



Capturing the created value in homecare service: the “hidden” performance dimensions

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Abstract

In the realm of homecare services, there is still a lack of a comprehensive conceptual framework and appropriate identification of performance dimensions to guide public managers in creating public value, guiding efficient resource allocation and effectiveness of homecare services. Addressing this gap requires the integration of financial variables with technical variables, strategic and operational needs, and both internal and external organizational perspectives. Only a few studies have explored how value is co-created during service delivery, particularly when considering the service user’s life context and the importance of cross-sector relationships in public service provision. Despite growing scholarly interest in cross-sector collaboration, practical evaluation of their overall performance remains limited, and there is insufficient attention to the internal dynamics that drive performance within collaborative processes. The aim of this study is to identify the dimensions of a performance measurement system, able to reach efficient resource allocation and effectiveness of homecare services. The study is based on field research using semi-structured interview as a data collection method, involving thirty-four healthcare providers and nine members of health organizations and regional government. The results of the empirical analysis are presented using the Public Service Environment framework, articulated at macro-, meso, micro-, and submicro- level.

Keywords Performance dimensions · Public service environment framework · Semi-structured interview methodology · Homecare services · Co-creation of public value

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1 Introduction

Performance measurement systems have assumed a central role within the public healthcare system as critical management tools designed to establish multidimensional performance objectives. These systems provide decision-makers with actionable insights into the achievement of strategic goals, operational efficiency, and organizational effectiveness (Neely et al., 1994; Otley, 1999; Purbey et al., 2007).

Scholars have focused on developing performance measurement systems for hospitals, utilizing a variety of metrics and indicators to assess dimensions of efficiency and effectiveness (Grossi et al., 2022; Kosklin et al., 2023; Nuti et al., 2016; Spanò & Ginestri, 2022). These efforts aim to create standardized frameworks for evaluating hospital performance and ensuring high-quality care delivery. While hospital performance has been extensively analyzed with well-defined indicators and methodologies (e.g., efficiency and clinical effectiveness) (Leotta & Ruggieri, 2017), the evaluation of territorial healthcare services remains underexplored (Lega & Vendramini, 2008; Silva & Ferreira, 2010; WHO, 2021). These services are inspired by management systems that integrate concepts such as “co-production” and “co-creation” of value (Cepiku et al., 2020; Leotta & Ruggieri, 2017). These elements are pivotal in constructing decision-support architectures for healthcare management processes (Marsilio et al., 2021; Osborne et al., 2022; Hardyman et al., 2015; Halvorsrud et al., 2021).

There is a notable gap in the literature regarding performance measurement for territorial healthcare services, such as residential care facilities, home care, rehabilitation services, and addiction treatment programs (Silva & Ferreira, 2010; Hung et al., 2019; Hutchison et al., 2020).

Among these services, home care has emerged as a compelling alternative to institutional care, enabling individuals to receive medical and social support in their own homes. This approach not only enhances patient well-being but also reduces the burden on hospitals (Barber et al., 2022; Falzarano et al., 2022; Oksholm et al., 2023). Home care services, in their various organizational forms, encompass medical care, nursing services, rehabilitation, and personal assistance, all delivered through the coordinated integration of multiple professionals under a pre-agreed care plan (Travaglini, 2024). These services adopt a patient-centered approach (Hyde & Davies, 2004) by providing care within the individual’s living environment—whether at home, with family, or in the workplace—while respecting their daily routines.

Home care services are inherently collaborative, relying on the co-creation of value among diverse stakeholders—patients, families, and healthcare providers—each bringing different expectations and values to the process (Palumbo, 2016; Sorrentino et al., 2018; Vrangbaek, 2015). This model enables the creation of personalized and effective care solutions through active collaboration (Bovaird & Loeffler, 2023). At the same time, challenges such as workforce shortages and geographic disparities often result in unequal access to home care services, necessitating ongoing policy adjustments to address these systemic barriers (Reinhard et al., 2023; Schulz et al., 2020).

Performance measurement systems in this context can provide information on “existing practices, values, beliefs, and assumptions and enable the administration

to develop a systematic means of identifying shortfalls and improving its future performance” (Purbey et al., 2007, p. 242).

In the specific context of home care, research is still ongoing (Cifalinò & Lisi, 2015; Angiola & Bianchi, 2016; Cinquini & Vainieri, 2008; Casteli et al., 2020). In particular, there is still a lack of shared understanding regarding which performance dimensions are most relevant and how performance measurement systems can effectively and efficiently account for the contribution of different stakeholders, such as professionals, patients, and families, in the co-creation of care. Although several indicator-based approaches exist, they tend to remain fragmented or focused on specific aspects of service delivery, without offering a multidimensional framework capable of integrating resource optimization and health effectiveness within the complex and context-dependent homecare environment. Therefore, the aim of this study is to identify the dimensions of a performance measurement system, able to reach efficient resource allocation and efficacy of homecare services. The study is based on field research using the semi-structured interview as a data collection method (Qu & Dumay, 2011), involving thirty-four healthcare providers and nine members of health organizations and regional government.

The article is structured as follows: Paragraph 2 focuses on the co-creation of value in the home care setting; Paragraph 3 presents the state of the art in the literature on performance measurement systems in home care services and aims to highlight the research gap; Paragraph 4 illustrates the methodological approach, clarifying the data collection and analysis processes, the interpretative framework, and the context of the study; Paragraph 5 presents the results of the empirical research according to the interpretative framework, highlighting the dimensions of value in home care; Paragraph 6 discusses empirical insights in relation to the literature. The concluding sections address the study’s limitations and explore the research and managerial implications of this work.

2 The co-creation of value in homecare services

Over the last decades, research on value co-creation in the public sector has highlighted its transformative potential in public service delivery. Co-creation involves collaborative processes in which citizens, public entities, and other stakeholders jointly design, deliver, and evaluate services to address shared challenges (Ansell & Torfing, 2021; Brandsen & Honingh, 2018; Jukic et al., 2019; Osborne et al., 2016). It emphasizes generating value through interaction, which can be individual (personal benefits) or collective (societal improvements) (Røiseland, 2024).

Fusco et al. (2023) underlined that co-creation of value in healthcare implies the integration of users’ personal resources (e.g., skills, knowledge), their private resources (e.g., support from friends or family), and health providers’ resources (e.g., clinical staff, medications, hospital beds, and equipment), as well as resources from the local community and government departments.

Some key elements must be clarified in the homecare setting: who the actors involved in the collaborative process are, their distinct roles, how the interaction

takes place, and the integrated resources. As Lindahl et al. (2011, p. 459) state, “*home care is jointly shaped by health professionals, patients, and family members.*”

Healthcare providers are health professionals who deliver care and treatment, such as doctors, nurses, physiotherapists, etc. (Fusco et al., 2023). Their role is to facilitate value creation during service delivery by reducing information asymmetries between co-actors (Skarli, 2021). In home care service delivery, healthcare workers are often required to adapt to situations of uncertainty with limited support and supervision from general practitioners, specialists, and multidisciplinary teams (Ekstedt et al., 2022). Their roles “*can be differentiated by how much power they are willing to share*” (Haug, 2024, p. 1071). Several researchers have underlined the need for professionals to develop competencies in relational aspects, such as the ability to motivate each actor and create the conditions for effective collaboration, focusing on the individual characteristics of the patient rather than delivering a standardized service (Flynn, 2003; Sullivan, 2000; Brandsen & Honingh, 2016).

Scholars have emphasized that the following factors influence healthcare providers’ interactions: resource availability, in terms of additional time and financial resources (Farr et al., 2018; Wilberforce et al., 2011); organizational culture focused on patient-centered care approaches and innovation orientation (den Boer et al., 2017; Farr et al., 2018); motivational training and support from colleagues (Sharma et al., 2011); and interactions between healthcare providers and other organizations, such as local authorities and third-sector organizations (Mantovani et al., 2017).

Wilson (1994) defined users of home care services as both patients and those who act on their behalf. Patients are mainly older people and/or vulnerable individuals with chronic diseases (OECD, 2023). These patients are supported by family members, who most often act as their caregivers.

Patients and family members interact with nurses and/or doctors during the care process (Sabadosa & Batalden, 2014). Integration may involve activities such as administering (and redesigning) treatment with medical staff, performing exercises, and fostering positive thinking, as well as self-generated activities such as collecting information (Fusco, 2023).

Patients and their family members integrate the healthcare operators’ service offerings with their own needs, abilities, experiences, and societal context (Hardyman et al., 2015). The patient’s active or passive role, as well as their expectations and/or experiences, impacts the quality and performance of care (Osborne et al., 2016, p. 642). They play a crucial role, *especially when healthcare users are in fragile clinical conditions* (Fusco et al., 2023, p. 9). In long-term treatments, family members may become “*the expert*” (Alakeson et al., 2013, p. 17). In elderly care, family members—often also caregivers—are commonly expected to provide additional support, conceptualized as *consumer work* (Dujarier, 2016).

