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PUBLIC VALUE CO-PRODUCTION IN PUBLIC HEALTHCARE ORGANISATIONS: STRATEGIES AND TOOLS TO SUPPORT

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"NON CHI COMINCIA, MA QUEL CHE PERSEVERA"

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PUBLIC VALUE CO-PRODUCTION IN PUBLIC HEALTHCARE ORGANISATIONS: STRATEGIES AND TOOLS TO SUPPORT

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1. THESIS INTRODUCTION

The epidemiological trend of the aging of the population, in conjunction with the greater prevalence of "*fragile patients*" with multiple chronic diseases (Fusco et al., 2020; Sorrentino, 2017; Anderson & Hussey, 2000), is leading healthcare organizations to identify strategies that ensure the treatment not only of the disease itself but of the patient as a "*whole person*" (Sorrentino, 2017; Lega & Calciolari, 2012).

Globalization, changes in economic and social developments, scarcity of resources have led to strong criticism of traditional models of health service delivery, considered inefficient and insufficient compared to user demand (Rummery, 2009; Sorrentino, 2017).

This is forcing health policymakers and managers – on the one hand to reduce healthcare costs but at the same time to improve the quality of service and, more generally, the quality of life of patients (Fusco et al., 2020; Berwick, 2008).

The identification of strategies aimed at satisfying the needs of the reference population, able to guarantee the sustainability of the health system, is therefore complex due to the fact that there is a fragmentation of governance, for the strong uncertainty that characterizes these systems and for the pluralism and multidisciplinary of the environment (Nuti, 2018; Plsek and Greenhalgh, 2001; Lemieux-Charles et al., 2003; Ramagem et al., 2011).

In addition, some studies (Bryson and Roering, 1987; Boyne and Walker, 2004) suggested that it is difficult for public organizations to identify the competitive forces and the different institutional pressures that can impact performance, as multiple. The authors highlight how strategic positioning is based on the principle of competition, while traditionally public organizations tend to set their strategies on the principle of collaboration, given the mission that characterizes them. Therefore, if the general objective of using a strategic positioning approach, according to Porter, is to gain an advantage over the competition and maximize profit (Porter, 1980; 1985), in public organizations the multiplicity of stakeholders and needs to be met shifts the focus from mere profit to the creation of public value (Hansen et al 2016).

In this sense, Bryson (2004) suggests that the focus should be on creating value for all stakeholders. For this reason, according to Bryson (2004) the application of theories on strategic positioning should take into account the peculiarities of the public sector, with regard to the management of the

value chain and the value creation process (Hansen et al., 2016) until reaching the perspective of public value (Porter and Teisberg, 2006).

The task of generating Public Value, i.e. of satisfying the needs of current and future citizens, constitutes the institutional goal of public administrations (Moore, 1995; Rebora, 1999; Deidda Gagliardo, 2015; Borgonovi, Mussari, 2011).

In particular, a public administration creates Public Value when it "*manages to rationally manage the economic resources available and to enhance its intangible heritage in a functional way to meet the social needs of users, stakeholders, and citizens in general*" (Deidda Gagliardo, 2015, p. IX). To direct the PA towards the creation of Public Value, it is therefore necessary to adequately plan the objectives to be achieved, to adequately manage the resources available (Deidda Gagliardo, 2015).

According to Porter (2010), public value in healthcare is identified as the ratio of outcomes to resources from a population-based perspective (Gray and El Turabi, 2012; Nuti, 2018). Similarly, Gray et al., (2017) argue that the value for the population in health care does not correspond to the volume of services provided or the result achieved for treated patients, but to the ability of the health system to provide care to people who could benefit most from it (Gray et al., 2017; Nuti, 2018).

This implicates involving a wide "*range of stakeholders*" (Osborne, 2010, p. 322) in a co-production effort. This is recognised as a potential solution to current and future challenges in the public sector, as the expected benefits relate to improving the services provided, greater economic and financial sustainability of the system, more efficient use of resources and the possibility of increasing the level of citizen satisfaction (Fusco et al., 2020; Alford, 2009; Voorberg et al., 2015).

In recent years, the scientific community has thus shown a growing interest in the issue of co-production of services in public administrations (Fusco et al., 2020) understood as the combination of activities through which public officials and citizens contribute to the provision of public services, where the former are involved as regular producers (public administration professionals), while the production of citizens is based on the voluntary efforts of individuals and groups in order to improve the quality and/or quantity of the services they use (Parks et al., 1981; Ostrom, 1996; Trocciola, 2015).

Co-production is therefore called today to play a priority role in contemporary administrations, governance systems and society in general.

The diffusion and greater involvement of users in the provision of public services, partly driven by the development of information technologies, has profoundly changed the relationship between professionals and users (Trocciola, 2015).

Literature makes a distinction between individual and collective forms of co-production: the former include those services that generate private value for the individual and at the same time public value for the community (Needham, 2009; Trocciola, 2015); the latter produce instrumental benefits, such as the improvement of outcomes and advantages in achieving intrinsic values (Trocciola, 2015).

In particular, collective co-production not only builds trust and strengthens relationships between users and providers, but also contributes to greater cohesion between communities (Griffiths and Foley, 2009; Trocciola, 2015): both forms of co-production arise from a greater awareness of citizens with respect to the quality of the services provided and this implies the reshaping of the approach towards the user by public administrations (Trocciola, 2015).

However, when by public administration it is meant public healthcare organisations, scientific production on the subject of co-production lags behind the rest of the literature on co-production generally on public administration and this despite the literature seems to agree that the healthcare sector is a reference point where co-production concepts can be operationalized (Fusco et al., 2020; Voorberg et al., 2015; Dunston et al., 2009; Gilardi et al., 2016; Palumbo, 2016 ; Vennik et al, 2016).

Patient involvement by healthcare professionals has become imperative in providing high-quality services and in order to positively impact health outcomes (Fusco et al., 2020).

The co-production of public value in public healthcare organisations is pivotal to making the necessary improvements in the quality of service (Fusco et al., 2020; Palumbo, 2017; Aung et al., 2016; Sorrentino et al., 2015; Schmidt et al., 2015; Berwick et al; 2008; Bifulco and Ladd, 2006), to ensure the sustainability of the health system (Dunston, Lee, Boud, Brodie and Chiarella, 2009; Fusco et al., 2020), to reduce costs and provide better results (Alford & O'Flynn, 2012), to allocate resources more closely to the needs of citizens (Thomas, 2013) – in a historical moment characterized by austerity regimes (Thomas, 2013) and characterized by the already mentioned epidemiological factors such as the aging of the population, the increase in patients with multiple chronic diseases (Anderson & Hussey, 2000) that are strongly undermining the sustainability of the health system.

The academy agrees that the healthcare sector is at a point where co-production concepts can be analysed through attempts to implement them (Fusco et al., 2020; Sorrentino et al 2017; Voorberg et al, 2015). Despite this interest in co-production strategies by both academia and governments, empirical evidence is still limited (Fusco et al., 2020; Kjellstrom, 2019; Loeffler et al, 2016; Palumbo 2016): the growing interest and the consequent increase in the number of publications on the topic of co-production in healthcare in the last three years (Fusco 2020; Palumbo, 2016) has not yet given sufficient answers to public healthcare organisations in support of the ability to involve patients in the co-production of public value in health services (Palumbo, 2016). The lack of organizational significance and more generally the lack of knowledge on the topic within public healthcare organizations, discourage on the one hand patients to be protagonists of the co-production of value in the healthcare environment (Altin et al., 2015) and on the other organizations to undertake the strategies in question.

There is also still a shortage of studies that provide a complete picture on the topic of co-production (Fusco et al., 2020; Palumbo, 2016; Sorrentino et al., 2015) within public healthcare organisations and development in this field: the research programmes that investigated the issue of co-production did not produce sufficient evidence to link the social and knowledge gap in organisations, so some key aspects need to be even better collected, integrated (Sorrentino et al., 2015) and made available to academia and practitioners.

Some literature reviews have dealt with the topic of co-production in healthcare (Majid, 2019; Palumbo, 2016). Only one of them (Palumbo, 2016) was able to provide a complete state of the art in terms of co-production.

This study places itself in this gap, in order to illuminate a route still little explored; this thesis work will attempt to respond to this need, through three studies: a review of the literature and two empirical analyses.

In order to pursue this objective, therefore, in the first place a structured review of the literature was carried out aimed on the one hand at theoretically framing and declining the concept of co-creation of public value in the form of co-production, in the health sector and on the other managerial strategies and support tools are today present in the literature to enhance the co-production of public value in public healthcare organisations.

The review of the literature highlights the research work on the application of the co-creation of public value within public healthcare organisations published to date. It provides a contextualization of the concept of public value co-production in relation to the main theoretical directions. In order

to make the activity of finding the scientific literature on the experiences of co-production within the public healthcare organisations as wide and, at the same time, as deep as possible, a structured approach has been adopted for the collection of the relevant bibliographic material. The main international databases were consulted in order to include the widest pool of significant contributions on the subject.

The review literature offered the possibility to frame the meaning of co-production in healthcare and managerial strategies and support tools are today present in the literature to enhance the co-creation of public value in public healthcare organisations. The results of the systematic review of the literature, have made it possible to highlight which managerial strategies and support tools are today present in the literature to enhance the co-production of public value in public healthcare organisations. Through this study, five strategies have been identified (1) improvement in perceived quality of service (Firth et al, 2019; Allen et al., 2010; Pohjosenperä et al, 2020) and patient safety (Allen et al., 2010) 2) abatement of access and treatment inequalities (Lwembe et al., 2016; Retzer, 2020) 3) creation of support programs for vulnerable patients (Ayton et al., 2019; Grindell et al, 2020; Pereira et al., 2021) 4) re-generation of care pathways for the chronically ill (Sorrentino et al., 2015; Pereira et al., 2021)) 5) co-creation of evaluation protocols (Cruice et al., 2021) and in the identification of outcomes (Retzer, 2020; Cruice et al., 2021) - each of which is confirmed by several studies within the sample identified.

However, the empirical evidence on the strategies currently available is still limited (11 studies out of 17 report they are case studies of implemented co-production strategies) and the current literature on the tools to support the strategies still appears in the embryonic stage (Nuti et al., 2021; Palumbo et al., 2016; Palumbo et al., 2017). The three supporting tools consist of health literacy as an "enzyme" of co-production, the use of technology and a new performance measurement system that helps guide the single public healthcare organisation in the adoption of strategies to generate public value. The small sample size puts the researchers to consider if these strategies within public healthcare organisations are already present but not yet widely disclosed and whether they are present as they are measured or if co-creation is still in its embryonic.

The results obtained in the first chapter become instrumental to the second and third parts of the work in which exploratory empirical investigations are carried out in order to understand to what extent the co-production strategies identified within the Italian public healthcare organisations are present and how public healthcare organisations can support and facilitate the active participation of the patient in the process of co-production of public value through the design of actions aimed at improving a public service with the health service provider.

In the literature, three different levels of analysis have been proposed to address the complexity of patient involvement as an active actor in the redesign of services: *macro* (Smith and Henry, 2009), *meso* (Sharma et al. 2013) and *micro* (Roberts et al., 2013).

The macro perspective "*echoes the co-government approach*" (Palumbo, 2016; p.78) and looks at the interactions between the network of health workers and the population served: collaborative relationships are established with the aim of achieving better conditions of quality and adequacy of health services: it allows a greater adherence of health services to the health needs of the reference population (Palumbo, 2016) improving the effectiveness of service delivery and improving achievable health outcomes (Palumbo, 2016; Moruzzi et al., 2007).

The "*meso*" level of analysis is oriented to specific groups of the target population with common health needs and/or similar requests for care (Palumbo, 2016; Sharma et al. 2013) therefore the co-creation of value (Van Hoof et al., 2013) takes place thanks to the design of technological solutions aimed at satisfying particular population groups; this level is finally "*intended to involve users to complement the efforts of health care organizations to achieve greater health outcomes*" (Palumbo, 2016, p.78)

Both the "*macro*" and the "*meso*" initiative therefore make it possible to recreate the relationship between healthcare professionals and patients as a co-creative partnership, thus favouring the implementation of co-productive initiatives, which are analysed through a "*micro perspective*" (Palumbo, 2016, p.78). Healthcare providers thus encourage the involvement of patients in the delivery of health services, in order to improve the adherence of the latter to clinical prescriptions and to improve their compliance with health treatments (Palumbo, 2016) and patients are willing to participate in the process of health care delivery to improve their awareness of health-related issues and – finally - to achieve greater health outcomes (Norman and Skinner, 2007).

For this reason, the second analysis will embrace a level of micro analysis, verifying the degree of diffusion of co-productive processes within complex operating units (in public healthcare organisations) while the third article will embrace a meso level, analysing a case study that employs co-production processes for the purpose of developing a strategy aimed at improving a service.

In the second article the objective is therefore to investigate to what extent the co-production strategies and tools identified by the review within Italian public healthcare organisations at the micro level are present (Palumbo, 2016).

Through a survey addressed to directors of complex operating units of Italian public healthcare organisations, multiple aspects related to co-production were investigated: in which areas it can be

applied, the means of involvement, the role of technology, the dissemination of tools that support it; however, thanks to this survey, it was possible to detect that co-production at the micro level is still of little diffusion.

For the purpose of a greater development of exploratory research – in the third chapter – the analysis of a single case study of a university public hospital (*The Bologna University Hospital "Sant'Orsola Malpighi"*) was developed to investigate the co-production processes for the elaboration of a strategy aimed at improving the ALPI (*Intramoenia health professional activity*) service.

In healthcare, few studies have dealt with co-production within Italian public healthcare organisations and no studies, of which the authors have knowledge, with a focus on the provision of Intramoenia health professional activity (ALPI). Intramoenia health professional activity (ALPI) is the activity that the doctors employed at public healthcare organisations, provide individually (or in teams) beyond the service hours, in favour and on request of an assisted (external user) paying for the service and, thus, supplementing and supporting the institutional activity provided by the National Health Service. This activity is carried out within the boundary (*intramoenia*) of the public hospital and with the observance of strict regulations.

If properly managed, ALPI could represent a way of co-producing public value, allowing on the one hand, an improvement in the quality of health services provided to the patient / client, increasingly an active part in the evaluation and choice of health services (Prahalad and Ramaswamy, 2004; Nordgren, 2009), and on the other, a better management of structural costs.

The achievement of the quality and efficiency objectives associated with ALPI could allow the recovery of functional economies to support other essential activities, such as prevention, for example, in the face of a National Health System that faces numerous critical issues related to financial sustainability in the provision of services (Thomson et al., 2014; Pirozzi and Saggese, 2015), to the dissatisfaction of the user, to the difficulty of access to services, to the widespread demotivation of professionals, to the degradation of structures (Dirindin and Rivoiro, 2013), and to the consequent displacement of patients towards the services of private health facilities (VII RBM Report - Censis, 2017).

It is then explored which and how certain managerial choices/actions facilitate the joint production of public value. The data were collected through in-depth interviews with the various interacting actors in the field of the services provided, with reference to doctors, health professionals and citizens / patients using the ALPI service. Whose contents have been codified and classified for the

purpose of developing a strategy capable of containing the actions that management can put in place for the purpose of formulating management actions aimed at co-producing public value.

With specific reference to the case study in question, in relation to the intrinsic characteristics, it seemed useful to classify the data collected according to the two categories of services offered with regard to ALPI services – outpatient services and hospitalization services. The strategy developed has been designed with actions that can be implemented in the short term and medium to long term.

Through the steps of the research described above, the aim is to fill in the literature gap on co-production strategies within the public healthcare organisation, in order to provide further evidence about the benefits deriving from the application of this practice - in terms of organizational and social implications - and linking the social and knowledge gap on its application in organizations (Sorrentino et al., 2015). Investigating the topic at an international level provides a state of the art in terms of co-production, shedding light on key aspects: what are the co-production strategies implemented to date within public healthcare organizations, in which areas of the organization they have been applied, to what end they have been used and what are the tools, means and methodologies that can support their application.

Then the object of the research is deepened, restricting the search to the Italian national context. Within this context, the aim is to understand the degree of diffusion of co-production practices at the micro level to enrich a picture currently composed of scarce evidence (Sorrentino et al., 2015; Palumbo, 2016; Fusco et al, 2020). It investigates the application of co-production in daily practice at the level of hospital operating units, analyses the degree of application of the means that favour it, if there are areas of application of co-production more widespread than others, the degree of knowledge on the part of middle management on the practice of co-production, its support tools and the benefits deriving from it. Subsequently, recording the context to a single public healthcare organization deepens the research further; within a university hospital there is an interpretative case study (Yin, 2011) on the use of co-production for the purpose of developing a strategy for improving an existing service in order to create public value.

Based on the above reflections, the research demand of this project (RQ) is defined as follows:

What are the strategies and tools to support the co-production of public value in public healthcare organisations?

Given the above aim of the research, the following objectives have been identified and consistently the objectives below:

> **(RO1):** Identification of strategies for the co-creation of public value currently present in the public healthcare organisations.
>
> **(RO2):** Understanding of the extent to which co-production strategies are applied in public healthcare organisations in the Italian context.
>
> **(RO3)**: Identification of the actions to be taken for the ALPI service and identification of a strategy that can be adopted with the aim of co-producing public value for all the stakeholders involved in ALPI, in relation to a specific context in which it is provided (the context of the University Hospital of Bologna "Sant'Orsola Malpighi - in which the ALPI enhancement project takes place).

In order to investigate the research objects identified above, the study will be divided into three phases:

(1) development of a *structured literature review* (Massaro et al., 2016) on strategies for the co-creation of public value currently present in public healthcare organisations;
(2) administration of a questionnaire to the directors of complex operating units of public healthcare organisations in northern Italy, to assess the extent to which the co-production strategies emerging from the structured literature review assume relevance for the pursuit of management purposes in the companies considered;
(3) analysis of an interpretative case study (Bowen, 2009; Crabtree and Miller, 1999; Yin, 1981, 2003) in one of the university public hospital, in order to deepen the extent to which strategies for improving a service are developed with a view to public value co-production.

2. RESEARCH METHODOLOGY

In this paragraph it will be addressed the methodologies adopted to achieve the research objectives. Against this background, this study aims to identify the strategies, tools and methodologies able to support the co-production of public value in the public healthcare organisation setting.

For the purposes of the present work, a mixed methodological approach was used (Creswell, 2013), considered in line both with the peculiar characteristics of the object of study and with the aims of the research project.

In the first instance, it was considered appropriate to map the state of the art of scientific knowledge in terms of co-creation of public value in the form of co-production within public healthcare organisations. In this regard - as already mentioned - a structured review of the scientific literature was conducted (Massaro et al., 2016), through which a contextualization of the concept of co-production in the managerial field is provided and its application in a specific context, such as the provision of public healthcare organisations, is investigated.

A significant gap in research has been identified: co-production is a topic investigated more by scholars than by practitioners and in fact at present it is rarely identified as a managerial approach instrumental to rethinking the management logic of public healthcare organisations. However, through this analysis it was possible to identify the areas of application of these strategies, from which the conceptual tools useful for the field analysis of the phenomena of co-production of value in the meso and micro-system of health services were deduced.

In order to contribute to fuelling the debate on co-production in the context of health services, the theoretical framework developed in the first step of the research was used as a concept map to guide the subsequent empirical analysis activities.

The first empirical investigation consists in administering a questionnaire aimed at understanding the spread of co-production practices at the micro level, i.e. within hospital complex operating units.

In consideration of the peculiarities of the analysis context, in line with the prevailing scientific literature, it was also considered appropriate to adopt a research approach configurable as a interpretative case study (Yin 2013; Yin 2011; Gerring 2004). In fact, it has allowed, on the one hand, exploring a field of research that is still little examined by adopting the investigative lens of co-production in the improvement of a public hospital service.

The research methodology adopted to discuss the first objective is a deductive one (Ferraris Franceschi, 1998): we will analyse the scientific approaches that over time have addressed, in an explicit or implicit way, the issues of the concept of co-creation of Public Value, in the form of co-production within public healthcare organisations.

The analysis of the literature will be functional to outline the characteristics of the strategies of co-creation of value within public healthcare organisations, analysing the components and identifying the contexts of application. The review of the literature was conducted in a comparative manner (Aveyard, 2007) according to a narrative approach (Massaro et al., 2016), using scientific articles from international journals.

Following the in-depth investigation on this theme that will guide the first part of the present work and that will try to investigate in a deductive way what literature and practice have offered for a deeper understanding of this phenomenon – a second empirical part will follow, consisting of the two investigations.

The results of the first study lead to the formulation of the second research question (RQ2).

The research methodology adopted to respond to the second research objective will be of a deductive type (Corbetta, 1999): according to which the theory precedes observation, which moves in the context of justification, i.e. of support, through empirical data, of the theory previously elaborated on the basis of literature (Corbetta, 1999).

The third research question (RQ3) will be answered through a second empirical investigation and consists of a case study (Yin, 2011) through an inductive approach (Bryman & Bell, 2011)

The research methodology of a case study aims to be the answer to the need to investigate how the management of public administrations implements co-productive processes for the development of a strategy aimed at improving a service.

Below is a summary table (Tab. 1) containing the questions of the research and the methodology that will be adopted.

	RESEARCH QUESTION	RESEARCH METHODOLOGY	CHAPTER
RQ1	*Which managerial strategies and support tools aimed at co-creation of public value in public healthcare organisations?*	The deductive phase of the research will be addressed (Ferraris Franceschi, 1998), in which, through a comparative analysis of the literature (Aveyard, 2007), the scientific approaches that over time have dealt with dealing, explicitly or implicitly, will be analysed the issue of the co-creation of public value within public healthcare organisations	**Chapter 1**
RQ2	*To what extent strategies for the co-production of value find application in public healthcare organisations in the Italian context?*	This phase will be of a deductive type (Corbetta, 1999): according to which the theory precedes observation, which moves in the context of justification, that is, of support, through empirical data, of the theory previously elaborated on the basis of the literature (Corbetta, 1999).	**Chapter 2**
RQ3	*What are the actions to be adopted in order to improve the ALPI Service and what can be an adoptable strategy having the objective of the Co-production of public value for all the stakeholders involved in ALPI, in relation to a specific context in which it is provided (the context of the Azienda Ospedaliero Universitaria di Bologna di Sant'Orsola Malpighi - in which the ALPI enhancement project takes place)?*	Due to the limited literature of co-production within public healthcare organisations and the absence of economic and managerial studies on ALPI, a method of analysis of the collected data of an inductive approach was chosen (Bryman & Bell, 2011)	**Chapter 3**

Table 1. Summary table of the research phases addressed

CHAPTER I.
PUBLIC VALUE CO-CREATION WITHIN PUBLIC HEALTHCARE ORGANISATIONS: STRATEGIES AND SUPPORT TOOLS

1. INTRODUCTION

Within health systems all around the world, dwindling of resources and concerns about long-term economic sustainability are growing due to the increase in the demand of health services, the increase in health-care costs resulting from an aging population, chronic diseases and due to technological advances and scientific innovations (Barello et al., 2012; Kjellström et al, 2019; Fusco et al, 2020).

At the same time the population has increasing expectations of higher quality of services provided by public healthcare organisations who force policy makers and public managers to adopt strategies aimed at reducing health costs without compromising the quality offered (Berwick et al, 2008).

For these reasons, we are witnessing a paradigm shift (Anderson and Funnell, 2005; Kjellström et al, 2019) that sees a failure in the NPM paradigm (Torfing et al, 2016) and an increasing adoption of new concepts such as 'public value' and 'public value co-creation' by public managers, (D'amour and Oandasan, 2005; Bennington 2011; Gittell, 2011; Moore, 2013; Moore, 2014; Ambrosini 2019; Andersen, 2020).

In healthcare, public value has been defined as the relationship between outcomes and resources (Porter, 2010) from a population-based perspective (Gray et al, 2012).

Public value as a key goal of health systems (Porter, 2010; Gray and El Turabi, 2012; Gray et al., 2017; Lee et al., 2017, Nuti et al, 2018) involves the ability to define actions that create public value for the population (Naranjo-Gil et al. 2016; Nuti et al., 2018). Public value does not correspond to the volume of services provided or the result achieved on patients in health treatment but in the ability of the health system to provide assistance to the neediest (Gray et al., 2017, Nuti et al., 2018).

Consequently, increasing attention is being given to methods for engaging citizens, or more generally, to involve stakeholders (Schillinger et al, 2013; Palumbo, 2017; Ambrosini, 2019) in re-

designing services to give a tailored answer at this growing demand in health and social care (Barello et al., 2012; Palumbo, 2017) and in the provision of high quality health services (Palumbo, 2017; Fusco et al, 2020).

Due to this, the involvement of patients in the design and delivery of healthcare has been considered pivotal in improving the sustainability of healthcare organizations (Segal, 1998; Johnson, 2011; Schillinger et al, 2013;).

In particular epidemiological conditions such as chronic or mental illnesses for example, the creation of value corresponds to the clinical pathways of the patients (Nuti et al, 2018; Nuti et al, 2016); due to this, the involvement of stakeholders is essential in the planning phase of therapeutic diagnostic paths (Nuti et al, 2018; Nuti et al, 2016): in order to understand what are the diagnostic tests rather than the services necessary to ensure the well-being of that particular patient.

Co-production in public services has become the "*leitmotif of public policy reform*" (Voorberg et al, 2017; Loeffler et al, 2018; Kjellström et al, 2019; Fusco et al, 2020). In fact, the expected benefits from the co-production concern the improvement of the services provided, a greater economic and financial sustainability of the health systems, the more efficient use of resources and the possibility to increase the level of citizen satisfaction (Alford, 2009; Voorberg, 2015; Fusco et al, 2020).

However, at the organisational level it has been given little attention to the ability to engage patients in the co-production of health services and in the co-creation of public value (Palumbo, 2016a).

Echoing these considerations, this research aims to fill this gap in the literature thanks to the identification of strategies that can allow and facilitate public value co-creation processes in public healthcare organisations.

2. BACKGROUND

In the last decade the concept of Public Value received an increasing attention between the policy makers and the public managers above Europe (in the UK in particular), Australia and New Zealand (Benington, 2009).

Before sifting the theoretical evolutions on the creation of Public Value, it is important to explain the exact mean of this concept by understanding what actually adds value to the public sphere (Benington, 2009).

The concept of value has been addressed in many disciplines such as philosophy, politics and even within the classical economy, assuming different identities in these fields (Exchange Value, Labor Value, Use Value, ect.) (Benington, 2009). Only at the end of the 1970s we assisted to an application of the concept of value to the economic sphere deriving from alternative economic strategies for specific industrial sectors and local or regional economic. This new meaning includes ideas for social use of production for social needs that the private market could not fully satisfy (Benington, 2009; Murray, 1999; Benington, 1986).

This fact may perhaps become the incipit of the discussion on the public value and the beginning of a new paradigm. In fact, from this moment we assisted to an increasing attention to the identification and the satisfaction of social needs (Benington, 2009).

Moore defines Public Value as "*value for the public*" (Moore, 1995) but the concept of Public Value undergoes an evolution over time. Indeed, in different temporal phases and contexts this concept have seen a gradual modification if its mean in function to the Public Administration' (PA) identity, starting to give attention to the identification of more particular needs of its reference communities (Deidda Gagliardo, 2015).

Before reaching the concept of Public Value and Public Value Management (PVM), PA crossed several seasons: from the Traditional Public Administration (TPA), to the New Public Management (NPM) and the Public Governance (PG).

The Traditional Public Administration is characterized primarily by the clear separation between the political and the technical soul (Stoker, 2006) and it is based on a monocratic-bureaucratic organizational form of structures, which provided a scientific subdivision of work, that undergoes a decomposition of complex problems in simple and standardized tasks.

To reach this, the system required the observance of pre-established procedures that minimized operational risks and naturally reduced the discretion of approach to the solution of problems by public officials (Weber, 1961).

As Borgonovi supports (2005), the focus on the compliance with the procedure instead of the satisfaction of the social need expressed by citizens still survive in PA.

This resulted into greater attention to financial inputs instead of outputs and outcomes generated (Borgonovi, 2005) which consequently influenced the ways to evaluate the performance of public managers.

However, the change in the economic environment, characterized by the beginning of resource scarcity in the environment and financial resource scarcity and a growing demand for individual needs satisfaction by citizens, placed the foundations for a paradigm shift in PA in western democracies (United States, Kingdom United, Australia, New Zealand) towards the New Public Management (O'Flynn, 2007).

The NPM was defined in reaction to the monopolistically imprint of public services, introducing managerial techniques belonging to the private sector, in order to elevate the degree of efficiency and effectiveness of the services. This new approach was therefore market and competition oriented between public and private organizations (O'Flynn, 2007; Borgonovi, 2005).

In the NPM season there is a translation of the focus from the form to the substance with a strong stance towards the satisfaction of the citizen-user (Borgonovi, 2005): even the role of public managers begins to go beyond the mere respect of procedures and control on financial inputs for a more result-oriented approach (Borgonovi, 2005).

In the mid-1990s, NPM begins to show its limits in terms of value creation due to the excessive competitive logic that seemed to distract PA from their fundamental principles (O'Flynn, 2007).

The overcoming of these limits took place with the Public Governance (PG) paradigm at the beginning of the 1990s. Coming from a Dutch/English fingerprint of thought, PG stands out from the previous paradigm thanks to the transition from competition logics to cooperation logics (Deidda Gagliardo, 2015).

In this season, the concept of value creation was therefore implicit and it was precisely understood as a generation of positive outcomes towards the recipients of the policies, even if this was still not planned in a systematic way (Rhodes e Wanna, 2007).

Only in the mid-1990s with the advent of the Public Value Management (PVM) we assisted to a total overcoming of the limits of the NPM, giving more space to value creation goals within networks of public and private actors.

The difference between Public Governance and Public Value Management lies in the fact that in the PG the value creation is shaped from time to time depending on the local contest and it emerges through the cooperation between actors; while in PVM, according to Moore, the VP has to be negotiated with citizens and with all the authorization environment (Moore, 1995).

In the PVM season, the value creation is therefore entrusted to public managers and must be determined in advance what it is manageable and controllable (Moore, 1995).

In the previous seasons - TPA and NPM - the political and technical soul was clearly divided: here the clear diffencerence of PVM compared to the other two is that the two souls (public manager and elected representing ones) are in close contact during the process of defining public interests (Moore, 1995; O'Flynn, 2009).

This aspect of PVM has been severely attacked by a part by the academy (Rhodes and Wanna, 2007) claiming that public managers became in this way politicians servants. This criticism has been received some defence (Alford and O'Flynn, 2009), explaining the roles of the two souls in the process of defining interest. The role of politics is to examine the value proposals deriving from the authorization environment (manager, stakeholders and citizens) while managers have the mission to increase PA organizational skills in order to create Public Value (Marcon, 2014).

The attention paid by PVM is both on input, output and outcome: these represent the basis for planning, creation and impact assessment of VP (Marcon, 2014).

Citizens become co-creators of VP, they are protagonists within the decision-making process, in the management and evaluation phase, while in the co-production phase they contribute to service delivery processes (Pillitu, 2009). In fact, the main contexts of public value creation are therefore found in the public service organizations, where there is a direct interaction between public service workers and users, citizens and communities who enjoy public value even through health and social care (Benington, 2009).

Table 2 below reports the concepts exposed so far and the main differences between the different paradigms.

