The second member, Enrico Campo, is a research fellow (RTD A) in Sociology (ssd SPS/07). His main research interests are social theory, sociology of science, and cognitive sociology, with a focus on the study of the relationship between culture, technology, and cognition. He has taught Sociology for the Department of Clinical and Experimental Medicine (University of Pisa). He has published article on sociology of COVID-19: “Early Home Therapies against COVID-19. An Italian Case of Politicisation of Science?” (with M. De Toffoli, G. Gobo, F. Strata) in PArtecipazione e Conflitto, 2022; “Covid-19 e fiducia negli scienziati Uno studio pilota sui lettori di due giornali online” (with G. Gobo, L. Serafini, E. Campo, A. Caserini), in Comunicazione politica, 2022; “Covid-19 in Italy: should sociology matter?” (with G. Gobo), in The European Sociologist, 2021; “Limiti e fallimenti dei modelli epidemiologici e previsionali nell’epidemia di SARS-COV-2” (with G. Gobo, P. Parra Saiani, M. Galeotti), in L'impatto Sociale del Covid-19, 2021. His last book is Attention and its Crisis, Routledge, 2022.

2. Unitelma Sapienza University (Unitelma)
Unitelma Sapienza University has one member, the team leader, and a researcher who will be hired at the beginning of the project and will work on it for its entire duration.
The team leader is Barbara Sena, Associate professor of General Sociology (ssd SPS/07). Her main research interests are in methodology of social research (including case studies and Delphi group technique) and sociology of health and medicine (including inter-professional care and health professions development) (see cv).

3. Università Politecnica delle Marche (UNIVPM)

UNIVPM has two members with complementary backgrounds and skills: the team leader is Nicola Matteucci, an economist focused on digital innovation and quantitative methods, and Micol Bronzini is a sociologist of health and medicine.
Nicola Matteucci is Associate professor of Applied Economics (Faculties of Economics and of Medicine - ssd SECS-P/06), and visiting professor at the University of Applied Sciences and Arts of Southern Switzerland (CH). His main research interests are the economics and policy of ICT and health care sectors (including broadband, gambling and other addictions, e-health and, e-government), institutions and regulation (see cv).
Micol Bronzini is Associate professor in Sociology of economic and labour processes (ssd. SPS/09) with an expertise in sociology of health and medicine and in sociology of organizations. She is a member of the Board of “Sociology of Health and Medicine”- Section of the Italian Sociological Association. She has recently co-edited a book and a special issue on digital health: G. Vicarelli, M. Bronzini (2018) Digital healthcare: analytical dimensions and research perspectives, in Social Policies 5(2); G. Vicarelli, M. Bronzini (2019) (eds.), Digital healthcare: theoretical reflections and applied experiences, Bologna: Il Mulino.
Both are members of the Research Centre on Social-Health Integration (CRISS), hosted by the Department of Economic and Social Sciences (DISES-UNIVPM), which develops research and postgraduate training on many topics related to the proposal: health policy, e-health, health professions. CRISS has long-standing relationships and collaborations with Regional and Local Health Authorities and healthcare professional associations.

Summary of staff effort.

| | UniMI | Unitelma | UNIVPN | Total Person-months per milestone |
|---|---|---|---|---|
| **Milestone 1 - project management** | 6 (4 out of budget) | | | **6** |
| **Milestone 2 - Conceptual framework, study protocol and training** | 1 (0,5 out of budget) | 1 (0,5 out of budget) | 0,5 (out of budget) | **3** |
| **Milestone 3 - Regulatory framework** | | 2,5 (2 out of budget) | 1 | **3,5** |
| **Milestone 4 - web survey pilot** | 0,5 | | 1 | **1,5** |
| **Milestone 5 - web-survey data collection, management and empirical analysis** | 4 | | 3 (2 out of budget) | **7** |
| **Milestone 6 - Case studies protocol** | 1 | 0,5 | | **1,5** |
| **Milestone 7 - Case studies data collection** | 6,5 | 5,5 | | **12** |
| **Milestone 8 - Case studies analysis and reports** | 3,5 | 3,5 | 1 | **8** |
| **Milestone 9 - Exploitation strategy** | 4 | 7,5 | 2 (out of budget) | **13,5** |
| **Milestone 10 - Website creation** | 1 (0,5 out of budget) | 0,5 | 0,5 (out of budget) | **2** |
| **Milestone 11 - Public engagements strategy** | 1 | 5 (2 out of budget) | 0,5 (out of budget) | **6,5** |
| **Milestone 12 - Dissemination strategy** | 2,5 | 3 | 0,5 (out of budget) | **6** |
| **Milestone 13 - Conference planning** | 0, 5 (out of budget) | 1 (out of budget) | 0, 5 (out of budget) | **2** |
| | | | **total person-months of the projects** | **72,5** |
| **Total Person-Months per participant** | 31,5 (5,5 out of budget) | 30,5 (5,5 out of budget) | 10,5 (6,5 of budget)) | |

1 Milestone: Project management
Unit: UniMi
Timing: 1-24

Aim: holding the overall responsibility for managing the project. It ensures that the project is conducted in a timely manner, within budget, and respecting Ministry of University provisions and requirements, as well as overseeing any ethical issue and ensuring gender equity. It also oversees any possible dispute within the group project, the communication within it and with the Ministry of University, the organization and planning of events, workshops and conferences, risk and data management, the collation of deliverables and reporting.
Activities:
Project activity monitoring and coordination (months 1-24)
Reports writing (months 1-24)

Deliverables:
Bi-montly reports on the project advancement (months 1-24)
Gender equality plan (approved at the first general meeting and updated at month 12 and 24)
Project activity reports (months 12 and 24 (final report))
Data management Report (available at the end of month 24)
Publications and scientific communications plan (available at the end of month 24)

2 Milestone: Conceptual framework, study protocol and training
Units: UniMi, Unitelma, UNIVPM
It concerns the development of a common, integrated conceptual framework, the study protocol of the mixed-and-multi method approach and the training of the postdocs hired, building a common ground for the whole team involved in the project about the methodologies to be applied
Timing: 1-6

Activities:
Review of STS and SHM literature on telemedicine (months 1-4) UniMi, Unitelma, UNIVPM
Definition of the study protocol (months 4) UniMi, Unitelma, UNIVPM
Training (months 5-6) UniTelma

Deliverables:
Literature review (available at the end of month 4)
Study protocol (available at the end of month 4)

3 Milestone: Regulatory framework
Units: UNIVPM, Unitelma
The analysis of governmental and regional regulatory documents and guidelines, concerning tele-medicine and healthcare services (method: qualitative textual analysis)
Timing: 1-4

Activities:
Collection of governmental and regional regulatory documents (months 1-4) UNIVPM, Unitelma
Secondary analysis of the regulation (months 1-4) UNIVPM, Unitelma

Deliverables:
Report on the regulatory framework (available at the end of month 4)

4 Milestone: Web survey pilot
Units: UniMi, UNIVPM
Submitting to a set of experts and stakeholders a draft version of the questionnaire addressed to GPs (concerning their attitudes and practices around telemedicine) in order to draw up the final version
Timing: 1-4

Activities
Development survey protocol (month 1) UniMi, UNIVPM
Constructing the draft questionnaire (month 1) UniMi, UNIVPM
Administration of the draft questionnaire to experts and stakeholders (month 2) UniMi, UNIVPM
Drafting the final questionnaire (month 3) UniMi, UNIVPM
Negotiating with the professional orders to obtain the list of the population of Italian GPs (month 4) UniMi, UNIVPM

Deliverables:
Survey protocol and data management plan (available at the end of month 1)
Final questionnaire (available at the end of month 3)
Report on the results of the pilot step of the survey (available at the end of month 4)

5 Milestone: Web-survey data collection, management and empirical analysis
Units: UniMi, UNIVPM
Conducting the web-survey, finalizing the data collection, and carrying out the statistical and econometric analysis.
Timing: 4-11

Activities
Data collection (months 4-5) UniMi, UNIVPM
Soliciting reluctant respondents, re-sampling of missing responses, and other dataset handing (months 5-7) UniMi, UNIVPM
Descriptive data analysis (month 8)
Inferential analysis (months 9-11)

Deliverables
Estimation dataset (available at the end of month 5)

Report with the preliminary descriptive statistics of the survey (available at the end of month 9)
Final report on the econometric (inferential) analysis (available at the end of month 11)

6 Milestone: Case studies protocol
Units: UniMi, Unitelma
Timing: 4-5
Selecting case studies and planning the data collection, analysis and criteria for reporting. According to the specific ratio of the case study approach, we expect to use different types of data through different collection instruments, depending on the nature of selected cases, which will be specified in the operative protocol of each case study

Activities:
Selection case studies (months 4-5) UniMi, Unitelma
Case studies planning (months 4-5) UniMi, Unitelma

Deliverables:
Operative protocol for the data collection, analysis and reporting of case studies (available at the end of month 6)

7 Milestone: Case studies data collection
Units: UniMi, UniTelma
Data collection of the 4 case studies, through discursive interviews, documentary collection, secondary quantitative data collection, focused observations and focus groups that will be used depending on the characteristics of each case study.
Timing: 5-16

Activities:
Secondary quantitative data collection (months 5-10) UniMi, UniTelma
Document collection (months 5-10) UniMi, UniTelma
Focused observation (months 5-12) UniMi, UniTelma
Discursive interviews (months 5-14) UniMi, UniTelma

Deliverables:
Data collected through the various indicated tools and sources of information (available at the end of month 16)

8 Milestone: Case studies analysis and reports
Units: UniMi, Unitelma, UNIVPM
Timing: 15-20
The production of a triangulated data analysis and a case studies comparison on which to draw up the final report of the results. A final workshop for each case will be held with stakeholders (professionals, managers, experts, patients, families) during the data collection for a discussion of the before drafting the final report.