As recognized by Slay & Stephens, caregivers can generate *social outcomes and impact (...)* *often more valid and powerful than support from ‘professionals’* (2013, p. 25). Regardless of the patient’s health status—which may determine their capacity to participate actively—the effectiveness of the service can change based on their lived experience during the care process.

In home-based care settings, service delivery is embedded in close, ongoing interpersonal relationships where healthcare professionals, patients, family members/

caregivers must continuously align tasks, expectations, and emotional needs. In addition, unlike institutional healthcare environments - like hospitals -, homecare is characterized by narrow boundaries between care and personal spaces, making collaboration, at home, inherently relational and context-dependent. Considering these peculiarities, the health encounters require coordination across roles to achieve desired outcomes. The focus is not only the exchange of services, but also the development of shared goals and knowledge, as well as mutual respect (Bolton et al., 2021; Gittel, 2002). These mechanisms support frequent, timely, accurate, problem-solving communication, and vice versa, enabling stakeholders to effectively coordinate their work across the home spaces.

Several factors influence this interaction, including sociodemographic characteristics (Farr et al., 2018). Poor health status can be a barrier to co-creation (Farr et al., 2018; Holland-Hart et al., 2019), as can limited competencies or knowledge (e.g., health literacy, language proficiency, communication, or listening skills) (Virlee et al., 2020). Resource availability—such as money and time (Morton & Paice, 2016; Munoz, 2013)—confidence and trust in clinicians (Virlee et al., 2020; Van Eijk et al., 2017), and communication by staff during health encounters (Banytè et al., 2014 ; Kim et al., 2025) also play a role.

Healthcare professionals and caregivers routinely manage patient emotions to reach potential positive health outcomes (Hochschild, 2003; McQueen, 2004). This requires “emotional labor” (Hochschild, 1979, 2003) and, in particular, an “emotion treatment process” (DeCoster, 2000): these professionals, in fact, are expected to manage their emotional expressions, demonstrate empathy, and maintain professionalism even in emotionally charged situations, such as chronic illness, dependency, or end-of-life care (typical in the context of homecare). These emotional regulation processes shape not only patient’s well-being and professionals’ performance but also patients’ satisfaction with care. At the same time, the sense of personal accomplishment by professionals could be enhanced (Brotheridge & Grandey, 2002).

Pharm et al., 2019 showed some key psychological factors, which could activate value-creation by patients: the sense of personal control over their health (internal locus of control), the confidence in their ability to perform requested activities (self-efficacy), positive expectations about outcomes (optimism), a stronger orientation toward achieving positive goals (promotion focus), and motivation driven by the perceived benefits of participation. About self-efficacy, the research conducted by Holland-Hart et al. (2019) - who involved members of the public with varying health-care experiences and clinicians - highlighted potential benefits of greater empowerment.

In line of this, Munoz (2013) developed an action research project with community members, health care providers and commissioners focused on home care delivery. Findings revealed as community members identified some positive aspects of being involved in service co-production relating to sense of community, empowerment and personal satisfaction. However, negative impacts included increased feelings of pressure, strain and frustration among those who took part in the co-production process (Munoz, 2013).

Additionally, homecare services can offer cost-effectiveness and improved healthcare system efficiency. As Spano et al. (2018) noted, homecare can result in cost savings when compared to hospital-based services.

3 The quest of a performance measurement system in homecare setting

Measuring performance in the context of home care is crucial for several reasons. First, as home care increasingly emerges as a strategic response to the growing demand for chronic and long-term care, performance measurement systems are essential to assess whether these services achieve their intended objectives in terms of quality, efficiency, and accessibility (WHO, 2021). Second, considering the decentralized and often fragmented nature of territorial healthcare services, robust performance measurement systems can provide a shared framework for coordination and comparison across settings, thereby supporting equity in service provision (Cinquini & Vanieri, 2008; Sorrentino et al., 2024).

Despite its importance, research on performance measurement in home care remains at an early stage. Cifalinò & Lisi (2015) proposed a set of performance indicators for primary care services within the Italian National Healthcare System, focusing on three key performance dimensions: care intensity, population coverage, and productivity. The authors emphasized that these indicators are defined based on the data flow from the Homecare Information System (SIAD), as established by the Ministerial Decree of 17 December 2008, which is available for benchmarking across the national system. The SIAD system delineates specific stages in the care process managed by public homecare services, each requiring data transmission in standardized formats. Drawing on this data flow, the authors defined several performance indicators aligned with the identified dimensions. These include: the average care intensity coefficient (stratified by duration of cares taken in charge); the average number of actual days and accesses (stratified by active or closed cares taken in charge); the incidence of care episodes with at least one multiple access; the incidence of patients receiving care within the population (stratified by age group); and the incidence of cares taken in charge on the population (also stratified by age group). The authors note that their study is limited to the ministerial data flow and recommend further in-depth analyses to assess the effective use of these indicators at the local level and to evaluate the impact of cares taken in charge in terms of effectiveness and efficiency.

Using statistical methods, Angiola & Bianchi (2016) examined the performance of networks delivering home care services for older adults in Apulia, Italy, involving both private and public organizations. Their primary focus was on identifying levers to enhance performance, particularly in terms of effectiveness, with an emphasis on service integration between municipalities and health districts. They observed that local welfare areas and health districts frequently encountered difficulties in data sharing, resulting in inconsistent data production. Their findings highlight that organizational well-being within multiprofessional teams is a significant factor in promoting integration within public homecare networks. Notably, the authors assert that the Multidimensional Evaluation Unit, operating at the district level, could play a pivotal role in fostering the implementation and utilization of performance measures.

Cinquini & Vainieri (2008) described an initiative within the Tuscan health system aimed at designing a homecare performance measurement system. The study proposed indicators related to three performance dimensions: patient health outcomes; adverse events (such as those requiring emergency medical intervention or hospi-

talization); and user-perceived quality. The authors reported efforts to utilize information already present in regional or organizational data flows. However, despite attempts to incorporate new data inputs from healthcare and other professionals, only data on adverse events were comprehensively collected; outcome indicators were available for only half of the cases, and no indicators pertaining to perceived quality were obtained. In their conclusion, the authors advocate for directing efforts toward the organizational structure of services to define a robust performance measurement model for homecare.

A systematic literature review by Casteli et al. (2020) investigated the indicators used to measure home-based hospitalization. The authors identified performance dimensions related to nursing assistance (including resource costs, management of problems and symptoms, comfort and quality of life, cognitive and psychosocial functional capacity, patient and caregiver satisfaction, hospital mortality, readmissions, and length of stay), as well as dimensions related to facilities and equipment (such as bed utilization, emergency consultations, and use of healthcare services), and changes in patients' conditions (e.g., survival time). They highlight the need for detailed investigations into cost-effectiveness, patient participation and perception, and note a lack of outcome indicators, particularly regarding safety and the burden on family or informal caregivers.

The fragmented nature of existing research on performance measurement frameworks in home care underscores a broader set of limitations. Beyond the lack of integration across studies, there is a notable absence of a comprehensive, multidimensional system capable of capturing the collaborative dynamics among stakeholders. Current approaches frequently rely on isolated indicators, thereby neglecting key relational and contextual dimensions that are essential in the home care setting.

Several scholars (Cifalinò & Lisi, 2015; Cinquini & Vainieri, 2008) have based their research primarily on data flows from regional or organizational information systems, omitting dimensions that may emerge within the home environment, particularly those arising from the interactions among patients, family members or caregivers, and healthcare providers. While Angiola & Bianchi (2016) examined the factors facilitating integration within home care networks, their analysis did not capture the performance dimensions necessary to inform the decision-making processes of the various actors within the network.

Finally, in the study by Casteli et al. (2020), the proposed indicator system is primarily oriented toward evaluating the total cost of resources utilized in home-based hospitalization. Other aspects cited—such as the management of problems and symptoms, comfort and quality of life, and cognitive and psychosocial functional capacity—lack sufficient contextualization to the specificities of the home care setting.

Many of the proposed tools lack validation across different settings and fail to reconcile quantitative metrics with interpretive frameworks that can account for the complexity and subjectivity of care delivery.

To further complicate matters, as shown in Sect. 2, home care is a highly complex and dynamic service, shaped by the interaction of multiple actors (patients, family members, healthcare professionals, and community organizations) and a wide range of contextual factors.

This complexity gives rise to several significant challenges for performance measurement. A first difficulty lies in the nature of the outcomes themselves. Many of the most meaningful results of home care are intangible or non-clinical, such as patient empowerment, perceived well-being, trust, and quality of interaction (Franzosa, 2016; Sanerma et al., 2020). These dimensions are essential to understanding the actual value created through care delivery, yet they often escape traditional measurement frameworks.

A second difficulty relates to the multiplicity of actors involved (O'Rourke & Beresford, 2022). Performance in home care is not the product of a single provider, but the result of a collaborative process involving heterogeneous stakeholders with different expectations, capacities, and roles (Haex et al., 2020; Darwich et al., 2023; Hochschild, 2003; McQueen, 2004). Measuring performance thus requires not only identifying relevant outcomes, but also attributing them appropriately across actors, i.e. a task that is methodologically and conceptually demanding.