	TRADITIONAL PUBLIC ADMINISTRATION	NEW PUBLIC MANAGEMENT	PUBLIC VALUE MANAGEMENT
KEY OBJECTIVES	Politically provided inputs; services monitored through bureaucratic oversight.	Managing inputs and outputs in a way that ensures economy and responsiveness to consumers.	The overarching goal is achieving public value that in turn involves greater effectiveness in tackling the problems that the public most cares about; stretches from service delivery to system maintenance.
ROLE OF MANAGERS	To ensure that rules and appropriate procedures are followed.	To help define and meet agreed performance targets.	To play an active role in steering networks of deliberation and delivery and maintain the overall capacity of the system.
DEFINITION OF PUBLIC INTEREST	By politicians or experts; little in the way of public input.	Aggregation of individual preferences, in practice captured by senior politicians or managers supported by evidence about customer choice.	Individual and public preferences produced through a complex process of interaction that involves deliberative reflection over inputs and opportunity costs
PREFERRED SYSTEM FOR SERVICE DELIVERY	Hierarchical department or self-regulating profession.	Private sector or tightly defined arms-length public agency.	Menu of alternatives selected pragmatically and a reflexive approach to intervention mechanisms to achieve outputs.
CONTRIBUTION OF THE DEMOCRATIC PROCESS	Delivers accountability: Competition between elected leaders provides an overarching accountability	Delivers objectives: Limited to setting objectives and checking performance, leaving managers to determine the means	Delivers dialogue: Integral to all that is undertaken, a rolling and continuous process of democratic exchange is essential.

Table 2. Main differences between the different PA paradigms (Adapted to Kelly and Muers, 2002)

The public health system naturally followed the same era described above for the PA (Nuti, 2018): accounting and management control forms were introduced in the 1980s with the NPM - which, as already described, has introduced the use of private practices in the public sector in the majority of the public administrations of the West (Hood, 1991; Nuti, 2018; Brignall and Modell, 2000) with the aim of overcoming the deficiencies of the TPA paradigm (Hood, 1991; o 'Flynn, 2007; Nuti, 2018).

This era, already known as "*Managerialism*" or "*Management for results*" (Nuti, 2018) led within hospitals, the first forms of "*budget control*" and measurement systems mainly focused on financial measures, volumes of services, assessments of supplied and organizational responsibility (Chua and Preston, 1994; Ballantine et al., 1998; Arnaboldi et al., 2015; Naranjo-Gil et al., 2016) - until reaching the breakdown of organizations in various corporate units controlled by setting targets and monitoring performance results to understand the productivity of wards (Bouckaert and Halligan, 2008; Head and Alford, 2015, Nuti, 2018).

This system, however, has soon shown fragility - or that of exasperated internal competition - especially in allocation of financial resources (Chua and Preston, 1994; Christensen and Laegroreid, 2007; Head and Alford, 2015; Nuti, 2018).

Two factors, the hectic attention to financial performance and the strong attribution of responsibility for organizational units have limited the capacity of health stakeholders to evaluate the performance according to the public value paradigm (O'Flynn, 2007; Cuganesan et al., 2014; Nuti, 2018)

According to Porter (2010), public value in healthcare is identified as the relationship between results and resources from a population-based perspective (Gray and El Turabi, 2012; Nuti, 2018).

In the same vein Gray et al., (2017) argues that the value for the population in health care does not correspond to the volume of services provided or to the result achieved for treated patients, but to the ability of the health system to provide assistance to people who could benefit more (Gray et al., 2017; Nuti, 2018).

This is a factor to which public opinion and academy has an increasing attention. As a poorly safe public health system directly compromises the political, managerial and clinical legitimacy, confidence towards a service is questioned on its capabilities to guarantee well-being for an entire population (Suckling et al., 2003).

For a better allocation of resources within this system, there is increasing attention by governments in times of austerity towards public value co-production (Thomas, 2013).

Other epidemiological factors such as the aging of the population or the increase of patients with multiple chronic diseases (Anderson & Hussey, 2000) are pushing hospitals in defining strategies aimed at "*patient centring as a whole person*" instead of mere disease treatment (Lega & Calciolari, 2012), bringing health managers to look at co-production in a path to pursue (Sorrentino, 2015).

We are witnessing a real change of direction towards co-production, "*codesign*" and cure centred on the person and professionals (Berwick, 2015; Kjellstrom, 2019).

In the Public Value literature are often used terms such as "*cooperation*", "*collaboration*" and "*co-production*" (Majid, 2019) that can be applied differently depending on the topics or a particular discipline (Majid, 2019). In particular, in the health field:

- " *The collaboration was particularly relevant for important issues for both patients and healthcare professionals* " (Majid, 2019, p.1585);

- "*Co-production, concept similar to collaboration and cooperation, has invoked the application of teamwork in planning and design of services and health interventions; Co-production can refer to a result of processes involving different groups of individuals who were cooperating to achieve a common goal*" (Majid, 2019, p.1585).

Literature seems to agree therefore on the fact that the health sector is at a point where the concepts of co-production can be analysed through attempts to put them in place (Fusco et al., 2020; Sorrentino et al 2017; Voorberg et al, 2015).

Despite part of the academy recognizes that the application of the principle of health co-production is fundamental to make the necessary improvements in the quality of the service (Fusco et al., 2020; Palumbo, 2017; Aung et al., 2016; Sorrentino, 2015; Schmidt et al., 2015; Berwick et al; 2008; Bifulco and Ladd, 2006), to guarantee system sustainability (Dunston, Lee, Boud, Brodie e Chiarella, 2009; Fusco et al., 2020), reduce costs and provide better results (Alford & O'Flynn, 2012) and thus attracting greater interest in public management practices (Voorberg et al, 2015; Kjellstrom, 2019). Despite this interest on service improvements, empirical evidence is still limited (Fusco et al., 2020; Kjellstrom, 2019; Loeffler et al, 2016; Palumbo 2016). The capacity by hospitals to involve patients in the co-production of health services and in value co-creation still appears neglected (Palumbo, 2016) and on the other hand the lack of organizational significance can discourage patients to be protagonists in value co-production within the health environment (Altin et al., 2015).

Despite the growing interest and subsequent increase in number of publications on the theme of co-

production in healthcare in the last three years (Fusco 2020; Palumbo, 2016) there is still at present a lack of studies that provides comprehensive picture of the structure and the development in this field (Fusco et al., 2020).

All research programs that investigated these problems had shed light on co-production, but have not produced sufficient evidence to link the social and the knowledge gap in organizations, some key aspects that have to be better collected and integrated yet (Sorrentino, 2016).

Some literature reviews have been carried out on value co-production in PA (Bracci et al., 2019; Faulkner & Kaufman, 2018; Williams & Sherer, 2011) but only a few were specifically oriented on health (Fusco et al., 2020; Majid, 2019; Palumbo, 2016). All of these treated a specific research questions but only two of them was focused on a strategic management point of view able to apply value Co-Creation in healthcare, in the form of co-production. Only one of these (Palumbo, 2016) was able to provide a complete state of the art in terms of co-production.

This study aims to fill this gap in order to illuminate a road that is still little explored by public managers to provide them a map to undertake corporate strategies aimed at the value co-creation.

2.1 RESEARCH QUESTION

The evidence emerged from the background on Public Value co-creation in healthcare lead to the formulation of the following research question:

Which managerial strategies and support tools aimed at co-creation of public value in public healthcare organisations?

3. METHOD

To answer to the above question, we will undertake a research method able to shed light on future pathways for both academics and practitioners. Indeed, the development of a research field necessarily requires a connection with the past: literature reviews contribute in this sense, as they can represent a basis on which to build new discoveries (Massaro et al., 2016; Petticrew and Roberts, 2008), in fact, as Light et al. (1984) "*the need for a new study is not as great as the need to assimilate existing studies*" (p.169).

In order to address the issue a Structured Literature Review (SLR) will be used. A SLR consists of a critical examination and an evaluation through specific lenses according to the topics covered, with the aim of identifying gaps suggesting new paths for the research agendas (Dumay et al., 2016; Massaro et al., 2016; Bracci et al., 2019).

The identifying character of a SLR is the replicability and transparency of the research strategy adopted, guaranteed by a strict research protocol - which allows other scholars to be able to replicate the study to increase the reliability of sampling and analysis of contributions and explaining the coding system adopted for the analysis of the collected material (Tranfield et al., 2003; Massaro et al., 2016; Bisogno et al., 2018, Torchia et al, 2015)

Tranfield and Denyer (2003, p. 209) argue that researchers should adopt a "*replicable, scientific and transparent process, in other words detailed technology, which aims to minimize bias through comprehensive literature searches of published and unpublished studies and providing an audit trail of the decisions, procedures and conclusions of the auditors*", a thought also shared by Scandura and Williams (2000, p. 1263) who affirm that "*without rigor, relevance in managerial research cannot be claimed* ": the rigor implies minimization of errors and biases that derive from subjective analysis and judgments (Tranfield et al., 2003).

In according with Petticrew & Roberts (2006) this review followed six main steps: refining the questions, evaluating the inclusion/exclusion criteria, undertaking the literature search, screening the results, assessing the study quality, and synthesizing the findings.

The analysis of the literature aims to bring out the evidence on *what are the managerial strategies aimed at co-creation of value are present in public healthcare organisations*.

This has two specific objectives:

- understand the strategies to support co-creation in the form of co-production, present in public healthcare organisations;
- understand the tools to support the strategies.

The first action to be undertaken is the search of the articles to be included in the review (Manes Rossi et al, 2020) and to do this it is necessary to rely on certain criteria to ensure the identification of the contributions that satisfy the objectives of the research (Manes Rossi et al, 2020; Massaro et al., 2016; Bisogno et al., 2018)

As Petticrew and Roberts (2006) state, there are numerous sources to be questioned in writing a review of the literature, but electronic databases are certainly the most important place to start.

The literature search was lunched on 27 October 2021 using Scopus and Web of Science adopting the following inclusion criteria: peer-reviewed articles published in English, in the timeframe between 2008 and 2021, considering only countries with universal coverage health systems and comparable to each other as from Majid (2019), in public healthcare organisations.

The table (Table 3) below shows the justified inclusion criteria.

INCLUSION	MOTIVATION
Peer –reviewed articles	They provide higher levels of reliability to the findings of the study
Articles in English language	To allow the reliability of the review and to ensure that all the records included in the analysis had an international audience, only English-written contributions were considered
Timeframe 2008-2021	To consider only the post-economic crisis period 2007-2008 as a result of the crisis there has been attention to the identification of new managerial paradigms
Countries with universal coverage health systems	Considering only countries with universal coverage health systems facilitates the comparability to each other (Majid, 2019)
In public healthcare organisations	The study focus is related to public healthcare organisations and to highlighting public corporate management strategy

Table 3. Inclusion criteria of the research

The so - called "*gray literature*" - books and book chapters are not taken into consideration: the focus has been on international peer-reviewed journal articles, as they provide higher levels of reliability to the results of this study (Massaro et al., 2016)

For the same reason, only original research and review articles were involved in the analysis, other contributions - such as conference papers, editorials, letters to the editor and protocols - were ignored (Manes Rossi et al, 2020; Massaro et al., 2016; Bisogno et al., 2018).

Conceptual, review and empirical documents were contemplated to investigate the issue.

Two databases were searched: SCOPUS (It is the largest database of multidisciplinary peer-reviewed abstracts and citations) e WEB OF SCIENCE using the same combinations of keywords:

1. (hospital OR "healthcare organization") AND public "value co-creation"

2. public AND (hospital OR "healthcare organization") AND "co-creation" AND stakeholder engagement

3. strateg* AND public value AND "stakeholder engagement" AND (hospital OR "healthcare organization")

4. "patient and public involvement" AND ("Health service co-production" OR coproduction OR co-production) AND (hospital OR "healthcare organization")

5. Health service* AND (coproduction OR co-production) AND stakeholder* AND (hospital OR "healthcare organization")

It was decided to use both the word "hospital*" and the word "healthcare organization" within the algorithms because they can sometimes be used as synonyms: the author - during the reading phase of the papers - ascertained that the setting is actually the public healthcare organisation.

The search was undertaken using article title, abstract, and keywords.

The author's guiding idea in creating the sample it was collecting all the implemented strategies that "*have created value or added through the activities of public organizations and their managers*" in hospital, following the same vein as the PV conception of Hartley et al (2017, p.3).

The selection articles process follows the phases of a structured review also described by Moher, Liberati, Tetzlaff and Altman (2009), visually conceptualized in the Figure 1 below - based on the PRISMA statement.

The initial database search identified 131 potential research articles. After removal of duplicates (n. 20) the author examined 11 articles: abstracts were analysed and checked if each article possessed the established inclusion criteria. 94 contributions were removed: 59 of them did not meet the eligibility criteria, in 35 articles the abstract was not relevant. The database were queried on 21st October 2021.

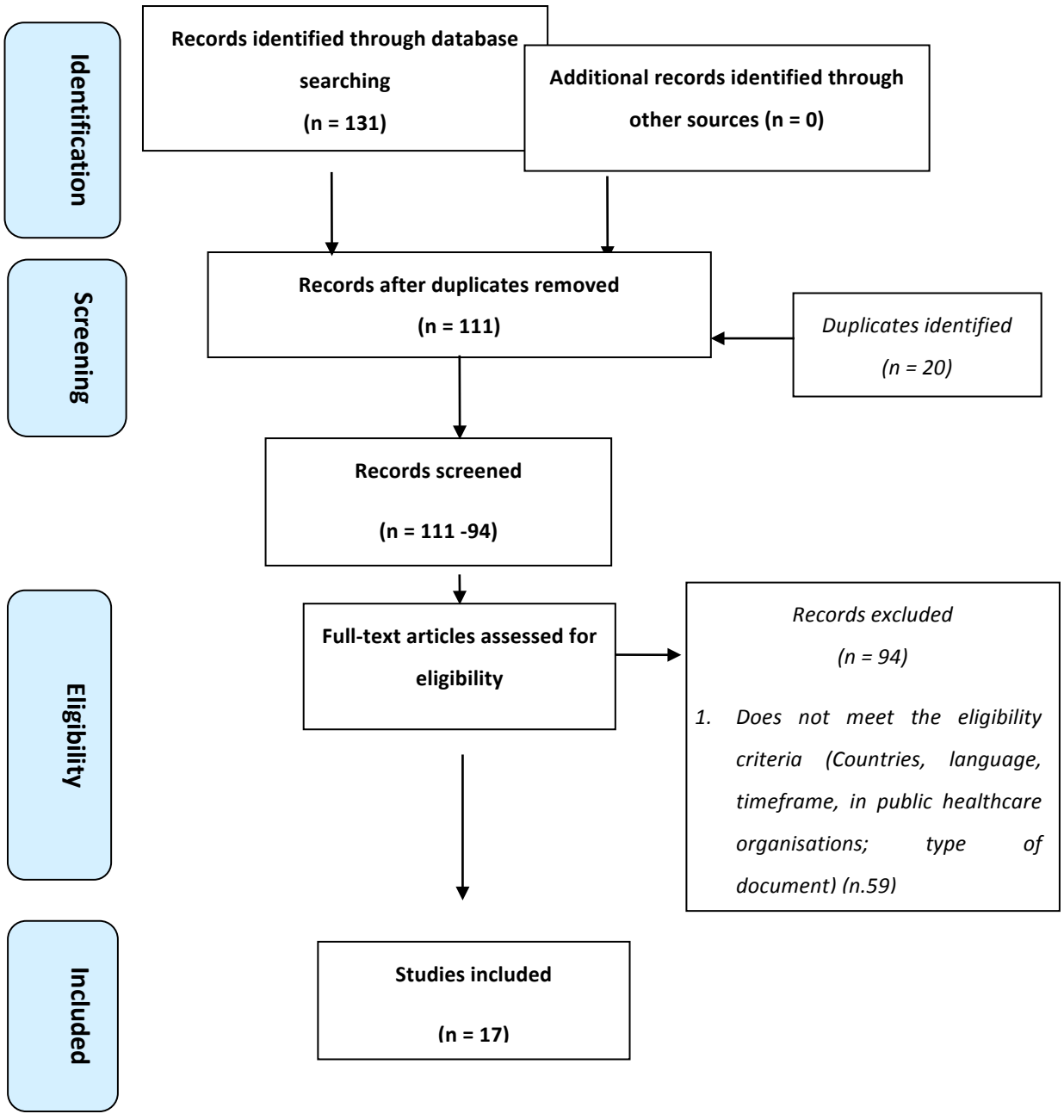

Figure 1. Results of complete search strategy

PRISMA 2009 Flow Diagram. From: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. PLoS Med 6(6): e1000097. doi:10.1371/journal.pmed1000097

3.3 DEVELOPING RELIABILITY

The second step to carry out is to evaluate the relevance (Petticrew and Roberts, 2008) of the collected contributions (Manes Rossi, 2020).

Each contribution was viewed by carefully examining the title and abstract and, where necessary, its contents, following the series of criteria above.

Beyond the stringent research criteria, scientific articles published in peer-reviewed journals were examined to ensure the quality of the research.

The searched journals are all part of the AJG 2021 classification - in the "Public Sector" category. This classification is provided by the Chartered Association of Business Schools - Association with the aim of creating a ranking of scientific journals with high quality standards.

Below is the table (Tab.4) reports the economic journals that are part of the sample and its ranking; BMJ Open is also part of the ranking, although a psychology journal is considered. The others fall within the "Public Sector" and only one in “Ethics and CSR Management” and “Marketing”. The judgment scale of AGJ goes from 1 to 4, 1 means less quality, while 4 of the highest quality.

JOURNAL	ABS CLASS	RANK
JOURNAL OF HEALTH ORGANIZATION AND MANAGEMENT	PUB SEC	1
INTERNATIONAL JOURNAL OF PUBLIC SECTOR MANAGEMENT	PUB SEC	1
BMJ OPEN	PHY	4
MANAGEMENT DECISION	ETHICS-CSRMAN	2
SOCIAL SCIENCE AND MEDICINE	SOC SCI	4
ADMINISTRATION & SOCIETY	PUB SEC	2
HEALTH SERVICES RESEARCH	PUB SEC	3
JOURNAL OF BUSINESS AND INDUSTRIAL MARKETING	MKT	2
AUSTRALIAN JOURNAL OF PUBLIC ADMINISTRATION,"	PUB SEC	2

Table 4. The quality of the Journals according to the AGJ ranking

To assess the quality of each article, the author evaluated the impact of each determined by the number of quotes from Google Scholar (Bisogno et al, 2018).

The counts of the quotes were downloaded from 27 October 2021. In reading this data it is necessary to take into consideration that the oldest articles have had more time to collect quotes than recent articles (Dumay et al., 2016).

Furthermore, the author has held several meetings with a senior researcher to define and evaluate the relevance of the criteria for selection of articles.

The issues related to the classification of articles through discussions between different reviewers have been clarified. Since all decisions have been taken by common consent of the reviewers during the process, the author has not conducted a formal reliability control, such as a Krippendorff alpha (Krippendorff, 2013). This decision, already present in literature (Bisogno, 2018), it was considered not necessary due to the poor disagreement about the analysis between the reviewers. Below Table 5 is reported and it shows the authors of the article, the year of publication and the number of quotations obtained up to the date of extraction.

AUTHORS	YEAR	N. CIT.
Allen S., Chiarella M., Homer C.S.E.	2010	86
Nuti S., Noto G., Vola F., Vainieri M.	2018	39
Palumbo R., Annarumma C., Adinolfi P., Musella M.,	2016	36
Lwembe S., Green S.A., Chigwende J., Ojwang T., Dennis R.	2017	35
Palumbo, Rocco; Annarumma, Carmela; Musella, Marco	2017	28
Sorrentino, M; Guglielmetti, C; Gilardi, S; Marsilio, M	2015	22
Majid U., Gagliardi A.,	2019	15
Fusco F., Marsilio M., Guglielmetti C.,	2020	10
Retzer, Ameeta; Sayers, Ruth; Pinfold, Vanessa; Gibson, John; Keeley, Thomas; Taylor, Gemma; Plappert, Humera; Gibbons, Bliss; Huxley, Peter; Mathers, Jonathan; Birchwood, Maximillian; Calvert, Melanie	2020	3
Frith L., Hepworth L., Lowers V., Joseph F., Davies E., Gabbay M.	2019	2
Ayton, D; O'Donnell, R; Vicary, D; Bateman, C; Moran, C; Srikanth, VK; Lustig, J; Banaszak-Holl, J; Hunter, P; Pritchard, E; Morris, H; Savaglio, M; Parikh, S; Skouteris, H	2020	1
Pereira R.B., Brown T.L., Guida A., Hyett N., Nolan M., Oppedisano C.L., Riley K., Walker G.,	2021	1
Cruice, M.; Aujla, S.; Bannister, J.; Botting, N.; Boyle, M.; Charles, N.; Dhaliwal, V.; Grobler, S.; Hersh, D.; Marshall, J.; Morris, S.; Pritchard, M.; Scarth, L.; Talbot, R.; Dipper, L.	2021	1
Pohjosenpera, T; Komulainen, H	2020	1
McCarron, Tamara L.; Clement, Fiona; Rasiah, Jananee; Moran, Chelsea; Moffat, Karen; Gonzalez, Andrea; Wasylak, Tracy; Santana, Maria	2021	1
Grindell, Cheryl; Tod, Angela; Bec, Remi; Wolstenholme, Daniel; Bhatnagar, Rahul; Sivakumar, Parthipan; Morley, Anna; Holme, Jayne; Lyons, Judith; Ahmed, Maryam; Jackson, Susan; Wallace, Deirdre; Noorzad, Farinaz; Kamalanathan,	2020	1

Meera; Ahmed, Liju; Evison, Mathew		
Leite H., Hodgkinson I.R.,	2021	0

Table 5. Quote number from Google Scholar, per article

3.4 DEFINE THE ANALYTICAL FRAMEWORK

After the definition of the analytical picture and verified the reliability of the research framework, the author codified the articles and discussed any uncertainties with the main auditor to clarify the encoding.

In this phase, Krippendorff (2013, p. 98) reminds us "*the researchers must establish what must be observed as and how the observations must be registered and subsequently considered the data*".

The authors must therefore determine analysis unit, in terms of aspects to be analysed and information from collected articles (Massaro et al., 2016).

The coding framework is based on similar research frameworks already developed and existing in literature (Bisogno, 2018; Dumay, 2015; Dumay, 2016; Massaro, 2015; Massaro, 2016; Manes Rossi, 2020; arms, 2019) maintaining an approach more flexible compared to the categories already identified on similar themes: this, in order to give the opportunity to new attributes or categories of relevant articles to emerge and to obtain a framework consistent with the research objectives and with the peculiarities of this SLR.

The author recorded the results in an Excel file, according to this logic:

- The first scope of investigation (A) concerns the impact and development in quantitative terms of literature from 2008 to present.

- The second scope (B) consists of a space-time analysis of the context in which these researches have been conducted their study;

- The third scope (C) consists in the research methodology adopted;

- The fourth (D) reports the contribution area of the articles in the Public Value in public healthcare organisations.

The author's research protocol is reported below (Tab.6).

A	**IMPACT AND QUANTITATIVE DEVELOPMENT OF RESEARCH**
1	Sources
2	Year
3	Most cited articles
B	**SPACE-TIME ANALYSIS OF THE RESEARCH CONTEXT**
4.	**Continent**
	1. Europe
	2. Canada
	3. Australia
	4. Intercontinental
	5. None
5.	**Observation level**
	1. International
	2. National
	3. Local
	4. None
C	**RESEARCH STRATEGY AND METHODOLOGY**
6.	**Research methodology**
	1. Case study or interviews
	2. Historical or content analysis
	3. Quantitative questionnaires and other applications
	4. Conceptual
D.	**CONTRIBUTION AREA TO THE PUBLIC VALUE IN PUBLIC HEALTHCARE ORGANISATIONS**

Table 6. Protocol Research

3.5 TESTING VALIDITY

Validity tests are used to verify the accuracy of the results (Franklin et al., 2010) to avoid "*the temptation to jump to easy conclusions only because there are some tests that seem to bring to an interesting direction. Instead we must submit these tests to every possible proof*" (Silverman 2013, p. 289)

The literature distinguishes between internal validity, external validity and construct validity (White and McBurney, 2012).

Internal validity is meant to prove that the study is free from the main methodological biases (selection bias, response bias, attrition bias, and observer bias) (Petticrew & Roberts, 2008) while external validity is concerned with whether the results of a study can be generalised (Dumay, 2016).

In order to reduce bias it is important to assume different forms of control and triangulation that can support this process (Yin, 2014): triangulation emphasizes the reduction of the "*bias through the integration of theories, methods, data sources and researchers with points complementary strength and weaknesses not overlapping* "(Modell, 2009, p. 209).

Therefore, reducing prejudices, researchers can support that their encoding and their analytical framework are reliable.

To test the external validity it is possible to adopt several approaches (Massaro, 2016): using the theory to explain the results (Yin, 2014), or demonstrating the completeness of the sources used (Massaro, 2016), for example, that the selected journals represent a "*coherent sample, drawn from journals sharing a relatively common interdisciplinary editorial philosophy, for the purposes of this assessment*" (Parker, 2005).

"*The validity of construct is a quality of the measures used*" (White and McBenNey, 2012, p. 143): it is testable through the importance of journals and articles selected through the analysis of quotes (Massaro, 2016) and through the use of multiple sources of evidence in order to compare the results of different sources and analytical perspectives (Massaro, 2016).

4. RESULTS

4.1 A. IMPACT AND QUANTITATIVE DEVELOPMENT OF RESEARCH

4.1.1. Sources

The Journals on which the articles that are part of the analysis sample have been published, are shown in the following table (Tab.7)

JOURNAL	N. ARTICLE PER JOURNAL
JOURNAL OF HEALTH ORGANIZATION AND MANAGEMENT	1
INTERNATIONAL JOURNAL OF PUBLIC SECTOR MANAGEMENT	1
BMJ OPEN	3
MANAGEMENT DECISION	1
PRIMARY HEALTH CARE RESEARCH AND DEVELOPMENT,	1
ADMINISTRATION & SOCIETY	1
BMC HEALTH SERVICES RESEARCH	1
PATIENT EDUCATION AND COUNSELING	1
AUSTRALIAN HEALTH REVIEW	1
APHASIOLOGY	1
PLOS ONE	1
JOURNAL OF BUSINESS AND INDUSTRIAL MARKETING	1
HEALTH EXPECTATIONS	1
AUSTRALIAN JOURNAL OF PUBLIC ADMINISTRATION	1
BMC MEDICAL INFORMATICS AND DECISION MAKING	1
TOT.	**17**

Table 7. Journal selected

As mentioned above, the argument analysed intersects two scientific areas, the economic and medical areas, in fact the articles are distributed for just more than half of Public Sector and managerial journals and for less than half in medical journals.

All Public Sector and Managerial journals fall within the AJG 2021 ranking (see Table 2): even the BMJ Open journal that belongs to the medical area falls into this ranking.

Figure 2 shows the distribution of the journals in the different research areas, more than half belong to the managerial economic area.

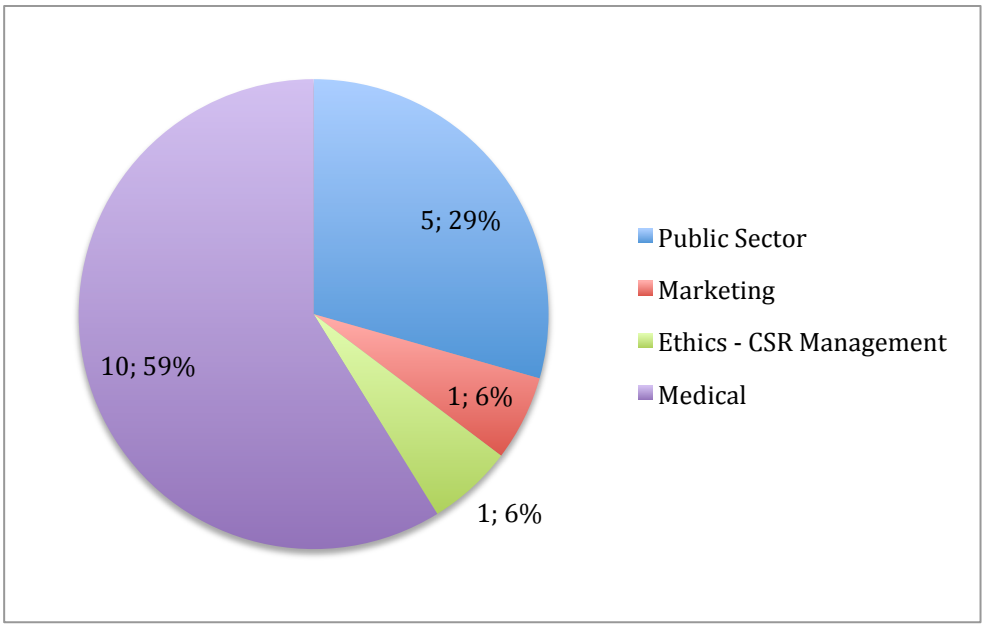

Figure 2. Distribution of journals in the various research areas

4.1.2 Time distribution of contributions

From the annual distribution of contributions, the positive or negative trend of a given line of research can be deduced.

The contributions from 2008-2017 were only 4, while from 2018 to date the interest on the subject has slightly increased.

This trend is confirmed in the bibliometry of Fusco (2020) on the topic of co-production in healthcare. The graph below shows the trend of publications in the years under analysis.

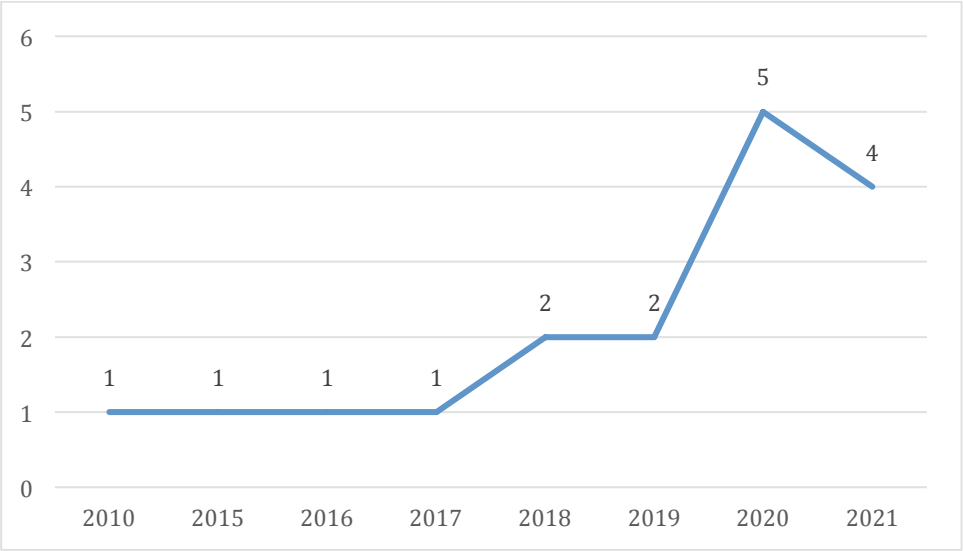

Figure 3. Distribution of articles per year

An interesting observation derives from comparing the trend of publications on the creation of Public Value in hospital, with respect to the contributions on the subject limited to the Public Sector (Bracci et al., 2019): the contributions are minor and the attention on the creation of PV in hospital appears three years later than the rest of the literature.

4.1.3. Most cited article

Massaro et al (2016) argues that the analysis of citations is a useful analysis for identifying the most relevant contributions on the topic.

The most cited paper appears to be that of Allen et al. (2010), the oldest compared to the sample under analysis, the less cited Ayton et al (2020) and the most recent (see Tab.5)

An interesting observation can also be made on the study by Allen et al. (2010). Australia is particularly sensitive to the issue of Public Value Co-Creation, although our sample is only composed of two Australian contributions, in fact one of the most prolific and expert authors is the Australian John Alford.

