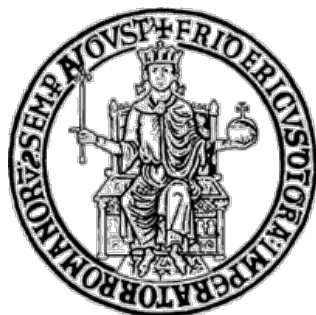


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Coordinatore: *Chiar.ma Prof.ssa* Cristina Mele

Shaping Public Services Through Artificial Intelligence: An Approach Based on Public Service Logic

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Supervisor:

***Chiar.ma Prof.ssa* Tiziana Russo Spena**

***Chiar.mo Prof.* Marco Tregua**

Candidato:

***Dott.* Carmine Sergianni**

*To my beloved father, Francesco Sergianni,
whose love and guidance continue to inspire me*

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Introduction

This thesis examines the role of artificial intelligence in shaping public service provision using a theoretical framework based on Public Service Logic. Specifically, the research explores how the introduction and use of artificial intelligence, particularly through conversational agents, affects the value proposition of public services.

The thesis has a structure consisting of four interrelated academic contributions. This section outlines the overall structure of the work. The literature review in the first chapter establishes the necessary conceptual foundations to advance current knowledge on the topic, while the subsequent contributions address the research gaps identified in extant studies by providing empirical evidence to contribute to scholarly discourse in this field.

1.1 Scope and research questions

Nowadays, digital transformation represents a valuable opportunity for public services, inspiring public service organisations to enhance the quality of their services (Lips, 2019).

The integration of digital technologies includes the adoption of Artificial Intelligence, which has led to the emergence of a wide range of opportunities in the public sector (Wirtz et al., 2019), such as automating tasks traditionally carried out by humans, enhancing decision-making, customizing services and reducing administrative burdens (Neumann et al., 2022).

These opportunities foster the development of increasingly interconnected and interactive public services (Wirtz et al., 2019), enabling public service organisations to involve users more effectively and benefit from their support (Osborne, 2020). This approach improves service quality, enhances trust, and increases efficiency (Wirtz et al., 2021).

Building on service research, particularly Public Service Logic, Osborne (2018) highlighted the need to consider digital technologies when describing the value creation process in public services. Furthermore, studies on Public Service Logic show that value co-creation can be facilitated by the digitalisation process that

Public Service Organisations undergo (Zyzak and Martinussen, 2024). Regarding the Artificial Intelligence in public services, Public Service Logic scholars argue that AI-based technologies have a significant potential to improve results, create more immersive environments, and increase the concentration capacity of public employees (Leite, 2023). Artificial Intelligence adds value through its instrumental role - being a tool - and improves the overall experience for users and providers, demonstrating how technological innovation can transform the value creation process in public services.

However, despite Public Service Logic literature calls for investigating the impact of Artificial Intelligence and digital technologies in public services (Rösler et al., 2021; Leite, 2023; Jiang and Fan, 2024; Zyzak and Martinussen, 2024), Trischler et al. (2023) highlight a high level of confusion regarding the positioning and contribution of Public Service Logic.

According to the authors, this confusion stems from the fact that Public Service Logic tends to combine the concepts of Service Logic and Service-Dominant Logic without providing a clear reflection on their theoretical roots. This lack of analysis creates ambiguity within Public Service Logic, leading to contrasting interpretations that hinder a consistent understanding of its role in Public Administration and Management (PAM) research. The first chapter therefore aims to clarify the theoretical foundations of Public Service Logic by systematising the existing literature and identifying future research directions. A particular focus will be placed on the impact of digitalisation and AI on the value proposition of public services from the perspective of Public Service Logic. To this end, the first research question is formulated as follows:

RQ1) What do we know and what more should we know about Public Service Logic?

In doing so, this chapter contributes to a clearer understanding of service concepts within the Public Service Logic framework and promotes a more consistent and systematic approach to their interpretation and application.

Building on these foundations, the literature review on Public Service Logic also reveals several gaps that deserve further investigation, particularly in relation to the digitalisation of public services.

Indeed, based on the emerging future research directions, there is a growing need to understand how artificial intelligence technologies influence the value proposition of public services.

Therefore, the second chapter aims to understand the impact of artificial intelligence on the value propositions of public service organisations. Consequently, the related research question is as follows:

RQ2) How does the adoption of artificial intelligence influence the value proposition of public services from a managerial perspective?

Building on Public Service Logic, the second chapter develops a conceptual framework that explains how public service organisations frame and reframe their value propositions and explores, from a managerial perspective, how artificial intelligence influences this process.

The chapter inform future research into innovation processes in public services, offering insights into how Artificial Intelligence can be used to improve value propositions in this context.

Furthermore, this contribution paves the way for the next two chapters, highlighting the need to explore the role of artificial intelligence in public services through an in-depth understanding of the perceptions of key players - namely frontline employees and users - who are essential for developing an ecosystemic view of the phenomenon.

Consequently, the third chapter explores how frontline employees experience and interpret the adoption of AI-based technologies within public service contexts. It focuses on their lived experiences, perceptions, and coping strategies adopted to respond to technological and organisational change. Consequently, the deriving research question is formulated as follows:

RQ3) How do public frontline employees perceive and interact with AI-tools in their work practices?

To answer this empirical question, the study adopts a qualitative approach, based on data collection through semi-structured interviews with frontline employees of Italian public service organisations.

The analysis reveals distinct levels of frontline employees' willingness to engage with AI-technologies. These findings provide a more nuanced understanding of how AI-based tools can be effectively integrated into public service contexts.

Finally, the fourth chapter delves into the users' perspective, exploring how they perceive the introduction of AI-based technologies and how these perceptions contribute to shaping the value creation process. Therefore, the associated research question is as follows:

RQ4) How do users perceive the value proposition driven by conversational agents in the context of public service?

For the empirical context, this thesis investigates conversational agents (chatbots, virtual assistants) as AI-driven technologies. Conversational agents represent one of the most advanced applications of artificial intelligence in public service organisations (Maragno et al., 2022) due to their ability to process large amounts of data and handle routine requests efficiently (Mehr, 2017), making them particularly valuable in the context of public services.

Next sub-sections offer additional details on the content of each chapter of this thesis, in order to clarify the rationale of the entire thesis and how all chapters are intertwined to offer a comprehensive view on the changes brought by artificial intelligence in public service provision.

1.2 Chapter 1. Public Service Logic: A Systematic Literature Review

The literature review lays the theoretical foundations of the thesis by positioning Public Service Logic (PSL) as the core conceptual framework underpinning the research. Rooted in service studies (Grönroos, 2006; Vargo and Lusch, 2008), PSL frames public value creation as the fundamental element of public service provision (Osborne et al., 2021). However, despite its growing relevance, PSL still suffers from conceptual ambiguities and inconsistent interpretations (Trischler et al., 2023).

To address these limitations, this chapter adopts a systematic literature review (SLR), defined as a rigorous and transparent process for synthesising and systematising the existing body of research (Snyder, 2019). The selection of studies

included in the review followed the PRISMA guidelines (Rethlefsen et al., 2021) and covered 58 peer-reviewed journal articles published in English between 2018 and September 2025, retrieved from two certified databases (Web of Science and Scopus).

The analysis was conducted using an inductive approach, starting with an in-depth reading of each study to identify emerging concepts without predefining rigid categories. From this process, three macro-categories emerged: Value Proposition, Value Creation Process, and Public Service Ecosystem. Based on these categories, the chapter proposes a conceptual framework that delineates the key dimensions of value creation in public services and outlines several future research directions, which serve as a foundation and guiding thread for the subsequent chapters of the thesis.

1.3 Chapter 2. Reframing Public Service Value Proposition with AI: A Managerial Perspective on Conversational Agents

Artificial intelligence is increasingly transforming the nature of public service provision by redefining how public service organisations deliver services for their users (Zyzak and Martinussen, 2024). Through these transformations, AI reshape the value propositions of public services (Trischler and Trischler, 2022), turning them into dynamic and continuously evolving constructs of adaptation (Røhnebæk et al., 2024).

Building on the theoretical foundations of Public Service Logic (PSL) (Osborne, 2018), this study examines how artificial intelligence reshapes the value propositions of public service organisations from a managerial perspective. A conceptual model is developed to explain the reframing process of value propositions within the PSL framework and to explore the influence of AI-based technologies in this process.