As third it must consider that many of these outcomes emerge over time, are highly context-dependent, and unfold in non-linear ways. This makes it difficult to define shared, stable performance criteria and to develop indicators that are both comparable and meaningful across different settings.

In homecare service delivery, it is recognized as geographic determinants also play a significant role in care disparities, highlighting the need for equitable policy frameworks (Kim et al., 2025; Herr et al., 2024; WHO, 2021). Urban-rural differences are also significant (Gheduzzi et al., 2021; Mseke et al., 2024; Reilly, 2021), with remote areas facing major challenges due to limited healthcare infrastructure (WHO, 2021).

As a result, much of the value generated through co-creation remains hidden or latent and cannot be easily captured by conventional performance measurement systems. This invisibility poses a challenge not only for researchers, who struggle to design adequate measurement tools, but also for practitioners and policymakers, who need reliable and comprehensive data to evaluate and improve home care services.

This is the reason why there is a growing call for frameworks that enable a more holistic understanding of performance, especially in healthcare co-creation research (Rajala et al., 2021; Sorrentino et al., 2018, 2024; Sicilia et al., 2019). Sorrentino et al. (2018) explicitly call for research that aims to identify “*the dimensions to incorporate in a framework designed to assess performance*” (p. 289).

Despite the growing importance of home care, research on performance measurement in this field remains fragmented and underdeveloped. As a matter of fact, existing studies have mainly proposed sets of indicators based on administrative or regional information systems (e.g., SIAD), focusing on dimensions such as care intensity, coverage, productivity, adverse events, or resource use (Cifalinò & Lisi, 2015; Cinquini & Vainieri, 2008; Casteli et al., 2020). However, these approaches remain largely limited to what can be captured through standardized data flows and, therefore, provide only a partial representation of performance in home care.

Current tools tend to rely on isolated and mostly quantitative indicators, neglecting the relational, contextual, and collaborative dynamics (Bolton et al., 2021; Gittel, 2002), through which value is produced in the home environment.

Moreover, many of the most meaningful outcomes of home care are intangible, long-term, and context-dependent (such as patient empowerment, trust, perceived

well-being, and quality of relationships): these dimensions are essential to understanding value creation, yet they often remain unobservable within traditional measurement frameworks (Franzosa, 2016; Sanerma et al., 2020). Emotion labor and emotion treatment process should acknowledge attention in this array (DeCoster, 2000; Hochschild, 1979, 2003).

Overall, the literature highlights the need for a more holistic and integrative framework capable of capturing not only efficiency and clinical outcomes, but also the co-creative, relational, and contextual dimensions of performance in home care networks. Responding to this gap, scholars increasingly call for research aimed at identifying the key dimensions that should be incorporated into a robust performance measurement framework for healthcare co-creation (Sorrentino et al., 2018; Rajala et al., 2021). As Talbot (2011) puts it: “*A reliable conceptual framework, and some way of developing metrics of performance against the elements of such a framework, therefore seems necessary to provide a guide to public managers and others seeking to create public value. How might such a task be approached?*” (p. 31).

This leads to the central research question of this study: What dimensions should a performance measurement system include to capture value co-creation in homecare settings?

4 Methodology

4.1 Data collection

To address the research question, this study employs field research using a semi-structured interview as a data collection technique. Semi-structured interviews were considered appropriate due to its high degree of flexibility (Qu & Dumay, 2011) since they enable an in-depth exploration of the conceptual categories used by the interviewees, the motivations behind their decisions, and their interpretations of reality. As a result, this method facilitates the identification of behavioural aspects that may have previously remained implicit (Kvale & Brinkmann, 2009).

To explore how value is co-created and how performance can be meaningfully assessed in the context of homecare, we conducted interviews with two key categories of actors: nurses, who operate on the frontline of service delivery, and institutional or governmental representatives, who are responsible for designing and regulating homecare services at the policy level¹. The decision to interview nurses stems from their central role in the delivery of homecare. As recognized by several authors, nurses are the largest group of homecare providers (Ganann et al., 2019; Htay & Whitehead, 2021; Grasmø et al., 2021). A total of thirty-four individual interviews were conducted with nurses.

We also interviewed nine managers of public health organizations and regional government, who serve as policymakers in matters related to resource allocation.

¹ The study was conducted in accordance with institutional ethical standards. All participants were informed about the purpose of the research, assured of confidentiality and anonymity, and provided informed consent prior to participation.

These participants were selected from different geographic areas, allowing for an investigation into how diverse “administrative” and “regulatory” contexts may influence the definition of performance dimensions (Chaebo & Medeiros, 2017; Voorberg et al., 2017).

All interviews with key informants were carried out in accordance with a uniform protocol to enhance the rigor and validity of the study (Yin, 2014). For interviews with nurses, the research team identified the following key themes, which structured the interview guide (Appendix A1):

- territorial organization of service delivery;
- actors involved in home service delivery and their respective roles;
- factors that facilitate or hinder homecare service delivery, including values and beliefs;
- relationships with other healthcare professionals;
- tools used for data management, including critical issues and potential improvements.

For interviews with managers, the interview guide (Appendix A2) included the following themes:

- evaluation of the current measurement system for managing homecare services;
- critical issues and gaps in the current monitoring and evaluation system;
- proposals for new criteria, tools, or changes to improve the evaluation system;
- influence of geographic factors.

During the interviews, researchers asked for concrete examples, encouraged storytelling, and posed reflective questions (Kreiner & Mouritsen, 2005) to prompt participants to describe what occurs in their daily work and to elaborate on specific details. Interviews were conducted during a period of over one year: from February 2024 to April 2025. Interviews conducted to nurses and managers lasted an average of 30 min. All interviews were audio recorded and fully transcribed.

4.2 Data analysis

Thematic analysis was chosen because it enables systematic analysis of large data sets and facilitates the comprehension of textual patterns while considering the context (Lincoln & Guba, 1985; Nowell et al., 2017). Open codes were created during the first pass to collect various perspectives from interviewees: particularly meaningful text segments - such as statements, experiences, critical issues, or reflections expressed by them - were identified and assigned open codes. These codes, defined as first-order codes, were intended to capture what emerged from participants' narratives as accurately as possible, remaining closely aligned with the informants' language and firmly grounded in the empirical material. The interview transcripts were examined repeatedly and coded line by line. Text segments corresponding to

the predefined codes were identified and tagged accordingly (Ayres, 2008). Clustering was used to group the unexpectedly high number of open codes, derived from the transcribed insights provided in each interview (Nowell et al., 2017).

In the second phase of the analysis, a constant comparison method guided the clustering of the codes: the first-order codes were systematically compared and clustered according to recurring meanings, highlighting common practices, and factors perceived as either enabling or constraining efficient resource allocation and efficacy of homecare services. When excerpts were relevant to more than one code, they were assigned to multiple categories in order to capture overlaps across themes. These clusters (second-order codes) were the preliminary formulation of emergent themes, understood as interpretative performance dimensions arising directly from the actors' lived experiences. At this stage, the analysis remained fully inductive, as the data themselves guided theme development rather than any pre-existing theoretical framework. Finally, these second-order categories were further integrated into higher-order aggregate dimensions by iteratively linking empirical insights with relevant theoretical perspectives (Gioia et al., 2013). The themes consisted of those that appeared predominantly across multiple interviewees and those that came from interviewees that represented divergent responses and opinions. Through multiple rounds of iterative coding and constant comparison within the research team, several overarching themes emerged. These emergent themes were then interpreted using the four levels of the Public Service Ecosystem framework, discussed in the subsequent section. Throughout the coding process, analytical memos were systematically produced to support ongoing reflection and the development of preliminary interpretations (Corbin & Strauss, 2008). Following the individual coding phase, the research team convened on several occasions to review the coding outcomes. During these meetings, discrepancies and areas of uncertainty were discussed collaboratively until a shared understanding was achieved (Ahrens & Chapman, 2006).

The coding process is simplified in Appendix B1 and in Appendix B2, respectively for nurses' interviews and managers' interviews.

Section 6 reports the findings associated with the identified aggregate dimensions for each of the four levels of the Public Service Ecosystem framework, isolating the contextual factors. In the same section quotations support the research findings.

4.3 Theoretical framework

This study adopts the Public Service Ecosystem (PSE) framework developed by Osborne et al. (2022) as its interpretative lens for analyzing performance dimensions in homecare services. Rooted in the broader Public Service Logic (PSL), the PSE framework shifts the focus from intra-organizational efficiency to the co-creation of public value within complex, multi-actor service systems. It emphasizes that value in public services is not generated solely within the boundaries of single organizations but is instead the result of interactions among a wide range of stakeholders, each bringing their own resources, motivations, and institutional contexts.