4.2 B. SPACE-TIME ANALYSIS OF THE RESEARCH CONTEXT

4.2.1 Geographical distribution of contributions

As per the research protocol, the space-time criteria of the researches were then analysed.

As already present in the literature (Bisogno, 2018; Dumay, 2015; Dumay, 2016; Massaro, 2015; Massaro, 2016; Manes Rossi, 2020; arms, 2019), the sample was codified on the basis of the continent of belonging with the objective of identifying the areas within which the topic has been most explored.

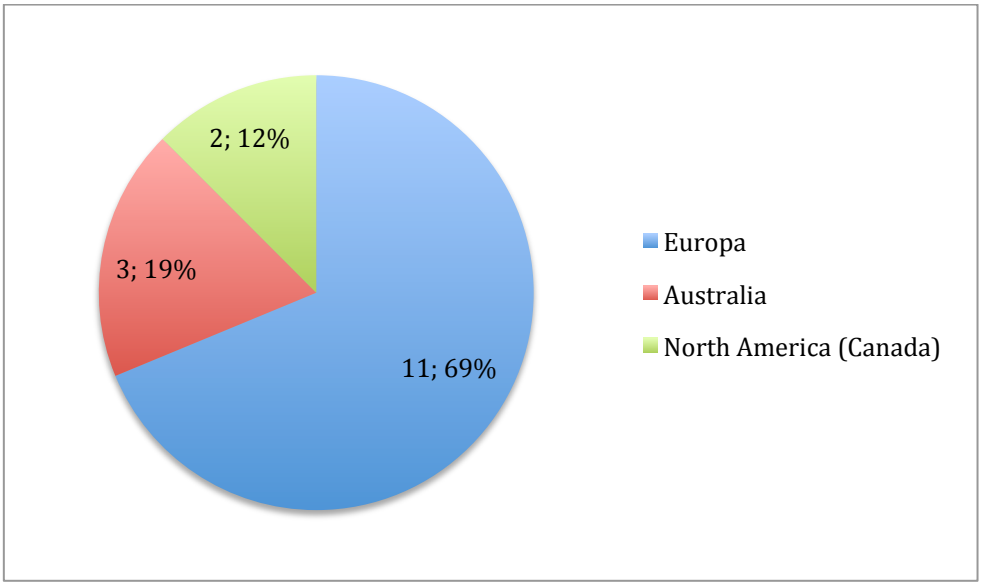

Figure 4. Geographical contribution per article.

The Figure 4 shows us that most of the empirical research is concentrated in Europe (represented by Italy and the UK) for 67%, the least explored is North America. However, it should be specified that for the entire continent only Canada - which is the Beveridge health system and not mixed or private as in the rest of the continent represent it.

The Graph shows the details of the publications by country.

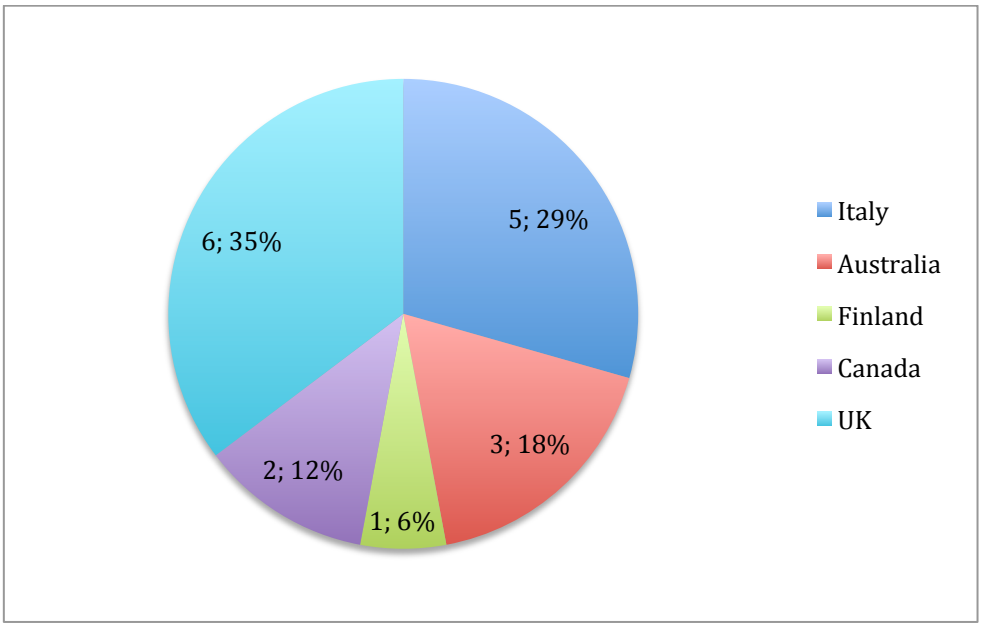

Figure 5. Geographical distribution of article, per country

4.2.2. Levels of observation

The analysis step consists of the observation level assumed by the sample searches identified from the existing literature, or "*what breath of analysis the author gives*", if her/his observation lenses are international, national, local or simply none.

As can be seen from the graph (Figure. 6) below, most cases have a local dimension of their research: the main reason for this could be the fact that most of the contributions are represented by case studies within hospitals.

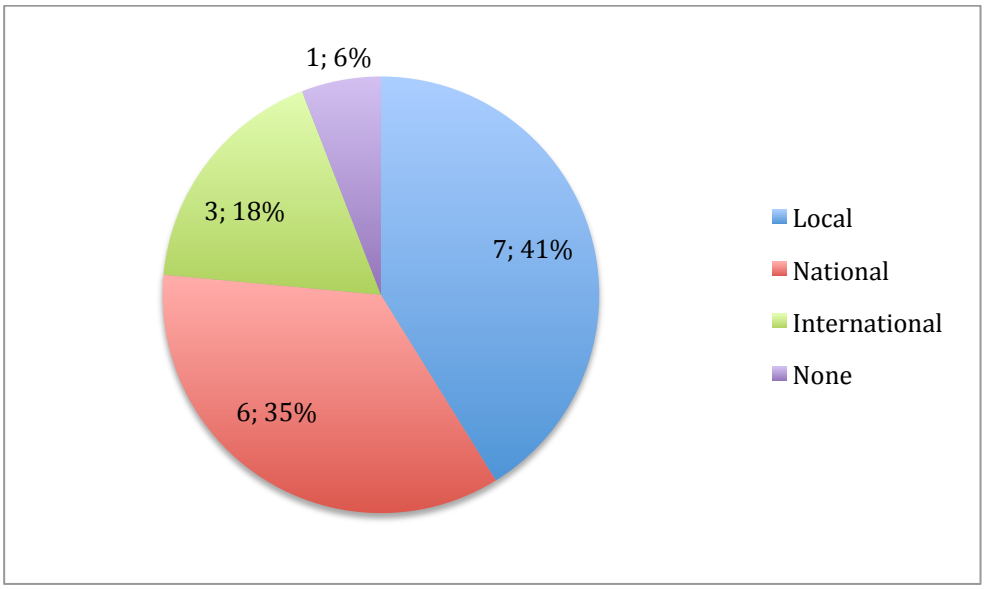

Figure 6. Observation Levels

4.3 C. RESEARCH STRATEGY AND METHODOLOGY

This level of analysis consists in identifying the research strategies and methods adopted by the authors of the sample contributions.

There are four coding elements: Case study and interviews, Historical or content analysis, Questionnaires or other quantitative applications, Conceptual.

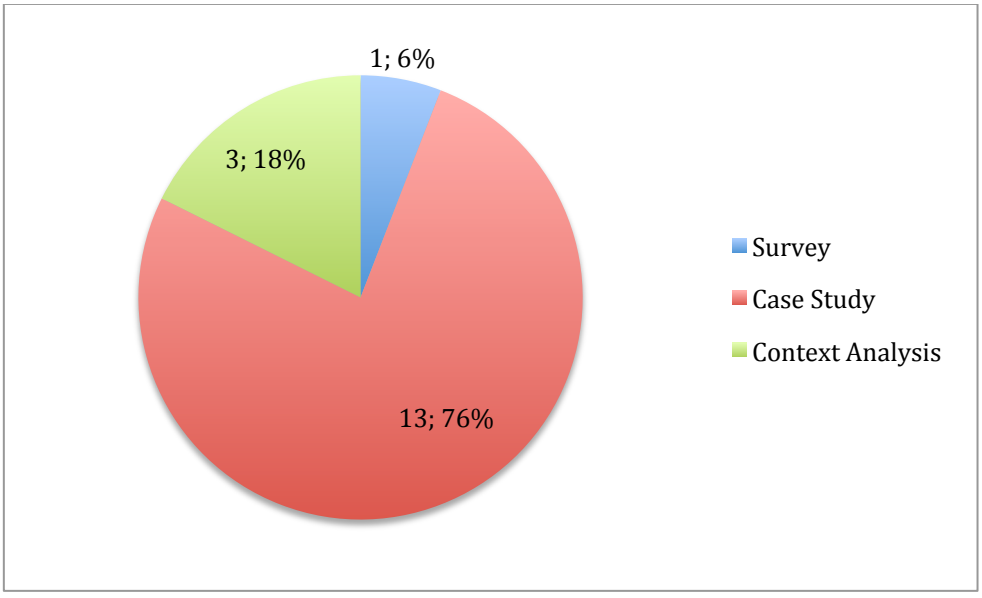

Figure 7. Research Strategy

As already reported, the most used research strategy is the case study, which represents the 60% of this sample (Figure 7).

4.4 D. CONTRIBUTION AREA TO THE PUBLIC VALUE IN PUBLIC HEALTHCARE ORGANISATIONS

As already stated above, the case studies represent the majority of the contributions of the sample. The most cited and oldest case study is that of Allen et (2010), an Australian case study which to reduce adverse events related to maternity hospitalization, with the aim of improving the patient-safety strategy. The practice setting is a maternity service located on two public hospitals in Sydney, Australia. In 2004, the "*PlanningBetterHealth*" health reform was being implemented; among the priorities of the agenda was the improvement of the quality of care and patient safety and the creation of a more efficient health system by reducing administrative inefficiencies and duplication. This is perceived as a need for an organizational restructuring of the Sydney Health Services as the restructuring has brought about major changes.

Specifically, the maternity service merged with a second structure located eight kilometres away, therefore with a new management on two sites, which resulted in one displacement of the main local stakeholders, a change in leadership on the site, a period of instability for the existing quality and safety infrastructures, service and personnel structure.

Interviews and questionnaires were carried out on a sample that included the main stakeholders (midwives, obstetricians, paediatricians, ...)

Despite the very low response rate in the questionnaires, through the interviews, on the other hand, the barriers to improving patient safety were understood, thus resulting in an adequate strategy to improve patient safety. The results of this study provide evidence of the benefit of including qualitative methods with quantitative investigations when examining the culture of safety in maternity Allen et al. (2010).

The second case study Lwembe et al. (2016) has as its setting the mental health service in London: Compared to the white majority, black ethnic minorities (BME) in England suffer with inequalities in accessing and providing appropriate mental health services (Lwembe et al., 2016; Palmer and Ward, 2007; Street et al., 2005) this study with a co-production approach between public health, a community group, primary mental health team and patients - proposes the improvement of health service provision to meet the needs of black and minority ethnic communities. Semi-structured interviews and focus groups, were used to collect data to examine the use of co-production methods in designing and delivering an improved mental health service; the first indications are that the

project has helped overcome barriers to accessing mental health services. The increase in hospitalization rates following this study (75% higher), albeit on a small scale, highlights an alternative model which, if explored and developed further, could lead to patient-centred service provision to improve health access and patient experience within mental health services, particularly for black and minority ethnic communities.

The case of Ayton et al (2020) - located in Melbourne - reports the case of a co-design approach for a program aimed at psychosocial support to elderly people with dementia and / or delirium in hospital and at home when discharged from hospital, this is in order to reduce the return to hospital of elders with cognitive disabilities who are vulnerable to frequent hospital admissions and presentations to the emergency room.

The co-design took place through workshops with key stakeholders (including doctors, geriatricians, nurses, hospital staff (volunteer coordinators and hospital managers), potential users of the service (caregivers, ...) researchers and project staff identifying implementation.

Another Italian case study is represented by Sorrentino et al (2015): whose contribution is to analyse how the coordination processes of public health service providers for the chronically ill have been reengineered through a co-production to meet the needs of patients. In the specific, the co-production analyses a collaboration to evaluate and redirect the clinical path of the parenteral clinic service of antibiotic therapy (OPAT) provided by the cystic fibrosis centre (CFC) of an important regional public hospital in Northern Italy.

The CFC has a day hospital (open on weekdays), two-day hospital beds, and six inpatient beds. The CFC team is made up of two doctors, one-day nurse, two physical therapists, a dietician and a social worker. Cystic fibrosis is a hereditary disease that affects several organs for which it is not etiological. A treatment has yet to be found, so any worsening of the patient's health condition lung or infectious condition is treated with a course of antibiotics.

Intensive intravenous antibiotic therapy (IAT) is prescribed in severe or failure of oral therapy, or resistance to oral antibiotics and should be administered, on average, over a 15-day period.

When the IAT is taken at home instead of in the hospital it is called OPAT, considered a co-production practice because patients are asked to self-manage their antibiotic treatment at home.

At the time the research was conducted (2009), CFC data showed that more than 50% of treated patients needed at least one course of IAT per year; of these, about one in five receives at least one home treatment. Co-production for health care providers results in further organizational and

additional complexity effort of the coordination process, as activities (or segments of activities) are redistributed between those who provide care, i.e. caregivers, and those who receive care, - this increases the effort for managerial coordination and control.

The study by Palumbo et al. (2016) is the only quantitative study in the sample, which identifies how inadequate health literacy represents a significant barrier to patient empowerment and how this is the missing link between planning services and satisfying needs.

About half of the sample of respondents showed inadequate health literacy: the actual ability of patients to act as co-creators of value in the health care environment was neglected, while most attention was focused on the enabling role performed by health professionals.

Health literacy is an essential ingredient in the recipe for patient engagement. Indeed, patients with health literacy are adept at navigating the health service system and are more likely to establish co-creation partnerships with care providers. From this point of view, the lack of a specific problem of health literacy within the initiatives aimed at empowering patients produces epochal inconveniences, which pave the way for the disengagement of patients.

Therefore, tailor-made interventions aimed at improving health literacy at both individual and systemic levels are needed, because they are crucial for achieving patient involvement and for improving the sustainability of the health system.

A multiple case study is represented by Palumbo et al. (2017): whose contribution was to investigate the ability of healthcare organizations to establish a comfortable and co-creative partnership with the patients. In an attempt to fill this gap, a study was carried out aimed at creating a strategy for "organizational health literacy". This study demonstrated that healthcare organizations were unaware of several issues crucial to improving their significance. Problematic organizational health literacy was found to prevent patient involvement and to adversely affect the quality of interaction between patients and healthcare professionals.

The contribution of this paper is indeed to argue that inadequate health literacy of the organization impoverishes the ability of health care organizations to empower patients and involve them in the co-creation of value.

The paper by Firth et al. (2019) demonstrated how the commitment to public patient involvement has helped to reorient the hospital's strategies and projects to be more responsive to the needs of patients rather than organized around professionals and organizations. In addition, it pays attention

to the fact that adequate investments of staff time, associated costs must be planned to provide real PPI and co-production.

Nuti et al. (2018) demonstrate that existing performance measurement systems (PMS) are designed to measure performance at the organizational level and do not tend to fail to assess the value created by collaborating multiple organizations and engaging users in the value creation process. The article proposes a measurement system capable of framing information based on the population served and the prospective supports of patients, helping to prevent each service provider from working in isolation and avoiding dysfunctional behaviour. The reformulation of the PMS contributes to refocusing the stakeholder perspective towards the creation of value; legitimizes the organizational units specifically aimed at managing transversal communication, cooperation and coordination; supports the alignment of professionals and organizations in objectives and behaviours and promotes shared responsibility between suppliers.

Fusco et al. (2020) provides a bibliometry on the topic of value creation in healthcare: co-production and co-design records some empirical evidence, research on co-delivery and co-management seems to be still in its embryonic stage and a more theoretical phase: it has been little investigated how the organization of health services should change or consider for the patient as a partner in the design, monitoring, delivery and even less researched is the issue of the impact of co-production on suppliers and patients (specifically psycho-social impacts and in terms of patient satisfaction).

Majid et al. (2019) though her paper contribute to this research with an identification of different ways of involving patients and professionals that can be used to adapt to the context.

Cruice et al. (2021) presents a case of co-production in patients with aphasia. The study consists of various phases, including the co-production of protocols for evaluating the desired results up to the setting of the treatment of the pathology. Specifically, the co-production process lasted six months which saw the involvement of patients and doctors and consisted of: decisions agreed between the parties of the content for evaluation protocol and treatment manual; clarity on personalized treatment, therapeutic alliance. The authors also believe that co-production with intended users has resulted in products (evaluation protocol, treatment manual) that are more practical, feasible and acceptable to physicians and clients than if designed by academics alone.

Grindell et al. (2020) applies co-production to understand and manage pleural effusion as a priority for patients, not for their overall cancer journey but for improving quality of daily life: the main influences on people's decisions about it to MPE treatment were personal aspects of their life, for

example, how active they are, what support they have at home. The results of this study led to the development of a first prototype / visualization of the service (a video that represents a web-based support tool) to help people identify personal priorities and guide shared therapeutic decisions.

Leite et al. (2021) a thematic analysis through a new integrated value co-creation framework for the design of a telemedicine service as the support tool for the current global pandemic carries out, identifying a set of elements that would make up the service. Furthermore, from this contribution it emerges that technology is a tool to support the co-creation of value that is still little adopted.

McCarron et al. (2020) conducts a scoping review of patients as partners in health research. The evidence gathered during this review-improved understanding of patient involvement as a research partner. As patient engagement becomes more central, this knowledge will help researchers and policy makers develop approaches and tools to support engagement.

Pereira et al. (2021) carries out a research on Consumer experiences of care coordination for people living with chronic conditions and other complex needs: this research addresses the knowledge gap related to the experiences of coordination of consumer care. Central themes have been identified for patients such as (1) experiencing authentic and value-based care, (2) collaborative care and working together, (3) gaining independence, (4) improving health and quality of life. Findings highlight the importance of providing person-centred care. The study demonstrates that inclusive and co-design research is feasible in this service setting and further research is recommended on how stakeholders understand the function of health care services. Coordination of care to promote health and prevent hospital readmissions and improve consumer participation.

Pohjosenperä et al. (2020) reports a case study examining the dynamics of value creation spheres in health care logistics from a management perspective: the study provides implications for how to develop health materials logistics to provide more value for both logistics service providers. That their clients, with consequent social implications or that understanding the co-creation of value in health logistic services supports healthcare organizations in developing their processes towards better patient care. Therefore, health logistics research makes it easier for companies and health systems to achieve their goals in terms of better service and lower costs.

Retzer (2020) A core outcome set (COS - core outcome set) is a standardized collection of results to be collected and reported in all studies within a research area, aimed at reducing reporting biases and facilitating synthesis of evidence. This is not currently available for use in bipolar studies.

A co-production approach was used in order to create COS. COS have been identified for personal recovery; connection; clinical recovery of bipolar symptoms; mental health and well-being;

physical health; self-control e management; effects of the drug; life quality; results of the service; care experience; and use of coercion.

This COS is recommended for use in community-based bipolar studies to ensure the relevance of results.

4.5 FINDINGS

The relevant objects that emerged from this analysis are eleven, five are identified co-creation strategies, such as: improvement in perceived quality of service (Firth et al, 2019; Allen et al., 2010; Pohjosenperä et al, 2020) and patient safety (Allen et al., 2010); abatement of access and treatment inequalities (Lwembe et al., 2016; Retzer, 2020); creation of support programs for vulnerable patients (Ayton et al., 2019; Grindell et al, 2020; Pereira et al., 2021); the re-generation of care pathways for the chronically ill (Sorrentino et al., 2015; Pereira et al., 2021); co-creation of evaluation protocols (Cruice et al., 2021) and in the identification of outcomes (Retzer, 2020; Cruice et al., 2021). The other elements of attention that have emerged are to be considered tools to support the strategy, such as: improvement of health literacy for the realization of value co-creation (Palumbo et al., 2016); awareness of health literacy organizations to foster value co-creation strategies (Palumbo et al., 2017); performance measurement systems to refocus the stakeholder perspective towards value creation, avoiding dysfunctional behaviours (Nuti et al., 2018); technology as a tool to support the co-creation of value (Leite et al, 2021); identification of different ways of involving patients and professionals that can be used to adapt to the context (Majid et al., 2019).

FINDINGS	AUTHORS	CONTRIBUTION IN TERMS OF…
Improvement in perceived quality of service	Firth et al, 2019; Allen et al., 2010; Pohjosenperä et al, 2020	Co-production strategy
Improvement patient safety	Allen et al., 2010	Co-production strategy
Abatement of access and treatment inequalities	Lwembe et al., 2016; Retzer, 2020	Co-production strategy
Creation of support programs for vulnerable patients	Ayton et al., 2019; Grindell et al, 2020; Pereira et al., 2021:	Co-production strategy
Re-generation of care pathways for the chronically ill	Sorrentino et al., 2015; Pereira et al., 2021	Co-production strategy
Evaluation protocols	Cruice et al., 2021	Co-production strategy
Identification of outcomes	Retzer, 2020 Cruice et al., 2021	Co-production strategy
Improvement of health literacy for the realization of value co-creation	Palumbo et al., 2016	Co-production strategy
Awareness of health literacy organizations to foster value co-creation strategies	Palumbo et al., 2017	Means and tools to support co-creation
Performance measurement systems to refocus the stakeholder perspective towards value creation, avoiding dysfunctional behaviours	Nuti et al., 2018	Means and tools to support co-creation
Technology as a tool to support the co-creation of value	(Leite et al, 2021)	Means and tools to support co-creation
Identification of different ways of involving patients and professionals that can be used to adapt to the context	(Majid et al., 2019).	Means and tools to support co-creation

Table 8. Findings and contributions

5. DISCUSSION AND CONCLUSION

This analysis aimed to identify which managerial strategies and support tools are today present in the literature to enhance the co-creation of public value in public healthcare organisations. Through this study, five strategies have been identified (1) improvement in perceived quality of service (Firth et al., 2019; Allen et al., 2010; Pohjosenperä et al., 2020) and patient safety (Allen et al., 2010) 2) abatement of access and treatment inequalities (Lwembe et al., 2016; Retzer,2020) 3) creation of support programs for vulnerable patients (Ayton et al., 2019; Grindell et al., 2020; Pereira et al., 2021) 4) for the re-generation of care pathways for the chronically ill (Sorrentino et al., 2015; Pereira et al., 2021)) 5) co-creation of evaluation protocols (Cruice et al., 2021) and in the identification of outcomes (Retzer, 2020; Cruice et al., 2021) - each of which is confirmed by several studies within the sample identified.

Co-production is significant in a re-tailor of pathways and services, especially for categories of fragile patients whose quality of life appears to be compromised (Sorrentino et al., 2015; Pereira et al 2021; Ayton et al., 2019; Grindell et al, 2020, Cruice et al., 2021; Retzer, 2020)

From the results - considering the nature of the journal of the published articles - it seems that co-production is more adopted and investigated from a medical point of view than from an economic managerial perspective (10 out of 17 journals are medical: Lwembe et al., 2017; Majid, et al., 2019; Retzer et al., 2020; Frith et al., 2019; Ayton et al., 2020; Pereira et al., 2021; Cruice et al., 2021; Pohjosenpera et al., 2020; Grindell et al., 2020; Leite et al., 2021) and its importance for the understanding and implementation of patient-centred services is recognized by all the authors.

However, the empirical evidence on the strategies currently available is still limited (11 studies out of 17 report they are case studies of implemented co-creation strategies) and the current literature on the tools to support the strategies still appears in the embryonic stage, (Nuti et al., 2021; Palumbo et al., 2016; Palumbo et al., 2017). The three supporting tools consist of health literacy as an "enzyme" of co-production, the use of technologies and a new performance measurement system that helps guide the single public healthcare organisation in the adoption of strategies to generate public value. Among the empirical studies of the strategies, no one has identified a set of indicators for measuring the impact of co-production strategies, thus measurement the goal achievement is still a gap. The small sample size puts the researchers before the question of understanding whether these strategies within public healthcare organisations are already present but not yet widely

disclosed and whether they are present as they are measured or if co-creation is still in its embryonic.

Undertaking research on the co-creation of public value in the public healthcare organisations, the task is still like that of Dante's *lampadophore* in the Divine Comedy: *it is to do as that one that goes at night, bringing the light behind him, not benefiting himself, but illuminating those who follow him* (Purgatorio, Canto XXII, 69). It is like embarking on a night journey, the path is still poorly lit and explored by the academy: it remains to be understood, at the level of academic research, to what extent the co-creation strategies are present within the public healthcare organisations. It should be investigated if these are present but are not yet sufficiently disclosed by the academy or are still present on a residual basis.

This research has implications at the practitioner level: if the goal is to undertake the path of co-creation of public value in the public healthcare organisation, there is a precise map to follow. First, investing in health literacy (Palumbo, 2016; 2017). Where public value can be created, it is derivable from an adequate performance measurement system (Nuti, 2018). Technologies are a useful support in order to reach co-production. It is possible "choose" how to create public value: if through "co-production" and "co-design" which, although not widespread (Fusco et al., 2020) and they are demonstrated effective ((Fusco et al., 2020; Palumbo, 2017; Aung et al., 2016; Sorrentino, 2015; Schmidt et al., 2015; Berwick et al.; 2008; Bifulco and Ladd, 2006; Dunston, Lee, Boud, Brodie and Chiarella, 2009, p. 40; Fusco, 2020; Alford & O'Flynn, 2012), while on the others forms of co-creation like co-delivery there is still too few evidence.

CHAPTER II.
PUBLIC VALUE CO- PRODUCTION IN ITALIAN PUBLIC HEALTHCARE ORGANISATIONS: WHERE THINGS STAND.

1. INTRODUCTION

Population aging, increasing chronicity, pressures on public budgets, global population growth and out-dated infrastructure weaken the ability of most developing nations to provide adequate health services (Moro Visconti, 2021).

Healthcare is a highly interconnected and systemic industry, for this reason resources and investments must be well allocated, as the Covid-19 pandemic has crudely demonstrated (Moro Visconti, 2021; Baxter et al., 2020)

Due to the over-exposed determinants, health services are becoming increasingly complex (Grindell et al., 2020).

Improving these services is difficult as the interactions between the individual components of the system are multifaceted (Grindell et al., 2020; Reed et al., 2020; Craig et al., 2008).

Public value co-creation holds the greatest potential as a key to complex services, such as the delivery of health services (Keeling et al, 2021).

In recent years it has been shown that consumers and service providers in various sectors benefit from co-creating value (Vargo et al., 2017); there is, in fact, a growing need to involve patients and healthcare personnel in the development of new interventions in order to face the challenges of the complex problems and actual systems, to make them relevant and applicable in practice (Grindell et al., 2020; Greenhalgh et al., 2016; Verde, 2009; Holmes et al., 2017;).

Policy reforms therefore encourage the development of patient-centred care, and recent surveys show that patients' first priority is the desire for more active involvement in their meetings with healthcare professionals (Deloitte Insights, 2018).

On the part of healthcare management, a management approach focused on the patient and in the perspective of the co-production of public value (hereafter co-production) involves the redesign of the health care service and a rethinking of the management logics underlying the relationships and interactions between the different subjects involved.

A collaborative management based on the co-production of public value of the health service is in fact able to lead to the achievement of better quality of the service provided (Alford, 2009; Voorberg, 2015; Fusco et al, 2020), better outcomes in terms of citizens' health (Best et al., 2019) and cost efficiency (Alford, 2009; Voorberg, 2015; Fusco et al, 2020). It also creates benefits against the backdrop of rapidly increasing demand and pressures on critical service providers (Best et al., 2019), through interactions between consumer-healthcare professionals that facilitate dialogue and shared understanding - therefore more balanced patient-health worker interactions lead to more targeted and enhanced health assistance.

Therefore, emerges the need to identify, on the one hand, strategic organizational models, such as those deriving from the evolution of research on the subject of service and public value co-productiom in healthcare, which can support, help to understand and manage this change of perspective allowing the enhancement of the centrality of the user of the service in the process of co-production of public value. On the other hand, there is also the need to define the tools able to facilitate co-production processes and to support the definition of strategic organizational models oriented to the public value co-production,

The international literature on the subject still appears to be in an embryonic phase and does not provide a large number of studies focused on the deepening of the processes and practices of public value co-production declined in the health sector and above all the search for strategic organizational logics and approaches able to facilitate, in this context, the active involvement of the patient and the other actors of the network (context) in the public value co-production.

However, while politics (Fusco et al., 2020) and academia recognize in public value co-productiom a potential response to current challenges, at the organizational level it has been given little attention to the ability to engage patients in the co-production of health services (Palumbo, 2016a).

For this reason it becomes pivotal - for the public structures of the national health service and policy makers - to understand what methods can be adopted to actively involve citizens, patients and other interacting actors in the relational contexts of reference.

Based on the review of the literature conduct and exposed in the previous chapter- it emerges that the areas in which co-production occurs within of the public healthcare organisations are: improvement in perceived quality of service (Firth et al., 2019; Allen et al., 2010; Pohjosenperä et al., 2020) and patient safety (Allen et al., 2010); abatement of access and treatment inequalities (Lwembe et al., 2016; Retzer, 2020); creation of support programs for vulnerable patients (Ayton et al., 2019; Grindell et al., 2020; Pereira et al., 2021); the re-generation of care pathways for the

chronically ill (Sorrentino et al., 2015; Pereira et al., 2021); evaluation protocols (Cruice et al., 2021) and the identification of outcomes (Retzer, 2020; Cruice et al., 2021).

From this also emerges the importance in health literacy for the realization of value co-production (Palumbo et al., 2016), the using of technologies in support of it (Leite et al., 2020) and the identification of different ways of involving patients and professionals that can be used to adapt to the context (Majid et al. al., 2019).

The review therefore offered the possibility of framing the areas that explored an active involvement of stakeholders in the activities of provision of health services and therefore of co-production of public value. However due to the reduced literature on the subject, the degree of diffusion of these practices is not understood: this study aims to fill this gap, or understanding whether these strategies within public healthcare organisations are already present but not yet widely disclosed and whether they are present as they are measured or if co-production is still in its embryonic. There is therefore a clear need to develop an in-depth understanding of the extent, in which hospitals (and in what areas) public value co-production takes place.

Through this empirical investigation it is analysed to what extent public value co-production practices are present within public healthcare organisations and drawing the conclusion how this can support and facilitate the active participation of the patient in the activities of public value co-production, through the design of actions aimed at promoting the active involvement of patients in relations with the healthcare provider, identifying what they are the possible tools that a healthcare company can adopt in order to facilitate co-production activities.

The present analysis work intends to investigate the question just described above and therefore understand to what extent the Italian public healthcare organisations adopt co-production practices in the areas identified by the literature to contribute to the design of the methods of service provision.

2. ANCHORING TO LITERATURE

The health system managerial logics have been questioned on a global level: the demand for resources and the prospects for long-term economic sustainability are increasing due to the growth in health services costs resulting from the aging of population, increasing diseases and technological advances and scientific innovations (Barello et al., 2012; Kjellström et al, 2019; Fusco et al., 2020).