Activities:
Data analysis and triangulation (months 15-18) UniMi, Unitelma, UNIVPM
Case studies comparison (months 15-18) UniMi, Unitelma, UNIVPM
Case studies reporting (months 19-20) UniMi, Unitelma, UNIVPM
Stakeholders workshop organization (months 19-20) UniMi, Unitelma, UNIVPM

Deliverables:
Comparative case studies report (available at the end of month 20)
Stakeholders workshop program (available at the end of month 19)

9 Milestone: Exploitation strategy
Units: UniMi, Unitelma, UNIVPM
Timing: 11-20
Co-creation of guidelines and policy brief, for the implementation of persistent and practice-rooted telemedicine services (method: Delphi), involving professionals of the community of practices

Activities:
Selection Delphi group of experts and planning of the rounds (months 11-14) UniMi, Unitelma, UNIVPM
Conducting Delphi group rounds (months 15-18) UniMi, Unitelma, UNIVPM
Co-creating guidelines (months 19-20) UniMi, Unitelma, UNIVPM
Co-creating policy brief (months 19-20) UniMi, Unitelma, UNIVPM

Deliverables:
Guidelines (available at the end of month 20)
Policy brief (available at the end of month 20)

10 Milestone: Website creation
Units: UniMI, Unitelma, UNIVPM
Designing and developing the website of the project.
Timing: 3-24

Activities:
Website technical development (months 3-4) UniMI
Web-site management: definition, revision and update of contents (months 4-24) UniMI, Unitelma, UNIVPM

Deliverables:
website contents, routinely updated (available at the end of month 4)

11 Milestone: Public engagements strategy
Units: UniMI, Unitelma, UNIVPM
Timing: 9-22
Engaging health professionals involved in the case studies and representatives of citizens associations through so-called 'dialogue workshops', aimed at discussing the outcomes of the study and co-creating guidelines for the organization of services

Activities:
Selection of participants (months 9-10) UniMI, Unitelma, UNIVPM
Organization of events (months 11-18) UniMI, Unitelma, UNIVPM

Deliverables:
Schedule of events (available at the end of month 14)
'Dialogue workshops' report (available at the end of month 22)

12 Milestone: Dissemination strategy
Units: UniMI, Unitelma, UNIVPM
Timing: 15-24
Dissemination of project results, involvement and impact on public debate and students.

Activities:
Organization educational seminars (months 15-24) UniMI, Unitelma, UNIVPM
Organization public events attendance (months 19-24) UniMI, Unitelma, UNIVPM
Scheduling dissemination seminars (months 21-22) UniMI, Unitelma, UNIVPM
Elaborating Interactive PDF (month 24) UniMI, Unitelma, UNIVPM

Deliverables
Schedule dissemination seminars and events (available at the end of month 20)
Interactive PDF ¬(available at the end of month 24)

13 Milestone: Conference planning
Units: UniMI, Unitelma, UNIVPM
Timing: 21-24
Organizing the final international conference, where the results will be presented and discussed with an international scientific board.

Activities:
Scheduling the final conference (month 21) UniMI, Unitelma, UNIVPM
Selection of international renowned scholars (months 21-22) UniMI, Unitelma, UNIVPM
Organizing the final conference (months 23-24) UniMI, Unitelma, UNIVPM

Deliverables:
Preliminary conference program (available at the end of month 22)

*4. Detailed description of the Project impact, as such; indicating knowledge improvements, technological innovation and/or industrial applications, scientific community reinforcement, level of research internationalization, dissemination and exploitation of the results*

The project is expected to have a significant impact on the scientific community as well as to provide a concrete contribution to societal questions of major relevance. First of all, the impact of the project will fit both systemic and specific research priorities (research field Health- Line of intervention Technologies for Health - Articulation Digital Health") of the National Research Plan 2021-27 (PNR) and with Mission 6 of PNRR (the National Recovery and Resilience Plan): Health. The project insists on the two components of Mission 6.

Component 1 aims to strengthen the National Health System through the enhancement of proximity networks and the development of telemedicine to move towards an approach of care in which people's natural living environment becomes also the first place for people's care and treatment. The Ministerial Decree 77/2022 defines the reform in the sector PNRR - M6C1-1 Riforma 1 "Definition of a new organizational model for the territorial care networks", devoted to propose models and standard for community healthcare services. The DM 77/2022 makes extensive reference to telemedicine at the point 15, in which telemedicine is considered an enabling tool for: the implementation of the reorganization of territorial assistance; integrated health and social care and territorial assistance pathways (ex art. 21 DMPC 12 January 2017); the exchange and collaboration between operators belonging to the various hospital and territorial care networks, initiative healthcare and personalised medicine. The legislator recognizes that adopting innovative service models (supported by telemedicine) are closely linked to the perspective and capabilities of local contexts; in addition, that local factors can influence professional skills and operative practices. Emphasising the different factors that facilitate and hinder the technological persistence of telemedicine and how these factors interact with each other, ETHICS results will be able to foster a closer adherence among people's health needs, e-health technologies, professional practices, and services organisation.

Component 2 is devoted to the development of technical, professional, digital, and managerial competencies of healthcare personnel, with a specific focus on general practitioners and other specialists that usually rely on telemedicine. The project is expected to integrate these practitioners within a community of practice based on the circulation of knowledge, best practice, and open comparison, in order to strengthen sociological and organisational skills for e-health care professionals of the SSN, preparing them to face current and future challenges in an integrated, sustainable, innovative, flexible, and result-oriented perspective.

More in detail, the impact of the project develops along the following routes: a) advancement of knowledge; b) technological innovation; c) scientific community and its strengthening; d) dissemination of scientific knowledge and internationalisation of Italian research; e) Social wellbeing and welfare empowerment.

a. Advancement of knowledge

The different levels of analysis envisaged and the methodological structure of the study will allow for the production of detailed knowledge with respect to the different factors that affect the development, implementation and use of telemedicine and the interdependencies between them.

About the macrosocial level, the study of (changing) regulatory documents will produce an advancement of knowledge about standard-making process and DHTs as boundary-objects. The results of the survey will provide an updated and exhaustive picture about the diffusion and intensity of the use of telemedicine among GPs. These data are essential to complete the current partial picture of a national knowledge of the diffusion of these technologies, bringing out in particular the main organizational obstacles and enabling factors that professionals perceive in practical use. Qualitative case studies, although they focus more on the meso and micro levels, will make it possible to retrospectively produce knowledge on this important aspect as well.

Furthermore, case studies will produce a situated knowledge on the institutional and political negotiation processes that accompany (and often determine the outcome of) each telemedicine implementation. This topic has been poorly investigated in Italy (mostly because it is difficult to grasp with standard methods) which however the international literature identifies as crucial for building favourable settings for technological persistence. Case studies results are expected to advance knowledge about different and sometimes contrasting perspectives of key stakeholders, helping them to engage more effectively with one another as recommended by Greenhalgh et al. (2012), according to systemic priority 4.4 of PNR 'Human-centric innovation'. ETHICS contributes as well as to those future directions for digital health research recently pointed out by Marent & Henwood (2022) as case studies allow gaining deeper insights on processes of knowledge and relationships reconfiguration.

b. Technological innovation and/or industrial applications

ETHICS aims to have actual effects also on the current situation of telemedicine implementation practices. We intend to achieve this important aspiration through two channels: the production, through the involvement of sector experts, of guidelines and policy briefs for the development and monitoring of technology in a perspective of technological perseverance; the creation of workshops dedicated to sector experts and policy makers to contribute to the improvement of current practices and perspectives (see below).

c. Scientific community and its strengthening

This project stems from the joint work of scholars from different disciplinary fields who decided to share theoretical knowledge, research experiences and empirical methodologies to address the issue of telemedicine from a new perspective, as to say, putting the practical dimension in its many facets at the center. The disciplines from which the project starts are social studies on science and technology (STS) and the sociology of health and medicine (SHM). From the former derives the interest in the situated and immersive analysis of socio-technological phenomena; from the latter, derives the skills related to the socio-organizational aspects that affect health.

By now, scientific literature has widely shown how the development of telemedicine requires not only multidisciplinary approaches but also transdisciplinary gazes, capable of creating a dialogue between conceptual frameworks and methods that are usually independent and distinct. This kind of epistemological integration and gnoseological contamination represents a novelty in the Italian scientific panorama and also at an international level adds a missing tile in the understanding of telemedicine. The project therefore encourages inter-disciplinary collaboration and exchanges between the various scientific communities of reference of the scholars (especially social scientists and applied economists) involved, thus affecting the systemic priority 4.1 of PNR and strengthening the balance between exploration and exploitation. In addition to an effective participation in the activities envisaged by the proposal and the consolidation of internal relationships, the impact will be amplified by the promotion of the proposal and its outcomes to scholars who will make use of them to their respective communities - both in formal contexts (such as conferences and scientific events - in particular by proposing thematic sessions on the proposal themes in order to foster exchanges among researcher in this field) and informal ones, as communication exchanges and ordinary collaborations. A further aspect of strengthening the scientific community derives from the enrollment in the project of 2 young researchers who, through interactions with colleagues, research actions and dissemination activities, will be able to consolidate their scientific belonging and advance in their professional career.

d. Dissemination of scientific knowledge and internationalization of Italian research

ETHICS aims to promote the proposal advancements and its results through a plan of dissemination and public engagement that will regard both national and international level. We planned to identify different actions according to different recipients: scientific community, professionals and stakeholders, civil society, students and young researchers.