The PSE framework conceptualizes value creation across four interconnected levels:

- Macro-level: the societal and institutional environment, encompassing norms, policies, and regulatory frameworks that shape public service delivery.
- Meso-level: the organizational networks and inter-organizational dynamics at the local level that structure how services are designed and delivered.
- Micro-level: the point of service interaction between professionals, service users, and families, where value is directly co-created.
- Sub-micro level: the individual values, beliefs, and motivations of the actors involved, which influence how they perceive and contribute to value creation.

Recent studies (Knox & Arshen, 2024; Haug, 2024) have shown that this framework is particularly effective in capturing the layered and dynamic nature of value co-creation processes in public services, especially when interactions are distributed across institutional, organizational, and personal dimensions.

The application of the PSE framework is especially appropriate in the context of homecare services for several reasons. First, homecare is inherently a multi-actor process involving not only healthcare providers but also patients, family caregivers, community actors, and regulatory institutions. These actors operate at different levels of the ecosystem and bring diverse, often conflicting, perspectives on what constitutes value. Second, homecare is deeply embedded in the socio-institutional environment: policies, geographic factors, cultural norms, and organizational practices all shape how care is delivered and perceived. Third, the co-creation of value in homecare depends on individual beliefs, emotional readiness, trust, and relational dynamics, i.e. all dimensions that are central to the sub-micro level of analysis.

By providing a structured yet flexible analytical lens, the PSE framework allows us to integrate these diverse dimensions and to support a holistic understanding of performance that goes beyond technical efficiency to include experiential, relational, and societal outcomes. This makes it particularly suited to reach the objective of the paper.

Using the PSE framework, the findings of our empirical study are analyzed and presented across the four levels of analysis.

Based on the literature reviewed in the previous section, the four levels of Osborne et al.'s (2022) framework can be operationalized in the context of homecare services as follows. At the macro-level, governments regulate homecare services, ensuring quality of care, equity of access, and cost-efficiency in resource allocation. The meso-level refers to how healthcare institutions organize and manage service provision within local communities, considering contextual features such as urban versus rural areas. The micro-level is the home environment itself, where healthcare professionals, such as nurses, general practitioners, and therapists, co-produce services together with patients and family members. Finally, the sub-micro level reflects how actors at the micro-level draw upon their personal and professional values and beliefs to shape their behaviours and perceptions.

This approach enables us to map the multiple dimensions of performance and articulate a comprehensive view of factors perceived as either enabling or constraining efficient resource allocation and efficacy of homecare services: health setting in which the is co-created (or destroyed) by different actors.

5 The context of empirical research

The study was conducted in Italy, where homecare operates as a publicly funded healthcare service governed by national and regional regulations. Administered through Italy’s National Health Service (NHS), these services are primarily targeted at older adults, individuals with disabilities, and patients requiring home-based medical support. However, eligibility criteria and service availability may vary across regions and individual circumstances, as local authorities are responsible for overseeing service delivery.

While all services are financed by the NHS, the distribution of funds occurs at the regional level, considering the specific characteristics and needs of each region. To access care, individuals typically request an assessment through public health organizations, which operates through district-level divisions responsible for coordinating service allocation. They coordinate healthcare professionals, collaborators, and, where available, volunteers, with an emphasis on role specialization, accountability, and multidisciplinary collaboration. It also manages systems for sourcing, distributing, and maintaining medical supplies, pharmaceuticals, and equipment, in alignment with regional health service mandates. Additionally, the health organizations are responsible for maintaining biomedical devices, IT systems, and facility operations to ensure service continuity and regulatory compliance.

We engaged interviewees working in three different districts of two different Italian Regions: District ALFA, District BETA, and District GAMMA. In District BETA, homecare services are entrusted to a social cooperative, rather than being directly managed by the public organization, which is the case in District ALFA and in District GAMMA.

In both District ALFA and District BETA, homecare services are structured into service streams across multiple municipalities, encompassing diverse geographical areas, from urban areas to rural, hilly, and mountainous zones. District GAMMA, by contrast, primarily covers urban areas with a limited portion of hilly territory.

6 Analysis

6.1 Performance dimensions

The results of the empirical analysis are presented using the Public Service Environment framework. Findings are reported by identifying, at each level, the key performance dimensions that enable assessment of the effectiveness, efficiency, and quality of homecare services.

6.1.1 Macro-level

At the macro level, two key informants operating at the regional level were engaged: a General Director of a public health organization appointed by the Region, and a Regional Executive. The General Director is accountable to the Region for achieving the objectives established at the time of appointment and within the framework of strategic and regional planning acts. The Regional Executive is responsible for managing the data flow of homecare services in accordance with current ministerial requirements. The selection of these two informants was based on their in-depth knowledge of the research context at the macro level.

Governance and regulatory framework Although the National Health Service (NHS) recently updated requirements for data transmission via standardized formats (Ministerial Decree of 7 August 2023), the data elements remain unchanged from the previous decree (Ministerial Decree of 17 December 2008), thereby confirming the continued relevance of the indicators defined by Cifalinò & Lisi (2015). Of particular interest is the national policy process that guided the specification's definition in 2008. The General Director reported having served as a member of the national committee-comprising representatives from each Italian region-responsible for drafting the original decree. He stated:

“The information flow was established to ensure uniformity in the activities provided by the various regional health systems and, therefore, to standardize data collection. Currently, we use exactly the same data flow defined in the 2008 decree, which has remained essentially unchanged, even though needs are evolving. We have no other information sources.” (General Director).

At the regional level, the Home Care Information System mandates a unified data flow that must be reported and made available for benchmarking across territories. Based on district-level data input, the Region fulfils national requirements after assessing the data logs. As the Regional Executive explained:

“Since 2023, there is a single and uniform data entry at the local level for homecare, structured on a monthly basis. The dataflow for the previous month is checked at the regional level for consistency with ministerial technical specifications. Primarily, the following corrected data are returned to the districts the next month: the distribution by class of the care intensity coefficient and the operator who provided the care, the type of service performed, the volumes provided, and the users served.” (Regional Executive).

Resource consumption and cost-efficiency Homecare services in Italy are financed by regional governments, in accordance with policies defined at the national level. Consistent with the literature (Casteli et al., 2020; Fusco et al., 2023; Wilberforce et al., 2011), the resources available for homecare depend on regional financial allocations but can be managed more effectively by utilizing data that capture the cost-efficiency of the service. The necessity of obtaining information from the various

settings involved in the patient’s care pathway is strongly emphasized, as it enables more efficient resource allocation at the macro level. The General Director articulated the following:

“One crucial dimension, not managed from a systems perspective, relates to the costs absorbed by services. We need data on: drug consumption to evaluate prescription appropriateness, considering that unused drugs expire and generate costs of non-use; optimization of patient pathways at different levels of care, in order to monitor and minimize downtime and recover resources; continuity of the medical guard, which prevents recourse to inappropriate services; and continuity of care for diagnostic tests, which avoids duplication of prescriptions and therefore impacts resources. Monitoring these aspects, from the perspective of an open system that communicates, allows for better resource allocation.” (General Director).

While the above evidence pertains to resource consumption, the General Director’s remarks also allude to additional performance dimensions -such as appropriateness of care across different settings- that are further explored at the meso-level and remain critical for cost-efficiency.

Third-sector involvement and data integration As noted by Angiola & Bianchi (2016), the research context reveals persistent challenges in data sharing among the various actors involved in homecare delivery. The need to update data collection processes is also highlighted by the Regional Executive, echoing the concerns raised by the General Director. The Regional Executive stated:

“In recent years, homecare is changing. Regulatory developments have expanded the involvement of third-sector operators. At the regional level, data on the activities provided by the third sector are not available. The Region has decided to include, among the objectives for general directors in 2025, the integration of these data.” (Regional Executive).

The relevance of these data is particularly significant for assessing regional service delivery and informing policy at the macro level. This information is especially pertinent given that, in 2023, the implementation of Measure 6.2 of the National Recovery and Resilience Plan aims to expand homecare coverage to 10% of individuals over 65 years old by mid-2026. Comprehensive mapping of the demand met would better support the achievement of this national target.

Trustful relationships Management and organizational scholarship consistently underscore trust as a fundamental resource for sustaining relationships, teamwork, and community building (Jones & George, 1998; Lewicki & Bunker, 1996). In line of this, nurses consistently emphasized that building relationship is foundational for effective homecare delivery. Establishing trustful relationships with patients and caregivers enhances cooperation, care compliance, and patient empowerment (Holland-Hart et al., 2019; Pham et al., 2019).

As one nurse from District GAMMA noted:

“If you establish a good relationship, everything goes better... Patient/care-giver empowerment is desirable, but it takes time (a resource often in short supply) and, above all, trust... there is a journey that needs to be relational, more relational than performance based. You can be the best nurse in the world clinically, but if they don’t want you, it becomes difficult to provide care. We must consider that there may be a patient (or a family) who does not know what they have, or a patient who is afraid of everything. ...Emotionally, when dealing with oncology patients, the nurse is perhaps more challenged than with a chronic patient over 80 years old with Alzheimer’s” (Nurse 5 – District GAMMA).