However, the population has rising expectations of higher quality of services provided by public healthcare organisations who force policy makers and public managers to adopt strategies aimed at reducing health costs without compromising the quality offered (Berwick et al, 2008).

We are currently witnessing a managerial paradigm shift (Anderson and Funnell, 2005; Kjellström et al, 2019) that consists in an increasing adoption of new concepts such as 'public value' and 'public value co-creation' by public managers, (D'amour and Oandasan, 2005; Bennington 2011; Gittell, 2011; Moore, 2013; Moore, 2014; Ambrosini 2019; Andersen, 2020).

It is therefore necessary to ask whether and how publicness features contribute to what is valued by the public.

The answer to this question is that public management and public order should always be concerned with "*establishing, following and realizing public values*" (Jørgensen and Rutgers 2015, p.4); public value creation is therefore a specific area and should be linked to concrete public benefits (Min et al, 2020; Yang, 2016).

Public value involves the ability to define actions that create public value for the population (Naranjo-Gil et al. 2016; Nuti et al., 2018) and it does not correspond to the volume of services provided or the result achieved on patients in health treatment but in the ability of the health system to provide assistance to the neediest (Gray et al., 2017, Nuti et al., 2018).

For this reason, increasing attention is being given to methods for engaging citizens, or more generally, to involve stakeholders (Schillinger et al, 2013; Palumbo, 2017; Ambrosini, 2019) in re-designing services to give a tailored answer at this growing demand in health and social care (Barello et al., 2012; Palumbo, 2017) and in the provision of high quality health services (Palumbo, 2017; Fusco et al, 2020).

The expected benefits from the co-production concern the improvement of the services provided, a greater economic and financial sustainability of the health systems, the more efficient use of

resources and the possibility to increase the level of citizen satisfaction (Alford, 2009; Voorberg, 2015; Fusco et al, 2020).

However, at the organisational level it has been given little attention to the ability to engage patients in the co-production of health services and in the co-creation of public value (Palumbo, 2016a).

The literature on public value is growing rapidly but to this day contributions remain mostly theoretical or qualitative (Min et al, 2020).

The literature review conducted lead to understanding whether these strategies within public healthcare organisations are already adopted but not yet widely disclosed; this article focuses on understanding which hospitals and to what extent they invest in community benefit programs through public value co-production strategies.

2.1 THE ITALIAN INSTITUTIONAL FRAMEWORK

Italian healthcare has been subject to copious processes of reform and reorganization, which have repeatedly redefined the logical framework that underlies the health system of our country.

The Italian National Health Service (hereafter abbreviated as INHS) inspired by the founding principles of the English National Health Service, is established by Law 833/1978; in this text of the law it lays down its founding pillars of the system, namely the public responsibility for the protection of health, the universality and equity of access to health services, the totality of coverage according to the care needs of each one, the portability of care rights throughout the national territory and public funding through tax revenue (Adinolfi e Melè, 2005; Demasi, 2010)

INHS *de facto* gives definitive implementation to art. 32 of the Italian Constitution, which identifies the protection of health as a *fundamental right of the individual and interest of the community* and where the responsibility for achieving this purpose is attributed to the State.

It is therefore implied that the task of the INHS is to prevent, diagnose, treat and rehabilitate (Demasi, 2010).

The *Res Pubblica*, becomes the protagonist of the health care process, defining the financial burden of expenditure, the essential lines, the size of the offer as well as the laws to which the Regions should adhere and consequently that manage the local health units present in the territory (Ardissone, 2008; Demasi, 2010).

The *reform bis De Lorenzo and Garavaglia* of the two-year period 1992-93 (Legislative Decree 502/1992 and subsequent Legislative Decree 517/1993) as well as the *Bindi reform ter* of 1999 (Legislative Decree 229/1999) lead to profound changes compared to the initial founding regulations of the system, giving a clear turn in a corporate sense to health management, through a reconceptualization of the governance of the entire system; this introduces the corporatization of health facilities, their management according to managerial criteria, regionalization, attention to the quality of the services provided, accreditation of hospital facilities, competition between public and private actors, the introduction of supplementary funds, etc., while guaranteeing the concept of health as a collective good (Demasi, 2010).

This two-year period of lively regulatory proliferation, sees the introduction of the ticket, as a participation in the health expenditure requested directly from citizens based on the services requested.

This period of regulatory revolution in the field of health led to the amendment of Title V of the Constitution following the entry into force of the constitutional law of 18 October 2001, n. 3 and the identification of the Essential Levels of Assistance (LEA) with the D.P.C.M. 29 November 2001 with the subsequent additions (Demasi, 2010).

Article 117, paragraph 2 letter m) of the Constitution places on the State the exclusive power in the determination of the essential levels of benefits concerning civil and social rights that must be guaranteed throughout the national territory and the delimitation of the fundamental principles in the matter, to be defined by national law (Demasi, 2010).

The Regions are given concurrent legislative power in the field of: health protection, protection and safety at work, professions, scientific and technological research and support for innovation, nutrition, sports system, supplementary and supplementary pensions, harmonization of public budgets and coordination of public finance and the tax system (Demasi, 2010).

Following the revolution of the logical system of reference, the Central Government and the Regions are entrusted with specific tasks, namely the responsibility of identifying mechanisms to guarantee health protection for the citizen, ensuring universalism and equity of access.

With the introduction of the current framework of health federalism, the burden on the Government is to define a new -large health system, now composed of numerous government subjects, placed in a subsidiary system both in vertical and horizontal terms: all the institutional actors and health workers present in the territory, through different interventions and participations, collaborate in a common integrated prevention project, diagnosis, treatment and rehabilitation of health care for the patient in order to contribute to the realization of favourable conditions for the satisfactory implementation of the right to health (Demasi, 2010).

The INHS – unlike the British National Health Service – is highly decentralised and the 20 regions, as just explained, are each legally responsible for planning services and allocating financial resources (Demasi, 2010).

Local self-government implies financial responsibility, which allows regions to develop health strategies based on their own health needs.

National policy is therefore not taken up in a homogeneous way by all regions.

With the already mentioned reforms of the INHS, launched in 1992 and finalized with "Bindi ter" (Legislative Decree 229/1999), principles of competition between health service providers have been introduced with the dual objective - to increase the quality of care and contain health

expenditure (Grattini et al., 2020; France et al., 2020; Brenna et al., 2011; Maino et al, 2011; Demasi, 2010).

The hospital sector sees a radical change at this time: many private suppliers have been accredited to whom, similarly to public healthcare organisations, public funds have been granted for hospital activities provided under the INHS system (Grattini et al, 2020).

Each Region, through its Local Health Authorities (Italian abbreviation ASL, hereinafter Local Health Authority, LHA), is financially responsible for the health services provided to the resident population. In addition, through its internal taxation, it collects the necessary funds to finance its health sector.

Health funds are distributed from the regions to the LHA on the basis of capitation agreements.

At the beginning of the year, each LHA allocates a share of its budget for hospital activity: hospital care can be provided by independent public healthcare organisations (e.g. Hospitals, University Hospitals, Public Scientific Institutes of Hospitalization and Care (Italian abbreviation IRCCS), accredited private hospitals or directly public hospitals managed by the LHA.

Considering public providers - Public Hospital Trusts - they are independent public healthcare organisations controlled by a General Manager appointed by the region.

These are distinguished from the LHA with which they contract the volume and type of hospitalizations.

On the contrary, LHA hospitals are given a more limited autonomy, because they are managed directly by the LHA. University Hospitals and IRCCS (Institutes of Care and Research) are for the most part (public and private) educational facilities or hospitals that carry out research activities, for which they receive extra public funds for their part of research.

With these categories of suppliers (together with the accredited private actor, not taken into account in this research by virtue of its different legal nature), the buyer (LHA) stipulates a supply agreement, through which he contracts the number and type of health services as well as the constraints (global ceiling, tariff ceilings and cuts) in case of excess production.

The benefits, in case of hospitalization, are paid according to a DRG scheme, while the outpatient benefits are reimbursed according to a regional service tariff.

The internal organization of hospitals provides for a different nature of the production units, there is in fact a subdivision into simple operating units, complex operating units, departmental programs and intercompany operating units.

The difference between these is dictated by several factors, by the different nature of labour law, by the complexity of the activities carried out internally, by the size in terms of personnel belonging to the unit and by the fact that some units are developing on several structures at the municipal level to ensure high number and quality of care.

2.2 PHILOSOPHICAL POSITION

Philosophical questions consist of epistemological questions, that is, that the foundation of research is appropriate for the study of society and its manifestations (Bryman, 1984).

Most of the methodological literature states that the choice of a particular epistemological basis entails the choice of a method suitable for philosophical deliberations (Bryman, 1984).

Trow (1957) argues that the problems one decides to deal with scientifically determine the methods and that a technique can never be intrinsically superior to its supposed alternatives, but that probably a technique is more useful in some contexts than others.

This study aims to understand *the extent the Italian Public Healthcare Organisations adopt co-production practices*.

For this reason, the author, guided by the literature on the subject, adopts the quantitative methodological tradition that - according to the proposal put forward by Ricolfi (1997), can be defined as such when the analysis gives statistical representativeness of an entire population, market or segment, on the basis of a statistical sample.

The quantitative approach derives from positivism, whose foundation is that of an independently existing reality that can be described as it really is (Slevitch, 2011).

The ontological position of such an approach consists of an objective reality that exists independently of human perception (Slevitch, 2011; Sale et al., 2002), from which it follows that "*the ultimate truth exists and that there is only one truth*" (Slevitch, 2011, p.76).

Since the positivist current maintains that phenomena therefore have an objective reality, quantitative epistemology maintains that the investigator and the investigated are independent entities and, therefore, the investigator can study a phenomenon without influencing or being influenced by it (Slevitch, 2011; Sale et al., 2002; Denzin & Lincoln, 1994; Deshpande, 1983). For this reason - in quantitative orientation - the general relationship with the studied environment does not consider the reactivity of the subject as a basic obstacle, considering that a certain degree of controlled manipulation is permissible (Corbetta, 1999).

Moreover, the physical interaction with the individual subjects studied often does not provide for any real and tangible contact between the scientist and the actor of the phenomenon under investigation: in quantitative methods the subject studied is therefore passive (Corbetta, 1999).

The present analysis will therefore adopt an objectivist approach, defined by virtue of the independence between the investigator and the investigated (Smith, 1983), with the aim to investigate measures and to analyse the causal relationships between phenomena, within a framework devoid of values and with the aim of generalizing the result (Denzin & Lincoln, 1994).

In order to eliminate threats to validity, this approach involves adopting various strategies to ensure that values and biases do not affect the results (Slevitch, 2011): the results of the research are considered valid, provided that the prescribed procedures have been strictly followed.

In this study, as in the quantitative tradition, the link between theory and research is articulated in sequential phases, according to a deductive approach - the theory precedes observation - which moves in the context of justification, that is, of support, through empirical data, of the theory previously elaborated on the basis of the literature (Corbetta, 1999).

According to this orientation, the explanation of concepts and their translation into variables takes place even before starting the research (Corbetta, 1999).

The social survey is the most widespread research tool within quantitative research because it responds well to the concerns posed by objectivism (Bryman, 1984): through the items of the questionnaire the concepts become concretely operational; objectivity is ensured by the distance between observer and observed and reinforced by the possibility of external glances on one's questionnaire; replication can be implemented by applying the same instrument in another context; the problem of causality has been supported by the emergence of new techniques of data analysis (Bryman, 1984).

The theoretical relevance of the survey methodology also reverberates in the number of scientific productions of the methodologists, so as to embody the typical representation of social research: to this we owe the name of *standard research* or *main steam* (Ricolfi, 1997).

As already mentioned, the survey object of this study, with a deductive approach, was preceded by an exploratory investigation, through which the data were collected primarily to build the project; this was followed by the ideation phase where the level of cognitive learning to be reached by defining the general concepts and research questions was realized.

Below, a preliminary operational phase was carried out where the concepts were translated into detectable entities and the fulfilment of all the procedures that lead to the construction of the data, including the design of the questionnaires, the analysis of the sample that ends with the

administration of the questionnaire and the organization of the results obtained within the data matrix (Niero, 2005).

In conclusion, the final drafting of the project was carried out where, in addition to the description of what emerged from the analysis, there are a series of personal considerations on the phenomenon under investigation (Niero, 2005). Below is the outline of the steps (Figure 8) adopted according to the approach of Niero (2005).

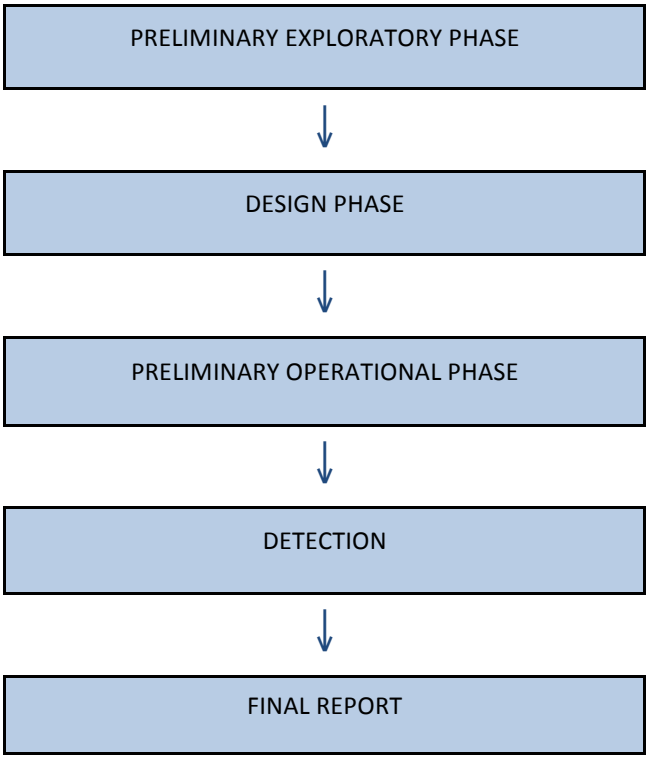

Figure 8. Reworking of the transversal survey setting for phases of Niero (2005)

3. RESEARCH QUESTION

From the literature review conducted in the field of public value co-production in public healthcare organisations at international level, some relevant issues emerged.

However, it is not that clear in what extent co-production strategies and tools in support of it, are widespread Italian public healthcare organisations.

The RQ of the study is therefore:

In what extent co-production strategies and tools in support of it are widespread in Italian public healthcare organisations?

From this question arise 4 sub-questions. The first (RQ_1) aims to investigate the degree of diffusion of the strategies identified by the review and is therefore in turn divided into 10 questions.

The remaining questions (RQ_2) (RQ_3) (RQ_4) aim to probe the degree of application of means and tools to support co-production. Each of them contains multiple investigations.

RQ_1 - to what extent the facility involves patients/citizens for… ?

Through this question the author intends to investigate the degree of diffusion of the strategies detected by SLR. The following questions investigate the degree of diffusion of each co-production strategy of each contribution that emerged from the analysis. Especially:

rq1a ... increase the perceived quality of service?

This strategy is perhaps the one that finds more application in public healthcare organisations, in fact it is the subject of three experiences (Allen et al., 2010; Firth et al., 2019; Pohjosenperä et al., 2020). Allen et al., 2010: this is the oldest and most cited paper among the extracted papers. This Australian experience reports an example of co-production in order to improve the maternity path

and identify a motion to avoid adverse events. Frith et al., (2019) adopt co-production to identify key elements aimed at hospital development for the improvement of healthcare. Pohjosenperä et al., (2020) implement co-production to improve the hospital logistics service.

rq1b ... improve patient safety?

Only one experience has applied co-production as a strategy aimed at improving patient safety (Allen et al., 2010): as already described above this paper also uses co-production in order to avoiding adverse events in maternity.

rq1c ... identify ways to break down barriers to access services?

The implementation of this strategy is part of the Lwembe et al. (2016) contribution, which aims to break down the inequalities in mental health service access and provision of the black and minority ethnic communities. Through co-production, an effective models that lead to improved access and better outcomes are yet to be established was created.

rq1d ... identify ways to eliminate differences in the patient's therapeutic treatment?

This item emerges is based on the contribution of Retzer (2020), who used co-production to build the core outcome set (COS) for bipolar trials, until then not available for bipolar –community.

The COS "is a standardised collection of outcomes to be collected and reported in all trials within a research area. A COS can reduce reporting bias and facilitate evidence synthesis" Retzer (2020).

rq1e ... the design of support programs for vulnerable patients?

The co-production strategies aimed at creating support programs for vulnerable patients are based on three papers of the literature review: Ayton et al., (2019), Grindell et al., (2020) and Pereira et al., (2021).

Ayton et al., (2019) applies co-production to identify a program to support the elderly.

Grindell et al., (2020), used co-production between doctors and people with malignant pleural effusion (MPE), in order to help doctors to build a tool that supports them in decisions for the choice of treatment, which is currently difficult to implement as the choice of treatment depends on numerous factors.

Finally, the contribution of Pereira et al., (2021) consists of an experience aimed at identifying the key aspects on which to base a service in support of the chronically ill.

rq1f ... the redesign of care pathways for chronic patients?

This item emerges from the contribution of Sorrentino et al., (2015) which aims at co-production in order to analyse coordination processes between hospital and chronic cystic fibrosis patients in order to improve the clinical path of the outpatient parenteral antibiotic therapy service (OPAT).

rq1g ... the design of services?

This item emerges is based on the article by Pereira et al, (2021), whose contribution has already been described above.

rq1h ... in the development and evaluation of treatment protocols?

This item comes from the article by Cruice et al., (2021) in which co-production is applied between patients suffering from aphasia and speech therapists in order to create an evaluation and treatment protocol.

rq1l ... the identification of possible desired therapeutic outcomes?

This item emerges is based on the article by Retzer (2020) and Cruice et al., (2021), both contribution has already been described above.

rq1m ... the design of diagnostic, therapeutic and assistance pathways?

This item is based on the contributions already described above by: Sorrentino et al., 2015; Pereira et al 2021; Ayton et al., 2019; Grindell et al, 2020, Cruice et al., 2021; Retzer, 2020.

Through RQ_2 we intend to understand to what extent the means of co-creation are widespread within hospitals. The 5 items that make up the main question (RQ_2) are the results of the scientific contribution of Majid et al. (2019) which has as its object of research the identification of co-productive means.

***RQ_2** to what extent the unit… ?*

rq2a ... is it involved in meetings with advisory committees of patients and family members?

rq2b ... is it involved in meetings with patient representatives and patient advocacy organisations?

rq2c is it involved in internal meetings to share critical issues that have arisen in the service delivery phase together with patients/citizens?

rq2d ... is it involved in patient training sessions together with internal professionals so that patients/citizens can have a voice in the Hospital?

rq2e ... do you use technologies for patient/citizen engagement?

RQ_3 aims to understand the degree of adoption of the technology for co-productive purposes. This question with its articulations are based on the article by Leite et al., 2020.

***RQ_3** to the extent to which the unit uses technologies?*

rq3a ... collect information relevant to the design of services?

rq3b ... increase interactions with patients/citizens receiving services?

rq3c ... increase the level of patient/citizen involvement?

rq3d ... share the decision-making processes on the articulation and delivery of services?

Through the RQ_4 we want to understand the degree of agreement of the directors of complex structure on some statements that contain in the application.

RQ_4 *to what extent does it agree with the following statements?*

The first two questions focus on the use of health literacy as a tool to trigger co-production within the public healthcare organisations; the two statements are mutually based in the contributions of Palumbo et al., (2016) and Palumbo et al., (2017).

rq4a In the last 5 years, the organisation has implemented health literacy improvement activities aimed at external stakeholders

rq4b In the last 5 years, the organisations has implemented health literacy improvement activities aimed at internal stakeholders

The next two questions want to deepen the degree of agreement of the directors to the evidence reported in the article Nuti et al., (2018) according to which, current performance measurement systems are not able to detect the perspective of the patient / citizen for internal purposes nor to provide useful information for the patient/citizen. They are therefore ineffective for understanding where a company can go to create public value.

rq4c The performance measurement systems in place detect the perspective of the patient / citizen for internal purposes

rq4d The performance measurement systems in place provide useful information for the patient/citizen

The next question finds scientific foundation in the contribution of Sorrentino et al., (2015) according to which co-production is effective only if there is a strong managerial commitment in implementing it. This is why we want to understand how much middle management is aware of the advantages of this practice.

rq4e The involvement of patients/citizens in defining how services are delivered leads to innovation

The question aims to investigate the degree of autonomy of the operating unit in the involvement of patients; this question arises from the conclusions of the study by Frith et al., 2019 which shows how the application of co-production is challenging from many points of view and how it needs support (for example: technological services that could facilitate the co-production process, through the use of social media or company sites). This difficulty of realization also arises from an adequate investment of staff time and the costs associated with the realization, which do not always find space in the public administration.

rq4f The unit has a good degree of autonomy in the involvement of citizens / patients

All these questions will be included in the questionnaire that will be submitted to the directors of complex operating units, below adequately described in the dedicated section (4.1).

4. RESEARCH DESIGN

Scientific research represents a creative process of investigation that develops according to a rigorous itinerary as well as pre-established procedures that are now consolidated within the scientific community.

According to the literature, empirical research must be public, controllable and repeatable in order to be defined as scientific (Corbetta, 1999).

By virtue of this, this study has followed a rigorous path - typical of social research that starting from the study of the background of the main international pronouncements on the co-production of public value in public healthcare organisations, formalizes a research question verified subsequently through the process of operationalization, i.e. data collection and analysis, of transformation of hypotheses into empirically observable statements.

After the diachronic examination of literary production, the question of empirical research was circumscribed.

Once the objectives of the investigation have been defined, the sample survey is articulated, according to which the research conducted through a questionnaire is central to detecting information by questioning the same individuals object of the research belonging to a representative sample, through a standardized interrogation procedure in order to study the relationships existing between the variables (Corbetta, 1999).

In order to achieve a high degree of efficiency and cognitive effectiveness, three fundamental steps are identified to build the questionnaire: first a rough structure is identified, a scaffolding for the investigation identifying the macro areas of observation; then the variables are introduced, transformed into clear and synthetic questions to be submitted to the interviewees; finally, a screening of the questionnaire is carried out identifying the possible anomalies and corrections to be made (Niero, 2005).

The scheme adopted to carry out the questionnaire followed the approach suggested by Meraviglia (2005) (Figure 9).

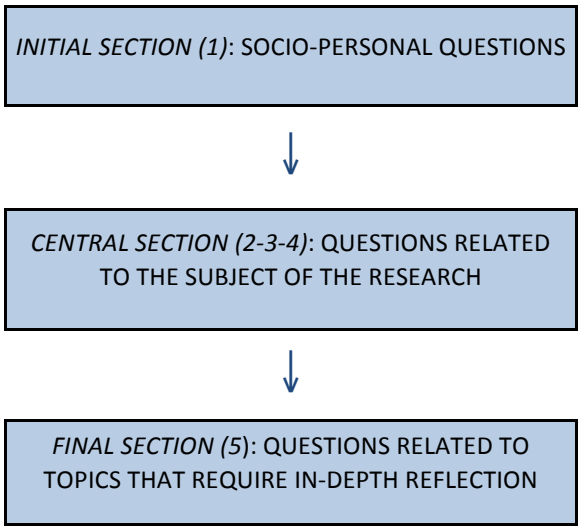

Figure 9. Scheme of habitual structure of the questionnaire according to Meraviglia (2005) adapted by the author

In order to collect data and information congruent with the objective of this research, the researcher administered a questionnaire in a given period of time with a cross sectional inquiry.

The survey in the Italian health context requires first of all the identification of the statistical sample to which to address the questionnaire: the empirical analysis focuses on co-production practices in operating units within public healthcare organisations (LHA, University Hospital, IRCCS Hospital) of 6 regions of Northern Italy included in the sample: Emilia Romagna, Friuli Venezia Giulia, Lombardy, Piedmont, Tuscany, Veneto.

The sampling method used was a sampling of probabilities, stratified (Yu et al., 1983) at the regional level but is not representative of the whole of Northern Italy.

The sample consists of 1389 directors of complex units belonging to all the LHA, University Hospital, IRCCS Hospital of Emilia Romagna, Friuli Venezia Giulia, Lombardy, Piedmont, Tuscany, Veneto.

The choice to address the questionnaire to this professional figure within the hospitals because it is due to the fact that you want to investigate the co-production practices at the micro level (Palumbo, 2016) therefore the director of the operating unit is the figure who most has knowledge and adherence to the decisions and actions that are adopted at micro level.

The population of the sample is composed of the directors of complex operating units who have made their email contact available on the company website: it is not representative of the total of the directors of operating units of all the Regions.

In addition, the exclusion of some Regions from the sample depended precisely on the failure to update the company portals of the LHA, University Hospital, IRCCS Hospital: some of these the websites were not updated and it was not possible to identify the responsibilities of the operating units with the corresponding names and contacts.

The contact method was an e-mail containing the web link to access the questionnaire.

Considering the entire sample (1389 directors), 87% of the population did not respond to the questionnaire (1202 directors), 4% partially answered the questionnaire (60 partial answers), 9% responded completely (127 complete answers).

The quantitative data collection method was adopted to obtain a comprehensive view (Opoku et al., 2016) of public value co-production practice in the Italian public healthcare organisations.

The literature suggests that surveys are useful for measuring opinions on a topic by making them less subjective (Bryman, 2004)

The questions addressed to the main players in the healthcare landscape are formulated some with a closed answer, codified and collected in homogeneous clusters by topic.

From the different types of demand styles available, the Likert scale is employed.

The Likert scale is often adopted for validation through numerous statistical tests (Chiarini et al, 2017) as the procedure that underlies the Likert scales consists in the sum of the points attributed to each individual question. The format of the individual questions of the Likert scale is represented by a series of statements for each of which the interviewee must say if and to what extent he agrees (Corbetta, 1999; Sullivan et al, 2013).

In this study questions were based on Likert scale 5 point which therefore provided for the answers: *1 – In no way; 2 – A little ; 3- Quite; 4 – Very; 5- Completely*.

4.1 THE QUESTIONNAIRE

The questionnaire was addressed to 1389 directors of complex operating units.

This is transmitted through "Qualtrics" software and accompanied by a short but comprehensive e-mail in which the objectives of this research are reported.

Respondents could quickly fill out the questionnaire by accessing the web link. The compilation took about 10 minutes. The language used was Italian; the questionnaire can be consulted, translated into English, in *Appendix 1* of this thesis.

The questionnaire remained available for completion for 35 days. Within the 35 days; every week the reminders were sent starting from week 3.

The questionnaire was built on the findings that emerged from the review, or that the areas of application of co-production within hospitals appear to be: in the improvement in perceived quality of service (Firth et al, 2019; Allen et al., 2010; Pohjosenperä et al, 2020) and patient safety (Allen et al., 2010); in abatement of access and treatment inequalities (Lwembe et al., 2016 ; Retzer, 2020); in the creation of support programs for vulnerable patients (Ayton et al., 2019; Grindell et al, 2020); Pereira et al, 2021); for the re-generation of care pathways for the chronically ill (Sorrentino et al., 2015; Pereira et al 2021); in the co-creation of evaluation protocols (Cruice et al., 2021) and in the identification of outcomes (Retzer, 2020; Cruice et al., 2021). Furthermore, the review shows the importance in health literacy for the realization of value co-creation as an enzyme of co-creation (Palumbo et al., 2016), the identification of different ways of involving patients and professionals that can be used to adapt to the context (Majid et al., 2019), the role of technologies in order to co-create public value (Leite et al., 2020) and the need for performance measurement systems to refocus the stakeholder perspective towards value creation, avoiding dysfunctional behaviours (Nuti et al., 2018).

On the basis of the results of the reviews set out above, the questionnaires is structured in 5 sections and by 32 questions were therefore formulated.

The first Section including 7 questions are aimed at facilitating the interviewee to answer the entire questionnaire and are characterized by a socio-demographic matrix to acquire demographic information regarding the type of healthcare organisation in which the director of operating units carries out his activity: in which region he operates, the type of public healthcare organisations in which he operates, the reference population area of the organisations to which its operating unit belongs, the number of beds in its complex operating unit, the type of complex operating unit, the age of the director, how many years he has been serving as director.

The literature suggests that the inclusion of simple demographic issues for the start of a questionnaire can encourage participants to more effectively provide the correct information, thereby increasing the rate of completion of the questionnaire (Meraviglia, 2005).

The central body of the questionnaire consists of *Section 2* including 10 questions closely related to the core of the survey where it is requested to indicate the extent to which the unit involves patients / citizens in the areas identified by the review. In this section as well as for the following ones it is required to respond through the use of the Likert 5 scale.

Section 3 includes 5 questions, where it is asked to what extent and how patients or representatives of these are involved.

Section 4, including 4 questions, asks to what extent technology is used as a means of implementing co-production, in the areas identified by the review.

In the final section of the survey (*Section 5*), on the other hand, the closing 6 questions that mark the epilogue of the survey are indicated and require a final reflection on the degree of agreement on statements regarding the use of health literacy and current measurement systems.

The data collected by the questionnaires are, subsequently, transferred through the use of the "Qualtrics" site in a Microsoft Excel spread sheet and analysed.

The information provided by the survey participants shall be summarised using a descriptive statistical approach.

5. FINDINGS

In this paragraph the results of the questionnaire will be presented according to the sections contained therein.

Section 1

Section 1 represents the section of socio-demographic context in which this study is placed.

The directors answering the questionnaire belong to public healthcare organisations present for 28% in Emilia Romagna (n. 53 hospitals out of 187), for 25% in Lombardy (n. 46 hospitals), 19% in Piedmont (n. 35 hospitals), in Veneto 10% (n.18) and for 9% in Friuli Venezia Giulia (n.17) and Tuscany (n.17).

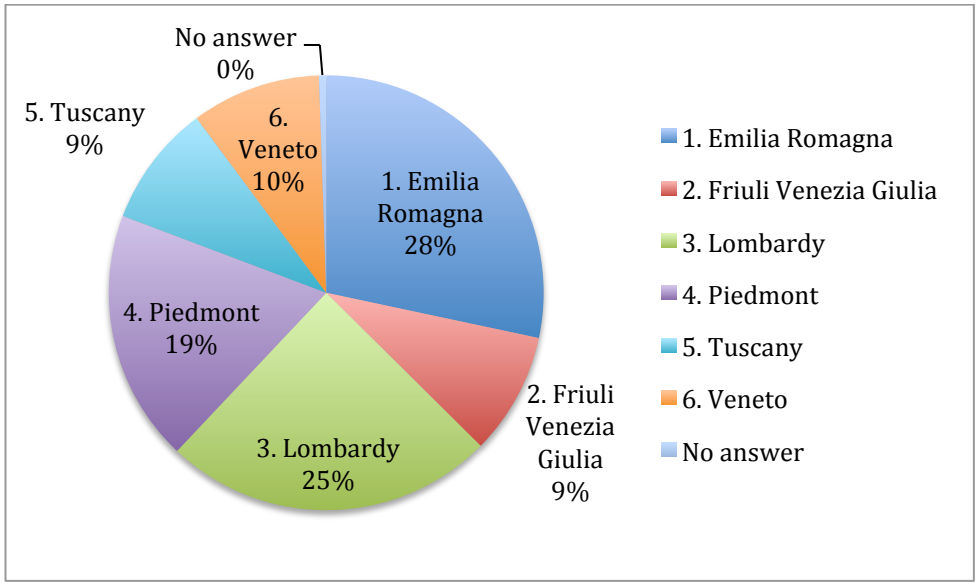

Figure 10. The Regions where the hospital to which respondent belong are located

The facilities in which they operate are 43% LHA, 25% Public Hospital, 23% University Public Hospital and 8% IRCCS.