Scientific community

With respect to this recipient, we intend to act for the internationalization of Italian research through the dissemination of ETHICS' products and results both nationally and at European level. In particular, it plans to:

1. organize the final international conference at the PI headquarter, taking advantage of the international vocation of the city of Milan and the Università degli Studi di Milano;
2. participate in European conferences during the implementation of the project for sharing and discussing partial results of the research in the main international scientific networks, in the field of STS and in sociology of health and medicine. At the end of the project, participation in conferences will continue to share and disseminate the results and products. At a minimum, we plan to attend the following conferences: European Sociological Association (ESA), European Association for the Study of Science and Technology, Society (EASTT), European Society for Health and Medical Sociology (ESHMS), International Sociological Association (ISA);

3. a further degree of internationalization will be achieved through publishing in international scientific editorial series and scientific journals. Priority will be given to scientific series and journals that offer the possibility of open access publications, in order to obtain greater circulation of scientific products and greater dissemination of study results. Particularly, we expect to publish at least one open access book, collecting both the research case studies and the survey results, and two articles in international open access scientific journals;

4. all empirical research materials (surveys with questionnaires and interviews/focus groups), that can be shared, will be published in The OpenAIRE (Open Access Infrastructure for Research in Europe) platform, in line with systemic priority 4.6 of PNR.

Civil society

To reach a non-specialist arena, we intend to prepare the following products, which will increase the dissemination of study knowledge and the social competence in the field of e-health and telemedicine. In addition, they will also positively impact the health literacy of the population:

• Website. It will be set up to provide summary information on the debate, topic, and progress of the empirical study. The website will also aim to raise collective awareness about the processes of knowledge production during crises and to stimulate a public debate on the case discussed in the study. The contents of the website and the promotion strategies will be discussed during the dialogue workshops with professionals and representatives of active citizenship associations in the field of health.

• Public discussions. The results of the study will be disseminated to the public through participation in public events aimed at

disseminating scientific culture and raising public awareness of the importance of investing in research and innovation for social and economic progress (e.g. the national event “La notte dei ricercatori”).

• Interactive PDF. It will consist of the preparation of a more concise and hypertextual version of the research report, designed for circulation in public arenas. The advantage of hypertext is the possibility of combining a slimmed-down body of text with detailed insights available on demand.

Professionals and stakeholders engagements

To ensure a significant impact at the institutional and organizational level, besides the dissemination strategy, two kinds of public engagement initiatives have been planned, drawing on new research approaches envisaged by PNR towards open innovation and citizen engagement:

• Dialogue workshops. They are aimed at stimulating critical reflexivity and epistemological awareness through the discussion of the results of the study. Four “dialogue workshops” with health professionals involved in the case studies and representatives of citizens associations will be organized at the end of each case-study.

• The Delphi group. It is aimed at developing guidelines and/or policy brief as an "applicative" and directly implementable synthesis of the results that emerged from the various stages of research. The guidelines will have a general part and specific sections related to those services targeted in the empirical studies. This balances exploration and exploitation of results (PNR systemic priority).

The impact of public engagement unfolds in two directions: on the one hand, the project contributes to enhancing the dialogue between scientific knowledge, professional and other lay stakeholders; on the other hand, it has the ambition to positively impact on the development of telemedicine, stimulating the emergence of a community of practice composed by health professionals and managers who share the situated and sociotechnical approach, advocated by ETHICS as a theoretical domain.

Students and young scholars

The proposal overall design impacts on the development of a new generation of young scholars, experts in knowledge transfer and open science (PNR systemic priority). The two young researchers hired are the main protagonists of the project, deeply involved not only in empirical research activities, but also in the dissemination and public engagement.

It is considered essential to disseminate the results of the study also to students. The team members themselves (including the two hired researchers) will carry out the seminars related to the topics of the proposal on their own university courses, and in other training contexts sensitive to the topic: Sociology of health and medicine at UNIVPM and Unitelma Sapienza. Seminars will also be organized for PhD students, and postgraduates in hygiene and public health (UNIVPM).

e. Social wellbeing and welfare empowerment

The proposal is also expected to indirectly impact social wellbeing with particular reference to both health professionals and patients, through the improving of telemedicine initiatives making them more responsive to both professionals and patients needs. Italy is currently suffering from a severe shortage of GPs. Understanding under what conditions DHTs can counteract professional “malaise” and burnout, and make clinical workflow more effective has a direct impact on social wellbeing.

## *5. Financial aspects: costs of each research unit*

| **nº** | | **Funds of the Ministry of University and Research (euro)** |
|---|---|---|
| 1. | GOBO Giampietro | 146.975 |
| 2. | SENA Barbara | 121.181 |
| 3. | MATTEUCCI Nicola | 27.600 |
| | | **295.756** |

## *6. Bibliography*

Due to the limited space, we could only provide a partial bibliography

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Topol, E. (2019). The Topol Review: Preparing the healthcare workforce to deliver the digital future. Leeds, UK: Health Education England. Retrieved from https://topol .hee .nhs .uk/.
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## *7. Time schedule of the research activities (GANTT CHART)*

*Milestone 1 Project management*

| ACTIVITY | ASSIGNED TO | I year | | | | | | II year | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | BIM. 1 | BIM. 2 | BIM. 3 | BIM. 4 | BIM. 5 | BIM. 6 | BIM. 1 | BIM. 2 | BIM. 3 | BIM. 4 | BIM. 5 | BIM. 6 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Project activity monitoring and coordination | GOBO G | X | X | X | X | X | X | X | X | X | X | X | X |
| Reports writing | GOBO G | X | X | X | X | X | X | X | X | X | X | X | X |

*Milestone 2 Conceptual framework, study protocol and training*

| ACTIVITY | ASSIGNED TO | I year | | | | | | II year | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | BIM. 1 | BIM. 2 | BIM. 3 | BIM. 4 | BIM. 5 | BIM. 6 | BIM. 1 | BIM. 2 | BIM. 3 | BIM. 4 | BIM. 5 | BIM. 6 |
| Review of STS and SHM literature on telemedicine | GOBO G SENA B MATTEUCCI N | X | X | | | | | | | | | | |
| Definition of the study protocol | GOBO G SENA B MATTEUCCI N | X | X | | | | | | | | | | |
| Training | SENA B | | | X | | | | | | | | | |

*Milestone 3 Regulatory framework*

| ACTIVITY | ASSIGNED TO | I year | | | | | | II year | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | BIM. 1 | BIM. 2 | BIM. 3 | BIM. 4 | BIM. 5 | BIM. 6 | BIM. 1 | BIM. 2 | BIM. 3 | BIM. 4 | BIM. 5 | BIM. 6 |
| Collection of governmental and regional regulatory documents | SENA B MATTEUCCI N | X | X | | | | | | | | | | |
| Secondary analysis of the regulation | SENA B MATTEUCCI N | X | X | | | | | | | | | | |

*Milestone 4 Web survey pilot*

| ACTIVITY | ASSIGNED TO | I year | | | | | | II year | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | BIM. 1 | BIM. 2 | BIM. 3 | BIM. 4 | BIM. 5 | BIM. 6 | BIM. 1 | BIM. 2 | BIM. 3 | BIM. 4 | BIM. 5 | BIM. 6 |
| Development survey | GOBO G | | | | | | | | | | | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| protocol | MATTEUCCI N | X | | | | | | | | | | | |
| Constructing the draft questionnaire | GOBO G MATTEUCCI N | X | | | | | | | | | | | |
| Administration of the draft questionnaire to experts and stakeholders | GOBO G MATTEUCCI N | X | | | | | | | | | | | |
| Drafting the final questionnaire | GOBO G MATTEUCCI N | | X | | | | | | | | | | |
| Negotiating with the professional orders to obtain the list of the population of Italian GPs | GOBO G MATTEUCCI N | | X | | | | | | | | | | |

*Milestone 5 Web-survey data collection, management and empirical analysis*

| **ACTIVITY** | **ASSIGNED TO** | **I year** | | | | | | **II year** | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **BIM. 1** | **BIM. 2** | **BIM. 3** | **BIM. 4** | **BIM. 5** | **BIM. 6** | **BIM. 1** | **BIM. 2** | **BIM. 3** | **BIM. 4** | **BIM. 5** | **BIM. 6** |
| Data collection | GOBO G MATTEUCCI N | | X | X | | | | | | | | | |
| Soliciting reluctant respondents, re-sampling of missing responses, and other dataset handing | GOBO G MATTEUCCI N | | | X | X | | | | | | | | |
| Descriptive data analysis | GOBO G MATTEUCCI N | | | | X | | | | | | | | |
| Inferential analysis | GOBO G MATTEUCCI N | | | | | X | X | | | | | | |

*Milestone 6 Case studies protocol*

| **ACTIVITY** | **ASSIGNED** | **I year** | | | | | | **II year** | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| | TO | BIM. 1 | BIM. 2 | BIM. 3 | BIM. 4 | BIM. 5 | BIM. 6 | BIM. 1 | BIM. 2 | BIM. 3 | BIM. 4 | BIM. 5 | BIM. 6 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Selection case studies | GOBO G SENA B | | X | X | | | | | | | | | |
| Case studies planning | GOBO G SENA B | | X | X | | | | | | | | | |

*Milestone 7 Case studies data collection*

| ACTIVITY | ASSIGNED TO | I year | | | | | | II year | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | BIM. 1 | BIM. 2 | BIM. 3 | BIM. 4 | BIM. 5 | BIM. 6 | BIM. 1 | BIM. 2 | BIM. 3 | BIM. 4 | BIM. 5 | BIM. 6 |
| Secondary quantitative data collection | GOBO G SENA B | | | X | X | X | | | | | | | |
| Document collection | GOBO G SENA B | | | X | X | X | | | | | | | |
| Focused observation | GOBO G SENA B | | | X | X | X | X | | | | | | |
| Discursive interviews | GOBO G SENA B | | | X | X | X | X | X | | | | | |

*Milestone 8 Case studies analysis and reports*

| ACTIVITY | ASSIGNED TO | I year | | | | | | II year | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | BIM. 1 | BIM. 2 | BIM. 3 | BIM. 4 | BIM. 5 | BIM. 6 | BIM. 1 | BIM. 2 | BIM. 3 | BIM. 4 | BIM. 5 | BIM. 6 |
| Data analysis and triangulation | GOBO G SENA B MATTEUCCI N | | | | | | | | X | X | | | |
| Case studies comparison | GOBO G SENA B MATTEUCCI N | | | | | | | | X | X | | | |
| Case studies reporting | GOBO G | | | | | | | | | | X | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SENA B<br>MATTEUCCI N | | | | | | | | | | | | |
| Stakeholders workshop organization | GOBO G<br>SENA B<br>MATTEUCCI N | | | | | | | | | | X | | |