Adopting a qualitative multiple case study approach (Yin, 2018), the research draws on 11 semi-structured interviews with managers of Italian public service organisations that have implemented conversational agents as AI-enabled technologies. The findings reveal that public service organisations reframe their

value propositions through a continuous analysis of emerging societal and user needs. AI technologies play a pivotal role in this reframing by enhancing user engagement, facilitating resource integration, and improving service quality.

These results extend the PSL perspective by clarifying the mechanisms through which artificial intelligence supports innovation in public value creation and by introducing framing and reframing as dynamic processes that characterise the evolution of public services in response to technological change. Beyond its conceptual contribution, the study provides managerial insights to guide innovation in public service provision by means of AI-driven chatbots. It outlines a set of principles to help managers leverage artificial intelligence effectively to design more adaptive, inclusive, and user-centred public services.

1.4 Chapter 3. Let's Talk with Chatbots: Frontline Employees' Experiences in Public Services

This study aims to explore the perceptions of frontline employees, namely those who interact directly with citizens in the delivery of public services (Lipsky, 2010). Although artificial intelligence (AI) is becoming increasingly integrated into public sector operations, there is still limited understanding of how frontline employees perceive, interpret, and adapt to working with AI-based technologies (Chen et al., 2024).

To address this gap, the study aims to provide an in-depth understanding of how public frontline employees perceive and interact with conversational agents in their daily work practices. A qualitative approach was adopted, with data collected through semi-structured interviews conducted with 33 frontline employees from various Italian public service organisations. The data were analysed using ATLAS.ti, a qualitative data analysis software that supports systematic coding and interpretation.

The analysis identified two distinct levels of engagement between frontline employees and conversational agents. The first - Willingness to Interact - reflects an initial and more superficial assessment of the technology's usefulness, perceived threats, or potential benefits. The second, - Willingness to Collaborate - represents

a deeper and more reflective evaluation, characterised by the adoption of coping strategies to manage organisational change.

These findings offer a nuanced understanding of how AI-based tools can be effectively integrated into public service contexts. They also highlight the importance of supporting employees through the transition, fostering collaboration between humans and AI systems to enhance both organisational performance and user experience.

1.5 Chapter 4: User Perception of Value Proposition Driven by Conversational Agents in Public Service Context

This study examines the user perspective by investigating how citizens perceive the introduction of AI-based conversational agents and the impact of these perceptions on the creation of public value, thus responding to the research call within the Public Service Logic literature by Trischler and Trischler (2022) and Zyzak and Martinussen (2024) for a deeper understanding of how digital technologies, and particularly AI, shape users' experiences and value creation processes in public services.

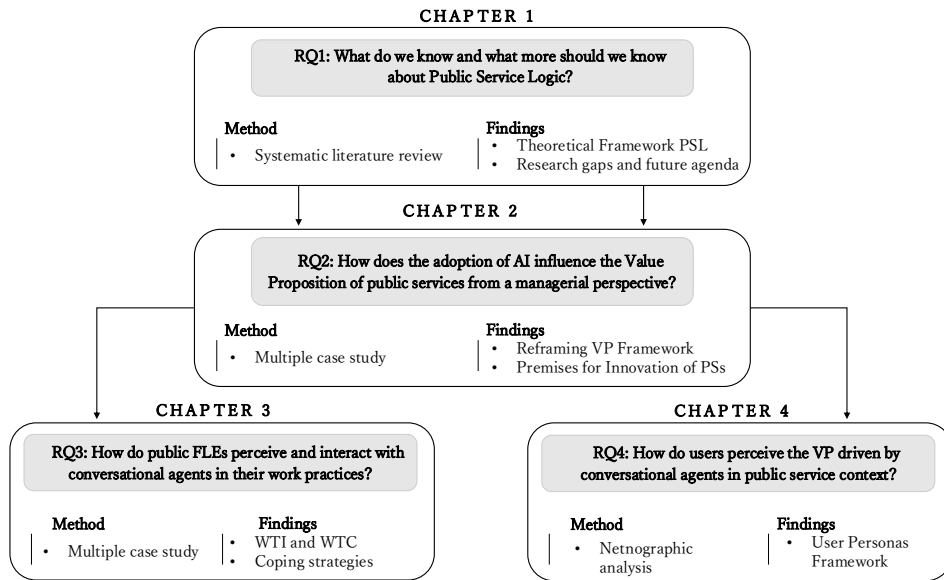
To capture these dynamics, the research takes a netnographic approach, analysing spontaneous user conversations collected from the official social media channels of the public service organisations included in the study. The analysis was conducted using Sketch Engine, a linguistic analysis software that can systematically identify patterns and recurring expressions in large sets of textual data.

The analytical framework is based on the Technology Acceptance Model (TAM), which categorises users' attitudes, sentiments, and reactions towards AI-driven conversational agents into two key interpretative dimensions: perceived usefulness and perceived ease of use. This framework enables a nuanced interpretation of how citizens understand technological innovation in public services and how their evaluations contribute to shaping the broader public service ecosystem.

Based on the analysis of the results, a conceptual model is developed to describe how user perceptions inform and reshape the value proposition of AI-enabled public services. This model can be used to understand how to design technological value

propositions that are more consistent with users' expectations, needs and perceptions.

Figure 1: Thesis overview



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Appended Chapters

Chapter I

Sergianni C., Brozović D., and Andersson T. (2025). “Public Service Logic: A Systematic Literature Review”

Status: Undergoing a 2nd revision in *Public Management Review*

Chapter II

Sergianni C., Tregua M., and Elmi F. (2025). Reframing Public Service Value Proposition with AI: A Managerial Perspective on Conversational Agents

Status: Submitted in *International Journal of Public Sector Management*

Chapter III

Sergianni C., De Filippis R., and Russo Spena T. (2025). Let’s Talk with Chatbots: Frontline Employees’ Experiences in Public Services

Status: Working paper. An earlier full version of the paper was presented at the 2025 RESER Annual Conference.

Chapter IV

Sergianni C., and Tregua M. (2025). User Perception of Value Proposition Driven by Conversational Agents in Public Service Context.

Status: Working paper. An earlier full version of the paper was presented at the 2025 SIM Conference.

Chapter I: Public Service Logic: A Systematic Literature Review

The high level of interest in Public Service Logic has led to an increase in the number of studies using this research stream. However, the unclear position of Public Service Logic presents challenges in clearly delineating its role within Public Administration Management research.

This paper systematises the existing research, identifies the main research themes and develops a theoretical model capable of illustrating value creation processes in public services.

The results show that although Public Service Logic integrates the concepts of Service Logic and Service-Dominant Logic, it is configured as a unique and distinct logic.

Keywords: Public Service Logic; Value Creation Process; Value Proposition; Public Service Ecosystem; Public Value.

2.1 Introduction

Public Service Logic (Osborne, 2018) is an emerging perspective linked to service studies, in particular Service Logic (Grönroos, 2006) and Service-Dominant Logic (Vargo and Lusch, 2008) and proposes to position value creation as a fundamental element of public service provision (Osborne et al. 2021). At the centre of Public Service Logic is an understanding for the nature of public services as processes of “service” rather than “production” (Cui and Aulton, 2023).

Public Service Logic offers an innovative perspective on public services, focusing on the role of the user, who creates value through the integration of resources in the use of public services.

Public Service Logic contrasts with the New Public Management-inspired school of thought (Alford, 2016; Osborne, 2018), particularly its Goods-Dominant Logic, which views public services as “goods”, and argues that value is created within Public Service Organisations without the involvement of users (Engen et al., 2021). Indeed, New Public Management promotes a linear approach to public service management, focusing only on the internal efficiency of Public Service

Organisations. In contrast, Public Service Logic argues that value is co-created with the involvement of users and third parties (Osborne, 2018), with Public Service Organisations facilitating the Value Creation Process.

Public administration and management literature has shown a strong interest in the theoretical development of Public Service Logic, making it a topic of growing interest among Public administration and management researchers who have explored Public Service Logic to study the dynamics of value creation in public contexts.