33% of these public healthcare organisations serve a catchment area between 300,000 – 600,000 inhabitants, followed by 23% serving 150,000 – 300,000 inhabitants and 22% 600,000 – 1,200,000.

The directors belong to operating units, 40% medical and 24% surgical, most of which have an occupation of less than 30 beds.

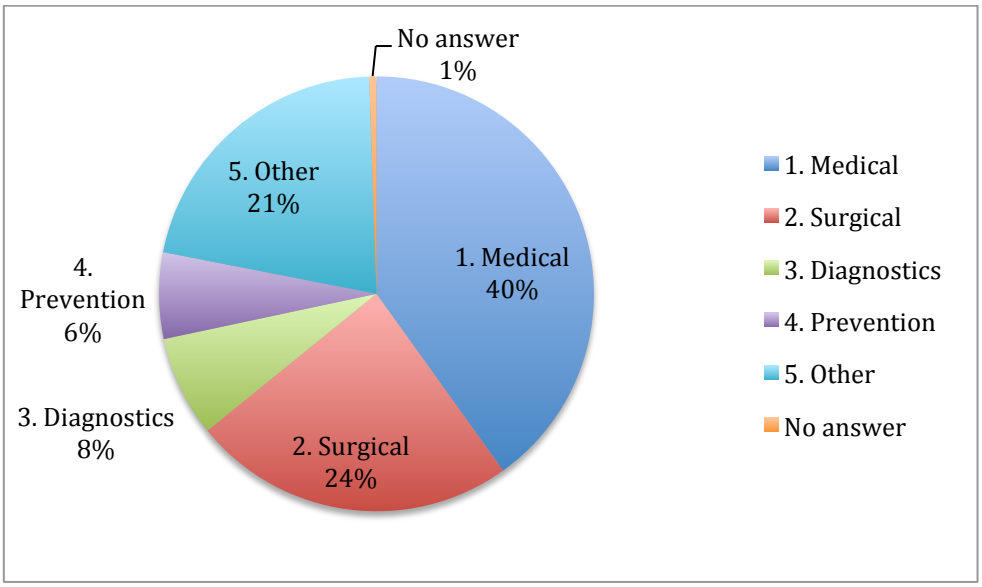

Figure 11. Type of operational units of the directors involved in the survey

The age of the responding directors, the majority (68%) belongs to the "More than 60 years old" group and 74% of respondents have a directive experience of at least 10 years.

Section 2

It represents the central part of the study and is designed to measure the degree of diffusion of co-production practices in the areas detected by the previous review.

Question #1, intends to detect the extent to which the complex operating unit involves patients / citizens to increase the perceived quality of the service. 37% of respondents gave an answer of 3 "*quite*", while 8% answered both "*completely*" and "*in no way*".

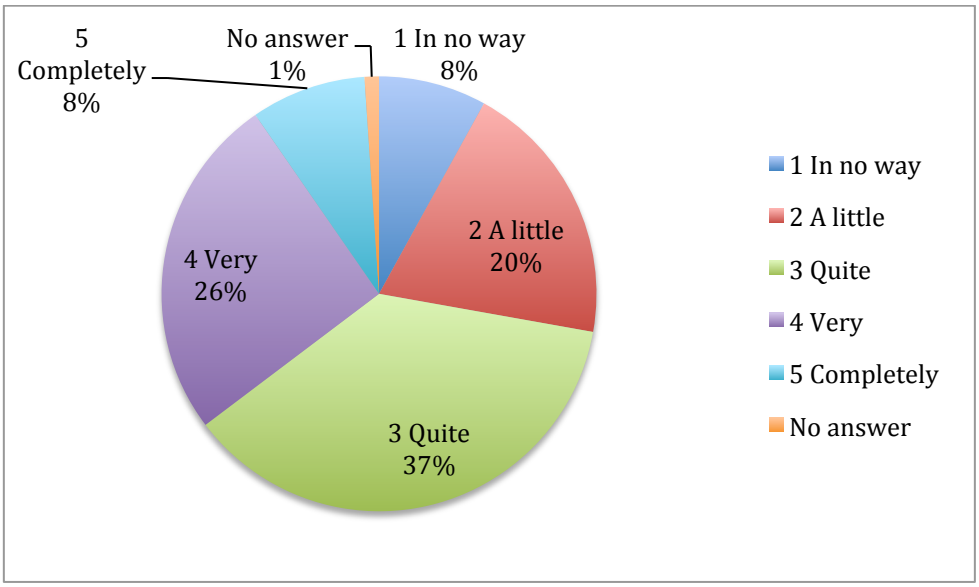

Figure 12. Degree of involvement of patients / citizens in order to increase the perceived quality of the service

Question #2 investigates the extent to which patients/citizens are involved to increase patient safety. Also in this question the evaluation extremes have very close percentages: 11% "in no way" and 12% "completely". 28% (53 users) assigned the central rating of 3 "quite". Question #3, is aimed at understanding the extent to which the operating unit involves patients / citizens to identify ways to break down barriers to access services; in this answer the not at all constitutes 15% and the almost not at all, represented by (2) represents 26% as well as (3), so there is a shift more towards the non-existence of this strategy.

Through question #4 it is understood to what extent patients / citizens are involved to identify ways to eliminate the differences in therapeutic treatment of the patient: 30% of the answers are represented by the central judgment (3), while the "a little" 20% and the "very" represent 19%, however the "in no way" prevails with 15% compared to the "completely" with 12%. Question #5 investigates the involvement of patients/citizens for the design of support programs for vulnerable patients; this question was answered as follows: 28% attributed the rating "very" (4), those who answered "completely" (10%) were in the minority compared to the opposite score "in no way" with 14%.

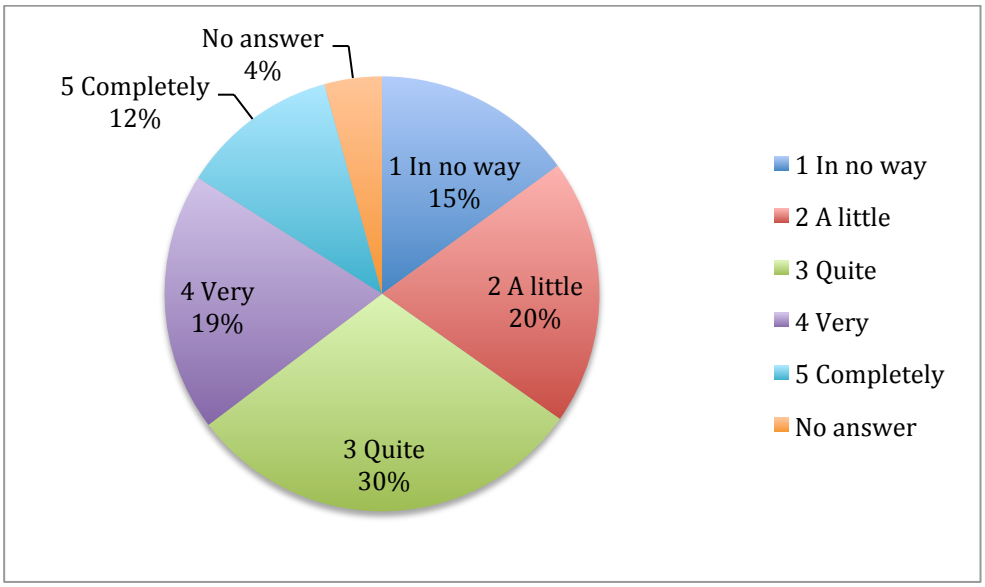

Figure 13. Degree of involvement of patients / citizens in order to identify ways to eliminate the differences in therapeutic treatment of the patient

Question #6 intends to measure the involvement of patients/citizens in the redesign of care pathways for chronic patients: the central assessments represent about the same population, who expressed (2) is 20%, who expressed (3) 23%, who expressed (4) 25%, mostly the "in no way" with 15% compared to "completely" with 10%.

Question #7 aims to understand the extent to which the complex operating unit involves patients/citizens in the design of services: as in the previous one, we have the central assessments representing about the same population, who expressed (2) is 22%, who expressed (3) 27%, who expressed (4) 21%, mostly the "in no way" with 19% compared to "completely" with 8%.

Question #8 measures the involvement of patients/citizens in the development and evaluation of care protocols; this response was the one with the highest percentage of "in no way" (21%) compared to all the previous ones, followed by a neutral response of (3) with 26% followed by "very" (4) and 22% by "a little" (2), 20% while only 8% is represented by "completely".

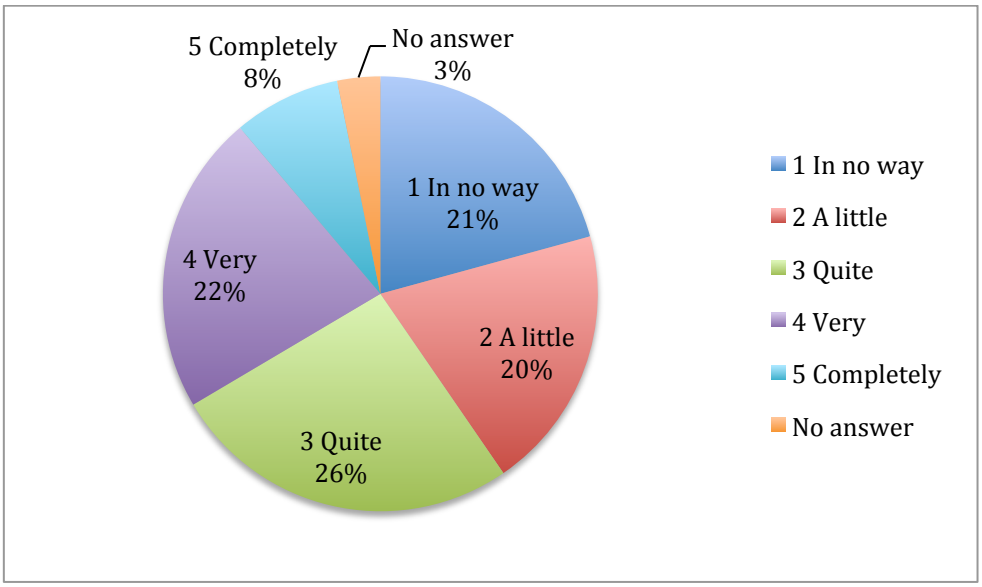

Figure 14. Degree of involvement of patients / citizens of development and evaluation of care protocols

Question # 9 notes the degree of involvement of patients / citizens for the identification of possible desired therapeutic outcomes; even in these evaluations the "in no way" represents a high percentage (19%) compared to all the previous ones, followed by a neutral response of (3) "quite" with 26% followed by and "a little" (2) 24%, "very" (4) 21% while the lowest rating is represented by the "completely" with only 6%.

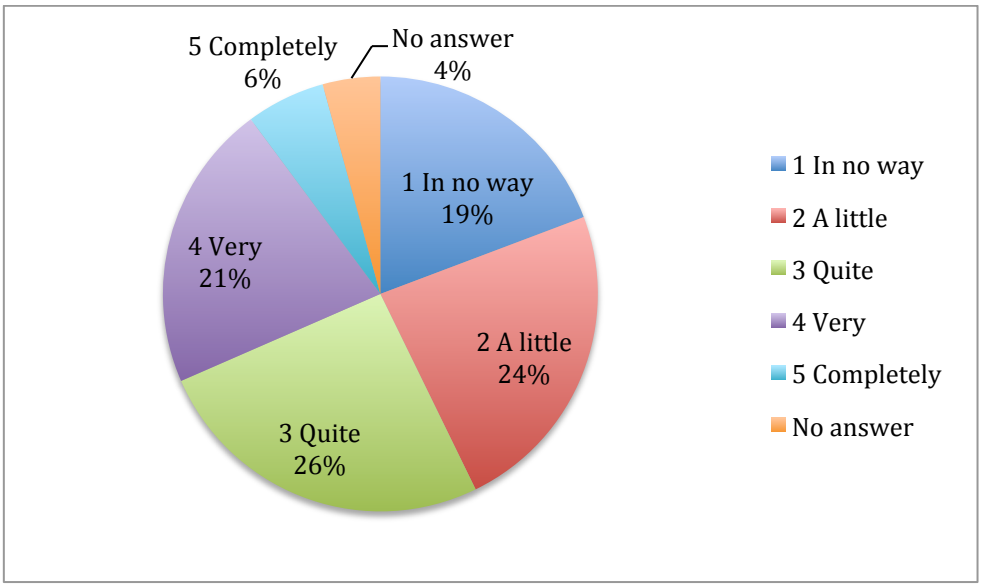

Figure 15. Degree of involvement of patients / citizens for the identification of possible desired therapeutic outcomes

The last question of this section, #10, the degree of involvement of patients / citizens in the design of diagnostic, therapeutic, assistance pathways: "in no way" and "completely" are very close, respectively with 16% and 15%. The "very" (4) and the central "quite" rating (3) represent 24% each, while the "a little" is represented by 18%; to this question it seems that the answers of adoption this practice are greater than those of non-adoption.

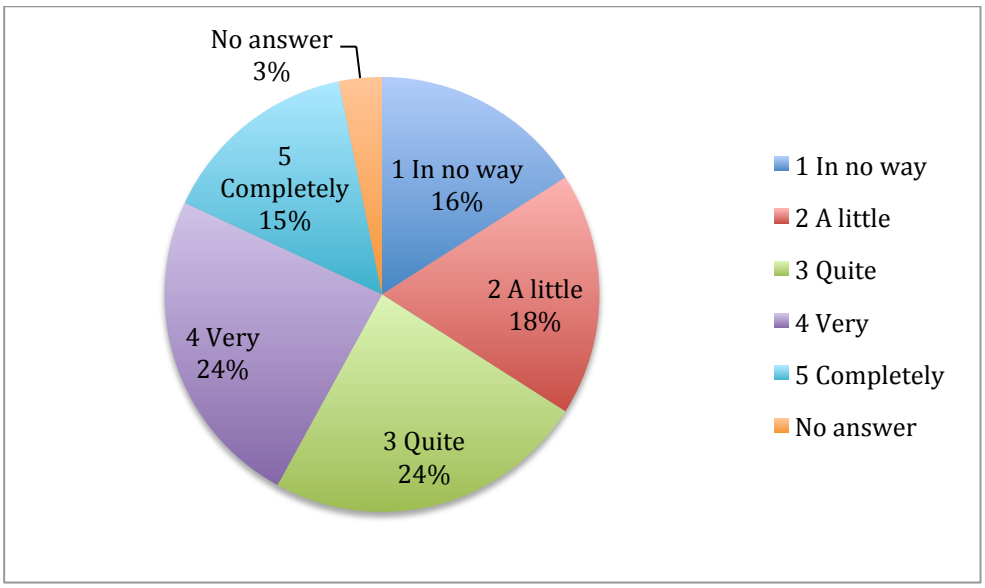

Figure 16. Degree of involvement of patients / citizens in the design of diagnostic, therapeutic, assistance pathways

Section 3

This section investigates the extent to which patient engagement strategies are widespread within Italian public healthcare organisations. This section consists of 5 questions on how to engage the review.

Question #1 measure by which the operating unit implements meetings with advisory committees of patients and family members. 40% of respondents said that "a little" (20%) and "very" (20%) involve patients and family members in advisory committees, 27% respond (3) "quite" while only 9% "completely".

Question #2 intends to investigate the extent to which the operating unit is involved in meetings with patient representatives and patient advocacy organizations.

This question records the following answers: as in the previous one, 40% of respondents said that "in no way" (20%) and "a little" (20%) have taken this action; the majority (27%) who say they have adopted "quite", 18% "very" and 10% "completely".

Question #3 aims to understand the extent to which the operating unit is involved in internal meetings to share critical issues that have arisen in the service delivery phase together with patients / citizens. As in the previous two answers, the "in no way" (22%) and "a little" (20%) represent a large portion of respondents; "quite" represents 26% of respondents, while "very" represents 23% which is the highest value so far detected, while "completely" 5% is the lowest so far .

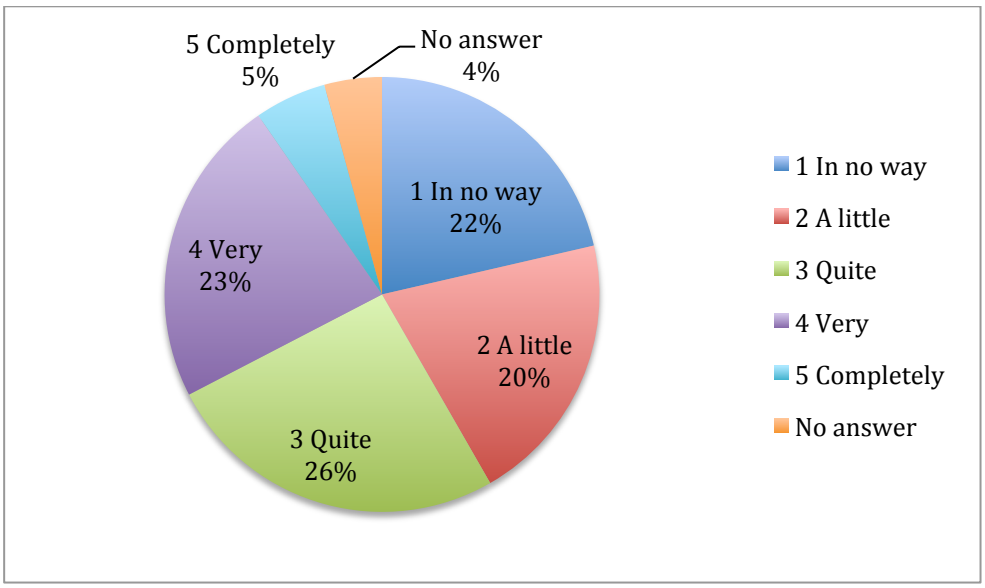

Figure 17. Degree of involvement of patients / citizens in internal meetings to share critical issues that have arisen in the service delivery phase

Question #4 aims to measure the degree to which the complex operating unit is involved in moments of patient training together with internal professionals so that patients / citizens can have a voice in the organisation.

The most frequent answer to this question is "a little" (29%) followed by "in no way" 26%; “quite” (22%) and “very” (14%) are less frequent, always stable the reduced representativeness of the "completely" (5%).

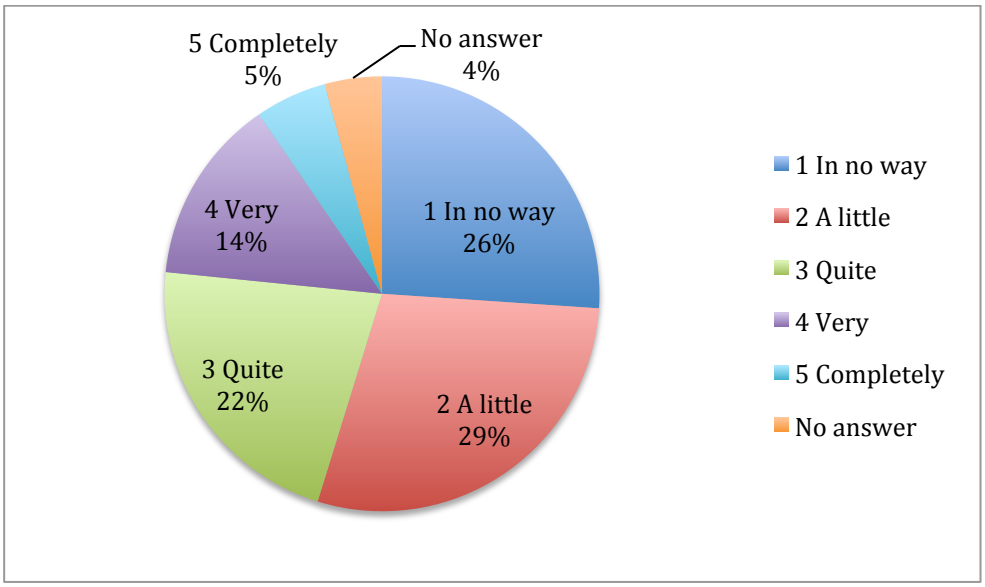

Figure 18. Degree to which the operating unit is involved in moments of patient training together with internal professionals so that patients / citizens can have a voice in the Hospital

Question #5 aims to understand the extent to which the complex operating unit uses technologies for the involvement of patients / citizens. As in the previous one, the most frequent answer to this question is "rarely" (31%), followed by sometimes (24%), "never" 21%, often 15% and constant always 5%.

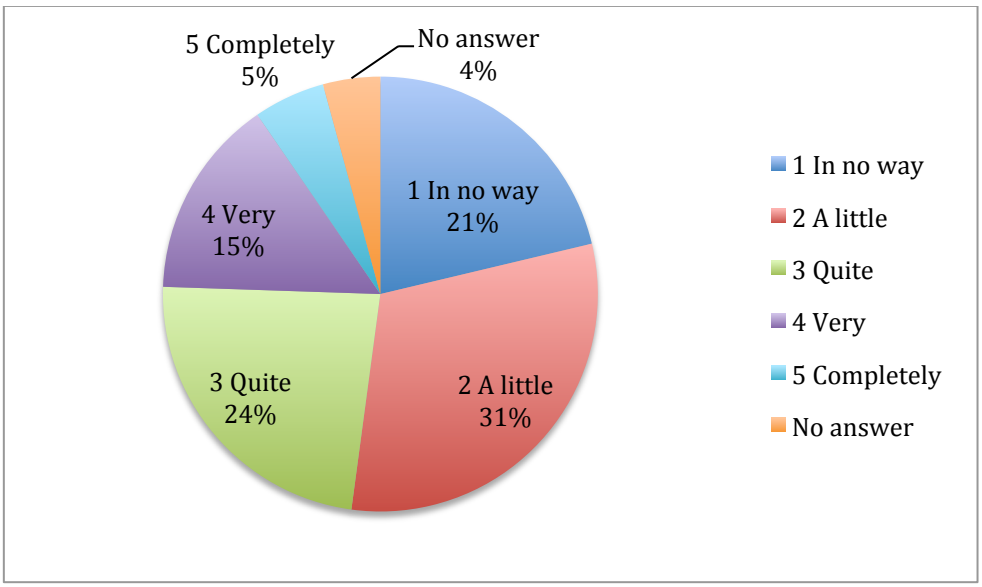

Figure 19. Degree of use of technologies for the involvement of patients / citizens.

Section 4

This section aims to understand the use of technologies for co-production purposes.

Through Question #1 it is requested to indicate the extent to which the complex operating unit uses technologies to collect information relevant to the design of services. The most frequent answer to this question is represented by the "a little" with 34% and “quite” 29%, the extremes "in no way" for 17% and “completely” with 5%.

Question #2 is aimed at understanding the extent to which the complex operating unit uses technologies to increase interactions with patients/citizens receiving services; the majority of respondents answered this question "a little" (32%), followed by 29% "quite". 18% answer that this action never takes place and while 4% answer that it always happens.

Question #3 intends to investigate how much the complex operating unit uses technologies to increase the level of patient/citizen involvement; even this action seems to be not widespread, given by the most frequent response "a little" (31%), "quite" 29%, in no way 20%. Very (12%) and Completely (4%) they represent only 16% of the population.

Question #4 aims to understand how much the complex operating unit uses technologies to share decision-making processes on the articulation and delivery of services. At this answer there is the highest value of the "in no way" (27%); the most frequent response is “a little” (32%) and “quite” (28%). The lowest values are also recorded of “completely” (3%) and “very” (7%).

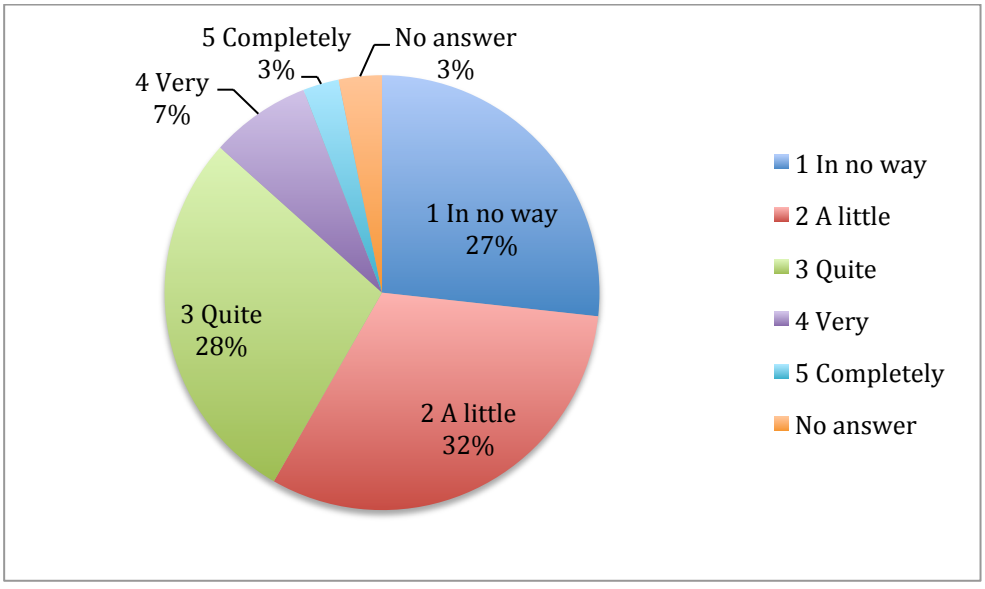

Figure 20. Degree of use of technologies to share decision-making processes on the articulation and delivery of services.

Section 5

This section requires the degree of agreement of the participants with some statements regarding the use of tools in support of co-production strategies of public value.

Question #1 intends to investigate whether in the last 5 years, health literacy improvement activities have been implemented in the organisation aimed at external stakeholders.

The most frequent answer is "quite" 27%, then "a little" 26%, "in no way" 20% while “very” 17% and “completely” (5%) present only 22% of respondents.

Question #2 aims to understand if in the last 5 years, health literacy improvement activities have been implemented in the organisation aimed at internal stakeholders. To the answers in these questions we see an “very” value of 20%, “completely” is always poorly represented with a 5%, “a little” and “quite” both 27% and “in no way” 17%.

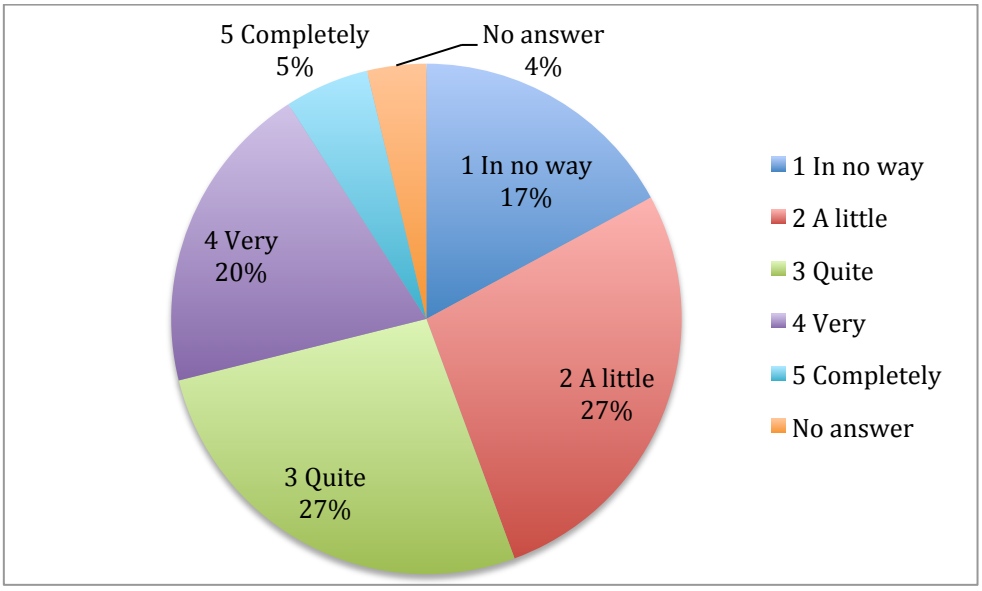

Figure 21. Implementation of Health literacy improvement activities in the Hospital aimed at internal stakeholders in the last 5 years

Question #3 aims to investigate whether the survey participants believe that the performance measurement systems in place detect the perspective of the patient / citizen for internal purposes.

The most frequent answer to this question is given by 30% of “a little”, followed by “quite” 25%, “In no way” 19% and “completely” 3%.

Question #4 aims to understand the degree of agreement of the participants that the performance measurement systems in place provide useful information for the patient/citizen. The most frequent answer to this question is given by 30% “quite”, followed by “a little” 24%, “very” the 21% who record in this answer its highest value and “completely” stable the reduced representativeness of 3% ever.

Question #5 wants to understand the degree of agreement with the statement that the involvement of patients / citizens in the definition of the mode of delivery of services leads to innovation. The majority of respondents gave an answer (3), “quite”; 23% of these (4) "very", followed by 18% of "in no way" and 4% “completely”.

Question #6 asks if the complex operational unit has a good degree of autonomy in the involvement of citizens / patients: the most frequent answer is always the central (3) with 31%, 22% report "a little" (2), 20% “very”, 15% “in no way” and only 6% "completely".

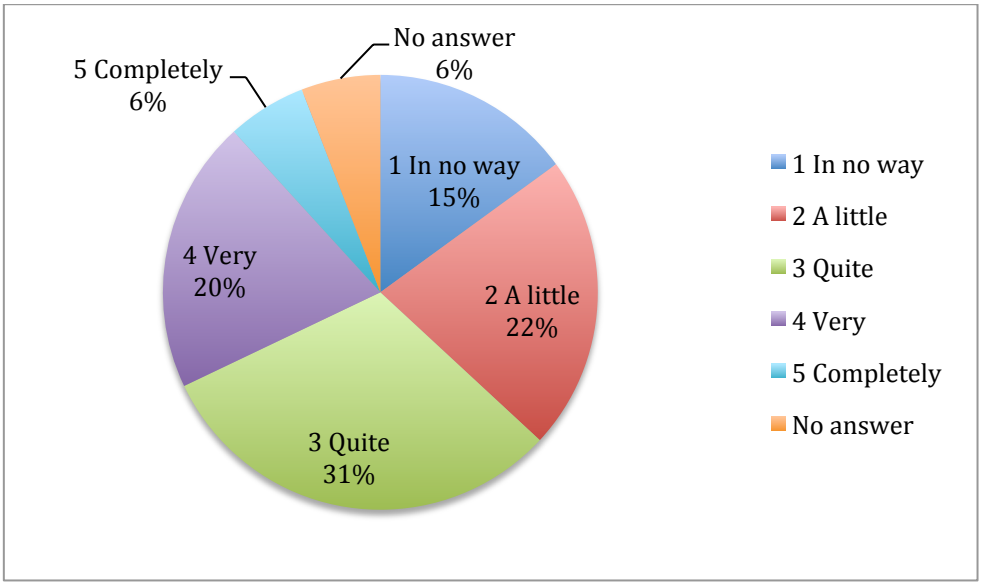

Figure 22. Degree of autonomy in the involvement of citizens / patients of the operational unit

6. DISCUSSION

The survey conducted in 187 operating units of public healthcare organisations in Northern Italy confirmed that like the theoretical development also the practical implications in terms of co-production of public value appear in the embryonic state.