The significance of trustful relationships for patient well-being is further illustrated by another nurse:

“If a family member or caregiver does not trust you, you cannot even provide them with information. For example, a patient with a pressure sore requires proper mobilization, a protein-rich diet, and adequate hydration. However, if the family member or caregiver does not trust you, they will not follow these recommendations. Trust is essential in every aspect of the relationship. This also affects our work: if there is trust, they wait for us to return the following week for treatment. If trust is lacking, the family member will contact the operations centre after just two days to request another visit, even if it is unnecessary.” (Nurse 11 – District BETA).

Job satisfaction All interviewed nurses expressed high levels of job satisfaction, particularly when compared to their experiences in hospital or other primary care settings. Despite various challenges and the needs to manage patients’ and own selves’ emotions (Hochschild, 2003; McQueen, 2004; see, above quotation Nurse 5 – District GAMMA), each nurse reported a strong passion for their work. This confirmed that the emotional regulation processes enhance the sense of personal accomplishment by professionals (Brotheridge & Grandey, 2002).

Nurses with previous hospital experience indicated a clear preference for homecare, stating they would not consider returning to hospital-based roles. Their testimonies reflect this sentiment:

“Yes, I would never go back to the department or to another clinic. I am not a clinic nurse. I need constant contact with the patient. In homecare, I am better able to express my professionalism.” (Nurse 3 – District ALFA).

“If today I could choose a priori between blood tests, homecare, being a nursing coordinator, head nurse, or any other role in a department, operating room, or sterilization, I would still choose homecare. I realize that I am in my own world here. Professionally, I have had the greatest satisfaction in this sector, even though there are, of course, highs and lows.” (Nurse 5 – District GAMMA).

Currently, no tools are in place to systematically monitor the level of job satisfaction among nurses in the context analyzed.

6.1.2 Meso-Level

At the meso-level, we conducted interviews with seven key stakeholders operating within the districts of public health organizations. Specifically, our sample included two primary care area managers-responsible for coordinating resources across all primary care services, including homecare-three nursing coordinators overseeing home nursing services, and two case managers specializing in palliative care. These individuals are actively involved in the Multidimensional Evaluation Unit and, as highlighted in previous studies on the Italian context, are well-positioned to foster the implementation and utilization of common performance measures (Angiola & Bianchi, 2016). This rationale guided the selection of interviewees. Three of these professionals operate in Districts ALFA and BETA, while the remaining four are based in District GAMMA.

At the meso-level, all managers identified several critical issues related to the current performance measurement system. These concerns primarily pertain to the limited availability and lack of comprehensiveness of data within the existing software infrastructure.

Currently, the only data accessible are two indicators mandated by national legislation, which also serve as the basis for budgetary objectives. According to all nursing coordinators and area managers, these indicators are insufficient for capturing the complexity of homecare provision. One nursing coordinator elaborated:

“The numerical data does not reflect the real complexity of patient assistance. In the initial phase, it may be necessary to schedule daily visits for 15 days to empower the family and foster autonomy, considering the family’s socio-economic conditions and the strength of their formal or informal support networks. Even with the same clinical status, another family may require a different and greater or lesser care commitment.” (Nursing Coordinator – District ALFA).

A second nursing coordinator reinforced this point, highlighting the absence of effective management control tools:

“It is only possible to determine whether the operators have visited the patient and whether or not they have performed the service. The system relies on what is reported by the operators, with no means of verification. Based on their entries, only the levels of assistance-calculated as the ratio between planned and performed days-are captured. Thus, it is purely statistical monitoring.” (Nursing Coordinator – District BETA).

Building on these identified shortcomings, the interviews enabled us to capture the missing performance dimensions that could support meso-level managers in more effectively assessing and improving homecare services.

Continuity of primary care The national government entrusts health organizations with the responsibility of ensuring service continuity for all patients, with a particular focus on primary care (Ministerial Decree 77/2022). At the macro level, the general director interviewed highlighted the necessity of collecting data on continuity of care (e.g., medical guard coverage, diagnostic tests), which is also instrumental for monitoring public health cost-saving policies. This need is further emphasized by meso-level professionals, who identified relevant indicators, some of which are documented in the literature, such as the use of medical emergency services or hospitalizations (Casteli et al., 2020; Cinquini & Vainieri, 2008).

The importance of monitoring these dimensions is underscored by interviewees, who specifically focus on the cause-effect relationships characterizing protected discharges—a key context requiring hospital-to-community integration to achieve continuity of care. As stated by the Area Manager of District GAMMA, “there is a lack of data from the patient’s discharge department.” This issue is further elaborated by other stakeholders:

“For protected discharges: despite the existence of a protected discharge protocol, and although the hospital should conduct the Blaylock Risk Assessment Screening Score (BRASS) within the first three days of admission—which predicts difficult discharges and assigns a specific score—and despite the requirement for the hospital to notify the PUA (territorial unit) and activate a simplified evaluation unit (nurse and social worker), this is often not implemented. At the district level, this results in inadequate evaluation, both in the hospital and at home.” (Area Manager – District BETA).

“For protected discharges, it is possible to detect gaps in reporting and errors, all of which impact the so-called continuity of care. Monitoring the causes of delays—whether due to physicians, discharge processes, or the COT (territorial health operations unit)—is essential if we aim to ensure continuity of care.” (Nursing Coordinator – District GAMMA).

When considering the evaluation of homecare services on a broader scale, the Nursing Coordinator of District ALFA reinforced these findings:

“At this moment, reporting is very limited. Even if I wanted to distribute the care load, optimize resources, and organize the service more efficiently, I cannot. To evaluate homecare, it is useful to capture data on: activation requests (appropriate, inappropriate, and their motivations); patients’ access to medical guards and emergency rooms, including timing and reasons; frequency of repeated hospital admissions; general practitioners’ visiting hours and availability. An overall view of these data can reveal critical issues for collaborative management across different health settings. Homecare is at least integrated between the general practitioner and the nurse and is networked with other health services: performance evaluation (outcome, result, process indicators) must not be limited to nursing activity alone.” (Nursing Coordinator – District ALFA).

Timeliness of activation requests Another performance dimension identified through empirical research relates to the timeliness of the first access. Effective homecare service delivery requires the involvement of various actors (e.g., the Multidimensional Evaluation Unit-MEU-at the district level) and timely information regarding the patient’s status. The case manager for palliative care observed:

“Often, relatives give us the letter received from the hospital upon discharge, but this happens several days after the service was activated.” (Case Manager – District GAMMA).

The Nursing Coordinator of District ALFA further explained the practical implications and consequences of delayed activation:

“This year, the average time for activation requests for protected discharges is 24 hours. Within the district, it may be necessary to activate specific organizational units (e.g., MEU) or prepare devices, but in 24 hours, it is not possible to ensure a safe return home for the patient or to verify whether in-depth education or training for caregivers is needed.” (Nursing Coordinator – District ALFA).

Quality of care and user perspective Monitoring the quality of care from the user’s perspective is considered essential by interviewees. One Nursing Coordinator proposed a tool to assess user-perceived quality, offering a potential solution to the limitations identified by Cinquini & Vainieri (2008):

“A straightforward evaluation tool consisting of a 10-point scale focused on the homecare experience, including questions about whether the patient felt abandoned. An entry and exit questionnaire could be administered, assessing awareness of the service, expectations, actual experience, and satisfaction. This could be implemented at the activation phase and upon completion, when the physical folder is returned.” (Nursing Coordinator – District BETA).

In line with this perspective, and reflecting the pressure to meet national targets, another coordinator stated:

“There is a rush to increase the number of patients, to reach 10% of those over 65, without really considering what is being done or the quality of care provided. In my opinion, perceived quality could be a more useful indicator than simply the percentage of over-65s served.” (Nursing Coordinator – District GAMMA).

6.1.3 Micro-and sub-micro-level

The study engaged thirteen nurses from District ALFA, ten from District BETA, and eight from District GAMMA. The findings for the micro- and sub-micro-levels are

presented together, as these levels are closely interconnected and capture the softer dimensions of performance.

Continuity of homecare (24 h) Previous literature has highlighted indicators of adverse events applicable to homecare services, such as hospital readmissions or emergency room visits (Casteli et al., 2020; Cinquini & Vainieri, 2008). Recognizing this critical issue, nurses emphasized the importance of 24-hour continuity of homecare, in line with the mission of homecare services. As one nurse from District GAMMA stated:

“I believe that we are moving towards territorialization: the patient should be followed 24 hours a day, even on Saturdays and Sundays. We cannot allow a cancer patient to be forced to go to the emergency room on weekends.” (Nurse 1 – District GAMMA).

Two nurses from District ALFA confirmed this perspective, focusing respectively on the benefits for patient health and family outcomes:

“If the homecare service were not available 24 hours, the patient (or family member) would be forced to call emergency services, which often results in hospital admission. Beyond the cost to the system, this can have negative health consequences for the patient: for example, a patient who waits five hours on a stretcher in the emergency room may return with a sacral lesion, thus worsening their condition. At home, we do everything possible to avoid moving a frail person.” (Nurse 1 – District ALFA).