However, Trischler et al. (2023) highlight a high level of confusion regarding the positioning and contribution of Public Service Logic. According to the authors, this confusion stems from the fact that Public Service Logic tends to combine the concepts of Service Logic and Service-Dominant Logic without providing a clear and thorough reflection not only on their theoretical roots, but also on their compatibility with Public Service Logic. This lack of in-depth analysis creates ambiguity within Public Service Logic, leading to conflicting interpretations that hinder a coherent understanding of the role of Public Service Logic in Public administration and management research. As a consequence, Public Service Logic has accumulated a number of concepts and co-concepts (i.e. co-production, co-design, co-creation, co-destruction) that stem from different perspectives, creating a conceptual “jungle”.

On this basis, Trischler et al. (2023) clarify how Service Logic and Service-Dominant Logic have influenced the development and positioning of Public Service Logic, highlighting the use of concepts and co-concepts from the Public Service Logic literature.

However, although the authors offer a theoretical synthesis of service-related concepts in Public Service Logic and propose four important premises that "position Public Service Logic as a mid-range theoretical framework that is capable of adopting the service ecosystem as an analytical lens to study public service " (Trischler et al., 2023, p. 25), a holistic and structured view of Public Service Logic is still lacking. There is a need to more clearly outline its overall definition, identify its core elements, systematically analyse the progress made in the literature on related concepts and co-concepts, and identify areas of unexplored research.

Therefore, the aim of this research is to clarify the theoretical roots of Public Service Logic by addressing ambiguities in the existing literature, to systematically organise the current literature and to identify future research directions.

In this way, the research contributes to a better theoretical and applied understanding of service concepts in the context of Public Service Logic and promotes a more coherent and systematic approach to their interpretation and use. This research is configured as a systematic literature review, which is defined as a structured method for collecting and synthesising existing research (Baumeister and Leary, 1997). Systematic literature review plays a crucial role in providing an in-depth overview of a particular topic, allowing for an assessment of the current state of knowledge (Snyder, 2019).

This research provides several contributions to the Public administration and management literature. First, it proposes a set of relevant categories that are useful for analysing Public Service Logic literature. These categories provide a detailed overview of the comprehensive advances in the literature and analyses how each group contributes to Public Service Logic literature. Furthermore, based on this classification, it proposes a framework that delineates the dimensions of value creation. In this way, the article not only clarifies and organises the Public Service Logic conceptual framework but also serves as a “toolbox” for future studies, providing researchers with a solid and well-organised resource to build on. Finally, based on the systematic literature review, new research directions and unexplored areas are identified.

The rest of the paper is structured as follows. First, the theoretical foundations of Public Service Logic are presented. This is followed by the methodology, which describes the analytical process used to identify the papers relevant to this research. The results of the review are then presented, highlighting the main macro categories on which the literature has focused to date. Finally, the article concludes with a broad overview of future research directions and a discussion of the results emerged from the analysis.

2.2 Value in Public administration and management Research: Origins and evolution of the Public Service Logic perspective

Over the past few decades, the academic debate within the Public administration and management literature has undergone a profound transformation. Initially dominated by the principles of the New Public Management paradigm, the focus has gradually shifted to more participatory and citizen-centered approaches. New Public Management, inspired by private sector management practices, emphasised the application of business tools and market-based mechanisms to the public sector, viewing citizens primarily as customers and prioritising outputs and efficiency (Hood, 1991).

In contrast, the emergence of the Public Service Logic framework (Osborne, 2018) marks a significant theoretical and conceptual departure from this managerialist tradition. Public Service Logic challenges the fundamental assumptions of New Public Management by proposing a paradigm shift: rather than positioning users as passive recipients or consumers of services, Public Service Logic redefines them as active co-creators of value. This perspective fundamentally reshapes the understanding of public service delivery, moving away from transactional logics towards a relational, context-sensitive approach that emphasises the importance of user experience and societal impact.

By centering value co-creation as a core organising principle, Public Service Logic contributes to a broader rethinking of public management theories. It introduces a dynamic and interactive view of public service delivery in which value is not produced by Public Service Organisations but is instead co-created through ongoing interactions between multiple actors (Osborne, 2018; Alford, 2016). In this way, Public Service Logic not only pushes the boundaries of Public administration and management theory, but also aligns it with the broader field of service research, particularly the Service-Dominant Logic (Vargo and Lusch, 2004, 2016) and Service Logic (Grönroos, 2006, 2013) perspectives. These frameworks converge on the idea that value is not embedded in outputs but emerges from the use of services - a view that Public Service Logic integrates into the public sector context. Both Service Logic and Service-Dominant Logic are widely used as foundational theoretical frameworks to guide and support the analysis of Public Service Logic.

Their theoretical relevance provides a solid conceptual basis for deepening the understanding of value co-creation processes in public service contexts. While Service Logic emphasises the direct interaction and value realised in the service encounter, Service-Dominant Logic adopts a more systemic and networked perspective, focusing on the integration of resources between multiple actors. Together, these frameworks enrich the analytical lens through which Public Service Logic interprets the dynamics of value co-creation in the public sphere. Table 1 outlines the key concepts of Service Logic and Service-Dominant Logic and shows how they inform the theoretical architecture of Public Service Logic.

Table 1
Service Logic and Service-Dominant Logic perspectives

Concept	Service Logic	Service-Dominant Logic
Value-in-use	Service Logic proposes that value is only created when the product (or resource) is used by the customer (value-in-use) (Woodruff and Gardial, 1996; Vargo and Lusch, 2004; Grönroos, 2006; Ramaswamy, 1996).	Service-Dominant Logic argues that value resides in the use of the good or service (value-in-use).
Value proposition	Service Logic introduces the concept of <i>value promise</i> (Grönroos, 2006), which refers to the implicit or explicit promise that a company makes to its customers about the value they will receive from using a particular service or product.	Service-Dominant Logic argues that companies cannot create value in isolation but provide <i>value propositions</i> (Vargo and Lusch, 2004, 2008) through which they contribute to the Value Creation Process.
Value creation	Service Logic argues that value creation refers to the value created by the customers using the product or service (Grönroos, 2013).	Service-Dominant Logic emphasises the systemic nature and involvement of multiple actors in the Value Creation Process (Vargo and Lusch, 2016).
Value co-creation	Service Logic argues that value co-creation only occurs when two parties interact directly and gain opportunities to co-create	Service-Dominant Logic argues that value is always co-created by multiple actors, including the beneficiary, that all actors are resource integrators, and that value is always subjectively

	value jointly (Grönroos, 2013).	determined by the beneficiary through his or her experience of use (Vargo and Lusch, 2016).
Co-production	In Service Logic, co-production was not explicitly addressed. Although customer participation was recognized as an important element in service delivery, co-production was not a central concept.	Co-production is a concept that emerged from Normann and Ramirez (1993) and refers to the involvement of consumers in all stages of service design, management, delivery and evaluation. In 2006, Service-Dominant Logic revisited the terminology by adopting the term “co-creation” and arguing that co-production is an optional part of co-creation.
Ecosystem	Service Logic has an approach that focuses on the dyadic relationship between the company and the customer (Grönroos, 2013).	Service-Dominant Logic takes an ecosystem approach by focusing on the entire context in which value is created, involving a complex network of public, private and social actors (Vargo and Lusch, 2016).
Criticism	Service Logic has been considered too limited in that it does not fully consider all the possible ways in which value can be created, even outside of explicit interaction (Vargo and Lusch, 2016).	Service-Dominant Logic is accused of normalising the concept of “value” as a positive outcome of market interactions, neglecting crucial issues such as power inequalities among consumers (Hietanen et al., 2018).

Source: authors elaboration

Finally, it is important to emphasise that Public Service Logic did not emerge in isolation but was derived from Public Service-Dominant Logic previously developed by Osborne et al. (2013). However, Public Service-Dominant Logic represented an early and incomplete stage of theoretical development, which was later refined as Public Service Logic developed. Indeed, Osborne argues in his editorial that the term Public Service-Dominant Logic “is no longer either a necessary or a sufficient term for this body of public management theory” (Osborne 2018, 225). Therefore, to reflect its maturation into a distinctive approach, he suggests that Public Service-Dominant Logic should be replaced with the more appropriate term Public Service Logic. The reasons for preferring the Public Service Logic approach stem from the fact that Public Service-Dominant Logic

placed an overemphasis on the concept of co-production (Osborne, 2018). Although this concept has provided important insights into the field of public management and continues to be used in Public Service Logic literature, Public Service Logic is distinguished by a greater focus on the co-creation of value. Specifically, whereas Public Service-Dominant Logic treated co-production as a process in which the service user played a marginal role, limited to contributing time and effort (Alford, 2016), with the service process initiated exclusively by Public Service Organisations (Osborne et al., 2013; Osborne et al., 2016), Public Service Logic places greater emphasis on the concept of value co-creation, giving the user a central role in the service process (Osborne, 2018).