Compared to the 10 strategies of co-production of public value identified by the literature, it seems that the most widespread practice is the involvement of patients / citizens in the design of diagnostic, therapeutic, care pathways which records the highest value of (5 - completely) (15%) together with a (4) "very" of 24%. The literature supporting this practice represents 29% of the entire literature (Sorrentino et al., 2015; Pereira et al 2021; Ayton et al., 2019; Cruice et al, 2021; Grindell et al, 2020) and shows that an inclusion of the voice of consumers, through co-production, in a re-design of services based on the patient experience, results in improved health outcomes (Sorrentino et al., 2015; Pereira et al., 2021); it is also believed to be a key factor in preventing hospital readmissions (Pereira et al., 2021). To the same question there was a 16 % who replied that this practice is in no way implemented: the literature itself suggests that research is needed to improve awareness and understanding of the role of co-production in health services, both by suppliers and consumers (Pereira et al., 2021) because the contribution of Sorrentino et al., (2015) it is reported that the key to the success of co-production is the strong managerial commitment in its implementation.

The involvement of patients/citizens in the design of support programs for vulnerable patients also appears to be a widespread practice: 28% attributed the rating "very" (4). The focus on support programs for vulnerable patients is also evident from the literature is also represented by 18% of the literature part of the review (Ayton et al., (2019), Grindell et al., (2020) and Pereira et al., (2021)): these three experiences have created support programs for the elderly, cancer patients and chronically ill patients in general. Creating these programs through co-production could be a good tool to address their needs and reduce hospital readmissions (Pereira et al., 2021).

The least contemplated public value co-production strategy is the identification of possible desired therapeutic outcomes; having to the "in no way" represents a high percentage (19%) and the "a little" (2) 22%. This dimension is also poorly represented by the SLR literature: only 12% of contributions report co-production experiences in order to identify therapeutic outcomes (Retzer 2020, Cruice et al., 2021).

The population involved in the two experiences were the bipolar community and people with aphasia. Future research could deepen this aspect, if co-production could prove more effective with some categories of patients than others.

The most frequent value in the rest of the answers is always the central value (3 – quite), which adds little to the research framework and leads us to believe that these practices are attributed little interest.

Through *Section 3* we want to understand the dissemination of means of patient involvement for the purpose of co-production; this question wanted to enrich the theoretical framework of Majid et al, (2019) in whose review the different means of co-production emerge, providing quantitative evidence. From the review of Majid et al., (2019) four means of patient involvement were identified: for each means a question was formulated. The majority of respondents to questions in these sections said they *rarely* or *never* adopt these means of engagement. The responses to this section suggest that co-production practices are still of little application in organisational practice.

Section 4 sinks its investigation into the article by Leite et al., (2020) from which it follows how technology can be a facilitator of co-production. This section asked questions to learn more about the use of patient engagement technologies; also in this section to all the questions the most frequent answer is "a little". The neutral answers provided therefore fail to bring out an in-depth reflection on the subject.

Section 5 is aimed at understanding multiple themes. The first two questions, which derive from the contributions of Palumbo et al., (2016) and Palumbo et al., (2017) intended to measure the degree of diffusion of health literacy that acts as an "*enzyme*" to co-production: *rarely* have health literacy initiatives been implemented to external stakeholders in the last 5 years at company level, while they have *often* been implemented at the level of internal stakeholders.

The next two questions want to deepen the degree of agreement of the directors to the evidence reported in the article Nuti et al., (2018) according to which, current performance measurement systems are not able to detect the perspective of the patient / citizen for internal purposes nor to provide useful information for the patient/citizen. Participants believe that current systems detect and provide poorly the patient/citizen perspective.

Another question is asked to the directors, in support of the experience of Sorrentino et al., (2015) according to which co-production is effective only if there is a strong managerial commitment in its implementation.

The degree of agreement on whether the involvement of patients and citizens leads to innovation is therefore investigated: only 4% agree with this statement.

This low degree of agreement leads one to think in a reduced knowledge on the subject of co-production and the advantages deriving from its implementation.

The question aims to investigate the degree of autonomy of the operating unit in the involvement of patients; this question arises from the conclusions of the study by Frith et al., (2019) which shows how the application of co-production is challenging from many points of view and how it needs support: however, the directors who responded believe they have a *good* degree of autonomy in patient involvement.

7. CONCLUSION

As already supported by the literature (Fusco et al, 2020; Palumbo 2016), the data collected in this study lead us to believe that the co-production strategies and the means to support them, at the micro level, still have little application in practice.

The existence of a non-systematic application of co-production as a means of creating public value emerges.

It remains to be understood whether this poor application can be attributed to a lack of knowledge on the phenomenon of co-production of public value in public healthcare organisations by mangers, if its supporting tools are still scarcely widespread (such as technology as a facilitator enabling co-production of public value) or if the methods of application (focus gruop, work shop, ...) turn out to be too demanding.

The study has endogenous limitations given by the sampling method: public healthcare organisations have been chosen only with up-to-date websites, however it is possible that in public healthcare organisations with outdated websites there may be virtuous co-production experiences.

CHAPTER III.
INTRAMOENIA HEALTH PROFESSIONAL ACTIVITY IN PUBLIC VALUE CO-PRODUCTION STRATEGIES: ANALYSIS OF A CASE STUDY OF THE BOLOGNA UNIVERSITY HOSPITAL "SANT'ORSOLA MALPIGHI"

1. INTRODUCTION

Due to the emergency situation due to the Sars – Covid -19 pandemic, the Italian public debate on the inadequacy of the government models of public healthcare organisations has flourished.

Furthermore, following the Guidelines n.1/2017 of the Department of Public Sector, Public Administrations are called to give innovative answers to current challenges, in order to generate public value, preserving and improving the level of well-being of service users and stakeholders.

However, if in recent years the concept of public value (PV) - intended as a balance between impacts - has found little space in a few Public Administrations, today it becomes a must (Papi et al, 2021) especially in the case of public healthcare organisation, which have the heavy burden of withstanding the impact of the current pandemic and mitigating the risks due to the emergency situation.

The public value for public healthcare organisation emerges when it is possible to combine a balance between efficiency's instances, social inclusion of patients and satisfaction of health needs (Del Vecchio and Romiti, 2017).

Based on the available resources, public healthcare organisation are called upon to formulate innovative responses to new challenges (aging of the population, increase in chronic degenerative diseases, scarcity of resources, increase in the cost of technology,...) to generate public value (Moore, 1995; 2004; O'Flynn, 2007; Alford and O'Flynn, 2009; Talbot, 2011).

The scientific literature has explored the concept of public value (Bozeman, 2007) identifying the components of the health offer in public, private for-profit and non-profit entities, interconnections between these (Eriksoon and Nordgren, 2018) and the determinants of value for the community (Bozeman, 2003; Gaughan, 2003; Feeney and Bozeman, 2007; Bozeman and Sarewitz, 2011; Slade, 2011; Wang, 2016; Wade, 2019).

Nevertheless, the studies currently present in literature are oriented to the creation and programming of public value (Moore, 1995; 2004; Talbot, 2011; Bryson et al., 2017) and did not comprehensively address the topic of public value creation in healthcare (Papi et al., 2021).

The application of the concept of public value in healthcare focuses on the co-creation or co-production of services as a fluid and heterogeneous process, far from the logic of rigid integration between subjects (Cluley and Radnor, 2020).

Few studies have dealt with the public value co-creation and in particular with the public value co-production within Italian public healthcare organisation - and no studies, to the best of authors' knowledge, with a focus on the provision of "*Intramoenia*" health professional activities (hereinafter defined with the Italian acronym ALPI –"Attività Libero Professionale Intramuraria").

If properly managed, ALPI represents a way of co-producing public value, allowing on the one hand, an improvement in the quality of health services provided to the patient / client - being an active part in the evaluation and choice of health services - and on the other, a better management of structural costs (Panella et al., 2018).

The achievement of the quality and efficiency goals associated to ALPI, allows the recovery of functional economies aiming at supporting other essential services, such as prevention, support the National Health System in facing numerous critical issues. From financial sustainability in the provision of services (Thomson et al., 2014; Pirozzi and Saggese, 2015), to the dissatisfaction of the users, to the difficulty of accessing public services, to the widespread demotivation of health professionals, to the degradation of public structures (Dirindin and Rivoiro, 2014), and to the consequent displacement of patients towards services of private health organizations.

The present study is meant at analysing - through an approach of co-creation of public value, in the form of *co-production* - the critical issues associated with the current organisation of the ALPI in a hospital of interest. To this end, it was intended to examine both the point of view of the health professionals providing services in ALPI, and the point of view of the patients who have used the service, in a predetermined period of time, as indicated by the literature on co-production (Yardley et al, 2015).

The discussion of the identified critical issues is a fundamental phase to define some possible improvement actions to be carried out in the short and medium-long term, in order to co-produce public value in the public healthcare organisation under study.

The study was designed using the interpretative case study (Yin, 2003) and to this end, the University of Bologna Teaching Hospital Sant'Orsola Malpighi was chosen as the studied object, due to the high specialization, the large size of the hospital in regards to the number of services in ALPI, the number of professionals involved, the reference to a large basin – supra local – about the origin of the patients.

The proximity of access to the data collection was another reason for choosing the investigated reality. The data were collected through: a) interviews with professionals involved in the provision of services in ALPI b) focus groups with patients who have benefited from hospitalization services in ALPI at the Hospital object of the case study; c) questionnaires; d) documents and reports of the Hospital about the activities carried out in ALPI.

A qualitative content analysis process of an inductive nature was subsequently adopted (Hsieh and Shannon, 2005) on the data collected, in order to identify recurring patterns among them through their coding, and therefore to group the codes into thematic categories that were subsequently used for the discussion of the results. The process of triangulation of the data obtained from the different sources has made it possible to guarantee the reliability of the results (Jean, 1979; Eisenhardt, 1989).

The analysis carried out made it possible to identify the critical issues with respect to the ALPI service, related to the areas of the health personnel employed in the process of providing the ALPI service, to the medical office and related spaces used during the health service, to the booking of specialist visits and to the comfort of the health facilities in which the ALPI is provided. More specifically, the critical issues identified allow synthesizing a poor characterization and enhancement of ALPI with respect to the activity of the National Health Service within the public healthcare organisation, such that both professionals and patients as widely improvable perceive the ALPI service.

The results of the analysis contributes, therefore, to the definition of actions to be implemented in the analysed public healthcare organisation in order to co-produce public value.

In the current state of the literature, this analysis constitutes a first attempt to investigate the effectiveness of the ALPI service delivery process and its strategic relevance in public value co-production for public healthcare organisation.

In addition, from the point of view of practitioners, this contribution focuses on the possibility to apply a managerial approach of public value co-production to a public healthcare organisation, such

as the health reality, thus introducing a new management model that can be used in the organization of health services.

1.1 INSTITUTIONAL THEORETICAL FRAMEWORK

1.1.1 THE INSTITUTIONAL CONTEXT

Since the issuance of the Guidelines of the Department of Public Function – starting from 2017 – the institutional context in which the Public Administration (PA) operates is changing considerably, turning towards a paradigm of performance governance aimed at public value creation (Papi et al., 2021).

The five Guidelines provide the inspiring principles aiming at improving the performances and, particularly, the performance plan of the Public Administration (LG no. 1/2017), focusing on performance measurement and evaluation system (LG no. 2/2017), the performance report (LG no. 3/2018), participatory evaluation (LG no. 4/2019) and individual performance (LG no. 5/2019).

The purpose of the Guidelines is to direct the impacts of administrative action towards the creation of public value, understood as improving the level of social and economic well-being of users and stakeholders (LG no. 1/2017) and where in summary, it is stated that the public value must be evaluated and designed with the contribution of users, stakeholders, citizens (Deidda Gagliardo, 2019).

The application of the Guidelines is a voluntary decision of the administrations, however the possibility to drive the performance of the public administrations towards the creation of public value, are nowadays particularly relevant due to the current health emergency, which could determine a revision of the concepts of equity of health, well-being and intergenerational sustainability (Papi et al, 2021).

In Italy, health protection is a fundamental right, constitutionally guaranteed (Dirindin and Rivoiro, 2014). The original system of the INHS, based on a Beveridge-type model, hinged on legal norms, ethical principles, capabilities, actions aimed at guaranteeing assistance, care, safety, clinical efficacy, appropriateness, essentiality - in a universalistic way.

The increase in the economic well-being of the population has led citizens to express a more personalized demand for care services, to interpret higher levels of perceived quality, compared to those offered by public welfare before the last recent crisis (RBM Assicurazione Salute S.p.A - Censis., 2017).

In this context, the ALPI can be a response of the National Health Service to the changed needs of the population, as this activity is flexible and it represents one of the sources of self-financing of public healthcare organisations.

Intramoenia health professional activity (ALPI) is the activity that the doctors employed at public healthcare organisations, provide individually (or in teams) beyond the service hours, in favour and on request of an assisted (external user) paying for the service and, thus, supplementing and supporting the institutional activity provided by the National Health Service. This activity is carried out within the boundary (*Intramoenia*) of the public hospital and with the observance of strict regulations.

This activity, compared to the activity of the National Health Service, differs in the following aspects: it consists in giving the citizen the opportunity to request specialist visits, laboratory investigations and hospital admissions with the guarantee of being followed by his trusted doctor, with the essential requirement of providing services of the same quality levels of the National Health Service. Within the paths provided by the National Health Service, the patient has not the chance to choose the favourite health professional, but the patient will be visited by the doctor on duty on the day on which the visit is scheduled.

ALPI within public healthcare organisations can be a response to patients, Italian and foreigners, who expect, in addition to high performance at a professional level, also high conditions of reception and comfort, expanding the mode of services for the assisted. Observing this phenomenon from a pure corporate point of view, this policy could be considered as a branding policy and in particular similar to brand-extension (Scott, 2004): it consists in the expansion of a given brand in a market segment different from the one in which its notoriety has been consolidated, to offer an improved product or a new product.

Intramoenia health professional activity (ALPI), which is certainly an opportunity for doctors, can also represent an important opportunity for the public healthcare organisation if properly interpreted: allowing a more adequate use of the hospital facilities and equipment and therefore optimizing the incidence of structural costs (thus making economies of scale), contributing to the progressive reduction of the waiting list, (this being an option for providing health services) and constituting a source of self-financing for the public healthcare organisation (being necessary the full replenishment of the costs incurred and retaining 5% of the doctors' remuneration to bind them to prevention interventions aimed at reducing public waiting lists, or the purchase of equipment naturally usable for INHS paths).

All these aspects can be traced back to a pure sphere of production and internal efficiency.

The regulation of the complex phenomenon of ALPI derives from a rich normative production, stratified over time, which has drawn inspiration from principles of transparency, correctness and lawfulness (Camera dei Deputati, 2016).

The substantial legislation in force on the ALPI, however, severely limits the organizational freedom of this service. The strategies applicable to the enhancement of the aforementioned activity can therefore be carried out taking into account various aspects. More precisely, this activity should respect the following aspects (Camera dei Deputati, 2016):

i. Does not lead to an increase in the waiting lists of the INHS activity (on the contrary, it contributes to reducing them);
ii. Does not conflict or affect the institutional purposes of the National and Regional Health Service;
iii. Does not conflict with or affect the company's objectives;
iv. Does not entail, for each doctor, a volume of services or an hourly volume higher than the one defined for institutional tasks;

In addition:

v. The hospital spaces for the exercise of the ALPI must be separate and different, in a physical or temporal sense, from the ones used for the activity of the INHS;
vi. To meet the needs related to the completion of the ALPI, the employees of the National Health Service must be already employed.

1.1.2 THEORETICAL FRAMEWORK

Over the last few years before the current Sars-Covid pandemic, the issue of the sustainability of the INHS, in its universalistic sense, has been progressively at the centre of the Italian political-institutional debate, especially as a result of the "*global economic crisis, together with that of the euro area*" which have led to a persistent economic stagnation (Pirozzi and Saggese, 2015).

This situation has led to a constant containment of the resources allocated to the INHS, causing pressure on the Regions, and strategies to optimize the organizational processes of public healthcare organisation - in an attempt to maintain the quality of the services provided and the ability to meet a high demand.

Thomson et al. (2014) highlighted how a cut in funds allocated to the public health service can, on one hand, contain costs in the short term, on the other hand result in an increase in long-term costs with negative repercussions on the health of the population.

The constraints on public budgets, together with other determinants such as the aging of the population, the increase in life expectancy, the increase in the incidence of chronic degenerative diseases lead to the erosion of the ability of the INHS to generate protection for citizens (Dirindin and Rivoiro, 2014). This growing asymmetry between social needs and the matrix of health services is demonstrated as people in difficulty begin to be left without coverage (RBM Assicurazione Salute – Censis, 2017).

There is a shift in costs from public to private: in 2018, 19.6 million Italians benefited from a private health service, particularly due to the long waiting times of the National Health Service (RBM Salute, 2019) - which not all families can afford, increasing social inequalities and changing the original structure of the National Health System.

This phenomenon has therefore changed the out-of-pocket health expenditure of Italian families and highlights a possible situation of "*Selective Universalism*" (Taroni, 2021), or a basic offer of social and health services to all those who need them and in the case of lack of ministerial funds, the income of families becomes crucial to access those benefits that are not guaranteed by the INHS.

In this regard, the World Health Organization (World Health Assembly, 2011) also intervenes, encouraging member states to develop health financing systems capable to establishing or

safeguarding universal coverage, allowing people to access the services they need without risking serious or disastrous financial consequences (Carrin et al., 2008).

In addition, Italian national research shows that the substantial cuts in funding the National Health System are weakening the health system also in terms of growth, in user dissatisfaction with the service offered, also causing progressive decline in the quality of care, widespread demotivation of health workers, degradation of structures and places of care, difficulty in accessing services and increasing the cost of tickets (Dirindin and Rivoiro, 2014).

For over a decade before pandemic, the inescapable need to review the way of doing business strategy and to use its resources within a system of health services that finds itself facing multiple challenges (socio-political, economic-financial and epidemiological) has been highlighted (Vagnoni, 2017).

In strategic business management it is necessary to involve stakeholders to respond with actions oriented to their needs. Especially participatory research methods, local stakeholders are the engines of data collection, as research questions are shaped in such a way that they are useful and meaningful in the local context that is intended to be investigated. (Lynch et al., 2021): for the same reason within a strategic elaboration the involvement of citizens must be taken into account as they are the stakeholders of public healthcare organisation (Lynch et al., 2021).

In healthcare there is a growing need to involve patients and healthcare professionals in the development of new interventions to address the challenges of complex problems and current systems, to make them relevant and applicable in practice (Grindell et al., 2020; Greenhalgh et al., 2016; Holmes et al., 2017;) thus implementing processes of co-production of public value.

If in recent years the concept of public value as a balance between impacts and its creation strategies (co-creation and co-production), has found little space in a few Public Administrations, today the application of these concepts become a necessity, especially in the case of public healthcare organisation, which have the heavy burden of withstanding the impact of the current pandemic and mitigating the risks due to the emergency situation (Papi et al., 2021).

Co-production means that citizens are not merely recipients of services, but also active actors that can act as co-producers in the design and the delivery of public services (Loeffler & Bovaird, 2018). Its implementation takes place through mixed methods of research (interviews, focus groups, observation, studies questionnaires) in order to systematically investigate the beliefs, attitudes, needs and situations of service users (Crurice, 2021; Yardley et al, 2015.)

Co-production of public value provides efficiencies in service delivery, better quality (Alford, 2009; Voorberg et al., 2015; Fusco et al, 2020) better health outcomes, against the backdrop of rapidly increasing demand and pressures on critical service providers (Best et al., 2019).

Policy reforms encourage the development of patient-centred care, and recent surveys show that patients' first priority is the desire for more active involvement in their meetings with healthcare professionals (Deloitte Insights, 2018).

In light of the considerations made so far, the implementation of a project can therefore represent a structured way to change organizations (Svejvig and Schlichter, 2020; Serra and Kunc, 2015) generating benefits and value (Svejvig and Schlichter, 2020; Laursen and Svejvig, 2016) undertaking co-production processes.

Benefits are understood as a result of change perceived as an advantage by one or more stakeholders (Svejvig and Schlichter, 2020; Bradley, 2010), and value consists of "*the benefits provided in proportion to the resources used to acquire them*" (Office of the Government of Commerce, 2010).

There are two ways of understanding benefits and value: they can be measured in financial terms (i.e. as an increase in revenue and cost savings), or in non-financial terms, as stakeholder satisfaction (Laursen and Svejvig, 2016).

Bringing out value from projects consists in identifying value, creating value and capturing value during and after the project (Laursen and Svejvig, 2016; Lepak et al., 2007; Martinsuo et al., 2017). The terms "*value*" and "*benefit*" are often used alternately (Aubry et al., 2017), for this reason the term "*value*" must be explained and understood as: the relationship between the satisfaction of need and the resources used in achieving that satisfaction (...) Value is not absolute, but relative and may be viewed differently by different parties in differing situations" (European Standard 12973-2000, 2000, p. 140).

"*The value can be positive or negative for specific stakeholders, depending on the advantages or disadvantages that derive from it*" (Svejvig and Schlichter, 2020; p.3) therefore "*patient expectation can be very different among patients, since it can depend on personality, previous contact with care providers, one's social and cultural values or the particular context in which care is received*". (Aharony and Strasser, 1993: p.60)

For this reason, patient engagement is pivotal in re-design of health services, as these report testimonies of real-life experiences, needs, expectations and skills expected from the people who

provide them; this translates into greater adequacy and effectiveness of the design action (Palumbo, 2016a).

The academy agrees that the co-production of services implies the establishment of a relationship of exchange between patients and healthcare professionals, where the latter strip themselves of the traditional paternalistic approach to care and recognize a key role from patients in achieving better health outcomes (Palumbo, 2016a).

Patients - by employing their resources to receive services - agree to be involved in the planning, design and delivery of healthcare interventions.

It is recognized that co-production is a two-sided penny: on the one hand it produces a better quality of service, greater effectiveness of treatment and a deeper knowledge of services - on the other hand these improvements generate greater patient satisfaction and better health results, increased subjective health status, cost savings and increased service innovation (Palumbo, 2016a).

Co-production can be a key solution to current and future challenges in the health public sector, given that the expected benefits relate to the improvement of the services provided, greater economic and financial sustainability of the system, the more efficient use of resources and the possibility of increasing the level of citizens' satisfaction (Fusco et al., 2020; Alford, 2019; Voorberg et al, 2015).

This collects the expectations of all stakeholders, external and internal - evaluating and designing through a fluid and heterogeneous process (Culey and Radnor, 2020) - actions aimed at improving a service, in order to generate benefit for all stakeholders, thus co-creating public value (Deidda Gagliardo, 2019).

Unfortunately, studies concerning health co-production are still rare (Palumbo, 2016a).

Well-founded empirical studies are therefore needed to fill this gap and improve knowledge about it (Palumbo, 2016a).

Hardyman et al. (2015) in the same vein recalls the importance of patient involvement in the co-creation of value and the need to undertake studies at the micro level in this regard such as to produce useful evidence both in practice and in the literature.

The academic literature seems to agree that the healthcare sector is a point of reference for analysing and putting into practice the concepts of co-production (Fusco et al., 2020; Giliardi et al, 2016; Vennik et al, 2016; Sorrentino et al, 2017; Berwick et al, 2008).

However, to date, it seems that public healthcare organisation have the willing to involve health professionals and resources to develop appropriate strategies aimed at involving patients that pave the way for an effective and sustainable service through co-production (Gill et al., 2011). Therefore, "*healthcare co-production should be understood as a two-way street, in which both users and suppliers are deeply involved*" (Palumbo, 2016a p.77).

ALPI is therefore a service of the National Health System able to offer citizens the opportunity to choose the trusted specialist - raying to trace the movement of patients to private health and bring them back to a public service paths.

It is a service that if expertly redesigned through co-production processes (involving internal and external stakeholders, already users of the service) brings advantages in terms of improving the quality of the perceived service (Firth et al, 2019; Allen et al., 2010; Pohjosenperä et al, 2020), the abatement of access barriers to the service (Lwembe et al., 2016; Retzer, 2020) resulting in greater user satisfaction, improvement of the motivation of the professionals involved, improvement of the degradation of structures (Dirindin and Rivoiro, 2013).

In summary, the achievement of the quality and efficiency objectives associated with ALPI could generate positive impacts; in addition the Hospital funds withheld from the doctor's remuneration can be used for the purchase of equipment that can also be used on the INHS path, for the improvement of the comfort of the environments (which can also be used in the INHS path but at different times), for the implementation of new services in favour of patients or in favour of professionals.

By virtue of the theoretical framework set out above, this study consists of a project to develop a strategy aimed at identifying actions to improve health care under the ALPI regime understood "*as improving the level of social and economic well-being of users and stakeholders*" (LG no. 1/2017).

1.2 RESEARCH QUESTION

The aim of this study focuses on the following research question:

What are the actions to be adopted in order to improve the ALPI Service and what can be an adoptable strategy having the objective of the Co-production of public value for all the stakeholders involved in ALPI, in relation to a specific context in which it is provided (the context of the Azienda

Ospedaliero Universitaria di Bologna di Sant'Orsola Malpighi - in which the ALPI enhancement project takes place)?

1.3 THE PHILOSOPHICAL POSITION

The objective of the study is to detect the critical issues existing within the hospital under analysis in order to understand what strategy to adopt to improve the *Intramoenia health professional activity (ALPI)* through a co-production process.

From the ontological point of view, this analysis starts from the assumption that all people live their own reality (Levers, 2013).

The object of research of this analysis - a hospital therefore an organization - is understood not as a direct part of nature, but as a part of the social world, so the methods and beliefs of the natural sciences do not apply (Bryman & Bell, 2011) but of the social sciences.

The knowledge of a phenomenon is subjective and depends on the interpretations and impressions of the individual (Levers, 2013).

Starting from these assumptions and considering that an analysis of the critical issues related to an organization in order to develop a strategy through which to face them and co-create public value is a complex project, an interpretative approach was thought of; according to this approach, the researcher who interacts with the research objective is not able to possess a complete a priori knowledge of the phenomenon (Hudson and Ozanne, 1988).

As the literature argues, "*there are disadvantages associated with the use of the case study research method regardless of the philosophical position adopted or the particular way in which the case study strategy is used*" (Darke et al. 1998, p.278) - i.e. that the processes of data collection and data analysis, in the case study research, are both subject to the influence of the researcher's interpretation of events, documents and material for interviews (Darke et al. 1998; Galliers, 1992.); for this reason, the bias could be part of the interpretation of the results and limit the validity of the results obtained.

In order to avoid this, in the case studies qualitative data are combined with quantitative data (Darke et al. 1998) as the use of more than one data collection technique helps in understanding complex social phenomena, observing them from different perspectives.

This analysis used multiple sources of evidence: interviews, focus groups, questionnaires and analysis of balance sheets to outline the project. This is not only because these sources are means of implementing co-production (Yardley et al., 2015), but above all to be able to triangulate the data collected (Yin, 2003).

The approach in data analysis has been predominantly qualitative, as the latter focuses more on the use of words and their meaning in context, so it is preferable to the quantitative one (Bryman & Bell, 2011) when requesting to investigate phenomena applied to a specific case.

Due to the limited literature of co-production within public healthcare organisation and the absence of economic and managerial studies on ALPI, a method of analysis of the collected data of an inductive approach was chosen (Bryman & Bell, 2011)

2. DESIGN OF THE STUDY

2.1 THE SETTING

Azienda Ospedaliero – Universitaria di Bologna di Sant' Orsola Malpighi has been chosen as the setting. The Azienda Ospedaliero – Universitaria di Bologna di Sant' Orsola Malpighi has an extension of 1.8 km and a logistics organization that is structured in 27 Pavilions in which the 87 Operating Units are distributed.

It has 1515 beds and a staff of 6807 employees; about 49,000 hospitalizations are carried out per year and over 3.300.000 specialist medical examinations to citizens.

2.1.1 INTRAMOENIA HEALTH PROFESSIONAL ACTIVITY (ALPI) AT THE UNIVERSITY HOSPITAL OF BOLOGNA SANT'ORSOLA MALPIGHI

The Bologna University Hospital has 2 ALPI inpatient wards in which all hospitalizations under the ALPI regime are concentrated. The first ward, located in the "*Nuove Patologie*" pavilion, was activated in June 2007 currently with an endowment of 9 beds.

In October 2008 the second ward located on "*Palagi*" pavilion was activated, with an endowment of 6 beds.

Initially both units were exclusively dedicated to ALPI hospitalizations, later some beds were destined for hospitalizations in the NHS. Today, therefore, hospitalization activities are mixed.

The two ALPI wards carried out a total of 672 hospitalizations during 2019 (a 70 cases decrease, compared to the 2018 figures).

During 2019, the ALPI "Nuove Patologie" ward discharged a total of 472 patients (- 44 cases compared to 2018). The operating units that have most used this ward are: general surgery (52%), specialized surgery (such as otolaryngology (25%), plastic surgery and oral and maxillofacial surgery (11%), gynaecology (8%), orthopaedics (2%) and in smaller numbers the units of specialized medicine and internal medicine (2%).

The level of attraction of patients outside the province is 12.1%; outside the region 16.7%; of foreign patients 2.3%.

The activity of the second ALPI ward, "*Palagi*" is 200 patients in 2019; the operating units that have carried out hospitalizations in this department are profession are those of the urological / andrological area (76%) and the ophthalmological area (24%). The attractiveness of extra-provincial patients is 15.5%; the extra-regional increase by 2.1 points, equal to 16%; and one point that towards foreign patients, equal to 2%.

The 2019 accounting report - compared with the results of 2018 - shows a reduction in total revenues (-€ 1,117,241 or -4.5%), generated by a reduction in revenues from hospitalization activities (-18.49%) only partially offset by the slight increase in revenues on an medical examination activities.

In 2019, revenues from specialist medical examinations accounted for 61% of the total volume of ALPI revenues, while the value of the hospitalization activity represented 28%.

As a result of the reduction in activity, direct and general costs, those for consumer goods in the operating theatre and those for intermediate services, naturally also decrease.

2.1.2 HOSPITAL STAKEHOLDERS

The staff present within the Polyclinic at 31 December 2020 amounted to 6807 units (5993 hospital employees, 274 university employees, other staff 540).

The analysis on the composition of employees by gender shows a prevalence of female staff compared to male: doctors 51.34% female – 48.66% male; nursing staff 74.30% females – 25.70% males, technical staff 86% females – 14% males, administrative staff 87.50% females – 12.50% males.

The average age group of employees is 45-54 years of age.

Regarding external stakeholders, during 2019 the activity of specialist medical examinations in ALPI, for Italian patients reached almost the same volume of accesses for women between 41-50 and men between 61-70 (more than 9000 accesses per year), while foreign users who made most of the accesses were female between 20-30 years (more than 350 accesses per year).

In the ALPI hospitalisation activity, on the other hand, always with reference to the year 2019, no data were received on foreign users, while for Italian users, there was a clear majority of accesses

by men between 61-70 (just over 300 accesses) followed by women between 31-40 (just over 200 accesses).

2.2 THE METHOD

A qualitative empirical study, in the form of an interpretative case study will be used in order to address the issue.

In particular, the interpretative case study involves the understanding of meanings/contexts and processes as perceived from different perspectives, seeking to understand individual and shared social meanings (Stake, 2000; Doolin, 1996).

As Walsham states (1995, p. 78) "*the interpretative researcher presents his interpretation of interpretations of other people*" and the tool of interpretative investigation is a case study where the researcher observes the object of analysis over an extended period of time.

The case study is one of the possible methods of conducting research in the field of social sciences. There are also other methods such as experiments, consultation of archives and analysis of documents. Each strategy has advantages and disadvantages, which depend on the type of research problem, the control that the researcher has over current behaviour, attention to the contemporary or historical phenomenon (Yin, 2003). When, in a current social context, the goal of research is to understand why a certain phenomenon takes place and how, it is convenient to use the case study method (Yin, 2003).