*Milestone 9 Exploitation strategy*

| ACTIVITY | ASSIGNED TO | I year | | | | | | II year | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | BIM. 1 | BIM. 2 | BIM. 3 | BIM. 4 | BIM. 5 | BIM. 6 | BIM. 1 | BIM. 2 | BIM. 3 | BIM. 4 | BIM. 5 | BIM. 6 |
| Selection Delphi group of experts and planning of the rounds | GOBO G<br>SENA B<br>MATTEUCCI N | | | | | | X | X | | | | | |
| Conducting Delphi group rounds | GOBO G<br>SENA B<br>MATTEUCCI N | | | | | | | | X | X | | | |
| Co-creating guidelines | GOBO G<br>SENA B<br>MATTEUCCI N | | | | | | | | | | X | | |
| Co-creating policy brief | GOBO G<br>SENA B<br>MATTEUCCI N | | | | | | | | | | X | | |

*Milestone 10 Website creation*

| ACTIVITY | ASSIGNED TO | I year | | | | | | II year | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | BIM. 1 | BIM. 2 | BIM. 3 | BIM. 4 | BIM. 5 | BIM. 6 | BIM. 1 | BIM. 2 | BIM. 3 | BIM. 4 | BIM. 5 | BIM. 6 |
| Website technical development | GOBO G | | X | | | | | | | | | | |
| Web-site management: definition, revision and update of contents | GOBO G<br>SENA B<br>MATTEUCCI N | | X | X | X | X | X | X | X | X | X | X | X |

*Milestone 11* *Public engagements strategy*

| ACTIVITY | ASSIGNED TO | I year | | | | | | II year | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | BIM. 1 | BIM. 2 | BIM. 3 | BIM. 4 | BIM. 5 | BIM. 6 | BIM. 1 | BIM. 2 | BIM. 3 | BIM. 4 | BIM. 5 | BIM. 6 |
| Selection of participants | GOBO G SENA B MATTEUCCI N | | | | | X | | | | | | | |
| Organization of events | GOBO G SENA B MATTEUCCI N | | | | | | X | X | X | X | | | |

*Milestone 12* *Dissemination strategy*

| ACTIVITY | ASSIGNED TO | I year | | | | | | II year | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | BIM. 1 | BIM. 2 | BIM. 3 | BIM. 4 | BIM. 5 | BIM. 6 | BIM. 1 | BIM. 2 | BIM. 3 | BIM. 4 | BIM. 5 | BIM. 6 |
| Organization educational seminars | GOBO G SENA B MATTEUCCI N | | | | | | | | X | X | X | X | X |
| Organization public events attendance | GOBO G SENA B MATTEUCCI N | | | | | | | | | | X | X | X |
| Scheduling dissemination seminars | GOBO G SENA B MATTEUCCI N | | | | | | | | | | | X | |
| Elaborating Interactive PDF | GOBO G SENA B MATTEUCCI N | | | | | | | | | | | | X |

*Milestone 13* *Conference planning*

| ACTIVITY | ASSIGNED | I year | | II year | |
|---|---|---|---|---|---|

| | TO | BIM. 1 | BIM. 2 | BIM. 3 | BIM. 4 | BIM. 5 | BIM. 6 | BIM. 1 | BIM. 2 | BIM. 3 | BIM. 4 | BIM. 5 | BIM. 6 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Scheduling the final conference | GOBO G<br>SENA B<br>MATTEUCCI N | | | | | | | | | | | X | |
| Selection of international renowned scholars | GOBO G<br>SENA B<br>MATTEUCCI N | | | | | | | | | | | X | |
| Organizing the final conference | GOBO G<br>SENA B<br>MATTEUCCI N | | | | | | | | | | | | X |

*8. Time schedule of the expenses*

| nº | Research Units | Expenses | I year | | | | | | II year | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | BIM. 1 | BIM. 2 | BIM. 3 | BIM. 4 | BIM. 5 | BIM. 6 | BIM. 1 | BIM. 2 | BIM. 3 | BIM. 4 | BIM. 5 | BIM. 6 |
| 1. | GOBO Giampietro | item A1 | X | X | | | | | X | | | | | X |
| 2. | GOBO Giampietro | item A2 | | X | X | X | X | X | X | X | X | X | X | X |
| 3. | GOBO Giampietro | item B | | | | | | | | | | | | |
| 4. | GOBO Giampietro | item C | X | X | X | X | X | | | | | | | |
| 5. | GOBO Giampietro | item D | | | | | | | | | | | | |
| 6. | GOBO Giampietro | item E | | | | | | | | | | | | |
| 7. | GOBO Giampietro | item F | | | | | X | X | | X | X | X | X | X |
| 8. | MATTEUCCI Nicola | item A1 | X | X | | | | | X | X | | | | |
| 9. | MATTEUCCI Nicola | item A2 | | | | | | | | | | | | |
| 10. | MATTEUCCI Nicola | item B | | | | | | | | | | | | |
| 11. | MATTEUCCI Nicola | item C | | | | | | | | | | | | |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12. | MATTEUCCI Nicola | item D | | | | | | | | | | | | |
| 13. | MATTEUCCI Nicola | item E | | | | | | | | | | | | |
| 14. | MATTEUCCI Nicola | item F | | | | | | | | | | | | |
| 15. | SENA Barbara | item A1 | X | X | | | | | X | X | | | | |
| 16. | SENA Barbara | item A2 | | X | X | X | X | X | X | X | X | X | X | X |
| 17. | SENA Barbara | item B | | | | | | | | | | | | |
| 18. | SENA Barbara | item C | | | | | | | | | | | | |
| 19. | SENA Barbara | item D | | | | | | | | | | | | |
| 20. | SENA Barbara | item E | | | | | | | | | | | | |
| 21. | SENA Barbara | item F | | | | | | | | | | | | |

*B.2*

*1. Scientific Curriculum of the Principal Investigator*

| | |
|---|---|
| - Researcher unique identifier: ORCID Id | 0000-0002-3519-5640 |
| - URL for web site: | https://www.unimi.it/en/ugov/person/giampietro-gobo |
| Academic age (years from the beginning of scientific activity, i.e. years from first publication or from the beginning of PhD or Medical Specialisation School) | 33 |
| Previous positions | 2011- Full professor of Methodology of Social Research, and Science and Technology Studies (STS), U<br>2002-2011 Associate professor of Methodology of Social Research, and Evaluation Research, Universi<br>1998-2002 Lecturer of Methodology and Techniques of Social Research (Qualitative and Quantitative<br>1995 Assistant Professor of Methodology of Social Research, University of Milan, School of Social Worl<br>1990 Teaching Assistant at the Dept. of Literature, University of California San Diego, LA JOLLA, (Sprir |
| Prizes and awards | 1988 CNR Fellowship: visiting scholar, Dept. of Sociology, UCSD (US)<br>1989 Award for the research 'The tact in interview situation" by CNR<br>1989-91 Fellowship: visiting scholar at the Dept. of Sociology, UCSD (US)<br>1992-93 ECPR Fellowship: Essex Summer School in Social Science Data Analysis and Collection, Unive<br>2004 Visiting International Fellow: University of Surrey, Guilford (UK). |

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|---|---|
| | 2008 Presentation of the book Doing Ethnography, 4th mid-term conference of the ESA Research Net<br><br>2009 Presentation of the book Doing Ethnography at the meet-the-author session, 9th Conference Eu Sept. 4th<br><br>2016 Keynote spk at New Tricks of Our Trade, 28th biannual Nordic Sociological Association conferen<br><br>2017 Keynote spk at (Un)Making Europe, 13th Conference of the European Sociological Association, U |
| Visiting academic positions | 1988 visiting scholar, Dept. of Sociology, University of California, San Diego, La Jolla (US<br><br>1989-91 visiting scholar, Dept. of Sociology, University of California, San Diego, La Jolla (US)<br><br>2004 Visiting International at the University of Surrey, Guilford (UK). |
| Teaching activities and PhD supervision | 1990 The practice of conducting interviews, Dept. of Literature, University of California San Diego, La<br><br>1990 Aspects of Contemporary Italian Society, Dept. of Literature, University of California San Diego,<br><br>1998-2017 Methodology of Social Research, University of Milan<br><br>2003-2017 Research methods and Evaluation, University of Milan<br><br>2010 Ethnographic Methods, Graduate School of Universität Bayreuth, Bayreuth (D), May 20-22.<br><br>2013 La Investigación Cualitativa, Dep. de Historia de la Comunicación Social, Universidad Compluten<br><br>2015-21 Mixed methods, summer school, University of Oslo<br><br>2015 Ethnographic methods, Graduate School of Technische Universität Berlin, Berlin (D), Sept. 1-2.<br><br>2016 Mixed methods, IPSA summer school, University of Flacso (Mexico City)<br><br>2018-current Sociology and Qualitative Methods, University of Milan<br><br>2019-current Science and Technology Studies,University of Milan<br><br>Ph.D.: 3 |
| Other work experience (e.g. consultancy if any) | From early 1990s consulting activity in the following areas:<br>1. management consulting<br>2. search and personnel recruitment<br>3. organizational analysis<br>4. training<br><br>This activity has been conducted for public administrations and private companies in several sectors ( fashion, women's and men's wear, commercial law, electronics). Consulting activity dealt with:<br><br>• evaluation of human resource's potential<br>• impact assessment<br>• customer satisfaction<br>• empowerment<br>• management of business meeting<br>• creation of participatory managerial style<br>• human resource management<br>• decision-making<br>• intra-company conflict management<br>• creativity<br>• ethnography of organizational communication |
| - Administrative role and position responsibility | 2005-08 Co-ordinator of the National Forecasting Laboratory on addiction behaviours, at the Italian Pr<br><br>2003-08 Faculty Delegate in the board of the Centre of Technology for teaching and learning (CTU), U https://work.unimi.it/aree_protette/121631.htm |