2.3 Methodology

This research adopts a systematic literature review, as outlined by Paul and Criado (2020), to explore theoretical developments related to Public Service Logic. The selection of studies to be included in the review was guided by the PRISMA criteria, following the guidelines of Rethlefsen et al. (2021).

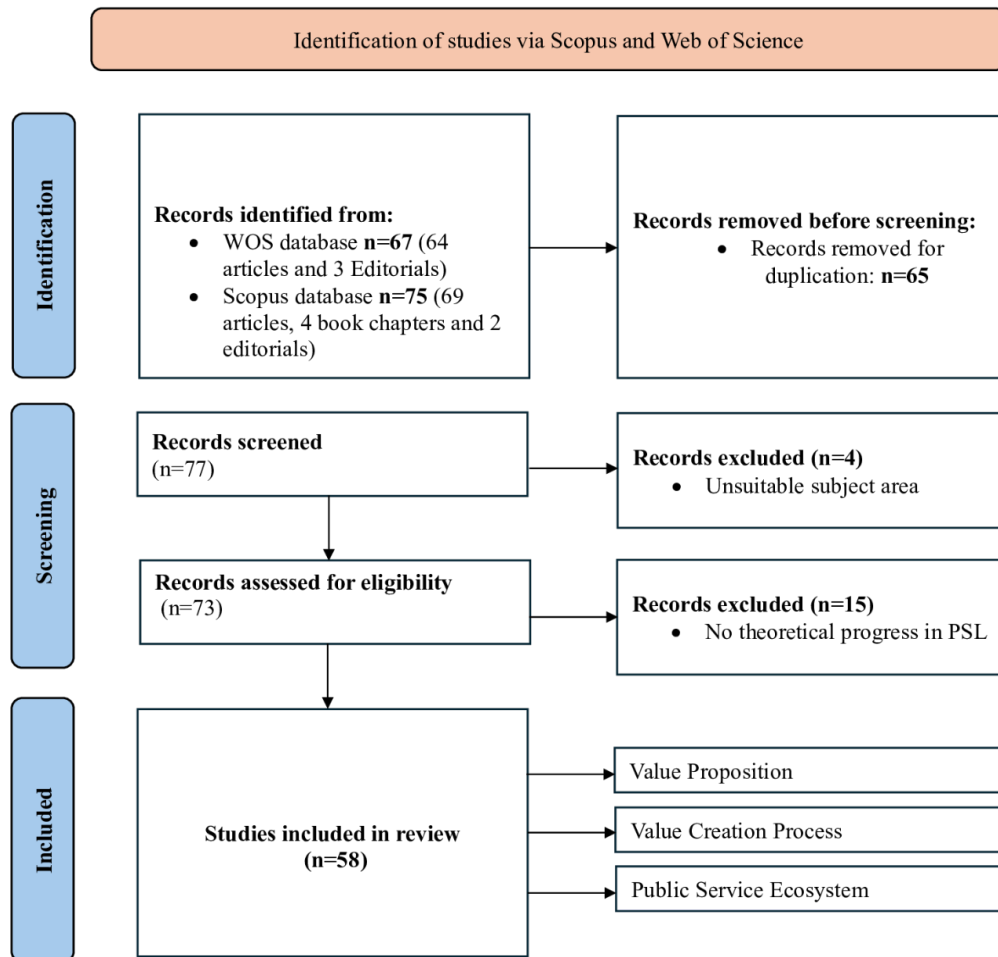
The aim of the review process was to identify relevant publications that contribute to the development of the Public Service Logic concept. Systematic searches were conducted in Web of Science and Scopus databases using “*Public Service Logic*” as a keyword search, focusing on titles, abstracts and keywords of articles. The adoption of this term as the only search criteria reflects the intention to limit the literature review to contributions that focus on conceptual advances in the field of Public Service Logic, thus avoiding dispersion into different approaches.

The search period covers the years from 2018, when the term was first introduced by Osborne (2018), to 2025.

The analysis process started with a preliminary assessment of the abstracts of the included articles. This was followed by an inductive analysis of the literature, which consisted of reading and analysing each article in depth to understand what concepts and co-concepts were being proposed or explored both empirically and theoretically in Public Service Logic literature. At this stage, 15 publications were excluded because they did not provide theoretical advances closely related to Public Service Logic, nor did Public Service Logic play a central role in defining the theoretical

scope of the work and 4 publications because they were outside the fields considered for the study. Finally, 58 studies were included in the review (see Figure 1).

Figure 1
Identification of studies



Source: authors elaboration

The analysis of the articles was conducted using an inductive approach, starting with a thorough reading of the research to identify emerging concepts without pre-defining rigid categories. Each selected article was carefully read to identify key concepts, noting definitions, theoretical frameworks, methodologies and key findings. During the reading, recurring themes and similarities between studies were identified, allowing common elements to be identified. These emerging concepts were then organised into three macro-categories: Value Proposition, Value Creation Process and Public Service Ecosystem. After an initial

categorisation, the process was refined through a critical review to ensure consistency and fairness in the assignment of articles to their respective categories. Some studies that covered more than one topic were categorised flexibly by assigning them to more than one category. In order to organise the information collected in a structured way, a summary matrix was created which included the author, year, methodology, key findings and contribution of each article to the research. This process provided a clear and detailed overview of the existing literature, highlighted links between different studies and identified any research gaps that required further investigation.

Accordingly, the publications in the first category focus on the conceptualisation of Value Proposition, aiming to define the initiatives implemented by Public Service Organisations. The publications in the second category explore the processes of value creation in the public sector. The publications in the third category examine the context in which these dynamics emerge and explore their role and importance (see Appendix 1).

Finally, to complete this process and provide greater robustness to the results, a bibliometric analysis of the identified publications was conducted.

The process and main findings of the supplementary bibliometric study are presented in Appendix 2 and are included in the following section, which presents the findings of the study.

2.4 Findings

This section discusses the main findings of the literature review. As mentioned earlier, three categories of research have emerged through which the discipline of Public Service Logic has developed.

2.4.1 Group 1: Value Proposition

In service literature, Value Proposition represents the way in which an organisation proposes to positively influence another actor (Vargo and Lusch, 2004, 2008). This approach recognises that value is determined by the beneficiary and that organisations do not create value directly, but can only offer potential value through their own Value Proposition.

Within the Public Service Logic literature, the formulation of Value Propositions by Public Service Organisations is seen as crucial for facilitating value creation, which is then processed and integrated by users (Osborne, 2018) through their direct experiences with the service (value-in-use) and in relation to how well the service outcomes align with their needs and expectations (value-in-context) (Leite et al., 2025).

Recent literature on Public Service Logic emphasises the need to consider different elements when defining the Value Proposition. In particular, as will be discussed in more detail below, it is essential to (i) integrate both the private value and public value dimensions (Skálén et al., 2024) and (ii) adopt an ecosystemic approach (Trischler et al., 2023). From this perspective, while individual Public Service Organisations can facilitate the value creation for individual users (private value), at the ecosystem level, organisations work together as mediators in the value creation process for society (public value) (Trischler et al., 2023).

Studies of Public Service Logic have therefore focused on understanding both the concept of value and the role of Value Propositions within Public Service Organisations.

Danielsson and Westrup (2024) argue that the concept of value is inherently complex and interpreted differently by stakeholders, making shared understanding essential. Using a case study of a Swedish municipal service, they show how value emerges as a “thick concept”—encompassing multiple meanings and perspectives—rather than a single, simplified definition. This complexity reflects the multidimensional nature of value, which varies depending on stakeholder needs and expectations.