Stake (2000, p.435) asserts: "*the case study is not a methodological choice, but it is the choice of what needs to be studied*". The use of case studies in the analysis of phenomena finds deep use in the social sciences (Kohlbacher, 2006), above all, as Benbasat et al. (1987) "*can be particularly useful when research and theory are in their early stages*" (p. 369) or in "*areas where there is a reduced knowledge of how and why a process or phenomenon happens, or when the experience of individuals and the context of action is critical*" (Darke et al. 1998, p. 279).

Therefore, the limited literature on case studies of co-production (Fusco et al., 2020) within public healthcare organisation and the absence of economic and managerial studies about *Intramoenia health professional activity (ALPI)* prompted the author in the choice of this method.

2.3 DATA COLLECTION

As already mentioned, this study mainly needed qualitative data in order to detect the experiences of stakeholders, to detect the existing key aspects and identify possible improvement factors related to the ALPI service.

For the purposes of a case study, Eisenhardt (1989) considers it impossible to use exclusively qualitative or quantitative data.

The limitation of the use of purely qualitative data is thus overcome.

For this reason, it has been decided that the most suitable way to reach the data was through interviews with respondents aware of the progress of the activities but also through document analysis and questionnaires.

The interviews are in fact distinctive for the design of the case study (Yin, 2011).

For the purposes of this study, in-person interviews were considered the most appropriate method for various reasons, mainly considering that body language can be important to understand the message correctly (Yardley et al., 2015).

Especially in qualitative studies, interviews can be long and therefore the interviewee can easily interrupt them before all the questions are answered (Bryman & Bell, 2011).

None of the interviews in this study suffered from being interrupted before the interviewer decided so.

The interviews were conducted in Italian by the author and recorded.

As estimated in the earlier part, performing the interviews in this way is supported by interpretivism, the paradigm used in this study. After the interviews were transcribed, they were sent to the interviewees to test their validity, as suggested by Yin (2009).

In order to collect different perspectives, two focus groups were also conducted with users of the ALPI service.

The composition of the focus groups was made on the analysis of access to ALP services and on the basis of the gender and age groups of the users.

The use of the focus group methodology is recommended by the literature to obtain information from individuals (Ruff et al., 2005) and is a tool used to determine the attitude of consumers towards a service used (Cruice et al, 2021; Urquhart et al., 2018; Caplan, 2010).

In this case, the focus group represents the means through which the co-production of public value is implemented, there is an involvement of the citizen / patient (Yardley et al., 2015).

The focus groups were conducted during weekdays, after seven in the evening to encourage the participation in the event outside the working hours, and their duration was one and a half hours each.

The author was an observer at the focus group, as he was not authorized to conduct at the company level. The language used was Italian. All the contents were transcribed and analysed through the QCA method, while the observations were reported according to the Regional protocol, to which the Hospital must comply for the conduct and analysis of these activity.

Part of the research also took place through the study of documents. In summary, multiple sources of evidence were used in this study:

- Interviews of professionals of the Hospital (used to understand the key aspects of ALPI and detect possible factors for improving the service);

- Focus Group to external users (used to understand detect the possible factors of improvement of the service, the degree of satisfaction of the users of the service, their expectations and their needs);

- ALPI financial statements of the 2019 (consulted to analyse the composition of the major users of the ALPI service);

- Mission Report, 2015 (consulted to understand the composition of internal stakeholders);

- The Act of Corporate (understand the regulations within which the co-production strategy where to take place);

- Satisfaction questionnaires for external users (used to understand the degree of satisfaction of the users of the service, their expectations and their needs).

The methodological characteristics of a case study analysis, in fact, as already described, are based on multiple sources of evidence, quantitative and qualitative (Darke et al. 1998)

As Kohlbacher (2006) argues, "*many experts in the field of socio-scientific research suggest using and obtaining different methods - the so-called triangulation or counter-examination - to obtain more valid results*" (p. 19). In fact, "*triangulation through the integration of different documents/evidence and quantitative and qualitative analysis of phases, helps researchers to be more confident in their results and can also lead to a synthesis or integration of theories*" (Jick, 1979, pages 608-609).

The researcher's bias in data collection and analysis can be countered as follows: using data triangulation to provide multiple instances from different sources (Miles & Huberman, 1984).

Furthermore, for the purpose of implementing co-production, part of the literature recognizes that the approaches to intervention development now explicitly acknowledge user engagement in a coproduction approach (O'Cathain et al., 2019) through mixed methods research (interviews, focus groups, observation, questionnaire studies) to systematically investigate the beliefs, attitudes, needs, and situations of those who will be using the intervention (Cruice et al, 2021)

Below are the sources used and how they have been used for the purpose of the analysis.

2.3.1 USE OF HOSPITAL DOCUMENTS

Documentation plays a key role in any data collection undertaken. The most important use of documentation is to validate and support evidence derived from other sources. In addition to this, the documents can provide more details and improve the information obtained from other sources.

The literature in this sense recommends that "*researchers prepare with sufficient background information on a case study before starting data collection*" (Darke et al., 1998, p.228).

In many case studies, official acts can be considered so important that they become the only object of information retrieval and analysis.

To obtain internal information on ALPI's performance and the company rules to which it is subject, the author has resorted to consulting the ALPI financial statements of the 2019, Mission Budget, 2015 and The Act of Corporate.

2.3.2 INTERVIEWS

Walsham (1995) in his study reports that with regard to interpretative case studies, that interviews can be considered the primary source of data, "*since it is through this method that the researcher can best access the interpretations that the participants have of the actions and events that have or are taking place and the opinions and aspirations of themselves and other participants*" (p.78).

Since hospitals "*are characterized by the presence within them of multiple identities with strongly differentiated values and for the consequent difficulty on the part of internal operators to identify themselves in a corporate identity*" (Andreini et al, 2012; p.13) for this reason the author has dedicated a lot of space to interviews with internal operators, with the aim of building a comprehensive picture of the reality.

28 professionals working within the Polyclinic, of various levels, were interviewed. 11 Directors of complex units, 7 doctors with high volume of activity ALPI, 5 doctors with low volume of activity and 4 doctors who have recently undertaken the ALPI.

The nursing coordinator of one of the two ALPI wards where hospitalizations are carried out under the ALPI regime was also interviewed.

Although at a first glance the participation of the nursing coordinator, could be considered to create inhomogeneity in the population analysed, actually it was fundamental to verify and consolidate the consistency of the information gathered, taking into account a different point of view.

Respondents were asked to initially answer the following question:

"*What are, in your opinion, the critical issues that exist today related to the provision of services in ALPI?*"

The interview took place in most cases at the meeting room of Hall 3, and in case of different needs, at the professional's office.

Since the approach to the study is interpretative, the interviews were conducted in a semi-structured, exploratory way, as interpretivism takes for granted the need and the possibility of adapting to constantly changing situations (Hudzon and Ozanne, 1988, p 513). In addition, this also allows new unpredictable knowledge to emerge, because the interviewer is not too constrained in following the pre-set form of question.

The interview question was prepared and sent to the respondents in advance along with the interview request letter.

As for the analysis of the interviews, this has the objective to detect the critical issues related to the provision of services under the ALPI regime.

The interviews were audio-recorded, rigorously transcribed, to achieve high validity of the results, as suggested by Elo et al. (2014).

Sometimes incorrect observations were found with respect to the company organization, derived from an information asymmetry, due to an incomplete knowledge of the regulations or organization by the medical director.

From interviews a researcher usually retrieves a considerable amount of information. However, not all this information is useful for the purpose of the research. The literature thus recommends "discarding" all unnecessary data, which can be misleading.

One way to discard unnecessary data, and to collect by analogy those deemed indispensable, is to use a qualitative analysis of the content of the interview texts (Qualitative Content Analysis (QCA)).

In many disciplines, especially in the medical field, QCA is a popular method (Elo et al. 2014) and is used to interpret written documents in a systematic way, taking into consideration the contexts in which they were produced (Kohlbacher, 2006). Starting from the transcripts of the interview, this method examines the reliability of the essential part (Yin, 2009).

In the paragraph QCA (3.3) the method of analysis undertaken will be explained.

2.3.3 FOCUS GROUP

The author of this study considered essential to proceed with the creation of a Focus Group with the aim of detecting what the needs of the external users may be, in order to offer a service as close as possible to their needs and expectations.

As supported by the literature on the subject of co-production, the patient involvement has become an imperative in the delivery of high-quality health services (Fusco et al., 2020) and represents alongside face-to-face meetings a co-production implementation strategy (McCarron et al, 2020) to systematically investigate the beliefs, attitudes, needs and situations of those who will use the intervention (Cruice et al, 2021).

Therefore, they should be encouraged where the establishment of friendly and comfortable relationships between healthcare professionals and patients can take place, in order to overcome possible hostilities in the operator-patient relationship and thus stimulating co-productive behaviours (Palumbo, 2016).

The focus group methodology uses targeted interviews to obtain information from individuals and interactions between individuals in a small-group environment (Ruff et al., 2005).

"*Focus groups are a common tool also used in market research, to determine consumer attitudes towards products or services; with careful attention to the basic structure (...), focus groups can be used to develop solutions to problems related to the product / service. By involving users and integrating their verbal reactions with "hard data", the results of focus groups can be understandable to market participants and management*" (Caplan, 2010, p.527).

To conduct the Focus Groups within the Polyclinic, the author made use of experts in research techniques for the social sciences within the Polyclinic.

The three professionals that participated in the focus Group, are the only people authorized and trained by the Emilia Romagna Region to conduct focus groups within the Polyclinic, as they are properly trained according to the methodology defined by the Region, using the same approach in Focus Groups and in the analysis of the results on the entire regional territory.

The formulation of the questions addressed to users was based on the company questionnaire "*Measuring satisfaction in hospital services*" (Bond et al, 2007); the choice was made to ask the same questions in order to have the same aspects analysed in a homogenous way with the users of the Focus Group and the users responding to the questionnaire.

The main features of the Focus Group are given below (see Table 8).

FOCUS GROUP CHARACTERISTICS	
Duration of the event	1.30 h
Participant Recruitment	The method of selection of the population sample provided for the preliminary assessment of the age group (men and women in a diversified manner) in which users use the ALPI service the most. A letter was sent to all the selected people by mail in which the focus objective, the time and day of the event was described. In addition, a few days after the convocation all the people were contacted by phone to make sure of the their participation.
Number of guests	200
Number of participants	11
Characteristics of Participants	Users who have benefited from services in ALPI during the year. Women in an age group between 31-50 (41-50 most accesses for the activity of medical examinations, 31-40 for the activity of hospitalization); Men in an age group between 61-70 (both for the activity of medical examinations and for the activity of hospitalization).
Focus Group Presenters	1 authorized employee of the Clinical Governance, Quality and Training service 1 authorized employee Privacy Office
Observatories	1 authorized employee of the Epidemiology and Control of Infectious Risk Program related to healthcare organizations The author
Support material	Flipchart. Photographs for free word associations
Distribution in space	Sitting on chairs in a circle
Audio recording	Yes
Video recording	No

Table 9. Main features of the Focus Group

The table below (Tab. 9) illustrates the protocol followed for the focus group and the data collection methodology, with respect to the different phases in which it was developed.

FOCUS GROUP PROTOCOL	
Phase I - PREPARATION / TRAINING	
QUESTION	**ELEMENTS OF ATTENTION**
"Let's start with a free association of words. You have photographs on the table, choose a photograph that reminds you of the experience in ALPI and write a word that represents this memory"	SHEET TO BE FILLED IN INDIVIDUALLY AND ANONYMOUSLY phase duration: 5 minutes
Phase II- DISCUSSION	
QUESTION	**ELEMENTS OF ATTENTION**
Set of questions belonging to the questionnaire "*Measuring satisfaction in hospital services*" (Bond et al, 2007) but leaving the user the opportunity to answer freely	THE QUESTIONS ARE REPORTED ON THE FLIPCHART SHEET Duration of the phase: 55 minutes
Phase III – CLOSING OF THE EVENT	
"To conclude ... Do you have any other suggestions or things to say about the issues addressed today? As anticipated at the beginning, the elements that emerged from today's meeting will be summarized in a document that will be delivered to the members. The opinions you have expressed will remain anonymous and will be presented as the fruit of the whole group, not as personal ideas. Thank you for your cooperation!"	THE QUESTION IS REPORTED ON THE FLIPCHART SHEET Duration of the phase: 30 minutes

Table 10. Focus Group Protocol

In addition, in Table 10, are reported the numbers and characteristics of the participants in the focus group.

N. PERSON	OCCUPATION	AGE
1	Executive	48
2	Office worker	42
3	Office worker	40
4	Office worker	35
5	Entrepreneur	66
6	Teacher	66
7	Theatrical machinist	60
8	NA	62
9	NA	62
10	Freelance	67
11	Executive	61
AVERAGE AGE	55	
GENDER	7 MALE 4 FEMALE	
NATIONALITY	ITALIAN (10) FOREIGN (1)	

Table 11. Main Characteristics of the Participants

The spaces used for the focus group, were chosen within Polyclinic and were welcoming and easily accessible by users.

The participants were arranged seated in a circle, the two observers seated outside the circle and the two conductors standing next to the flip chart.

The participants arrived on time (within 15 minutes of the call), no one was absent during the discussion (for example to answer the phone, go elsewhere and then return). Only one took leave before the scheduled end.

During both Focus Groups the atmosphere of the discussion was very good and relaxed: the participants often made jokes, laughed and interacted with each other and with the conductor in a relaxed and friendly way.

The discussion was very much attended by everyone, more in the final part of the meeting than in the initial part. Everyone expressed opinions and intervened spontaneously, without needing to be stimulated by the conductor. The rules of the focus illustrate at the beginning were respected by all participants. No participant attempted to centralize or monopolize the discussion, which was balanced and focused on the proposed theme; sometimes it was necessary for the conductor to curb off-topic interventions.

No conflicts or alliances emerged between the participants, but a fair contradictory and confrontation between different opinions.

Some participants stood out both for their "*competence*" on the subject, and for the ability to express opinions, partly divergent from each other, which then gathered the greatest consensus and therefore created debate.

On the other hand, neither "*protest leaders*" emerged, that is, participants who challenged the dominant opinions, nor characters that hindered the discussion.

Various participants, both during the discussion and after, underlined how the FG was an important opportunity for them to make their opinion heard and contribute to the improvement of the service.

The meetings were recorded and fully transcribed; the data obtained from the focus group were analysed using the QCA method.

2.3.4 THE QUESTIONNAIRES

Questionnaires are a useful tool to gather the opinion of external stakeholders through targeted questions.

Questionnaires are important to enrich the picture of the data collected; as Gillham (2000) states, "*case study research is not just a qualitative or data method. (Qualitative data) are predominant, but quantitative data and their analysis function can add something to the picture*" (p.89).

The questions the questionnaires were submitted to all external users invited to the Focus Group who did not have the chance to participate.

The questionnaires were also sent to the email address issued by users who could not take part in them and whose email address were available to the hospital.

14 questionnaires were received (out of a total of 70 sent; the response rate was 20%). Despite the low response rate, the questionnaires made it possible to enrich the picture of the research conducted.

The questionnaire administered is a validated tool, still used today within the Polyclinic. Its creation and first use was for the study " Misurazione della soddisfazione nei servizi ospedalieri: il caso del Policlinico Sant'Orsola Malpighi "(*Measurement of satisfaction in hospital services: the case of the Policlinico Sant'Orsola Malpighi*") (Bond et al, 2007).

The questions are aimed at investigating all the possible factors that can influence the users in their hospital path and are divided into 5 sections, indicating the various phases of the hospital process: access, during the medical examination or hospitalization, hospital discharge, overall judgment.

Each section contains multiple questions, for a total of 22 questions.

For each question the user is asked to answer by formulating the following judgment: " expectations disappointed ", - "is in line with expectations", - "exceeded expectations".

Below each question, the user must also show the importance of the factor on which she/he has just expressed the judgment, using a Likert scale from 1 (unimportant) to 5 (very important).

2.4 TRUSTWORTHINESS

When a researcher studying a particular social phenomenon uses interviews as sources of evidence, he must take into account the biases that can affect the result in a negative way.

In order to reduce bias, a large number of respondents, many different sources of evidence (triangulation), peer debriefing with a senior researcher are used with the aim of increasing the credibility of the research (Manning, 1997).

Regarding validity and reliability, this work meets the internal validity requirements (Gibbert & Ruigrok, 2010) by applying three strategies: first, the primary research using existing literature and theories (Marques et al., 2014), secondly using pattern matching (Eisenhardt, 1989) third using triangulation (Yin, 2003).

In detail: the construction of validity was constructed using triangulation in data collection (analysis of documents, interviews, questionnaires) while reliability "*using widely accepted methods, such as digitally recorded interviews and transcription*" (Marques et al, 2014, p. 212; Gibbert and Ruigrok, 2010).

3. DATA ANALYSIS

3.1 INDUCTIVE CATEGORY DEVELOPMENT

This chapter aims to present the analysis of the data collected, with respect to each source used.

This will then allow to discuss the results in an aggregate way and to provide a complete view of the phenomenon that has been investigated.

As stated earlier, in this study there is a predominance of qualitative data and the method of analysing qualitative data (interviews and focus groups) used is QCA.

The analysis of the material was conducted with the aim of identifying the critical issues related to ALPI, semantically evaluating what the interviewee provided as an answer.

It was always kept in mind what the role of the communicator was, or the medium, or what was the target group, to which the message was intended. Since a high validity of the results is important, the process of creating the results is reported strictly, as suggested by Elo et al. (2014)

The approach to this case study was interpretative, as there are no public healthcare organisations that have adopted co-production for the improvement of the ALPI service.

Within the QCA it is able to choose between deductive and inductive strategies (Mayring, 2015).

Inductive strategy means investigating data without an existing strategy, which could explain the results.

While deductive strategy uses an existing theory to verify its validity with data (Eisenhardt & Graebner, 2007).

For this study, the inductive approach was chosen (Mayring, 2015) outlined the process, as shown in Figure 1, to show how to form the categories used in material analysis, inductively.

First, the purpose or objective of the analysis is determined (Mayring, 2015). In this study it is a question of finding the critical issues that exist today related to the ALPI service in order to develop an improvement strategy through co-production.

Secondly, the level of abstraction must also be set. This preference determines how concrete the categories that define the critical issues related to the ALPI service should be (Mayring, 2015) According to Mayring (2015) the categories in an inductive study must be designed in such a way that they can include the relevant information, which gives a response to the investigation that is

taking place. This means that, since this study is looking for the critical issues currently related to the ALPI service, each category defined through the material is a criticality detected. After deciding on the subject and the level of abstraction of the research, the material was read line by line in search of phrases that can explain the critical issues related to the ALPI service, as Mayring (2015) teaches. Whenever a sentence was detected, which provided a possible criticality of the service, it was considered whether this sentence fell into an existing category or deserved a new one for itself. The formed categories and their dynamics relative to each other were revised after about half of the material has been studied. The same revision was carried out, as indicated by a Mayring guide (2015), after the entire material has been read.

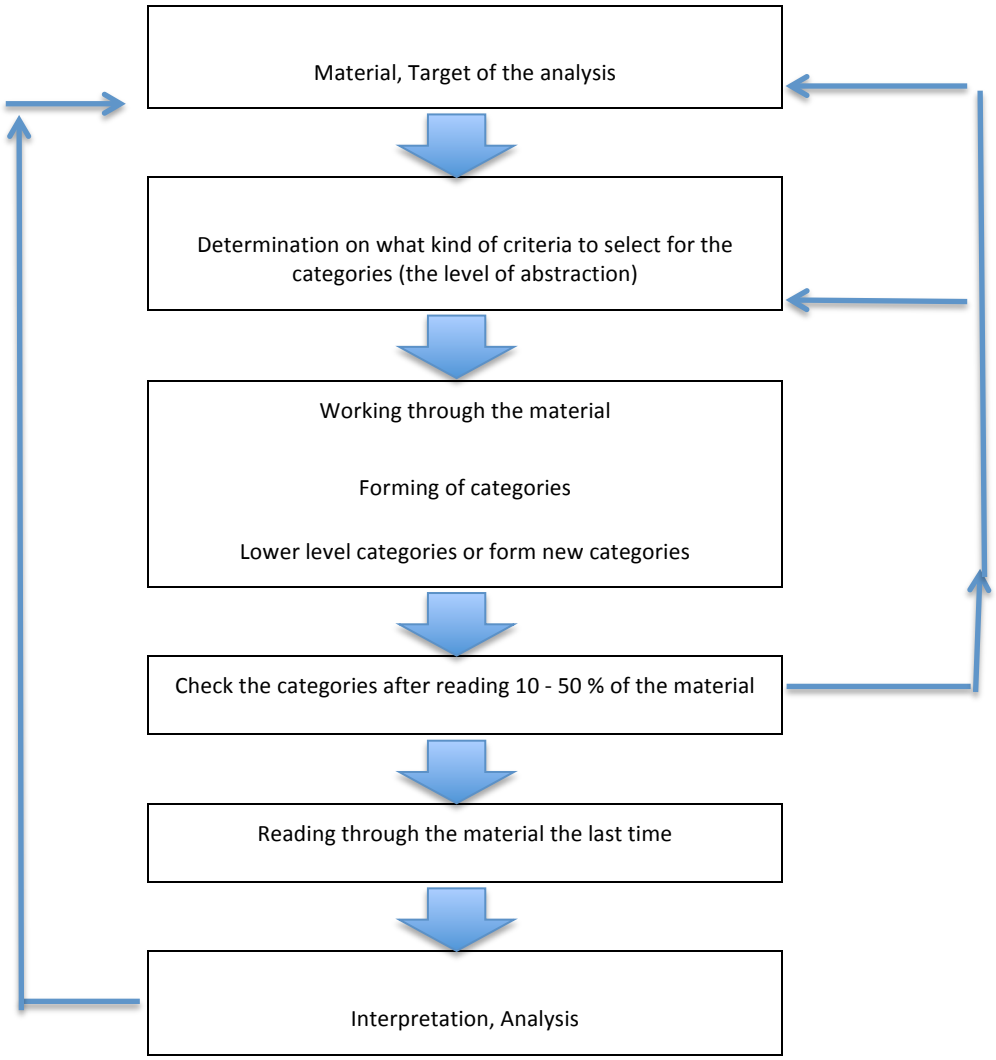

Figure 23. Process of building categories (Adapted from Mayring, 2015, p. 86)

3.1.1 CATEGORIES

After performing the procedure just described above, the following categories were developed: 1. Outpatient spaces and relapses on the service; 2. Personnel; 3. Communication; 4. Organization; 5. Comfort; 6. Booking service for the specialist visit; 7. Insurance; 8. Technology.

Each category corresponds to potential *aspects of improvement* existing within the ALPI.

3.2 QUALITATIVE CONTENT ANALYSIS (QCA)

As already mentioned, this study focuses mainly on qualitative aspects (interviews and focus groups); a method is therefore needed to reliably examine the essential parts contained in them (Yin, 2009, p. 127).

Due to this, the case study uses a qualitative analysis of the content (QCA), and in particular the version, developed by Mayring (Mayring, 2015) as a method of analysis.

QCA is a method used to interpret written documents in a systematic way, while taking into account the context in which the content is produced (Kohlbacher, 2006). Since the respondents in this research do not represent a homogeneous group, it is valuable that the context is also evaluated separately in each case.

Kohlbacher (2006) sees in particular that the inductive approach within Mayring's QCA could be suitable for case studies and to generate theories from them.

Since Mayring's QCA provided a clear framework for material evaluation, it was thought that the first approach, together with the observations of Eisenhardt (1989) and Eisenhardt and Graebner (2007), was used in the preparation of the study design and in the evaluation of the results after the Quality Control Procedure.

3.3 THE CRITICISMS THAT EMERGED FROM THE INTERVIEWS

From the analysis of the 28 interviews, the following categories have been identified, which indicate the main critical issues that characterize ALPI:

i. Spaces and repercussions on the service;
ii. Personnel;
iii. Communication;
iv. Organization;
v. Comfort;
vi. Booking of medical examinations;
vii. Insurance;
viii. Technology.

The results of the analysis are reported in a distinct manner between outpatient and inpatient activities. Below are two tables presenting some examples of what emerged in this phase.

OUTPATIENT	
CRITICALITY DETECTED	***CATEGORY***
"The spaces available are few, it is difficult to find available days and time slots. This causes difficulties in the possible movement of appointments in case of unforeseen events, emergencies/urgencies and rescheduling of the activity"	PLACE
"The dislocation of the clinic, for the type of patients who are treated, is not suitable. Not always in the pavilion where the activity is delivered you have a point of acceptance nearby and (sometimes) the payment point is in another pavilion. For geriatric patients, oncological or with motor difficulties the paths are complicated"	PLACE
"Some clinics turn out to be too isolated. Hall 25 in particular, in the afternoon, is sparsely populated and I do not feel in a safe situation even because it is unsupervised and the reception staff is only on the ground floor."	PLACE
For diagnostic imaging and endoscopy there are not enough clinics and this has led to a lengthening of the waiting list also in ALPI	PLACE
"In most cases the clinics are unseemly. Small spaces, not always easy, excess heat or cold depending on the seasons; Spaces are dirty because are the same used by the institutional activity after 7 hours of visits"	COMFORT
"The waiting rooms are unseemly, there is no proper décor and they are often dirty (the same goes for the bathrooms near the clinics)"	COMFORT
"The information for the external user on the possibility of accessing certain routes even in ALPI is not enough	COMMUNICATION

"the health personnel in support are not trained, nor during the reception, where they do not respects the privacy of patients, nor in approaching the patient, where there is often an absence of the sense of decorum, of good manners, creating embarrassment to the professional and the patient"	PERSONNEL
"The hospital website is unattractive and in no way highlights its professionals"	COMMUNICATION
"There is a lack of information material to be issued to patients or to be placed in waiting rooms that explain what ALPI is, what services are provided, how access takes place, how it takes place the reservation, how the payment takes place"	COMMUNICATION
"The booking systems currently active and its operators are not flexible. In case of urgencies do not get in touch with me to see that they can satisfy in somehow the urgency of the patient"	BOOKING
"Often, especially for geriatric patients, a recall-memo service would be needed for remember the visit and make sure of their presence; this service is currently not active"	BOOKING
" there is no smart channel or app, no more path immediate, less cumbersome, for booking visits."	BOOKING
"I would be absolutely willing to provide services at rates lower through the agreement with more insurance groups in favor of greater volume of visits"	INSURANCE
"technology in clinics is obsolete and inadequate. In some clinics there is also no computer with which to report"	TECHNOLOGY

Table 12. Some critical issues that emerged from the ALPI outpatient service

As far as inpatient activity is concerned, several categories have emerged, shown below (Tab.13) in the table according to the process expressed just before.

HOSPITALISATION	
CRITICALITY DETECTED	CATEGORY
All the professionals interviewed believe that the ALPI and SSN mixture weakens the comfort factor. In some cases due to lack of space at 5, patients are were transported to Hall 1, creating discomfort for the patient	PLACE
"The spaces are sometimes insufficient and it is not possible to meet the needs of the patient of be operated on in a certain period because there are no rooms available. The patient, in fact, he often decides to have surgery in a private structure or chooses other paths for this reason"	PLACE
"If a room for small ALPI surgery were available it would be possible to carry out many interventions in that space and being able to offer them at a lower cost."	PLACE
"The nursing staff dedicated to the ALPI department is not enough, especially during the nights"	PERSONNEL

"Not enough visibility is given to the professional, in the company's information channels. Users turn to a doctor based on the "word of mouth" of other users"	COMMUNICATION
"In some pavilions comfort is non-existent"	COMFORT
"Patients often complain about the quality of food"	COMFORT
"The cost of comfort should be reviewed because the rate is too high compared to the offer"	COMFORT
"currently the insurances in agreement with the insurances are still few"	INSURANCE

Table 13. Some critical issues that emerged of the ALPI service during the hospitalization

3.4 THE CRITICISMS THAT EMERGED FROM THE FOCUS GROUP

The focus-group - in application of co-production processes of public value - aims to detect what may be the critical issues detected by the external user during the use of the ALPI service and his needs for a service that is as close as possible to their needs and expectations.

Below are summarized the main elements that emerged from the discussion, distinguishing between those on which the participants in the focus were compact and those on which they polarized opinions.

ELEMENTS OF COMMON CONSENT	POLARIZATION ELEMENTS
Professionalism of medical staff	Communication not always adequate
Costs too high	Unprofessional health support staff
Spaces not always adequately maintained	Possibility to rely on an App (ICT) for the choice of professional
	Outpatient course affiliated with insurance
	Food quality

Table 14. Some critical issues that emerged of ALPI focus group

With regard to the elements that emerged from the group discussion, some criticisms emerge, such as: the procedures for access to the profession must be standardized. All professionals must make use of the same reservation and receive patients in the places assigned to them for the performance

of the service in the profession. The patient should be accompanied/guided by the reception staff in the payment phase.

At the level of the inpatient department, intervene on the temperature of the rooms (too cold) and on the noise of the rooms (air conditioning system) while at the outpatient level it is necessary to improve the cleanliness of the rooms and the waiting rooms, toilets and medical office.

The quality of food for the hospitalization activity can be improved. Evaluate the possibility of proposing an alternative menu to the current one with greater choices between the types of dishes.

It is necessary to generally improve the information on the path of hospitalization, or outpatient that the patient will have to face. Regarding hospitalization activity: clearer information about pre-admission, surgery, hospitalization, discharge and follow-up should be provided.

Users reported feeling unaccompanied in identifying/choosing the professional. It has been suggested to develop Apps or information/decision support systems to facilitate the choice of professionals and increase the visibility on the current company portal.

3.5 THE RESULTS OF THE QUESTIONNAIRES

As already described, some users who failed to take part in the focus group asked to be able to provide their opinion through questionnaires. 14 questionnaires were received (out of a total of 70 sent).

The characteristics of the population that responded to the questionnaires are as follows: the average age is 43 years, 21% are men, 79% are women. Those who have responded, (except one – family member of the assisted), are those who have personally benefited from the service.

The population, as you can see from the graphs below, is for the majority employed and with a high level of study.