| | |
|---|---|
| | 2005 Expert Evaluator for the CIVR at the Italian Minister of University and Research.<br><br>2006-13 Director of the centre ICONA (Innovation and Organizational Change in the Public Administra<br><br>2007-2012 Member of the managing board of 2nd Level Master's Degree "Qualitative Methods applie Formazione Agostino Gemelli, Catholic University of the Sacred Heart, Milan, Italy.<br><br>2002-2015 Member of the Board of the Ph.D. Program SOMET (Sociology and Methodology of Social R of Milan, https://www.nasp.eu/training/phd-programmes/somet.html<br><br>2011-14 Director of the MA degree on Administration and Public Policies https://www.unimi.it/it/corsi/corsi-di-laurea/amministrazioni-e-politiche-pubbliche-app<br><br>2015-current Member of the Board of the Ph.D. Program "Philosophy and Human Sciences", Dept. of I https://www.unimi.it/en/education/postgraduate-and-continuing-education-programmes/doctoral-prog<br><br>2022-current Member of the Executive Board (Giunta) of the Dept. of Philosophy, University of Milan, https://www.dipafilo.unimi.it/ecm/home/organizzazione/organi/giunta-di-dipartimento |
| - Scientific organisations/Coordination of academic activities | It is not clear to me what this section requires and what is the difference with the previous section. Ho<br><br>1999 Founder of the "Qualitative Methods" Research Network of ESA (European Sociological Associati<br><br>1999-2001 First Chair of the "Qualitative Methods" Research Network of ESA (European Sociological A<br><br>2017-current Director of LASAS (LAboratorio di Sociologia e Antropologia della Scienza), University of https://www.dipafilo.unimi.it/ecm/home/ricerca/centri-di-ricerca/laboratorio-di-sociologia-e-antropolog<br><br>2019-current Director of the Workplace Studies Lab, University of Milan, http://sites.unimi.it/workplace |
| Editorial activity | 1999-current Member of the Board of the "Qualitative Methods" Research Network of ESA (European<br><br>2001-current Consulting Editor of the "International Journal of Qualitative Research in Work and Orga (Scopus) https://www.emeraldgrouppublishing.com/journal/qrom#editorial-team<br><br>2001-2018 Member of the editorial board of Qualitative Research (Sage), withdrawn due to unforesee https://journals.sagepub.com/home/QRJ<br><br>2004-2016 Review co-editor of International Journal of Social Research Methodology. Theory & Practic withdrawn due to unforeseen commitments, https://www.tandfonline.com/journals/tsrm20<br><br>2007-current Member of the editorial board of "Forum Qualitative Sozialforschung / Forum: Qualitativ https://www.qualitative-research.net/index.php/fqs/people/board<br><br>2015-current Consulting editor of the Board of Qualitative Sociology Review http://www.qualitativesoc<br><br>2017-current Member of the editorial board The European Journal of Cultural and Political Sociology (F http://www.tandfonline.com/toc/recp20/current<br><br>2018-current Peer review coordinator of GLOCALISM. JOURNAL OF CULTURE, POLITICS AND INNOVATI<br><br>2019-current Member of the scientific committee of the journal Rassegna Italiana di Valutazione https |
| Membership of scientific societies | • "Qualitative Methods" Research Network # 20, ESA (European Sociological Association)<br><br>• Methodology Section, Italian Sociological Association (AIS)<br><br>• Research Network #24 - Science and Technology, International Sociological Association (ISA) |
| Funding (current and past) | |

| Anno | Project title | Person months | Funding |
|---|---|---|---|
| | Scientific direction of a monitoring research of the project "OLI.VA – | | |

| | | | | |
|---|---|---|---|---|
| | 2020 | Orientation to Work and Entrepreneurship in the province of Varese | 3 | Preside Gioven |
| | 2016 | The control room of 118. Expert systems and cooperative work: a comparison of three medic emergency dispatch centres | 8 | Italian project |
| | 2013 | Scientific direction of a mixed methods research on Over55 employees at the Sella Bank | 6 | Banca |
| | 2011 | Scientific direction of a customer satisfaction research on the booking service medical specialist of Lombardy Region | 4 | Lomba |
| | 2008 | Organizational models, best practices and well-being in call centres | 8 | Italian project |
| | 2004 | Medic emergency and computer-mediated communication. Cooperative work practices at 118 | 4 | univers |
| | 2003 | Vertical" call centres. Human resource, motivation and cooperative work in a credit recovering service | 3 | univers |
| | 2002 | The control room of 118. Expert systems and call takers' cooperative work in a medic emergency dispatch centre | 4 | univers |
| | 2002 | The control room of 118. Expert systems and call takers' cooperative work in a medic emergency dispatch centre | 4 | univers |

| | |
|---|---|
| Significant career breaks | no scientific career breaks.<br><br>Just 1 year of sabbatical leave (from Oct. 1, 2021 to Sept. 30, 2022) |
| - H-Index (in Scopus): | n.a. |
| - Total number of publications in peer-reviewed journals | 38 |
| - Total IF | n.a. |
| - n. and total IF of publications where the candidate is first author or equivalent (for the disciplines where the position in the list of authors correspond to the role in the work presented) | 34 |
| - N. and total IF of the publications where the candidate is last or corresponding author (for the disciplines where the position in the list of | n.a. |

| | |
|---|---|
| authors correspond to the role in the work presented) | |

*2. Scientific Curriculum of the associated PIs*

## 1. SENA Barbara

| | |
|---|---|
| - Researcher unique identifier: ORCID Id | 0000-0002-8546-1302 |
| - URL for web site: | https://www.unitelmasapienza.it/barbara-sena/ |
| Academic age (years from the beginning of scientific activity, i.e. years from first publication or from the beginning of PhD or Medical Specialisation School) | 20 |
| Previous positions | - Senior Assistant Professor (rtd-B) in General Sociology (SPS/07)- Unitelma Sapienza University – Department of Law and Economics (2018-2021)<br><br>- Junior Assistant professor (rtd-A) in Economic sociology (SPS/09) - Unitelma Sapienza University – Department of Law and Economics (2014-2018) |
| Prizes and awards | - Visiting fellowship Grant awarded on a call among competitors by Gesis (Leibniz Institute for the Social Sciences) of Koeln (Cologne), Germany (period September-October 2012).<br><br>- Youth Award "Achille Ardigò" - Social Policies session for the paper entitled "From relational sociology to the economics of relationships", X Incontro Giovani, Pontignano (Siena), 25-26 June 2010 |
| Visiting academic positions | - Facultad de Ciencias Sociales, Departamento de Sociologia y Comunicacion - Universidad de Salamanca, 20-25 September 2021 - visiting professor<br><br>- International Summer School “Desarrollo Humano Para Todos Y Todas: Ciencias Sociales En Diálogo Por Una Sociedad Inclusiva”, Universidad Católica de Chile – Santiago - Cunago (Chile), 9-12 January- invited professor<br><br>-International Summer School “Agapic action and social reality: sociological imagination to promote development, to build future”, Centro Universitário Tabosa de Almeida ASCES – UNITA, Federal University of Pernambuco, Brasil 11-14 December 2017 - invited professor<br><br>- Eurolab - Gesis (Leibniz Institute for the Social Sciences), Koeln, Germany (September-October 2012) - visiting fellow<br><br>- Faculty of Social Sciences - Humboldt University of Berlin (October 2003-February 2004) - visiting fellow<br><br>- Solvay Business School - Université Libre de Bruxelles (October 2004-February 2005) - visiting fellow |
| | 2022 - Ph.D. in "Social Theory, Digital Innovation and Public Policies" of the University of Salerno (January 26, 2022) - Invited professor for teaching.<br><br>2019 - Ph.D. in "Social Sciences", Department of Political Sciences of the University of Genoa (5 June 2019) - Invited Professor for teaching.<br><br>2014 – to date: |

| | |
|---|---|
| Teaching activities and PhD supervision | - Sociology of health and health policies (SPS/07 - 10 CFU);<br>- General Sociology (SPS/07 - 6 CFU);<br>- Methodology of social research (SPS/07 - 6 CFU);<br>- Human Resource Management (SPS/07 - 6 CFU)<br>- Sociology of innovation (SPS/07 - 6 CFU)<br>Unitelma Sapienza University – Department of Law and Economics<br><br>2014 -2018 - Economic sociology (SPS/09 - 6 CFU), Unitelma Sapienza University - Department of Law and Economics<br><br>2010-2011<br>- General sociology (SPS/07 - 10 CFU)<br>Faculty of Education, University of L'Aquila.<br><br>2007-2014<br>- Sociology and methodology of social research –<br>Faculty of Social Sciences, Pontifical University of S. Thomas Aqu... |
| Other work experience (e.g. consultancy if any) | 2019 -2022: Responsible for the impact evaluation of the Project 2016-ADR-00463 "The Youth City-Factory", supported by the Social Enterprise "Con I bambini" (Fund for the fight against child educational poverty - Law 28/12/2015 n 208 art.1 paragraph 392) (duration: 30 months).<br><br>2018-2021: Responsible for the impact evaluation of the Project 2016-PIR-00064 "Crescere Insieme 06", supported by the Social Enterprise "Con I bambini" (Fund for the fight against child educational poverty - Law 28/12/2015 n. 208 art.1 paragraph 392) (duration 30 months).<br><br>2010-2011: Supervisor for the methodology in the project "Pilot survey on the repercussions of municipal ordinances on urban safety", coordinated by ANCI (National Association of Municipalities of Italy) and financed by SSPAL (Higher School of Local Public Administration). |
| - Administrative role and position responsibility | - Academic Senator representing the Researchers of the University Unitelma Sapienza (2021)<br><br>- Member of the joint teacher-student commission (CPDS) of the Unitelma Sapienza University (2017-2021).<br><br>- Member of the Commission for Quality Assurance Management (CGAQ) of the master's degree in Management of Public and Health Organizations of the University Unitelma Sapienza and Head of the Cyclical Review Report for the same degree course (2017 to date).<br><br>- Member of the Commission for Quality Assurance Management (CGAQ) of the Bachelor degree in Administration and Security Sciences of the University Unitelma Sapienza (2017-2019). |
| - Scientific organisations/Coordination of academic activities | - Scientific Director of the University specialisation course (master universitario) in Human Resource Management, Unitelma Sapienza University (2019 - to date)<br><br>- Scientific Director of the long life learning training course (40 hours /5 credits) for public administration managers in "Management of human resources. Focus on intelligence, emotion, group psychology and relationship management", organised by Unitelma Sapienza University and funded by INPS (March-June 2017). |
| Editorial activity | - Member of the Editorial board, referee and section editor of the journal Salute e Società (Health and Society, FrancoAngeli, Milano).<br><br>- Member of the Editorial board of the scientific collection "Laboratorio Sociologico" (FrancoAngeli, Milano), section "Theory, Epistemology and Method".<br><br>- Member of the Scientific board of the editorial collection "INTERAZIONI" (Natan Edizioni).<br><br>- Referee for Health Economics, Policy and Law.<br><br>- Referee for Journal of Interprofessional care.<br><br>- Referee for Sociology of Health and Illness.<br><br>- Referee for Profession and Professionalism. |