This complexity also emerges in the distinction between private value and public value (Skálén et al., 2024; Trischler et al., 2023). While private value benefits individuals, public value is consumed collectively and benefits society (Benington, 2011). Although Public Service Logic research has highlighted the importance of investigating public value (Eriksson et al., 2020; Osborne et al., 2022; Petrescu, 2019; Trischler and Trischler, 2022), its understanding remains limited (Osborne et al., 2021; Skálén and Trischler, 2025). As noted by Sønderskov et al. (2021), Public Service Logic fails to adequately capture the role of public policy and public value,

focusing mainly on user interaction and therefore not effectively supporting the servitisation of public services—the process through which services evolve in response to complex societal needs.

In response, Skålen et al. (2024) examined conflicts over public value in Public Service Ecosystems, showing that public value is a variable concept shaped by different stakeholder perspectives. These differences often lead to conflicts that can either hinder or stimulate innovation and change, depending on how they are managed. To advance understanding, the authors propose five propositions on public value conflicts, offering a conceptual contribution to the debate. Complementarily, Komulainen et al. (2023) argue that Public Service Organisations must adapt to dynamic societal needs, and that adopting a holistic approach to value can improve service provision and governance.

Building on this, Skålen and Trischler (2025) developed the Public Services as Practices framework, which conceptualises public services as bundles of value co-creation practices. This approach simultaneously considers private and public value, distinguishing between templates (design intentions of services) and performances (their actual delivery). While templates always aim to co-create value, performances can result in both value co-creation and value co-destruction. By integrating both value domains and recognising the role of performance, the framework helps to overcome the limitations of Public Service Logic and offers conceptual tools to better understand and manage conflicts over public value in Public Service Ecosystems.

Eriksson et al. (2022) suggest that in order to understand the development of Value Proposition, it is necessary to recognise the existence of multiple and distinct value configurations. These configurations are not static but are shaped by and intertwined with both intra-organisational and inter-organisational processes. At the intra-organisational level, value configurations can be influenced by internal dynamics such as organisational culture, structure and interactions between different departments or teams. These internal factors play a crucial role in shaping the way value is perceived. On the other hand, inter-organisational processes involve the relationships and collaboration between different Public Service Organisations, as well as with external stakeholders, including users, private sector

partners and other government agencies. These interactions can further refine or redefine the Value Proposition, making them useful in the public context. By linking these configurations to both internal and external processes, the authors highlight the complex and dynamic nature of value creation in public services, suggesting that effective Value Proposition emerges from the continuous interaction between an organisation's internal mechanisms and its wider network of relationships. In parallel, Cui and Aulton (2023) propose a framework that breaks down the concept of value into a number of distinct concepts, allowing for more precise terminology and a more in-depth analysis of the dynamics of value creation. With regard to Value Proposition, Røhnebæk et al. (2024) have focused on how they are created and adapted within Public Service Logic, highlighting the framing and reframing processes required to develop and modify Value Proposition in response to user needs. In this context, Eriksson et al. (2020) argue that it is also important to consider collaborative public management (Iodice et al., 2025) and the concept of public service innovation, which concerns the creation or development of innovative Value Proposition by Public Service Organisations. Using a case study from the Swedish health sector, the authors show that the increasingly complex challenges faced by Public Service Organisations require the adoption of collaborative and innovative approaches to improve service provision.

Therefore, public service innovation framework developed by Osborne and Stokosch (2013) is tested (Skålén et al., 2018), which suggests that the processes of facilitation, co-creation and value creation, together with the iteration between problem-finding and problem-solving practices, drive innovation in public services. This approach emphasises that public service innovation is a collaborative process involving Public Service Organisations, their staff and users. This concept is further explored with the introduction of Public Service Innovation Networks for Social Innovation, which explores how such networks can facilitate innovation and value creation in public services (Desmarchelier et al., 2022).

In line with this perspective, Skarli and Stokke (2025) demonstrate that situated learning can enhance professionals' competence in value co-creation methods, thereby promoting value facilitation.

Finally, Ulvin et al. (2024) discuss the importance of the expectation-reality mitigation approach in the context of public services. This approach focuses on the management of user expectations by Public Service Organisations in the process of Value Proposition and value creation.

Collectively, these studies provide an in-depth and integrated view of Value Proposition and explore the dynamic nature of such propositions in public service provision. They emphasise that Public Service Organisations do not create value, but play the role of facilitators, providing Value Proposition. They also highlight the importance of a user-centred approach, coordination between organisations and theoretical development as key elements in improving policy and practice in public service management.

2.4.2 Group 2: Value Creation Process

In service literature, the Value Creation Process is seen as a collaborative and interactive activity between organisations and users in which value is co-created (or co-destructed). This process encompasses a number of co-concepts that have emerged in Public Service Logic literature: co-production, co-design, co-creation and co-destruction. This is also supported by the keyword analysis (see Appendix 2).

As noted by Duda et al. (2019), co-concepts have been explored at different times, partly overlapping, but each retaining distinctive features. Therefore, Public Service Logic studies have been concerned with understanding how these concepts emerge in the context of public services.

Co-production

In Public Service Logic literature, co-production refers to the voluntary or involuntary involvement of public service users in any stage of the design, management, provision and/or evaluation of public services (Osborne et al., 2016). Thus, Public Service Logic suggests a way of looking at the concept of co-production that emphasises the intrinsic and contextual participation of users and suggests that value is co-produced through interactions between users and Public Service Organisations, with practical implications that require effective

management of service encounters, relationship building, development of specific skills and a pragmatic approach to value creation (Strokosch and Osborne, 2021). Public Service Logic studies have deepened the debate on co-production by empirically testing the link between co-production and Public Service Organisations performance and understanding how it is perceived and practised according to existing Public Service Organisations norms and objectives. In particular, Landi and Russo (2022) analysed the impact of high co-production intensity on the performance of public services, focusing on waste collection services in Italian municipalities. Through a survey of public managers and the use of official data on waste collection results, they show that Public Service Organisations with a positive attitude towards co-production tend to achieve better results in terms of separate waste collection on average. This underlines the importance of studies investigating the influence of co-production on the performance of Public Service Organisations and highlights the crucial role of co-production in improving the quality of public services. Rasmussen et al (2023), through a study of co-production in Danish health services, show that co-production can generate conflicting perceptions, but they also highlight how these can be combined and balanced through networking strategies that facilitate mutual understanding. The study also highlights how co-production is highly contextual, reflecting the dynamic interaction between the logics and contextual management of the actors involved. In this direction, Nasi and Choi (2023) introduce the concept of “citizen engagement” in Public Service Logic studies to highlight the importance of engaging citizens in meeting their expectations and needs. In particular, through an empirical analysis of the municipal services of a European local government, the authors highlight how the engagement of Public Service Organisations can foster a better understanding of problems, stimulate innovation and ensure that public services are responsive to society's needs, reflecting the co-production principle of Public Service Logic. In addition, the study identifies several design strategies that can help achieve strategic user orientation. These strategies include empathising with users’ needs, the co-production of solutions and using design thinking methods to address engagement challenges.

In this regard, Yu and Gerber (2025) demonstrate that the simple availability of resources and ideas by users is not sufficient to guarantee their participation in services. Other conditions are essential, such as leadership, managerial skills, and reducing information asymmetries.

Finally, Palumbo and Manesh (2023) provide a framework that can guide managers involved in co-production. This framework provides insights into best practices and potential challenges in implementing co-production initiatives, highlighting the importance of collaborative efforts in public service provision.

Co-design

Public Service Logic literature on co-production has also paid particular attention to the co-design phase of public services, which consists of a collaborative process in which a variety of actors, including citizens, end-users, professionals and organisations, work together to co-design solutions that meet community needs in a more effective and innovative way (Osborne et al., 2022).

Public Service Logic has paid increasing attention to the impact of digital technologies and virtual environments on co-design. The development of digital technologies has radically changed the way public services are designed and provided, creating new opportunities for user engagement (Trischler and Trischler, 2022). Osborne et al. (2022), through a qualitative study of the co-design of local neighbourhood services for vulnerable older people in Scotland, argue that these technological tools are not simply means to facilitate communication or information gathering, but can act as catalysts for deeper interaction between the different actors involved in the co-design process.

One of the key observations that has emerged is that although the outcomes of services may vary according to context and specific circumstances, the active involvement of users in co-design has a significant impact on the value that these services can generate in people's lives (Osborne et al., 2021). This value is not only tangible, in terms of improving the services themselves, but also intangible, such as improving participants' digital skills and increasing their trust in public institutions. The use of virtual environments for co-design makes it possible to overcome

geographical and time barriers, allowing for more inclusive and diverse participation.