“The continuity of homecare service gives families peace of mind and leads to smoother care overall.” (Nurse 5 – District ALFA).

6.2 Contextual factors affecting performance dimensions

The results demonstrate a significant association between contextual factors and the design and use of performance measurement systems in different settings.

6.2.1 Rural and urban areas

In the delivery of homecare services, both meso-level managers and micro-level nurses reported substantial differences between rural and urban areas (Gheduzzi et al., 2021; Mseke et al., 2024; Reilly, 2021). Social structures in rural areas tend to be more cohesive, whereas urban environments are characterized by greater isolation, which can negatively affect service efficiency.

This evidence adds interesting elements to the discussion about the impacts of social factors on social interaction (Sampson & Gannon-Rowley, 2002; Unger & Wandersman, 1985), and the interplay between social interaction and specific physical characteristics of the environment (Arundel & Ronald, 2017; Brower et al., 2019). This phenomenon is reflected in several interviews:

“In cities, people are much more atomized.” (Area Manager – District BETA).

“In rural villages, there is still a sense of caring for the neighbourhood. In cities, there is a sense of isolation; the neighbourhood is less attentive.” (Nursing Coordinator – District ALFA).

“In hill areas, patients tend to be more independent. In coastal areas, we need to make three or four visits per week; in hill areas, one visit is often sufficient.” (Area Manager – District GAMMA).

“24/7 care is typically provided by a spouse or extended family, such as uncles or cousins.” (Nurse 11 – District ALFA).

Travel time is a relevant factor that varies between these contexts, as highlighted by one interviewee:

“For planning, the time factor due to transportation must be considered. Extra-urban areas have longer distances, while urban areas have shorter but more congested routes; ultimately, the time factor balances out.” (Nursing Coordinator – District BETA).

Nevertheless, travel time directly affects the number of home visits that can be completed—a key output indicator—while population density must also be considered:

“In the urban context, given the population density and the short distances, I make many visits, including repeated check-ups. I believe that for colleagues working in rural areas, the situation is different: they may need to travel up to half an hour to visit two patients. In the urban municipality, there are about 40–45 thousand people receiving homecare, while in the rural municipality, there are about 5 thousand.” (Nurse 2 – District ALFA).

Similarly, as reported by a nurse from District BETA:

“In the city, I might see 12–13 patients within 15–20 km. In rural areas, seeing the same number may require traveling over 120 km.” (Nurse 10 – District BETA).

This last observation highlights the significant impact of fuel costs due to the long distances required in rural areas.

6.2.2 Adequacy of the home setting

The adequacy of the home setting—including factors such as available space, hygiene, and the presence of essential medical equipment (e.g., anti-decubitus beds)—is crucial for the effective delivery of care. Nurses frequently report encountering inadequate environments, such as cramped or unsanitary conditions, which necessitate adapta-

tion and improvisation, potentially compromising the quality of care. As one nurse from District BETA explained:

“The environment inside the home can be improved. The problem of medical devices, therefore, is that there are often too few orthopaedic beds, too few articulated beds, too few walkers. Caregivers experience difficulties because the process for acquiring these devices through traditional channels-whether via the hospital or homecare services-is very complicated. In some cases, they end up having to buy the articulated bed at the pharmacy or rent it.” (Nurse 5 – District BETA).

Echoing this perspective, another nurse stated:

“At home you also have to make do, you really have to make do. Sometimes, for example, you don’t have a catheterization kit, so you have to improvise one.” (Nurse 5 – District GAMMA).

These observations also highlight challenges related to the continuity of primary care, particularly regarding the coordination of services across different district units, with consequential impacts on family costs. Another nurse noted:

“There is a lack of hygiene, unfortunately. Sometimes you find the family super clean and precise, but you also encounter truly disastrous situations: low beds, narrow beds, dirty home environments.” (Nurse 5 – District BETA).

6.2.3 Territorial integration of third-sector actors

The role of third sector organizations is widely recognized among stakeholders involved in homecare service delivery. The findings reveal territorial differences but underscore a need for greater integration, in accordance with national regulations (Ministerial Decree 77/2022). As one regional executive observed:

“One province is very structured-historically, it has had a vision of collaboration among the public, private, and third sectors-while the other provinces are less structured.” (Regional Executive).

An area manager further emphasized:

“A huge priority is integration with the third sector, especially in the districts, particularly as we move closer to people’s homes and away from acute hospital care.” (Area Manager – District BETA).

However, the activities of third sector entities are not always systematically tracked, as indicated by a case manager:

“Third sector entities, for the moment, facilitate-for example, they support the patient and the family with psychological counselling but even though I am aware of this, the data is not tracked.” (Case Manager – District GAMMA).

6.2.4 Language barriers and older caregivers

Language barriers significantly influence care practices and outcomes. As reported by one nurse:

“There are problems above all with informal caregivers. Some of them don’t even understand Italian: 20% still have difficulty learning the Italian language. Afterwards, it’s hard to make yourself understood.” (Nurse 7 – District GAMMA).

This issue impacts communication, education, and time management-factors directly related to cost-efficiency, as illustrated in the following interviews:

“There are families to whom you can delegate a lot and others to whom you cannot delegate. Sometimes, for example, we meet caregivers who do not speak Italian, and it is difficult to communicate.” (Nurse 4 – District ALFA).

“You have to spend time to make them understand, especially if the caregiver is foreign and the child lives in Florence.” (Nurse 5 – District BETA).

Additionally, the analysis highlights the presence of “caregivers not capable of being one,” as described by a nurse who recounted:

“Sometimes you find situations where there is perhaps an elderly couple in which the caregiver is actually more in need of care than the patient.” (Nurse 5 – District BETA).

The table n. 1 summarizes our findings.

Table 1 This data is mandatory. Please check and provide

	Macro-level	Meso-level	Micro-level and Sub micro-level
Performance dimensions	- o Governance and regulatory framework - o Resource consumption and cost-efficiency - o Third-sector involvement and data integration	- o Continuity of primary care - o Request timeliness of activation - o Quality of care and user perspective	- o Continuity of homecare 24 h - o Trustful relationships - o Job satisfaction
Contextual Factors	- o Rural and urban areas - o Territorial integration of third-sector actors - o Adequacy of the home setting - o Language barrier and older caregiver		

7 Discussion and conclusions

This study responds to recent scholarly calls for conceptual frameworks that elucidate performance within co-produced public services (Sorrentino et al., 2018, 2024; Sicilia et al., 2019; Rajala et al., 2021). It offers a distinctive contribution to the literature on public service performance measurement by addressing a critical gap: the absence of performance measurement system capable of capturing the relational and co-produced nature of value in homecare services (Brown et al., 2020; Røiseland, 2024; Torfing et al., 2019).

The coding analysis revealed a set of factors that either enable or constrain the delivery of homecare services.

At the macro level, findings highlight the central role of institutional governance in shaping homecare performance measurement. Regional actors emphasized strong accountability mechanisms and strict compliance with ministerial technical specifications (Cifalinò & Lisi, 2015). Despite recent updates to data transmission formats, the core indicators defined in 2008 remain unchanged, reflecting a high degree of institutional stability. Data collection is standardized and centrally verified, ensuring uniform benchmarking across districts. However, this regulatory consistency also limits adaptability to evolving care needs.

A second macro-level dimension concerns resource consumption and cost-efficiency. Interviewees identified significant information gaps in monitoring resource consumption, particularly regarding drug use, duplication of diagnostic tests, optimization of patient pathways, and continuity of medical guard services. In particular, the interviewees at regional level reported the lack of accessible information on the costs of homecare services and the absence of cost-efficiency indicators as major barriers to effectively manage resource allocation. The absence of integrated cost-efficiency indicators can impact system-level resource allocation (Spano et al., 2018). Interviewees stressed the need for a more open and interconnected information system capable of capturing appropriateness of care across settings to enhance financial sustainability.

Moreover, at macro-level, managers emphasized that the expansion of third-sector involvement in homecare delivery has not been accompanied by adequate data integration. Regional managers reported the absence of systematic information on services provided by external actors, limiting the capacity to assess overall service coverage, especially considering national targets to expand homecare access. Collaboration among public, private, and third-sector actors also emerged as an important enabler of coordinated resource use, particularly in complex service ecosystems. This reveals fragmentation within the service ecosystem and underscores the need for improved cross-sector data coordination.

At the district level (meso-level), managers consistently reported that the current performance measurement system is insufficient to capture the complexity of homecare delivery. Only two nationally mandated indicators are available, primarily linked to budget objectives. Requests for data on drug consumption, appropriateness of care, and activation demand were interpreted as mechanisms that can improve resource

planning and allocation. In addition, monitoring relies largely on self-reported operational data, with limited verification mechanisms. These include the absence of evaluation systems across hospital and home settings, limited availability of reports and clinical information regarding patients' status. As a result, performance evaluation remains predominantly statistical and fails to reflect variations in patient needs and socio-economic conditions.