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| | - Referee for Qualitative Sociology Review.<br><br>- Referee for Sociologia e ricerca sociale.<br><br>- Referee for Sociology of Frontiers. |
| Membership of scientific societies | - European Sociological Association (ESA) - RN 16 Sociology of Health and Medicine<br>- Associazione Italiana di Sociologia (AIS) - Session Sociologia della Salute e della Medicina<br>- Società Italiana di Sociologia Economica (SISEC). |

Funding (current and past)

| Anno | Project title | Person months | Funding organisation |
|---|---|---|---|
| 2021 | Regulating technological driven finance: activities, subjects and supervision in the digital era. | 12 | PRIN 2020 |
| 2020 | The Patient-centred approach in interprofessional teams: The case of palliative care in Italy and international contexts | 12 | University Research Projects Call 2019 |
| 2018 | Challenges in interprofessional care for health organisations | 12 | University Research Projects Call 2017 |
| 2018 | Food waste valorisation for sustainable HORIZON2020 - STAR-ProBio: Sustainability Transition Assessment and Research of Bio-based Products | 6 | European Commission Horizon 2020-BB-2016-2017 |
| 2017 | Innovation in Health services | 12 | University Research Projects Call 2015 |
| 2014 | Family and community nurse: a new protagonist of territorial health | 12 | Ipasvi and Italian Ministry of Health |
| 2011 | The experience of pain in cancer patients: extension, characteristics and possible solutions. A national research | 12 | LILT (Italian League Against Cancer) and AIOM (Italian Association of Medical Oncology). |

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| Significant career breaks | N.D. |
| - H-Index (in Scopus): | N.D. |
| - Total number of publications in peer-reviewed journals | 0 |

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| - Total IF | N.D. |
| - n. and total IF of publications where the candidate is first author or equivalent (for the disciplines where the position in the list of authors correspond to the role in the work presented) | N.D. |
| - N. and total IF of the publications where the candidate is last or corresponding author (for the disciplines where the position in the list of authors correspond to the role in the work presented) | N.D. |

## 2. MATTEUCCI Nicola

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| - Researcher unique identifier: ORCID Id | 0000-0002-2190-3837 |
| - URL for web site: | www.univpm.it/nicola.matteucci |
| Academic age (years from the beginning of scientific activity, i.e. years from first publication or from the beginning of PhD or Medical Specialisation School) | 19 |
| Previous positions | Associate professor (permanent tenure) at Marche Polytechnic University (ongoing).<br>Assistant and aggregated professor (permanent tenure) at Marche Polytechnic University (2006-2022).<br>Term research fellow and post-doc researcher at Marche Polytechnic University (2001-2006).<br>Term reader at Maastricht University (2000-1). |
| Prizes and awards | Winner competition incentive ex art.29 c.19 Law 240/2010, Faculty of Economics, 2015.<br>Winner competition “Best researcher of Marche Polytechnic University”, 2009.<br>Winner DIMA department prize for scientific publications, 2008. |
| Visiting academic positions | Visiting professor at University of Applied Sciences and Arts of Southern Switzerland (CH), 2022-2023.<br>Visiting professor at Gran Sasso Science Institute (IT), 2018-19.<br>Visiting professor at State University of Milan (IT), 2017.<br>Visiting professor at Sophia University Institute (IT), 2013-18.<br>Visiting researcher at Maastricht University (NL), 2010-11.<br>Visiting Pdh student at Indiana University (US), 2001-2. |
| Teaching activities and PhD supervision | Graduate and post-graduate teaching of the courses: “Industrial organization and business strategy” (MSc), “Oligopoly and game theory”(Phd), “Economics of ICT”(MSc), “Economics of networks” (BSc & MSc), “Industrial Economics” (BSc & MSc), "Langue Française" (BSc), “Applied Economics” & “Informatics” (School of Specialization in Medicine). BSc and MSc exams and final degree committee member.<br>Coordinator of the Microeconomics Module, PhD Programme in Economics, Marche Polytechnic University (since 2015). |

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| | Member of the teaching Board of the PhD in Economics, Marche Polytechnic University.<br>Member of the teaching Board of the post-graduate School of Specialization in Hygiene and Preventive Medicine, Marche Polytechnic University.<br>PhD supervision and examination committee member (5 Phd students and candidates until 2022). |
| Other work experience (e.g. consultancy if any) | For University of Applied Sciences and Arts of Southern Switzerland (CH), expert for studies on gambling economics, harms and policy, 2022-23.<br>For LUISS Business School (IT), expert for a study on “The telecom sector in Italy: Regulatory status and impact analysis”, 2021.<br>For EU Commission–DG Connect, expert for a study on “National broadband plans of the EU-28”, 2016.<br>For Veneto Regional Government, expert for drafting the regional Digital Agenda within the 2014-20 regional cohesion policy. 2013-4.<br>For EU Commission-DG Enterprise and Industry, panel expert in a Delphi survey on future EU policy on ICT standardization, 2009.<br>For Marche Regional Government, expert for a study on “Governance and strategy of internationalization”, 2009.<br>Scientific advisor on “Microcredit for economic development” (L), 2007. |
| - Administrative role and position responsibility | Department delegate coordinating the management of the Quality of the institutional activities (DiSES, since 2015).<br>Faculty delegate responsible for the management and the certification of the teaching Quality of the courses offered in English (RAQ CdS IEC), since 2014.<br>Member of these committees for teaching organization and results assessment (CCdS EC, IEC, DSEI), various years.<br>Stipulation and management of the Agreements of international cooperation UNIVPM-Shenkar College of Engineering and Design (IL, since 2012) and with University of Brasilia (BR, since 2015).<br>Stipulation and management of the Erasmus+ Agreement with the Institute TelecomSud (FR, since 2014). |
| - Scientific organisations/Coordination of academic activities | Organizer of meetings and scientific events for the UNIVPM Phd programme, for the scientific societies and for national/international research projects.<br>Committe member of two research centres deputed to scientific activity management: 1) CRISS, centre for research on socio-health care services integration, 2) CIRP, centre for research on landscape. |
| Editorial activity | Member of Editorial Board for these scientific journals: Springer Nature Business & Economics; L’industria (Review of Industrial Economics and Policy); Revista de Direito Setorial e Regulatório (Journal of Law and Regulation); Prisma. Formerly, also for Economia Pubblica (Italian Journal of Public Economics).<br>Referee for: Advances in Economics and Business, Annals of telecommunications-Annales des télécommunications, Bulletin of Economic Research, Digital Policy, Regulation and Governance, Economia Marche-Journal of Applied Economics, Economics Bulletin, European Journal of Comparative Economics, Industry and Innovation, Economia pubblica–Italian Journal of Public Economics, Journal of Broadcasting & Electronic Media, Journal of Small Business Management, JMM-International Journal of Media Management, l'Industria-Rivista di economia e politica industriale, Oxford Bulletin of Economics and Statistics, Papers in Regional Science, Prisma, Regional Studies, Review of Economics and Institutions, RIE-Italian Economic Journal, Small Business Economics, Telecommunications Policy. |
| Membership of scientific societies | Member of SIEPI: http://siepi.org, SIEP: http://www.siepweb.it/siep/wp/, ITS: http://www.itsworld.org, SIE: https://www.siecon.org/it |

| Anno | Project title | Person months | Funding organisation |
|---|---|---|---|
| 2018 | Structural reforms in Italy, 2014-2017 | 8 | EU Commission–DG Grow and WIFO (AT) |
| 2015 | Financing models for public services in the | 6 | EU Commission-DG Competition and |

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| | | European Union and their impact on competition | | Ecorys (NL) |
| Funding (current and past) | 2005 | Policy guidelines for regions falling under the new regional competitiveness and employment objective for the 2007-2013 period in the fields of the knowledge economy and the environment, in line with the Lisbon and Gothenburg objectives | 5 | EU Commission-DG Regional policy and CSIL (IT) |
| | 2001 | 5th Framework Project "EPKE" (Employment Prospects in the Knowledge Economy) | 36 | European Research Council |

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| Significant career breaks | n.a. |
| - H-Index (in Scopus): | n.a. |
| - Total number of publications in peer-reviewed journals | 0 |
| - Total IF | n.a. |
| - n. and total IF of publications where the candidate is first author or equivalent (for the disciplines where the position in the list of authors correspond to the role in the work presented) | n.a. |
| - N. and total IF of the publications where the candidate is last or corresponding author (for the disciplines where the position in the list of authors correspond to the role in the work presented) | n.a. |