Moreover, co-design in digital environments offers a unique opportunity to experiment with new forms of interaction and collaboration that would be difficult to achieve in traditional settings. The ability to create virtual spaces where participants can interact in real time, share ideas and collaboratively develop solutions paves the way for a more agile and responsive way of designing public services. This approach, as noted by Osborne et al. (2022), not only enriches the user experience, but also contributes to the creation of significant value during the production of the service itself, transforming the way public services are designed and delivered.

In summary, the studies show that a positive attitude towards co-production and co-design and active community involvement are essential steps in the process of improving public services.

Co-creation

The concept of co-creation is rarely used in Public Service Logic, as other co-concepts are used in the literature analysing the process of value creation in public services (Trischler et al., 2023). However, Public Service Logic literature argues that “value may be created through the use/consumption of a public service, either be at the nexus of interaction with the Public Service Organisations (value co-creation) or by the service user themselves, through resource integration with their needs (value creation)” (Osborne et al. 2021, 644).

To understand this co-concept in a public context, Virtanen et al. (2024) argue that it is crucial to first understand public value creation flows, as this process is dynamic and continuous, and involves elements such as (i) effective leadership, (ii) user perception and (iii) collaborative practices (Patrucco et al., 2024).

Public leadership emerges as a key factor in facilitating value co-creation, and the alignment of stakeholder roles and expectations becomes crucial to reduce conflict and optimise co-creation.

User perception is another key factor in value co-creation. Public Service Logic literature emphasises the importance of taking user perceptions into account in

order to facilitate Public (Hafer and Hossain, 2025) and Private co-creation (Gong and Yang, 2024). In this context, organisational strategies can have a significant impact on these perceptions, influencing the perceived quality of the service and overall satisfaction.

Finally, collaborative practices that specifically involve users in the provision of public services have been explored in depth by Skålen et al. (2025). Through a qualitative study of social insurance services in Sweden, the authors demonstrate that such involvement primarily involves a significant workload for users.

Furthermore, it is essential to also consider the interactions between frontline employees in Public Service Organisations and users (Gyllenhammar et al., 2023). User needs, which are often more complex than the structure of the service system can manage, require careful management and strategic planning aimed at their satisfaction (Osborne and Strokosch, 2021). The role of frontline employees is crucial in this context, as they are at the centre of interactions that can both create and destroy value, highlighting the complexity and sensitivity of the co-creation process (Eriksson and Andersson, 2024; Rønshaugen et al. (2025)). The concept of frontline employees is very close to the concept of part-time marketers that emerges from Gummesson (1991), understood as all employees who, although not formally in the marketing department, perform functions that influence customer perceptions and ultimate satisfaction. In particular, the author argues that part-time marketers have a significant impact on service outcomes and can be critical to the success of a service. In the public sector, frontline employees have a similar impact on public services.

Another relevant aspect that has emerged in Public Service Logic literature (Skarli, 2021; Skarli, 2023) is the impact of cognitive disabilities on users of public services, particularly in the health sector. Skarli (2021) states that cognitive disabilities can significantly affect users' ability and motivation to actively participate in co-creation processes, highlighting the need for a more attentive and personalised approach by service providers. It is crucial that these providers address the challenges and improve their collaboration with vulnerable users to ensure that the value created is effectively perceived by all stakeholders.

This process of value co-creation can be facilitated by the digitalisation process that Public Service Organisations are undergoing (Zyzak and Martinussen, 2024; Sergianni and Iodice, 2025), as shown by Leite's (2023) analysis of the impact of the use of artificial intelligence (AI) and, in specific, virtual reality in the context of health services. In fact, it is clear from this study that this technology has shown significant potential to improve results, create more immersive environments and increase the concentration capacity of public operators. Another key element that has emerged in this context is the use of digital platforms for the co-creation of public services. Jiang and Fan (2024), through the analysis of a digital platform used by a municipal service in China, noted that the active participation of users on these platforms not only improves the quality and effectiveness of public services, but also contributes to strengthening their trust in institutions, promoting greater transparency and accountability within the framework of Public Service Logic. However, this process is not without its challenges. Indeed, as stated by Rösler et al. (2021) co-creation in the context of digital transformation presents both barriers and opportunities, and the difficulties that may arise require careful management by public managers to overcome. In line with this, Hasche and Höglund (2025) argue, based on a study of the Swedish Public Employment Service, that digitalisation, if not balanced by adequate human support, can both facilitate and hinder value creation—especially for the most vulnerable users—and they propose different premises to guide public managers in addressing these challenges.

Finally, recent studies have criticised the theoretical framework of Public Service Logic and its value co-creation approach, pointing out its idealistic nature. In particular, Kinder and Stenvall (2023) argue that Public Service Logic places too much emphasis on subjective evaluation by users, thus neglecting the tangible and material aspects related to the production and distribution of public value. This approach is seen as limited because it reduces the role of public employees to simple facilitators who co-create value with Public Service Organisations, without recognising their active and autonomous contribution to value creation.

In summary, value co-creation in public services requires a combination of strong collaboration between different actors and attention to user needs, with digital transformation playing an increasingly important role. Interaction between

stakeholders is crucial to overcome challenges and exploit opportunities in the co-creation process, and to ensure that the value created is sustainable and positively perceived by all stakeholders.

Co-destruction

Value co-destruction refers to the decrease in perceived value by the actors involved in an interaction (Echeverri and Skålén, 2011). This phenomenon occurs when the parties involved fail to integrate resources in a win-win manner, resulting in a decrease in value use.

According to Public Service Logic literature, in order to understand a first driver of value destruction, it is essential to start from the assumption that, as previously stated, public services should be analysed along two dimensions: their contribution to private value creation and their contribution to public value creation (Engen et al., 2021). These two dimensions can either coincide, contributing to both public and private value, or conflict, leading to the destruction of private value. This happens when the users of public services who participate in the value co-creation process of public value consume their own resources, leading to a reduction in private value (Ofstedal, 2024). To prevent this phenomenon, it is therefore crucial to align public value with private value creation.

In addition, Engen et al. (2021) identify numerous other causes and drivers of value destruction in public services, such as (1) lack of transparency, (2) operational errors, (3) lack of bureaucratic competence, (4) failure to provide an adequate service, and (5) inappropriate use of resources by one or more actors.

Building on these insights, Naveed et al. (2025) examine value co-destruction from an ecosystemic perspective. They demonstrate that it arises not only from interactions between a Public Service Organisation and a user, but also from the interplay of multiple actors, including regulators and providers. This view suggests that co-destruction stems from both individual failures and systemic inefficiencies, such as conflicting governance mechanisms, and user behaviours. This highlights the need to analyse value destruction at the level of the entire Public Service Ecosystem (Naveed, 2025).

Finally, in the context of value destruction in Public Service Logic, Jenhaug (2021) argues for challenging the predominantly positive view of Public Service Logic by introducing the analysis of value destruction through the role of family caregivers. The author argues that the personal experiences of these caregivers should be carefully examined and highlights the importance of considering the co-destruction of value in Public Service Logic studies in order to gain a deeper understanding of the collaboration between the parties involved.

In summary, value co-destruction is a concept that is becoming increasingly important in Public Service Logic studies, highlighting how a number of factors can lead to a reduction in the perceived value of the actors involved in the interaction process. This insight underlines the need to consider not only the positive aspects of cooperation, but also the dynamics that can lead to negative outcomes for the parties involved.

2.4.3 Group 3: Public Service Ecosystem

Service studies argue that value creation is not the responsibility of a single actor but takes place within interactive service ecosystems that include several different actors (Vargo and Lusch, 2016). Public Service Logic supports this perspective in the public context, especially given the challenges associated with public value. Indeed, several studies in this field have emphasised the fundamental importance of context in the Value Creation Process (Medina-Molina et al, 2024), highlighting that this process takes place in a Public Service Ecosystem where multiple actors collaborate to create value (Petrescu et al., 2019). Therefore, to better understand this phenomenon, studies have introduced an ecosystem approach, which analyses how interactions and relationships between different actors within an ecosystem shape the value co-creation process. Strokosch and Osborne (2020), through a qualitative analysis of the Value Creation Process within the Scottish social security service ecosystem, found that value co-creation is highly dependent on the alignment of objectives between the actors involved, strategic direction and the adoption of a participatory approach. Through this empirical analysis, the authors further argue that an ecosystem approach highlights the importance of networks of actors, their interactions and collaboration as key elements for effective value

creation. Consequently, not only individual Public Service Organisations, but the entire network of stakeholders must be considered and involved in the co-creation process to achieve optimal results. In this sense, Trischler et al. (2023) proposes the service ecosystem as an analytical framework to study value co-creation, offering a multi-actor approach that facilitates the Value Proposition and supports public service users in creating value. The authors suggest that Public Service Logic, while remaining a mid-range theoretical framework, needs to evolve to incorporate the service ecosystem as a primary analytical lens for understanding Public Value Creation, recognising the mediating role of Public Service Organisations in this process.