Continuity of care emerged as a critical concern at meso-level. Interviewees described recurring breakdowns in hospital-to-community transitions, particularly in protected discharge processes. Gaps in discharge information, inconsistent implementation of risk assessment protocols, and limited cross-setting reporting hinder effective integration between hospital and primary care services. These shortcomings affect both service effectiveness and resource consumption. Existing studies on performance measurement in homecare typically rely on isolated and largely quantitative indicators—such as the number of visits, frequency of interventions, or stratified levels of care intensity (Haex et al., 2020; Franzosa, 2016). While such indicators are useful for administrative reporting and resource allocation (Ansell & Torfing, 2021; Osborne et al., 2018), they provide only a partial view of what constitutes value in homecare services. More importantly, they overlook the relational, contextual, and co-constructed dimensions of care delivery that are essential for understanding both patient outcomes and systemic effectiveness, encompassing both internal and external organizational perspectives (Grossi & Argento, 2022; Osborne et al., 2022).

Another key dimension, at meso-level, relates to the timeliness of activation requests. Although a 24-hour activation standard exists for protected discharges, informants emphasized that such timeframes often do not allow for adequate preparation of the home environment or caregiver training. Delays in information exchange between hospital and district services further constrain responsiveness, revealing the importance of temporal coordination as a performance dimension.

Finally, interviewees highlighted the absence of systematic measurement of user-perceived quality. Managers, mainly at local level, also emphasized the value of patient feedback mechanisms, such as entry and exit questionnaires, as tools to strengthen perceived service quality (Haex et al., 2020; Darwich et al., 2023). Perceived quality of care aligns with the growing emphasis in the literature on user-centred outcomes (Osborne et al., 2022; Marsilio et al., 2021). Although the literature has long recognized the significance of satisfaction and user perception in healthcare performance evaluation (Hardyman et al., 2015; McColl-Kennedy et al., 2017), these elements remain marginal in homecare monitoring systems. The inclusion of perceived quality as a core metric responds directly to calls for more person-centered performance frameworks that can effectively inform decision-making and improve service satisfaction.

Several managers expressed concern that current policy pressure to increase coverage rates risks prioritizing quantitative targets over care quality. This tension suggests the need to incorporate patient-centred outcome measures into the performance framework.

At micro-level, nurses consistently emphasized that “the patient should be followed 24 hours a day, including weekends” and stressed the importance of avoiding emergency room visits during off-hours. They described the risk of hospital admission when homecare is unavailable and highlighted the negative clinical consequences of prolonged emergency room waiting, such as the development of sacral lesions. Informants also noted that homecare prevents unnecessary movement of frail patients and provides peace of mind for families, contributing to smoother care processes.

In addition, interviewees, who directly engaged with patients at home, frequently stated that “good relationships improve care outcomes” and that trust is a prerequisite for patient and caregiver empowerment. Nurses described the care process as a “relational journey,” often “more relational than performance-based” (citing an interviewee’s words), particularly in emotionally demanding contexts such as oncology care. In this perspective, findings reveal as healthcare providers are required to manage patients’ and own selves’ emotions (fear, confusion) to deliver care (Hochschild, 2003; McQueen, 2004). In homecare, relational coordination becomes essential for ensuring continuity, trust, and responsiveness (Bolton et al., 2021; Gittel, 2002; Lewicki & Bunker, 1996).

At micro-level, in fact, interviewees explained that a lack of trust limits information exchange, reduces compliance with clinical recommendations, and increases unnecessary service requests. Conversely, caregivers are more likely to follow guidance and wait for scheduled visits when trust is established. Therefore, trust has also been shown to enhance the overall efficiency, while contributing to the long-term positive results (Ingenhoff & Sommer, 2010). This can reinforce the argumentation that the dimensions encompass not only clinical and operational aspects but also softer, yet critical, factors such as trust-building and job satisfaction (Jones & George, 1998; Lewicki & Bunker, 1996).

About job satisfaction, all interviewed nurses reported high levels of satisfaction compared to hospital-based roles, expressing strong passion for homecare work and, in several cases, a refusal to return to clinical settings. They described greater opportunities for professional expression and autonomy in homecare, as well as a heightened sense of personal accomplishment derived from managing relational and emotional complexities. Job satisfaction and a strong perception of professionalism were identified as supportive conditions that enhance the quality-of-service delivery (Hochschild, 2003).

Contextual constraints were also significant (Farr et al., 2018; Holland-Hart et al., 2019), particularly the inadequacy of the home setting. Nurses described significant variability in the adequacy of home environments. They reported insufficient availability of orthopaedic or articulated beds, limited access to walkers and other essential devices, and complex bureaucratic procedures for obtaining medical equipment. As a result, families were sometimes forced to purchase or rent devices privately. Interviewees further described unsanitary or cramped living conditions, low or narrow beds that complicate clinical procedures, and the need to improvise when equipment was unavailable.

Furthermore, language barriers and the limited capability of older caregivers were identified as additional obstacles that hinder care continuity and service quality (Virlee et al., 2020). Communication barriers affecting care delivery and language limitations as efficiency constraints, as additional time and effort are required for education and coordination. Nurses reported caregivers who do not understand Italian, difficulties in delegating tasks due to communication barriers, and the additional time required to explain procedures. Several interviewees also described situations in which caregivers were themselves elderly or fragile, sometimes more in need of care than the patient.

At the territorial level, managers and nurses reported differences in the penetration and collaboration of third-sector organizations. They accounted that some provinces have historically developed structured collaboration among public, private, and third-sector actors, whereas others remain less integrated. However, although psychological and social support activities are often delivered by third-sector entities, findings revealed that these contributions are not systematically tracked. All also emphasized the need for stronger integration with third-sector providers, particularly as services move closer to patients' homes.

At the same time, geographical and logistical diversities, such as rural isolation and travel time, were also found to constrain efficiency, increasing the complexity of delivering care in remote areas (Gheduzzi et al., 2021; Mseke et al., 2024; Reilly, 2021). Interviewees frequently contrasted rural and urban contexts. They described urban populations as “more atomized,” characterized by a greater sense of isolation and weaker neighbourhood cohesion. In contrast, rural villages were portrayed as socially cohesive, with extended family networks often providing 24/7 informal support. Nurses also noted territorial differences in patient autonomy, observing that patients in hill areas tend to be more independent, whereas those in coastal or densely urban areas require more frequent professional visits.

Geographical characteristics further emerged in references to travel time and distance. Nurses reported that rural areas may require traveling up to 120 km to see a limited number of patients, increasing fuel costs and reducing the number of daily visits. Conversely, urban areas allow higher visit density due to shorter distances and greater population concentration, although congestion may offset some time advantages. Interviewees repeatedly emphasized that travel time must be considered in planning and that population density directly influences service volume.

Overall, the findings suggest that effectiveness-related factors are strongly shaped by relational dynamics (Hardyman et al., 2015; Gittel, 2002; Mantovani et al., 2017), care continuity (den Boer et al., 2017; Farr et al., 2018), and contextual conditions at home (Farr et al., 2018; Virlee et al., 2020); whereas efficiency-related factors are primarily influenced by resource availability, in terms of additional time and financial resources (Fusco et al., 2023; Morton & Paice, 2016; Wilberforce et al., 2011), and resource-monitoring systems, able to detect cost allocation to different health settings (Spano et al., 2018). Together, these enabling and constraining elements highlight the multi-level challenges of ensuring their intended objectives in terms of quality, efficiency, and accessibility (WHO, 2021).

This study directly addresses these limitations by identifying and systematizing a series of hidden or latent dimensions that often escape traditional measurement frameworks—typically focused on limited statistical data—but are critical to the actual functioning and value of homecare services. The findings clarify that monitoring homecare performance requires attention to relational dynamics, care continuity, contextual home conditions, and resource availability. What current performance measurement systems treat as peripheral, this study demonstrates to be central: trust, continuity, contextual adequacy, and emotional labour are not soft variables but structural determinants of effectiveness and efficiency. Consequently, measurement efforts must move beyond output-based logics and explicitly incorporate these dimensions into the core architecture of performance measurement systems.

In summary, performance dimensions in homecare public services have been captured to reveal the co-creation of value as both individual and societal improvements, confirming the predominance of “*experiential, contextual, and societal dimensions of value*” (Osborne, 2022, p. 9).

By applying the Public Service Ecosystem (PSE) framework, this paper provides a structured interpretation of empirical findings across macro, meso-, micro-, and sub-micro levels in doing so, it expands the traditional boundaries of performance measurement, introducing a new taxonomy of dimensions grounded in stakeholder perspectives and contextual realities.

The framework enables a bottom-up reconstruction of performance logic that reflects the collaborative, dynamic, and context-sensitive nature of homecare delivery (Fusco et al., 2023; Haug, 2024). Thus, this study provides a replicable analytical framework for co-produced services and equips public managers with deeper, more nuanced insights into how performance is generated and can be meaningfully supported in practice. The key insights can inform governmental strategies to ensure consistent service quality across diverse regions by defining coordinated care models that foster collaboration among patients, families, and healthcare providers (Eriksson et al., 2023; Svensson & Valokivi, 2023).