*3. Main Principal Investigator's scientific publications (Max. 20)*

1. G. Gobo, B. Sena (2022). Questioning and Disputing Vaccination Policies. Scientists and Experts in the Italian Public Debate. BULLETIN OF SCIENCE, TECHNOLOGY & SOCIETY, vol. 42, p. 25-38, ISSN: 0270-4676, doi: 10.1177/02704676221080928 - **Articolo in rivista**
2. G. Gobo, L. Serafini, E. Campo, A. Caserini (2022). Covid-19 e fiducia negli scienziati. Uno studio pilota sui

lettori di due giornali online. COMUNICAZIONE POLITICA, vol. 1, p. 19-38, ISSN: 1972-5094, doi: 10.3270/103648 - **Articolo in rivista**

3. Gobo G., Campo E. (2021). Covid-19 in Italy: should sociology matter?. EUROPEAN SOCIOLOGIST, vol. 46, ISSN: 2415-6426 - **Articolo in rivista**

4. g. gobo (2021). Replicability. Politics and poetics of accountability, validation and legitimation. FRONTIERS IN PSYCHOLOGY, vol. 11, p. 1-13, ISSN: 1664-1078, doi: 10.3389/fpsyg.2020.608451 - **Articolo in rivista**

5. G. Gobo (2019). Vaccini e vaccinazioni. Una questione solo medica?. RASSEGNA ITALIANA DI SOCIOLOGIA, vol. 60, p. 627-636, ISSN: 0486-0349, doi: 10.1423/95513 - **Articolo in rivista**

6. G. Gobo, B. Sena (2019). Oltre la polarizzazione "pro-vax" versus "no-vax". Atteggiamenti e motivazioni nel dibattito italiano sulle vaccinazioni [Beyond the "pro-vax" versus "no-vax" polarization. Attitudes and motivations in the Italian debate on vaccination]. SALUTE E SOCIETÀ, vol. 18, p. 176-190, ISSN: 1723-9427, doi: 10.3280.SES/2019002014 - **Articolo in rivista**

7. G. Gobo (2016). Why “merged” methods realize a higher integration than “mixed” methods : a reply. QUALITATIVE RESEARCH IN ORGANIZATIONS AND MANAGEMENT, vol. 11, p. 199-208, ISSN: 1746-5648, doi: 10.1108/QROM-07-2016-1392 - **Articolo in rivista**

8. G. Gobo (2015). The next challenge : from mixed to merged methods. QUALITATIVE RESEARCH IN ORGANIZATIONS AND MANAGEMENT, vol. 10, p. 329-331, ISSN: 1746-5648, doi: 10.1108/QROM-07-2015-1309 - **Articolo in rivista**

9. G. Gobo (2007). 118 : dalla tecnologia in sé alla tecnologia-in-uso. BELTEL, vol. 3, p. 6-11, ISSN: 2037-4194 - **Articolo in rivista**

10. G. Gobo (2006). Set them free. Improving data quality by broadening interviewer’s task. INTERNATIONAL JOURNAL OF SOCIAL RESEARCH METHODOLOGY, vol. 9, p. 279-301, ISSN: 1364-5579, doi: 10.1080/13645570600916064 - **Articolo in rivista**

11. G. Gobo (2001). Best practices : rituals and rhetorical strategies in the initial telephone contact. FORUM: QUALITATIVE SOCIAL RESEARCH, vol. 2, ISSN: 1438-5627 - **Articolo in rivista**

12. G. Gobo (2018). Upside down : reinventing research design. In: (a cura di): U. Flick, The SAGE Handbook of Qualitative Data Collection. p. 65-83, LONDON:SAGE, ISBN: 9781473952133 - **Contributo in volume (Capitolo o Saggio)**

13. G. Gobo (2011). Back to Likert : towards a conversational survey. In: (a cura di): M. Williams;W.P. Vogt, The Sage Handbook of Innovation in Social Research Methods. p. 228-248, LONDON:SAGE, ISBN: 978-1-4129-4648-3 - **Contributo in volume (Capitolo o Saggio)**

14. G. Gobo (2008). Re-conceptualizing generalization : old issues in a new frame. In: (a cura di): P. Alasuutari;J. Brannen;L. Bickman, The Sage handbook of social research methods. p. 193-213, Los Angeles:Sage, ISBN: 978-1-4129-1992-0 - **Contributo in volume (Capitolo o Saggio)**

15. G. Gobo, S. Rozzi, S. Zanini, A. Diotti (2008). Imparare a gestire l'emergenza : il caso del 118. In: (a cura di): S. Gherardi, Apprendimento tecnologico e tecnologie di apprendimento. p. 209-239, Bologna:Il Mulino, ISBN: 978-88-15-12521-7 - **Contributo in volume (Capitolo o Saggio)**

16. GOBO G (2004). Sampling, representativeness and generalizability. In: SEALE C., GOBO G., GUBRIUM J. F., SILVERMAN D. EDS.. Qualitative research practice,. p. 435-456, LONDON:SAGE - **Contributo in volume (Capitolo o Saggio)**

17. G. Gobo, N. Fielding, G. Larocca, W. der Wart (2021). Merged Methods : A Rationale for Full Integration. Sage, ISBN: 9781529717730 - **Monografia o trattato scientifico**

18. g. gobo, v. marcheselli (2021). Sociologia della scienza e della tecnologia : Un’introduzione. STUDI SUPERIORI, vol. 1268, Carocci, ISBN: 9788829005260, ISSN: 1724-3254 - **Monografia o trattato scientifico**

19. GOBO, GIAMPIETRO, S. Mauceri (2014). Constructing survey data : an interactional approach. Los

Angeles:Sage, ISBN: 9781849201773 - **Monografia o trattato scientifico**

20. G. Gobo (2008). Doing Ethnography. LONDON:SAGE, ISBN: 978-1-4129-1921-0 - **Monografia o trattato scientifico**

*4. Main scientific publications of the associated PIs (Max. 20, for each associated PI)*

1. **SENA Barbara**

1. Sena B, De Luca E (2022). Managing the end of life in COVID patients. The role of palliative care in emergency departments during the pandemic. FRONTIERS IN SOCIOLOGY, vol. 7, p. 1-9, ISSN: 2297-7775, doi: 10.3389/fsoc.2022.1039003 - **Articolo in rivista**
2. Cataldi S, Sena B, De Luca E, Fusillo F (2022). La tecnica Delphi: limiti e potenzialità da un'esperienza di ricerca sociologica. SOCIOLOGIA E RICERCA SOCIALE, vol. 127, p. 5-25, ISSN: 1121-1148, doi: 10.3280/SR2022-127001 - **Articolo in rivista**
3. Gobo G, Sena B (2022). Questioning and Disputing Vaccination Policies. Scientists and Experts in the Italian Public Debate. BULLETIN OF SCIENCE, TECHNOLOGY & SOCIETY, vol. online first, p. 1-14, ISSN: 0270-4676, doi: https://doi.org/10.1177/02704676221080928 - **Articolo in rivista**
4. Sena B, De Luca E, Cataldi S, Fusillo F (2021). A Delphi survey of Health Education System and Interprofessional nurse' role. NURSE EDUCATION TODAY, vol. 99, ISSN: 0260-6917, doi: https://doi.org/10.1016/j.nedt.2021.104779 - **Articolo in rivista**
5. Pellizzoni L., Sena B (2022). Preparedness as Governmentality. Probing the Italian Management of the Covid-19 Emergency. SOCIOLOGICA, vol. 15, p. 61-83, ISSN: 1971-8853, doi: https://doi.org/10.6092/issn.1971-8853/13530 - **Articolo in rivista**
6. Cataldi S, Sena B (2021). Mixed-Methods Data Collection in a Study on Interprofessional Care: Interviews, a Survey, and the Delphi Technique. In: (a cura di): AA.VV., SAGE Research Methods Cases Part 1. LONDON:SAGE, ISBN: 9781529759624, doi: 10.4135/9781529759624 - **Contributo in volume (Capitolo o Saggio)**
7. Sena B (2021). Il case study nella ricerca sociale. Origini, sviluppi e applicazioni. STUDI SUPERIORI, p. 1-170, ROMA:Carocci Editore, ISBN: 9788829005277 , ISSN: 1724-3254 - **Monografia o trattato scientifico**
8. Sena B (2022). Social love in healthcare professionals. Some preliminary reflections on a missing issue. In: (a cura di): Cataldi S, Iorio G, Social Love and the Critical Potential of People. When the Social Reality Challenges the Sociological Imagination. p. 187-198, LONDON:Routledge, ISBN: 9781032107820 - **Contributo in volume (Capitolo o Saggio)**
9. De Luca E, Sena B (2021). Searching for a professional identity: a qualitative study of the oncology nurses role in a multidisciplinary breast-unit team. ACTA BIOMEDICA, vol. 92, p. 1-12, ISSN: 2531-6745, doi: 10.23750/abm.v92iS2.11643 - **Articolo in rivista**
10. Sena B, Liani S (2020). The role of relational routines in hindering transdisciplinary collaboration: the case of the setting up of a team in an Italian Breast Unit. JOURNAL OF INTERPROFESSIONAL CARE, vol. 34, p. 251-258, ISSN: 1469-9567, doi: 10.1080/13561820.2019.1649643 - **Articolo in rivista**
11. Sena B, Cataldi S (2019). A meta-analysis based on case study research in different organizational contexts: Overabounding and unconditional gratuitousness in institutions. In: AA.VV.. (a cura di): AA.VV., SAGE Research Methods Cases. p. 1-18, LONDON:SAGE, ISBN: 9781526490971, doi: 10.4135/9781526490971 - **Contributo in volume (Capitolo o Saggio)**
12. Sena B, Cataldi S. (2019). Overabounding and Social Relations: a Study of Antinomies and the Specifics of a Concept through a Meta-Analysis of Multiple Case Studies. SOCIOLOGIA, vol. 1/2019, p. 34-47, ISSN: 0038-0156 - **Articolo in rivista**
13. Sena B, Gobo G. (2019). Oltre la polarizzazione 'pro-vax' versus 'no-vax'. Atteggiamenti e motivazioni nel dibattito italiano sulle vaccinazioni. SALUTE E SOCIETÀ, vol. anno XVIII, p. 176-190, ISSN: 1723-9427 - **Articolo in rivista**
14. Sena B (2017). Professionalization without Autonomy: The Italian Case of Building the Nursing Profession. PROFESSIONS AND PROFESSIONALISM, vol. 7, 3, ISSN: 1893-1049, doi: http://dx.doi.org/10.7577/pp.1900 - **Articolo in rivista**
15. Sena B, Stievano A (2017). The evolution of the nursing profession in Italy: From care to cure or a different form of care?. MEDICINA NEI SECOLI, vol. supplemento 2017, p. 111-135, ISSN: 0394-9001 - **Articolo in rivista**
16. Sena B (2016). L'approccio del case study nella ricerca socio-economica. SOCIOLOGIA E RICERCA SOCIALE, vol. 111, p. 5-22, ISSN: 1121-1148, doi: doi: 10.3280/SR2016-111001 - **Articolo in rivista**
17. Sena B (2016). The sociological link between risk and responsibility: a critical review and a theoretical proposal. INTERNATIONAL SOCIAL SCIENCE JOURNAL, vol. 215/2016, p. 79-91, ISSN: 0020-8701, doi: doi:10.1111/issj.12066 - **Articolo in rivista**