Digitalisation and service design are two key dynamics influencing public management within these ecosystems, and the Public Service Logic framework must be able to evolve to respond to these emerging challenges.

This has also highlighted the importance of actors operating effectively at three levels of the ecosystem - micro, meso and macro - and the need to understand how to influence these levels more effectively (Osborne et al., 2021).

To this end, Sancino and Tasselli (2024), through a qualitative analysis of Italian municipal services, developed the Appreciate-Engage-Facilitate model to help public managers understand and support value creation at all levels of service ecosystems, and identified seven key practices as essential to maintain the functionality of Public Service Ecosystem even during crises. These practices are seen as sets of interrelated practices that are fundamental to ensuring ecosystem resilience. They include creating new digital structures, expanding collaboration with new actors, regulating the intensity of interactions with volunteers, modifying roles and responsibilities, and using storytelling techniques and digital media to effectively communicate and motivate value co-creation. These practices show how managers adapt their strategies to foster collaboration, innovation and communication during a time of crisis.

Furthermore, Eriksson et al. (2021), who examined the impact of periods of turbulence, such as the Covid-19 pandemic, on the Swedish health ecosystem, found that periods of crisis also highlight the strengths and weaknesses of the Public Service Ecosystem.

Indeed, the authors found that the pandemic has accelerated collaboration between actors, facilitating the integration of resources such as knowledge and expertise across organisational and professional boundaries. However, these collaborations focused mainly on traditional providers, excluding the potential contribution of users and other actors. It can therefore be argued that the pandemic acted as a “game changer”, challenging traditional ways of working in the public sector and accelerating reforms that had stalled. However, this shift suggests that a more integrated and collaborative approach involving a wider range of actors, including users, should be promoted.

In addition, Osborne et al. (2024) examined the pandemic vaccination programme from a Public Service Logic perspective and confirmed the importance of an ecosystem approach that considers the ability to collaborate and interact effectively. This approach recognises the dynamics between the different actors involved and their values and beliefs. The authors therefore suggest that to be effective, a vaccination programme must integrate into this complex ecosystem, recognising and addressing the different perspectives and potential tensions between private and public value.

In summary, the analysis of the Public Service Ecosystem highlights the importance of collaboration between multiple actors for value co-creation, highlights the existence of a variety of Public Service Organisations with different characteristics, and provides a solid theoretical framework to improve the understanding of value creation processes in public services.

2.5 Public Service Logic: a research agenda

The findings show that research on Public Service Logic is still a young field and highlight several areas of research that remain underexplored (see Table 2). Although the concept has gained traction since Osborne's (2018) seminal contribution, the literature has yet to reach a stage of theoretical maturity or broad empirical validation.

Cocitation analysis in Appendix 2 clearly shows that a cluster of papers representing the fundamental principles of Public Service Logic exists and requires further investigation.

This suggests that Public Service Logic has successfully established several key conceptual pillars, leaving space for further development. Further research is therefore needed to refine its theoretical nuances, broaden its empirical applications and strengthen the evidence base to support the consolidation of Public Service Logic as a unique strand of public management studies, distinct from Service Logic and Service-Dominant Logic.

For each group that emerged from the literature review, Table 2 shows the research areas that need to be explored and the related research questions.

Table 2
Future Research Area and Research Questions

Group	Future Research Area	Future Research Questions
Value Proposition	Understand the concept of public value and the mediating role played by Public Service Organisations in the value creation process (Osborne et al., 2021). Investigate the impact of digital technologies on the Value Proposition of public services (Trischler, J. and Trischler, J. W. 2022; Osborne et al., 2022). Explore the influence of collaboration policies for the development of joint Value Proposition in an ecosystemic perspective (Eriksson et al., 2020).	How is public value defined and perceived within the Public Service Logic framework, and what are the main dynamics that influence its creation by society? How do Public Service Organisations mediate public value creation within different public service contexts? What is the impact of digital technologies on the effectiveness of public service Value Proposition? What are the challenges and opportunities of integrating digital technologies to improve public service Value Proposition? How can the use of digital technologies promote the personalisation of public services and thus increase public value? How do collaboration and user feedback influence the Value Proposition? What is the role of alliances and collaborative networks between actors in developing sustainable and efficient Value Proposition in an ecosystem perspective? How can cross-sector collaborative strategies improve public value creation and foster greater integration between public services, businesses and citizens?

		What collaborative governance models are most effective for managing resources in an ecosystem context?
Value Creation Process	Examine the role of social context, user characteristics and service type in value creation processes (Eriksson, 2019) Explore the user perspective on value creation processes, as research has often focused only on Public Service Organisations (Rasmussen et al., 2023) Empirically investigate the impact of co-production (and co-design) on different levels of value (private, public) and whether there are conflicts between them (Eriksson, 2019). Investigate the impact of digital technologies on value creation processes in public services (Rosler et al., 2021; Leite, 2023; Jiang and Fan, 2024; Zyzak and Martinussen, 2024). Empirically explore the concept of co-creation and co-destruction in a variety of public contexts (Engen et al., 2021).	How do co-creation, co-design, co-production and co-destruction processes manifest themselves in different public contexts (e.g. education, security, environment)? What contextual variables influence co-creation and co-production in different public service sectors? How do the social and professional backgrounds of the actors involved influence co-production and co-creation processes in public services? What are the differences in the contribution of users and staff to co-production according to the type of public service (e.g. social, health, education)? How does co-production of public services affect perceived value at individual, group and public levels? Are there conflicts between public and private values within co-production processes and how can these be resolved? What are users' expectations and perceptions of co-creation and co-production processes in public services? How can the inclusion of the user perspective improve the outcomes of co-production and co-creation? How do digital technologies facilitate or hinder co-creation and co-production processes in public services? What are the potentials and limitations of digital technologies for improving the effectiveness of value co-creation in public services? What are the factors that determine value co-creation in different public service contexts, and how do they vary by type

		of service? How can value co-destruction be avoided in co-creation and co-production processes in public services?
Public Service Ecosystem	Explore the processes of value co-creation within a Public Service Ecosystem, analysing how the dynamics of interdependence between actors and resources influence the creation of public and private value (Petrescu, 2019) Understand how digital technologies affect the structure and dynamics of the Public Service Ecosystem, facilitating or hindering value co-creation (Trischler, J. and Trischler, J. W. 2022). Analyse the perspectives of Public Service Organisations and other actors in the Public Service Ecosystem, how they interact with each other and the collaborative dynamics of value creation (Strokosch and Osborne, 2020). Explore how the Public Service Ecosystem concept can be used as an analytical tool to understand value co-creation processes (Trischler et al., 2023).	How do value co-creation processes develop within a Public Service Ecosystem, and what factors influence their effectiveness? How do interactions between Public Service Organisations and other ecosystem actors influence value creation in public services? How do digital technologies facilitate value co-creation in a Public Service Ecosystem and what are the implications at micro, meso and macro levels? What are the main barriers and opportunities arising from the integration of digital technologies in the Public Service Ecosystem? What are the perceptions of Public Service Organisations and other stakeholders (citizens, private organisations, etc.) regarding their roles and contributions in the Public Service Ecosystem? How do the relationships between Public Service Organisations and other stakeholders influence the outcomes of value co-creation in public services?