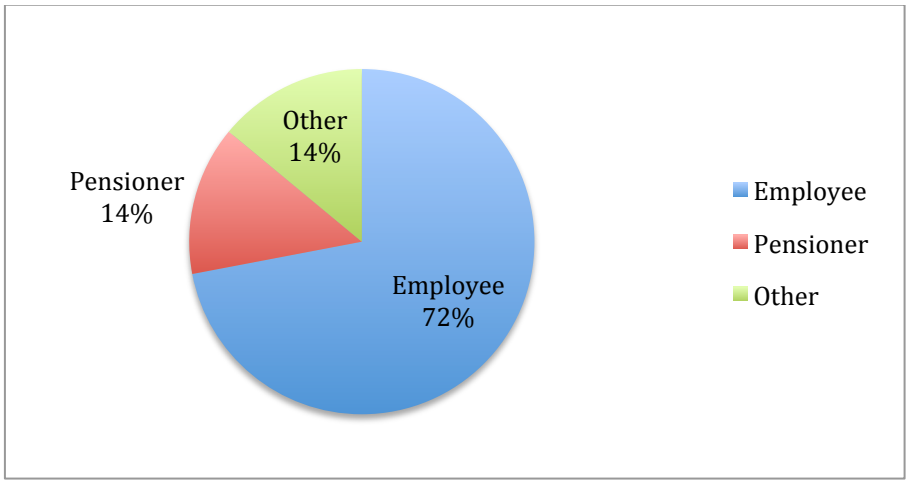

Figure 24. Profession of users who replied to the questionnaire

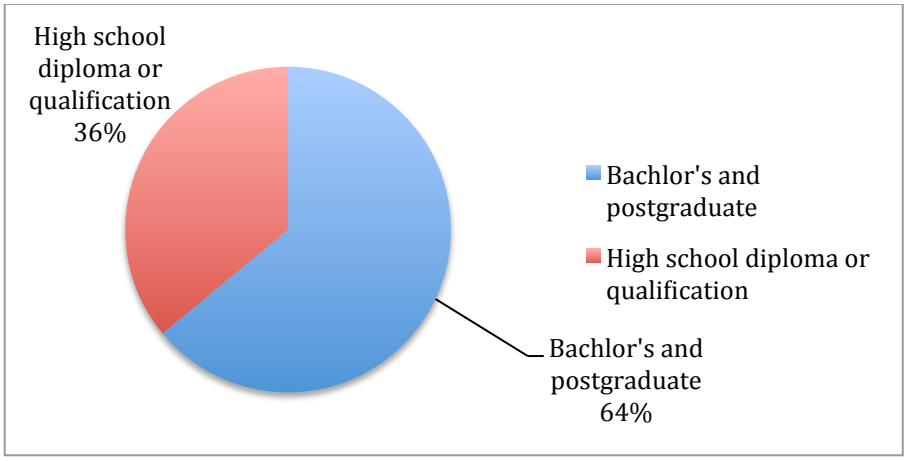

Figure 25. Educational qualification of users who replied to the questionnaire

Analysing the importance attributed to individual factors, it is possible to observe that users had a medium-high expectation of context factors: in fact, those who attributed an average score of 4 (important) correspond to 36% of the population and those who attributed an average score of 5 (very important) correspond to 47%.

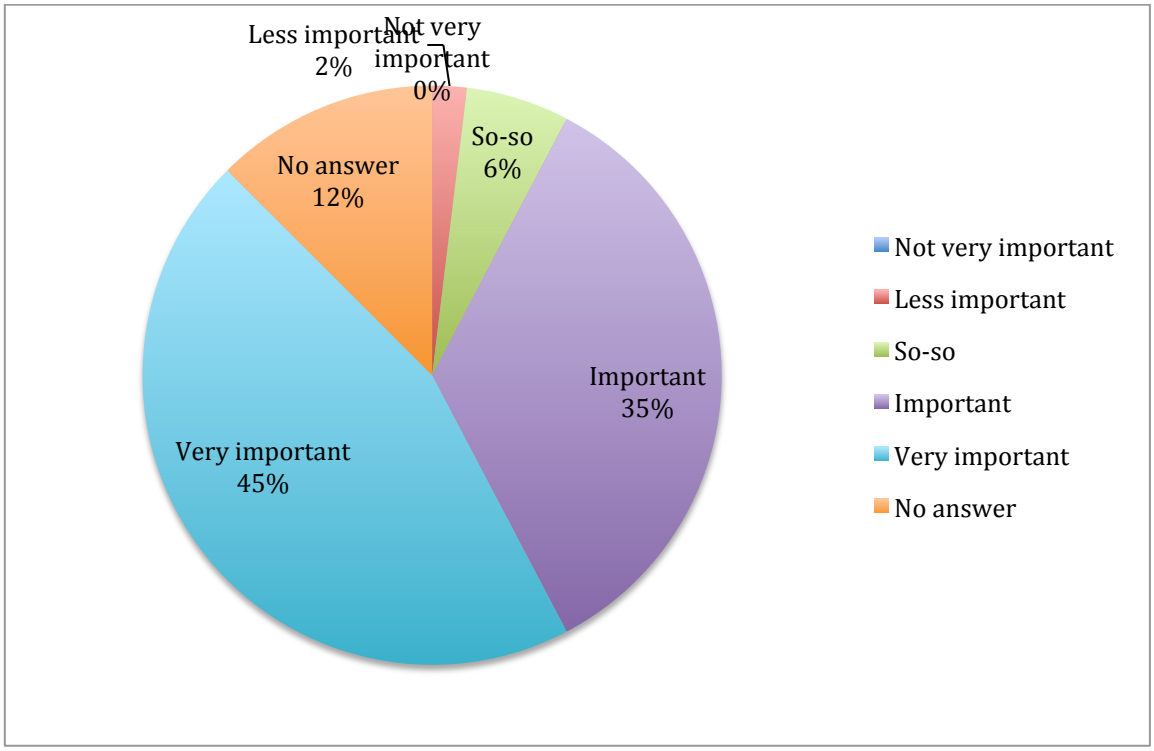

Figure 26. Importance attributed by the users who answered the questionnaire, to the single factor

Proceeding in the analysis of the individual factors, in *Section 1*, linked to the dimension "Access to the structure" there were no particular criticalities. Only in one question out of four (#3: "The kindness and availability of the nursing staff at the time of reception in the facility where they performed the service") 7% of the population reported negative feedback, responding that "it disappointed its expectations", while 75% of users said it was in line with their expectations. Therefore, this phase does not appear to be particularly critical.

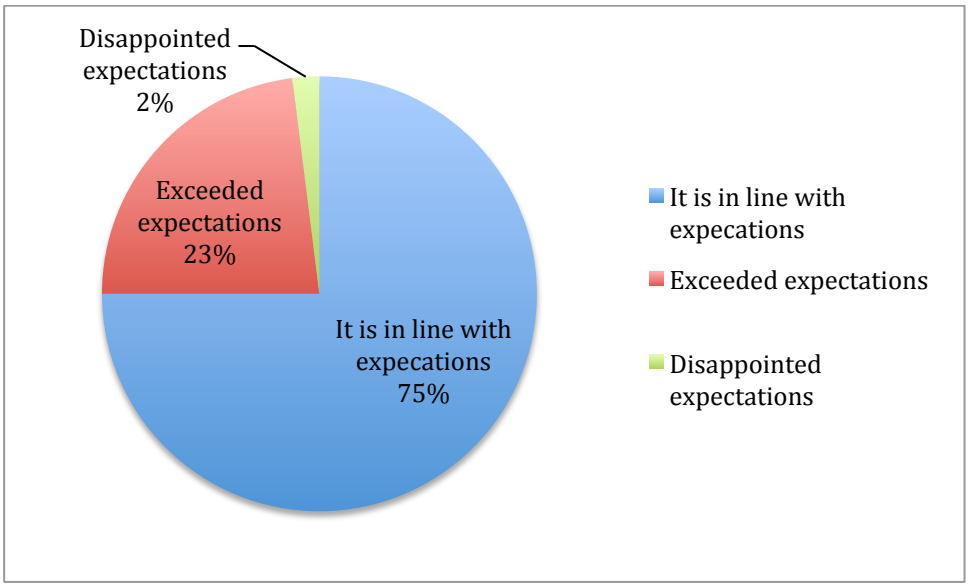

Figure 27. Evaluation of the user who replied to the questionnaire related to the "Access to the Structure" phase

Section 2, "During performance" is the most critical phase. 4 out of 8 questions that made up this section recorded negative feedback. In particular: to the Question #6 "The availability, friendliness and humanity in the relationships by the nursing staff during the visit / examination", to Question #8 "The attention of doctors in understanding and responding to your specific needs and your needs", and to Question #10 "The clarity and completeness of the information received on your state of health and your follow up", 7% of the population gave as an answer "disappointed their expectations" while to Question #11 "The organization of the times of the structure where they carried out the visit / examination (waiting for the reception by the doctor, etc ....)" 21% of the population gave as a judgment "disappointed their expectations". The composition of the judgments is reported in detail:

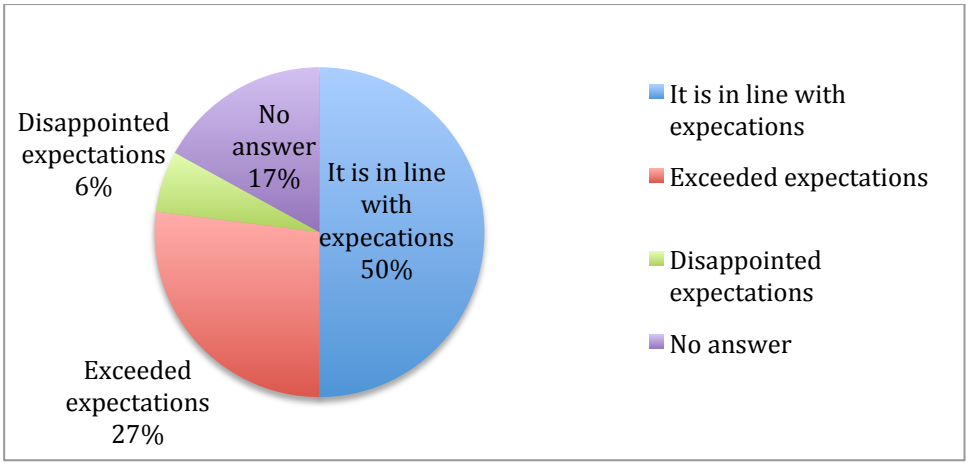

Figure 28. Evaluation of the user who replied to the questionnaire related to the "During the Performance" phase"

In *Section 3*, linked to the "Discharge" phase, only one critical issue was noted in Question #13 "The simplicity of the administrative procedures to be carried out at the time of discharge (possibility of payment, etc...)", in which 7% gave a negative opinion ("disappointed their expectations"), while for 35% of users this factor "exceeded their expectations".

In *Section 4*, dedicated to "Comfort" in Question #17 "The comfort of your waiting room, clinic and toilets (e.g. furniture, room temperature, quietness/noise, etc.)" 7% of the population gave as an answer "disappointed its expectations", while for 71% it was in line with expectations and for 21% it exceeded the user's expectations.

In *Section 5*, "Overall Judgments" to Question #18 "Express your overall opinion on your outpatient visit / examination in free professional activity of the Policlinico S. Orsola Malpighi in Bologna", 89% of users responded "in line with their expectations" and 11% that "exceeded their expectations".

To Question #20 "Do you believe that during your visit you have been guaranteed a care path appropriate to your clinical condition", 83% answered "yes completely", 7% "no for nothing".

4. DISCUSSION

From the triangulation of the collected data, common areas that are subject to improvement emerge. Patients expressed the need for an improvement of ALPI's service with regard to *access to services*, the *comfort of the facilities* and *communication/information* on how to carry out their treatment path under ALPI.

In the wake of what has been argued on the patient side, health professionals have also discussed the need to expand agreements with insurance groups, as it can represent a break down of a barrier to access to the service.

In this regard, a professional noted as a problem the fact that insurance in accordance with ALPI are few; he declares "*it would probably make more sense to do agreement with all insurance companies in order to increase the possibility of access to the service*".

Also with reference to waiting times, professionals have confirmed the criticality complained of by patients about the length of time.

With regard to the comfort of the facilities in which the ALPI takes place, patients have complained about deficiencies in the quality of the service in the outpatient activity and the hospital. Regarding to the first, the main critical issues referred to the poor care of the waiting rooms.

They also found poor quality in the phase of taking charge of the patient in both modes of ALPI services.

Regarding hospitalizations, patients indicated deficiencies in the hotel comfort of the hospitalization, particularly referring to the low quality of the equipment and the quality of food, not adequate with the cost of the service. In this sense, one patient argued: "*I did a really nice post-operative course, but for the poor quality of the bed I suffered tremendously*"

The communication and information activities to the patient about the outpatient or hospitalization path that will have to follow, the user has highlighted critical issues associated with the lack of information provided at the time of booking.

In particular, the user opting for the ALPI service would like to choose the professional and therefore, be advised in this regard by those who manage the reservations.

The shortcomings in communication activities are also reported by professionals who see a poor ability to promote the offer of services: by way of example, several have proposed a portal that

accurately presents the professionals and their specializations, in order to guide the patients in their choice.

Furthermore, the analysis of the data of patients who have chosen ALPI service leads to the need to improve the communication skills of the administrative and nursing staff with whom, mainly, they interface. In this sense, the attention paid by patients is not only on substantial aspects related to patients' paths, but also on the quality of communication, therefore the degree of cordiality, and friendliness of the staff.

The ineffective organization of production capacity in ALPI leads to the mixing of ALPI's activities with those provided under the INHS (which often take place on the same spaces); from the perspective of patients, the costs incurred by them for services in ALP are not justified. Patients, therefore, do not associate the individual activities that characterize their path, the value necessary to justify the 'price' charged by the Hospital.

In this regard, one patient pointed out that: "*Every time I was told to go to floor x, room y, that was never the destination; and while walking around the structure I did not find a single person in the concierge that road was able to give effective directions*".

In summary, through the co-production that saw citizens as co-producers in the design and the delivery of public services (Loeffler & Bovaird, 2018), and in its implementation through mixed methods of research (the interviews and focus groups with users) (Crurice, 2021; Yardley et al, 2015), it emerges that the patient who uses the ALPI service does not believe he is accessing an ALPI service that justifies the price paid for it; in this sense, the criticalities encountered can be traced back to the value co-production process and these criticalities will need to be addressed for the benefit of the stakeholders.

In this study, through co-production, the expectations of the citizen/patient regarding the improvement of the ALPI service in order to increase their level of satisfaction were understood (Fusco et al., 2020; Alford, 2019; Voorberg et al, 2015). The expectations of all stakeholders, external and internal - evaluated and designed through a fluid and heterogeneous process (Culey and Radnor, 2020) - actions aimed at improving the ALPI service, in order to generate benefit for all stakeholders, co-producing public value (Deidda Gagliardo, 2019).

In terms of practical implications, involving the patient, as a co-producer of the value of the service (Palumbo, 2016a), it is possible to develop a business strategy aimed at improving the experience, based on:

1. Improvement of internal and external communication linked to the ALPI;
2. Strengthening of the structures dedicated to the ALPI;
3. Expansion of the procedures for accessing the ALPI;

Table 14 shows the actions related to the short term and the medium-long term, adopting the 4P Borden's framework (Borden, 1965) in order to classify the actions.

Within each box containing the action, the initials "S.E." (external stakeholder) and / or "S.I." (internal stakeholder), it is possible to get an idea, not only visually, of who identified that need and also towards whom that action generates value.

SHORT-TERM IMPROVEMENT ACTIONS		
PRODUCT	PRICE	PROMOTION
stipulation of new insurance agreements	create service packages at reduced prices in the form of a team. The citizen does not choose the professional but a group of professionals.	Creation of the "Doctor's Card"; creation of a summary card for the presentation of the doctor, a photo and the pathologies he deals with in ALPI. This card will be uploaded on the hospital's website and the user can access it through the search engine "doctor's name" or "area of intervention"
S.E + S.I.	**S.E + S.I.**	
create service packages at reduced prices in the form of a team. The citizen does not choose the professional but a group of professionals.	Create reduced rates for hospital staff and their families.	
S.E + S.I.		**S.E + S.I.**
meetings with new healthcare professionals in support of ALPI training for effective and assertive communication.		Agreements with companies developing information/decision-making supports for the choice of professionals (App)
S.E + S.I.		**S.E + S.I.**
Give back the results of the Focus Group, questionnaires to external users and interviews (anonymized) to raise awareness of the critical issues detected		ALPI information campaign. Planned printing of information leaflets to be distributed in all the waiting rooms of the Policlinico.
S.E + S.I.	**S.I.**	**S.E + S.I.**

LONG-TERM IMPROVEMENT ACTIONS		
PLACE	PRICE	PROMOTION
Unique building ALPI, clinics and departments in a single structure.	treatment (e.g. diabetes p	The single building project would result in a single cost center. Better monitoring of the cost would make it possible to apply more advantageous rates to the health service in ALPI.
S.E + S.I.	**S.E + S.I.**	**S.E**

Table 15. Actions related to the short term and the medium-long term

5. CONCLUSION

This analysis – thanks to a co-production process (Yardley et al, 2015) - made possible to identify actions in order to improve the ALPI service in the context of a university public hospital, in line with the vision proposed by Deidda Gagliardo (2019) i.e through actions aimed at improving a service, in order to generate benefit for all stakeholders.

Since co-production refers to a result of processes involving different groups of individuals who were cooperating to achieve a common goal (Majiid et al, 2019), in these specific case internal and external stakeholders actively cooperated in order to improve a service.

Actions have been identified that could increase the value of the service both from the point of view of internal processes, therefore in terms of the quality of the work of the professionals who work within the company, and from the point of view of the user, trying to increase the quality perceived by the patient who uses the ALPI service and by giving a direct response to the needs they have identified.

Through the 4P method, short and long-term actions were defined to be adopted in the analysed setting, which concern both the possibility of improving the management of the service (comfort of the structures, revision of the logistics inherent to the ALPI), and its promotion through more complete and effective forms of communication, aiming at attracting new users.

The framework proposed by (Borden, 1965) has been adapted by the author; within each box where the improvement action is concentrated, the abbreviation "S.E." (external stakeholder) and / or "S.I." (internal stakeholder) - in order to have an idea not only visually of who has been identified this need but also of those who the action generates value to get an idea, not only visually, of who identified that need and also towards whom that action generates value.

Again with reference to the operational implications, some of the proposed actions are being evaluated, while others have been implemented and are being implemented.

Given the company's strategic objectives, the aforementioned actions will be subject to periodic monitoring, in the same way as other objectives.

From a theoretical point of view, this work constitutes an attempt - through an exploratory case study - to fill the gap in the economic-managerial literature that analyses at the “meso level” (Palumbo, 2016 a) the processes of public value co-production in health, in particular with reference to an organizational level like an institutional level constituting a public entity.

The study has limitations, inherent to the chosen methodological approach, including the subjectivity of the researcher in interpreting the results (Orlikowski and Baroudi, 1991); however, interviewing different subjects made it possible to limit the biases deriving from the reading of the data.

Furthermore, the study does not allow for generalization of the results (Darke at al., 1998).

Therefore, further developments of academic research activities in this sense could enrich the literature and fill the identified limitations: longitudinal analyses of stakeholders' perceptions, methodological approaches based on surveys that consider different experiences and large groups of professionals, could lead to better exploring the co-production of value in healthcare and the contribution of patients, both with reference to ALPI services and with reference to the widest range of services provided under the INHS.

THESIS CONCLUSION

The research conducted led to the investigation of the public value co-production in public healthcare organisations and the tools to support.

In these conclusions, the research questions and sub-questions are recalled, highlighting which results emerged.

The first objective aimed at identifying the strategies for the co-creation of public value currently present in public healthcare organisation. The analysis carried out shows the complex nature of the process of co-creation of public value, in the form of co-production, in the health context and in particular within public healthcare organisation, as a result of interactions between activities involving multiple actors. Focusing on the patient service system, as an actor in the public value co-production, the research has made it possible to highlight a complex of strategies for co-production of public value and tools to support this, which directly involve the patient.

Five strategies have been identified by literature: (1) improving the perceived quality of service have been identified from the literature review conducted (Firth et al., 2019; Allen et al., 2010; Pohjosenperä et al., 2020) and patient safety (Allen et al., 2010) 2) breaking down inequalities in access and treatment (Lwembe et al., 2016; Retzer, 2020) 3) creation of support programs for vulnerable patients (Ayton et al., 2019; Grindell et al., 2020; Pereira et al., 2021) 4) for the regeneration of care pathways for the chronically ill (Sorrentino et al., 2015; Pereira et al., 2021)) 5) co-creation of evaluation protocols (Cruice et al., 2021) and in the identification of outcomes (Retzer, 2020; Cruice et al., 2021) – each of which is confirmed by several studies within the identified sample.

Three tools to support strategies, which consist of health literacy as an "*enzyme*" of co-production (Palumbo, 2016), the use of technologies in support of co-production (Leite et al., 2020) and a new performance measurement system that helps guide the individual public healthcare organisation in the adoption of strategies to generate public value (Nuti, 2018).

Empirical evidence on currently available strategies is still limited (11 out of 17 studies report that they are case studies of implemented co-creation strategies) encourage the author to investigate whether these strategies within public healthcare organisations are already present but not yet widely disseminated and whether they are present while being measured or whether co-production is still at the embryonic stage.

At the level of practical implications, the understanding and dissemination of the application of the co-production activities identified by the literature, would allow the health management to reconfigure the service delivery process in order to optimize the objectives according to a co-production of public value.

A fundamental aspect for management is to profitably manage the systemic interactions deriving from scientific research on the co-production of public value in the service ecosystem. In this sense, the need to include and involve the patient in the processes of design, production and delivery of the health service represent one of the essential conditions for health management in order to pursue objectives of improving the quality of service and, at the same time, rationalizing and containing health expenditure.

However, as already mentioned, the study shows that there are not many research works related specifically to the activities of public value co-production in the health sector, yet: the articles analysed in the review process address the issue from a patient-centred perspective while it would be valuable for future research work to develop studies that also consider the point of view of the management of the public healthcare organisation in such a way as to be able to build a model capable of promoting the participation of the patient and other actors in the co-production of value in the health sector at a systemic level.

The literature also guides us that while with regard to co-production and co-design records some empirical evidence, research on co-delivery and co-management seems to be still in theoretical phase.

For this reason, the research will focus on deepening the aspect of co-production that appears to be significant from the literature in a re-tailored of pathways and services, especially for categories of fragile patients whose quality of life appears to be compromised (Sorrentino et al., 2015; Pereira et al 2021; Ayton et al., 2019; Cruice et al, 2021; Grindell et al, 2020, Cruice et al., 2021; Retzer, 2020)

The second objectives is related to analysing the extent to which strategies for co-production of value find application in public healthcare organisation in the Italian context. Although the analysis of the literature had highlighted that co-production seemed to be more adopted and investigated from a medical point of view than from a managerial point of view, in light of the nature of the journals in which the analysed articles were published, looking at the phenomenon from the micro

level (Palumbo, 2016) and questioning directors of operating units, the Italian experience appears to poorly embrace this practice.

In the medical articles analysed by the review, all authors recognize the importance of co-production for the understanding and implementation of patient-centred services (Lwembe et al., 2017; Majid, et al., 2019; Retzer et al., 2020; Frith et al., 2019; Ayton et al., 2020; Pereira et al., 2021; Cruice et al., 2021; Pohjosenpera et al. ., 2020; Grindell et al., 2020; Leite et al., 2021); however, the survey conducted among Italian public healthcare organisations in northern Italy, and in particular in 187 operating units, shows a lack of attention from the perspective of the directors of complex structure (clinical unit) to the issue with the exception of the design phase of diagnostic, therapeutic and assistance pathways.

The data collected in this study lead to believe that co-production strategies and the means to support them, at the micro level, still have little application in practice congruently with what has already been argued in the literature (Fusco et al, 2020; Palumbo 2016).

There is still an unsystematic application of co-production as a means of co-creating public value.

It remains to be seen whether this poor application is the result of a lack of knowledge of the co-creation of public value in health, if this delay is only Italian or even at international level this practice is poorly applied, if its methods of application take too long (as already noted by the literature - Frith et al., 2018) or if this delay is also attributable to the lack of tools to support it.

Through the third study we wanted to analyse a phenomenon of co-production at the meso level (Palumbo, 2016), on the improvement of the experience of a service. The study objective is related *identifying the actions to be adopted to improve the ALPI Service in the Italian context. Furthermore, the adoptable strategy having the objective of the co-production of public value for all the stakeholders involved in ALPI are investigated, in relation to a specific context in which it is provided.*

In this study, through co-production, the expectations of the citizen/patient regarding the improvement of the ALPI service were understood in order to increase the level of satisfaction (Fusco et al., 2020; Alford, 2019; Voorberg et al, 2015). The expectations of all stakeholders, external and internal - to evaluate and design through a fluid and heterogeneous process (Culey and Radnor, 2020) - actions aimed at improving the ALPI service, in order to generate benefit for all stakeholders, co-creation public value (Deidda Gagliardo, 2019).

In terms of practical implications, involving the patient in a research mix, as a co-producer of the value of the service (Palumbo, 2016 a), it was possible to develop a business strategy aimed at improving the experience, based on:

1. Improvement of connected internal and external communication
2. Strengthening of the structures dedicated to ALPI;
3. Extension of the procedures for access to the ALPI;

A strategy was thus developed, containing short and medium-long term actions, adopting the 4P Borden scheme (Borden, 1965) to classify them.

Within each box containing the improvement action was reported by those who identified that need and also by those who that action generates value.

The improvement actions identified are being evaluated, while others have been transposed and are being implemented. Given the hospital's strategic objectives, the actions mentioned above will be monitored regularly, as well as other objectives in order to assess their possible impacts in the future.

The conceptual implications that emerge from this contribution in its entirety highlight that public value co-production practices improve the quality and sustainability of the service as well as generate a better level of satisfaction among users and citizens.

The second study addressed within this thesis, gives us that despite the theoretical evidence, the implications from the practical point of view represent an image of managers quite reluctant with respect to co-production.

Despite the value of the information provided by this study, the current poor application of co-production within public healthcare organisations may mean that management needs more information to implement strategies; there is also a need for further research that can lead to a better definition of the activities of co-production of public value within public healthcare organisations, which allow to build an application model, adaptable to diversified contexts of care and different types of patients within public healthcare organisations.

The analysis conducted in the third chapter highlights the need to move from a top-down logic to an open, inclusive and participatory management model. The deep understanding – by management – of the differences in patients' behaviours in co-production activities of value, can be used as

fundamental information to contribute to the development of a service offer more adherent to the needs of the patient and to achieve improvements in the management of the process itself.

For management it is essential to understand the patient's perspective - as a user with different peculiarities and needs - as the understanding of this aspect allows a co-design of actions that have real benefit on the common well-being, therefore as an element of achieving the creation of public value (Musso, 2019).

With a view to co-production, the design of a health service should be focused both on the micro level, focused on the problems of patient-health worker relationships; and at the meso level, on the identification of actions to improve the service from a systemic point of view.

The systematic perspective would consist in the involvement of the patient upstream and downstream of the production activity - delivery of the health service (Musso, 2019).

The integration of the patient in these phases, the literature suggests to us to be difficult to implement and translate into practice (Frith et al., 2018; Palumbo, 2016). The reason for this difficulty could be attributable to the progressive reduction of public funding that conditions investments and therefore restrict investments in human resources (for example in training and patient awareness actions on the disease) and in technologies (such as web-based ones that enable and support the sharing of information and interaction between the different actors of the health network).

The means aimed at encouraging patient involvement such as, for example, focus groups, work shops, social networks, which encourage the participation of patients in the design of the offer, in the innovation of the service and its use and evaluation, are time consuming (Frith et al, 2018).

However, management should understand that the practice of co-production of public value is a harbinger of numerous management implications about: the redefinition of design activities, a new method of evaluating the existing supply, a new system of allocation of resources therefore more generally a widening of organizational boundaries (Musso, 2019).

The research process that brought to the above conclusions, however, presents some limitations.

With reference to Chapter I, it is considered that the literature related to the strand scientific co-creation in public healthcare organisation could be quite exhaustive: contributions in languages other than English were not examined. Extending to other languages perhaps the research could have gathered some more valuable experience in terms of co-producing public value.

In Chapter II the public healthcare organisations in the sample were companies belonging only to Northern Italy, which although these may have given a homogeneous answer on the topic, was a partial answer on the topic at national level. The study has endogenous limitations given by the sampling method. Public healthcare organisations have been chosen only with up-to-date websites; however we cannot exclude that in healthcare organisations with out-dated websites there may be virtuous co-production experiences.

In Chapter III, the restricted observation period did not allow a system to be developed to understand the impacts of these actions. Although the research presents some intrinsic limitations, considering the Italian context, this thesis has raised the issue of developing awareness on public value co-production within public healthcare organisations; thus, further research is needed on the topic for its extensive application to improve the performance of co-production and to meet the current and prospective needs of citizens.

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APPENDIX 1

PUBLIC VALUE CO-PRODUCTION IN PUBLIC HEALTHCARE ORGANISATION

Section 1

Q1 - Please indicate your age range	□ Under 40 years old □ 41-50 years □ 51-60 years □ More than 60 years
Q2 - How long have you been in the leadership role?	□ Less than 5 years old □ 5-10 years □ More than 10 years
Q3 - Please indicate the type of public healthcare organisation in which you operate	□ LHA □ University Hospital □ Hospital □ IRCCS
Q4 - Please indicate the type of unit you direct	□ Medical □ Surgical □ Diagnostic □ Prevention □ Other
Q5 - How many beds does the unit you direct have?	□ Less than 15 □ 15 - 30 □ More than 30
Q6 - Please indicate the Region in which you operate	□ Emilia Romagna □ Friuli Venezia Giulia □ Lombardy □ Piedmont □ Tuscany □ Veneto
Q7 - Indicate in which range the reference catchment area of the public healthcare organisation is included (n. unit of resident population)	□ ≤ 80.000 □ 80.000-150.000 □ 150.000-300.000 □ 300.000-600.000 □ 600.000-1.200.000 □ ≥ 1.200.000

Section 2

Q8 - *Please indicate the extent to which the unit involves patients/citizens for...* *(1 = in no way; 5 = completely)*					
	1 *in no way*	2	3	4	5 *completely*
… increase the perceived quality of service	o	o	o	o	o
… improve patient safety	o	o	o	o	o
… identify ways to break down barriers to access services	o	o	o	o	o
… identify ways to eliminate differences in the patient's therapeutic treatment	o	o	o	o	o
… the design of support programs for vulnerable patients	o	o	o	o	o
… the redesign of care pathways for chronic patients	o	o	o	o	o
… service design	o	o	o	o	o
… in the development and evaluation of treatment protocols	o	o	o	o	o
… the identification of possible desired therapeutic outcomes	o	o	o	o	o
... the design of diagnostic, therapeutic and assistance pathways	o	o	o	o	o

Section 3

Q9 - *Please indicate the extent to which the unit ...* *(1 = in no way; 5 = completely)*					
	1 *in no way*	2	3	4	5 *completely*
… Is it involved in meetings with advisory committees of patients and family members?	o	o	o	o	o
... Is it involved in meetings with patient representatives and patient advocacy organisations?	o	o	o	o	o
... Is it involved in internal meetings to share critical issues that have arisen in the service delivery phase together with patients / citizens?	o	o	o	o	o
… is it involved in patient training sessions together with internal professionals so that patients/citizens can have a voice in the public healthcare organisation?	o	o	o	o	o
... uses technologies for patient/citizen engagement	o	o	o	o	o

Section 4

Q10 - *Please indicate the extent to which your unit uses technologies for...* *(1 = in no way; 5 = completely)*					
	1 *in no way*	2	3	4	5 *completely*
... collect information relevant to the design of services	o	o	o	o	o
... increase interactions with patients/citizens receiving services	o	o	o	o	o
... increase the level of patient/citizen involvement	o	o	o	o	o
... share decision-making processes on the articulation and delivery of services	o	o	o	o	o

Section 5

Q11 - *Please indicate the extent to which you agree with the following statements* *(1 = in no way; 5 = completely)*					
	1 *in no way*	2	3	4	5 *completely*
In the last 5 years, the public healthcare organisation has implemented health literacy improvement activities aimed at external stakeholders	o	o	o	o	o
In the last 5 years, the public healthcare organisation has implemented health literacy improvement activities aimed at internal stakeholders	o	o	o	o	o
The performance measurement systems in place detect the perspective of the patient / citizen for internal purposes	o	o	o	o	o
The performance measurement systems in place provide useful information for the patient/citizen	o	o	o	o	o
The involvement of patients/citizens in the definition of the mode of delivery of services leads to innovation	o	o	o	o	o
The structure has a good degree of autonomy in the involvement of citizens / patients	o	o	o	o	o