18. SANNELLA A, SENA B (2014). Social Architecture: the condition for health organization. SALUTE E SOCIETÀ, vol. 2EN, p. 21-33, ISSN: 1972-4845, doi: 10.3280/SES2014-002003EN - **Articolo in rivista**
19. Sena B, Marcadelli S (2017). Infermiere di famiglia e di comunità: il ruolo agito. In: (a cura di): Rocco G., Marcadelli S., Stievano A., Cipolla C., Infermiere di Famiglia e di Comunità. Proposte di policy per un nuovo welfare. SALUTE E SOCIETA', p. 164-181, MILANO:FrancoAngeli, ISBN: 9788891744166 - **Contributo in volume (Capitolo o Saggio)**
20. Sena B (2011). Etnometodologia e sociologia in Garfinkel. L'indicalità inevitabile. MILANO:FrancoAngeli, ISBN: 9788856837995 - **Monografia o trattato scientifico**

## 2. MATTEUCCI Nicola

1. Matteucci N, Santolini R, Di Fabio S (2022). ICT diffusion in public administrations and business dynamics: Evidence from Italian municipalities. ANNALS OF PUBLIC AND COOPERATIVE ECONOMICS, ISSN: 1467-8292, doi: 10.1111/apce.12400 - **Articolo in rivista**
2. Matteucci N (2022). Il boom italiano del gioco d'azzardo: mercato, istituzioni e politiche. STATO E MERCATO, vol. 2022, p. 327-361, ISSN: 0392-9701, doi: 10.1425/105233 - **Articolo in rivista**
3. Matteucci N., Missoni E. (2022). Strategie di cattura e governance multistakeholder: il caso dell'OMS. In: E. Lello N. Bertuzzi. Dissenso informato. Pandemia: il dibattito mancato e le alternative possibili. p. 151-166, ROMA:Castelvecchi, ISBN: 8832908042 - **Contributo in volume (Capitolo o Saggio)**
4. Matteucci, N, Scardacchi, D (2022). Caratteri e dimensione economica del mercato sociale della cannabis in Italia. MEDICINA DELLE DIPENDENZE, vol. 12, p. 35-41, ISSN: 2039-7925 - **Articolo in rivista**
5. Matteucci, N (2021). Procuring NGA infrastructure: The performance of EMAT auctions in Italy. TELECOMMUNICATIONS POLICY, vol. 45, ISSN: 0308-5961, doi: 10.1016/j.telpol.2020.102074 - **Articolo in rivista**
6. Matteucci N (2020). Digital agendas, regional policy and institutional quality. Assessing the Italian broadband plan. REGIONAL STUDIES, vol. 54, p. 1304-1316, ISSN: 1360-0591, doi: 10.1080/00343404.2020.1782876 - **Articolo in rivista**
7. Quaglione Davide, Matteucci Nicola, Furia Donatella, Marra Alessandro, Pozzi Cesare (2020). Are mobile and fixed broadband substitutes or complements? New empirical evidence from Italy and implications for the digital divide policies. SOCIO-ECONOMIC PLANNING SCIENCES, vol. 71, ISSN: 0038-0121, doi: 10.1016/j.seps.2020.100823 - **Articolo in rivista**
8. Gerli P., Matteucci N., Whalley J. (2020). Infrastructure provision on the margins: A critical assessment of Broadband Delivery UK.. INTERNATIONAL JOURNAL OF PUBLIC ADMINISTRATION, vol. 43, p. 540-551, ISSN: 0190-0692, doi: 10.1080/01900692.2019.1638932 - **Articolo in rivista**
9. N. Matteucci, M. Marcatili (2019). e-Health ed evoluzione dei sistemi sanitari. Un'analisi empirica sull'Europa. In: Vicarelli G Bronzini M. Sanità digitale. Riflessioni teoriche ed esperienze applicative. p. 49-68, BOLOGNA:Il Mulino, ISBN: 978-88-15-28049-7 - **Contributo in volume (Capitolo o Saggio)**
10. Matteucci N. (2019). The EU State aid policy for broadband: An evaluation of the Italian experience with first generation networks. TELECOMMUNICATIONS POLICY, ISSN: 0308-5961, doi: 10.1016/j.telpol.2019.101830 - **Articolo in rivista**
11. Matteucci, Nicola, Vieira Lima, Sabrina (2016). Women and Happiness. In: Bruni L. Porta P. (eds.). Handbook of Research Methods and Applications in Happiness and Quality of Life. vol. Vol. I, p. 419-447, CHELTENHAM:Edward Elgar Publishing Ltd, ISBN: 9781783471164, doi: 10.4337/9781783471171.00025 - **Contributo in volume (Capitolo o Saggio)**
12. MATTEUCCI, Nicola (2016). Standards, IPR and Digital TV Convergence: Theories and Empirical Evidence. In: Lugmayr A. Dal Zotto C.. Media Convergence Handbook - Vol. 1. Journalism, Broadcasting, and Social Media Aspects of Convergence. vol. I, p. 203-230, BERLIN HEIDELBERG:Springer-Verlag, ISBN: 978-3-642-54483-5, doi: 10.1007/978-3-642-54484-2 - **Contributo in volume (Capitolo o Saggio)**
13. MATTEUCCI, Nicola (2015). La valutazione delle agende digitali regionali. Un modello per gli investimenti pubblici in banda larga. L'INDUSTRIA, vol. XXXVI, p. 551-582, ISSN: 0019-7416, doi: 10.1430/82532 - **Articolo in rivista**
14. Seri P., Bianchi A., MATTEUCCI, Nicola (2014). Diffusion and Usage of Public eServices in Europe: An Assessment of Country Level Indicators and Drivers. TELECOMMUNICATIONS POLICY, vol. 38, p. 496-513, ISSN: 0308-5961, doi: 10.1016/j.telpol.2014.03.004 - **Articolo in rivista**
15. MATTEUCCI, Nicola (2014). L'investimento nelle reti NGA a larga banda: la 'questione settentrionale'. ECONOMIA E POLITICA INDUSTRIALE, vol. 41, p. 9-25, ISSN: 0391-2078 - **Articolo in rivista**
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*5. Main staff involved (max 10 professors/researchers for each research unit, in addition to the PI or associated PIs), highlighting the expected time commitment*

*List of the Research Units*

*Unit 1 - GOBO Giampietro*

*Personnel of the research unit*

| nº | Surname Name | Qualification | University/ Research Institution | e-mail address | Months/person expected |
|---|---|---|---|---|---|
| 1. | GOBO Giampietro | Professore Ordinario | Università degli Studi di MILANO | Giampietro.Gobo@unimi.it | 3,0 |
| 2. | CAMPO Enrico | Ricercatore a t.d. - t.pieno (art. 24 c.3-a L. 240/10) | Università degli Studi di MILANO | ENRICO.CAMPO@UNIMI.IT | 2,0 |

*Unit 2 - SENA Barbara*

*Personnel of the research unit*

| nº | Surname Name | Qualification | University/ Research Institution | e-mail address | Months/person expected |
|---|---|---|---|---|---|
| 1. | SENA Barbara | Professore Associato (L. 240/10) | Università Telematica UNITELMA SAPIENZA | barbara.sena@unitelmasapienza.it | 4,0 |

*Unit 3 - MATTEUCCI Nicola*

*Personnel of the research unit*

| nº | Surname Name | Qualification | University/ Research Institution | e-mail address | Months/person expected |
|---|---|---|---|---|---|
| 1. | MATTEUCCI Nicola | Professore Associato (L. 240/10) | Università Politecnica delle MARCHE | n.matteucci@univpm.it | 2,0 |
| 2. | BRONZINI Micol | Professore Associato (L. 240/10) | Università Politecnica delle MARCHE | m.bronzini@univpm.it | 2,0 |

*6. Information on the new contracts for personnel to be specifically recruited*

| nº | Associated or principal investigator | Number of expected research contracts | Number of expected PhD scholarships | Overall expected time commitment (months) |
|---|---|---|---|---|
| 1. | GOBO Giampietro | 1 | 0 | 21 |
| 2. | SENA Barbara | 1 | 0 | 21 |
| 3. | MATTEUCCI Nicola | 0 | 0 | 0 |
| | **Total** | **2** | **0** | **42** |

*7. PI "Do No Significant Harm (DNSH)" declaration, in compliance with article n. 17, EU Regulation 852/2020. (upload PDF)*

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MUR also has the right to the dissemination of the main economic and scientific data related to the funded projects.".

Date 29/11/2022 ore 18:04