The adoption of the Public Service Ecosystem (PSE) framework represents a key strength and innovation of this study. In a context where existing performance measurement systems are predominantly rooted in intra-organizational logics and standardized output indicators, the PSE framework facilitates a shift toward a more comprehensive understanding of value creation across institutional levels, organizational boundaries, and interpersonal relationships. A multi-level healthcare analysis should be implemented, recognizing the interdependence among organizational nodes responsible for service delivery.

8 Limitations and future research

Despite the insights provided by this study, certain limitations should be acknowledged.

While the research is conducted in two different contexts, with the aim to yield in-depth and rich empirical data, it also limits the observations’ generalizability

to other geographical areas, where could emerge different or further performance dimensions. In this regard, future research could adopt large-scale surveys to examine whether the findings observed here hold across differently both in national and international areas.

Secondly, the current research does not allow for an in-depth longitudinal analysis of how actors’ relationships evolve over time and, consequently, could impact on performance dimensions. Future research could employ longitudinal studies to track the dynamic nature of these collaborations. It could examine if the performance dimensions captured in this study - and factors enabling/constraining the effectiveness/efficiency - remain stable or change both in terms of nature and impacts. It can move, also, the investigation of cause–effect relationships between each performance dimensions and the role of each different actor.

Thirdly, although the developed approach was derived from field observations, it remains predominantly conceptual. Therefore, further research aimed at operationalizing performance indicators related to each dimension is highly valuable to bridge the gap between theory and practice through the co-production of knowledge between researchers and practitioners. Future research should also investigate which levers could activate or enhance performance dimensions in the specific context of homecare services.

The research reveals the crucial role of “emotions” in homecare setting and the capacity to shape interactions between health professionals, caregivers, and patients. Further development of the current paper could deepen how “emotions” influence behaviour and experience within complex care environments, as the homecare does. Lazarus’s cognitive-motivational-relational theory and Hochschild’s emotional labour framework (Lazarus, 1991, 1999; Hochschild, 1979, 2012) could represent a starting point for further research in this perspective.

Annexs

A1. Interview guide at micro-level

- Could you can introduce yourself (Seniority in homecare service)
- In the service delivery at home, who collaborates with you?
 - Which relationships are the most difficult to manage?
 - Why are these relationships difficult to manage?
 - What improvements would you suggest to improve the relationship with them?
 - What data might you need to better manage your activity with these actors?

- Can you briefly describe the relationship you have with GPs?
 - Which relationships are the most difficult to manage with GPs?
 - Why are these relationships difficult to manage?
 - What improvements would you suggest?
 - Do the problems with GPs also derive from any limitations in the data collection and communication system?
- Which other subjects in the health service delivery system do you come into contact with?
- What data do you collect daily?
 - In your opinion, do the data requested from you reflect the service provided?
 - Are there any critical issues in the data collection activity?
 - Are there other data that would be useful at the moment, but are not being collected? What are they? Why are they not being collected?
 - How could this be improved to support collaboration?
- How much time do you spend moving from one domicile to another? Is this aspect adequately included in the data they ask you to communicate?

A2. Interview guide at macro- and meso- level

- How is the performance of the homecare service currently measured in your district/region?
 - Do the indicators used adequately reflect the service's objectives and the complexity of needs?
 - Is the collected information concretely used to improve service organization or management?
 - Are periodic reports or feedback available to help interpret service trends?
 - In your opinion, what are the main limitations of the current monitoring and evaluation system?
- If you could propose new criteria or indicators, which aspects of the service would you include?
- What tools or changes would be needed to create a more useful evaluation system?
 - How could staff, users, or caregivers be more involved in the evaluation process?
- Do you observe differences in managing homecare services across geographic areas (rural vs. urban)?

Table 2 Coding process for nurses' interviews

First-Order	Second-Order	Aggregate dimensions
MICRO AND SUB-MICRO LEVELS		
Avoiding emergency room visits during weekends Risk of hospital admission if homecare is unavailable Negative health consequences of emergency room waiting (e.g., sacral lesions) Peace of mind for families Homecare prevents unnecessary patient movement Smoother care processes when continuity is guaranteed Patient should be followed 24 h a day, including weekends	Prevention of inappropriate hospitalization and emergency service use and avoidance of adverse clinical events Continuity as a determinant of care effectiveness (protection of frail patients)	Continuity of Homecare (24 h)
Good relationships improve care outcomes Relational journeys are more important than performance-based approach	Relationship-building as core professional competence, able to foster empowerment	
Trust as prerequisite for empowerment Lack of trust limits information exchange Compliance depends on trust Trust reduces unnecessary service requests Caregivers follow recommendations only if they trust the nurse	Trust as enabler of care compliance and relational infrastructure of homecare	Trustful Relationships
Emotional challenges in oncology care Emotional regulation enhances personal accomplishment High satisfaction compared to hospital settings Strong passion for homecare work Refusal to return to hospital-based roles Professional fulfillment in homecare Greater autonomy and professional expression	Emotional labor as source of fulfillment Preference for relational continuity in homecare over hospital routines due to professional identity and autonomy	Job Satisfaction
CONTEXTUAL FACTORS		
Rural areas require long-distance travel (up to 120 km) Urban areas allow higher visit density Fuel costs increase in rural contexts Population density influences service volume	Travel time as a constraint on service productivity Contextual determinants of service efficiency	Rural and Urban Areas
Limited availability of walkers and medical devices Complex procedures to obtain medical equipment Families forced to purchase or rent devices privately Improvisation due to lack of equipment Unsanitary or cramped home environments Low or narrow beds complicating care Inconsistent hygiene conditions across households Insufficient orthopedic or articulated beds	Barriers to access essential medical equipment Structural inadequacy of home environments	
Caregivers who do not understand Italian Difficulty delegating tasks due to communication barriers Extra time required for explanation Foreign caregivers with limited language proficiency Caregivers are more fragile than patients Elderly couples where caregiver needs care	Communication barriers affecting care delivery Fragility of informal caregiver networks	Language barriers and older caregivers

Table 3 Coding process for managers' interviews

First-Order	Second-Order	Aggregate dimensions	
MACRO LEVEL			
Accountability of the General Director to regional strategic objectives	Regional governance accountability mechanisms	Governance and Regulatory Framework	
Responsibility for data flow management under ministerial requirements			
Standardized national data transmission formats			
Single and uniform regional data entry system			
Benchmarking across districts			
Continuity of 2008 ministerial indicators despite evolving needs	Institutional stability of ministerial specifications	Resource Consumption and Cost-Efficiency	
Monthly verification of data consistency			
Lack of system-level management of service costs			
Expired unused drugs generating waste			
Absence of monitoring downtime across care levels			
Need for data on drug consumption	Need for integrated cost-efficiency data	Third-Sector Involvement and Data Integration	
Need for optimization of patient care pathways			
Lack of cost-efficiency indicators			
Avoidance of duplication of diagnostic prescriptions			
Need for data on prescription appropriateness			
Expanded role of third-sector operators but absence of data on third-sector activities	Data fragmentation across service providers		
Need to map demand met for national targets (10% over-65 coverage)			
Objective to integrate third-sector data into performance systems			
Psychological support provided by third-sector but not tracked			
Lack of systematic monitoring of third-sector activities			
MESO LEVEL			
Need to monitor emergency service use and hospitalizations	Breakdowns in hospital–community integration	Continuity of Primary Care	
Errors in reporting affecting continuity			
Failure to implement BRASS protocol			
Need for integrated evaluation across settings			
Gaps in protected discharge processes			
Need to monitor causes of delays	Incomplete discharge information flows	Timeliness of activation requests	
Lack of discharge data from hospitals			
Delayed transmission of hospital discharge letters			
Lack of timely patient-status information			
Need to monitor activation request timing			
Average 24-hour activation for protected discharges	Insufficient preparation time for safe discharge		
Inability to ensure safe return home within 24 h			

Table 3 (continued)

First-Order	Second-Order	Aggregate dimensions
Absence of perceived quality reporting Proposal for entry and exit questionnaires 10-point scale to assess homecare experience Patients' feeling of abandonment Pressure to increase coverage to 10% of over-65 population	Need for systematic measurement of perceived quality Tension between quantitative targets and service quality	Quality of care and user perspective
CONTEXTUAL FACTORS		
Urban populations are more atomized Rural villages show stronger neighborhood cohesion Greater sense of isolation in cities Patients in hill areas more independent Extended family provides 24/7 support in rural contexts More frequent visits required in coastal/urban areas Travel time must be considered in planning	Social cohesion vs. urban isolation Territorial variation in informal care support Contextual determinants of service efficiency	Rural and urban areas
Territorial differences in third-sector collaboration Some provinces historically structured around collaboration	Uneven territorial integration of third-sector actors	Territorial integration of third-sector actors
Need for stronger integration with third sector Need for monitoring of third-sector activities	Need for institutionalized cross-sector coordination	

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