Source: authors elaboration

It is clear from Table 2 that the concepts and co-concepts identified in the literature review on Public Service Logic require further exploration. In addition, existing empirical studies focus almost exclusively on the Swedish context and the health care sector, using predominantly qualitative methodologies. This highlights the need to broaden the empirical analysis of Public Service Logic in different geographical and sectoral contexts and with more diverse methodological approaches, including quantitative and mixed methods studies (see Appendix 1). Furthermore, it is important to emphasise that, although emerging concepts and co-concepts should be treated as rigid and distinct categories, they can interact and

influence each other. Therefore, an integrated research approach is essential in order to explore these interactions and contribute to a more holistic understanding of value creation processes in the public sector.

2.6 Concluding Discussion

This research confirmed that Public Service Logic represents an integration of concepts that stems from both Service Logic and Service-Dominant Logic. The findings that emerged from this analysis contribute significantly to a deeper understanding of the theoretical foundations that have informed the development of this new research perspective. In particular, they provide a useful key to understanding how these theories have influenced the growth of the field of Public Service Logic. First, therefore, it is necessary to understand the theoretical foundations that have informed Public Service Logic.

For the Value Proposition category, Public Service Logic draws on Service-Dominant Logic literature (Vargo and Lusch, 2016), which uses this concept to explain how a company participates in value creation. In contrast, Service Logic literature adopts the concept of value promise (Grönroos, 2006), which refers to the promise a company makes to its customers about the value they will receive from using a service or product. Public Service Logic literature explores the role of Value Proposition in the public sector, analysing how they are created, adapted and coordinated to meet users' needs.

The category *Value Creation Process* includes the main co-concepts that have emerged in Public Service Logic literature.

The concept of co-production has its roots in both Service Logic (Grönroos, 2013) and Service-Dominant Logic (Vargo and Lusch, 2004) and is used to describe the active involvement of consumers. In 2008, with the revision of its fundamental premises, Service-Dominant Logic shifted away from treating co-production as a core concept in firm-customer interactions, recognizing it instead as an optional aspect within the broader co-creation process.

The studies on co-production in Public Service Logic explore how user participation contributes to value creation and improved performance. In particular,

the studies examine different aspects of co-production, including mechanisms for user participation and the influence of co-production on public service outcomes. The concept of co-creation is based on Service Logic studies (Grönroos, 2013), according to which value can be co-created through interaction with Public Service Organisations. In the absence of interaction, it is simply value creation (Osborne et al., 2021). The value co-creation literature in Public Service Logic examines how Public Service Organisations and users can contribute to the Value Creation Process.

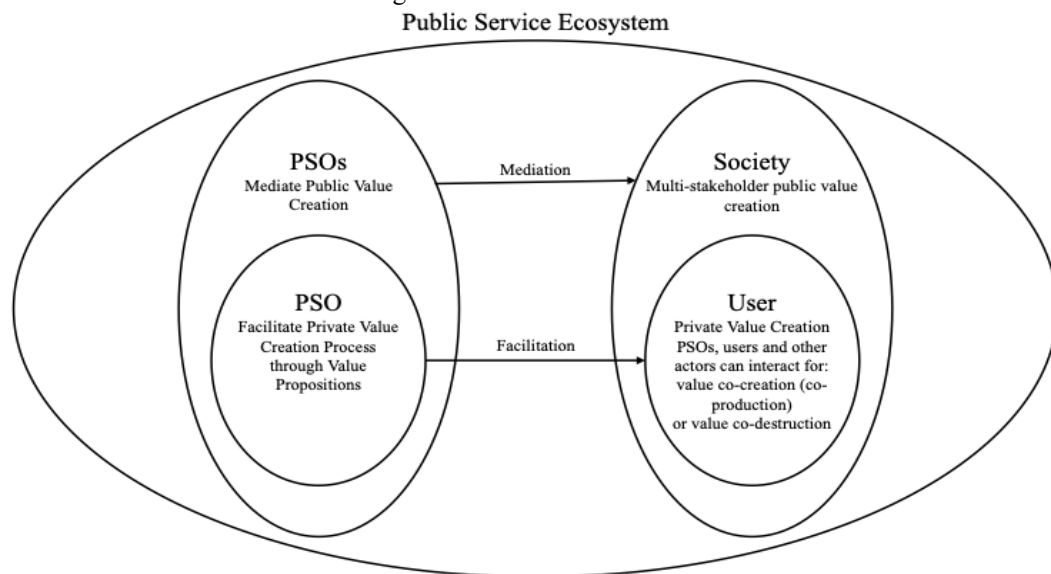
The concept of co-destruction has been introduced in Service-Dominant Logic literature (Plè and Chumpitaz Caceres, 2010) and refers to the decrease in the perceived value of the actors involved in an interaction (Echeverri and Skålén, 2011). Studies on value co-destruction in Public Service Logic explore how these phenomena can manifest themselves in complex ecosystems. A crucial aspect concerns the causes, with a focus on the dynamics of interaction between different public sector actors that contribute to these processes and negatively affect the quality and effectiveness of services.

The *Public Service Ecosystem* category focuses on the service ecosystem, a concept derived from Service-Dominant Logic literature, where value creation is not the responsibility of a single actor, but takes place within interactive service ecosystems that include multiple different actors (Vargo and Lusch, 2016). Service ecosystems provide a broader perspective that emphasises the importance of connections between the different actors involved. Incorporating an ecosystemic view into Public Service Logic allows one to consider how value is created through the continuous interaction between these actors, who co-create value through shared processes. In this context, Public Service Organisations play a central role, as they are no longer seen as isolated actors who provide Value Proposition to users in a dyadic relationship, but as entities integrated into complex networks of interaction. This ecosystem approach to Public Service Logic implies that value is not created in a linear way, but is created dynamically through interactions between different actors, with Public Service Organisations acting as mediators in this process of value co-creation, facilitating collaboration between different stakeholders to respond to the collective needs of the society.

Based on these considerations, and in particular inspired by the studies of Osborne et al. (2021) on the locus of value creation in public services and the premises proposed by Trischler et al. (2023), which highlight: (i) the need to position Public Service Logic as a theoretical framework for understanding value creation in public services, (ii) the importance of adopting an ecosystem perspective to study value co-creation, (iii) the relevance of defining the concept of *service* (rather than *services*) as the basis of Public Service Logic, and (iv) recognising the role of Public Service Organisations as mediators in balancing competing interests between individuals and communities (i.e. public value), it is possible at this stage to develop a theoretical model to guide research on Public Service Logic (Figure 2).

Figure 2

Theoretical model Public Service Logic



Source: authors elaboration

To describe the model, it is first necessary to clarify that, as suggested by Trischler et al. (2023) in Premise 2, it uses the Public Service Ecosystem as an analytical lens to understand the interconnected and dynamic nature of value co-creation. Within the ecosystem there are two macro dimensions:

The first encompasses all Public Service Organisations that are involved in and act as mediators in the process of public value creation through the joint provision of services. This dimension is inspired by premise 4 of Trischler et al. (2023).

Within this broader dimension, each individual Public Service Organisation acts as a facilitator of the private Value Creation Process, formulating specific Value Propositions that provide the basis for the user to create private value through the use of the service (value-in-use).

The second-dimension concerns society, understood as the locus of public value creation. In this context, public value emerges from the contribution of society, which should not be understood as a monolithic entity, but rather as a heterogeneous set of stakeholders, often with divergent interests (Osborne et al., 2021).

Within this dimension there is also the sphere of the individual user, who creates private value both autonomously and through co-creation processes, where the user and the Public Service Organisation actively collaborate, also through co-production processes. In this scenario, not only can value be created, but it can also be destroyed, depending on how resources and interactions between the Public Service Organisation and the user are managed.

This theoretical model clearly shows that Public Service Logic cannot be considered as a simple extension of Service Logic and Service-Dominant Logic. Although it is derived from these two logics, Public Service Logic is configured as an autonomous logic with its own distinctive characteristics, within which the concepts of Service Logic and Service-Dominant Logic coexist in a complementary way. In particular, the focus of Public Service Logic is not limited to the creation of value for the user but also includes the dimension of public value.

This emphasis on public value is the fundamental difference between Public Service Logic and Service Logic and Service-Dominant Logic. While these models focus primarily on private value, Public Service Logic broadens the concept of public value to include the needs of society as a whole. Consequently, it is no longer useful to ask how similar Public Service Logic is to Service Logic or Service-Dominant Logic, but it is essential to recognise it as a theory in its own right.

Public Service Logic therefore offers a new and relevant perspective for understanding value creation in the context of public services. It is a logic that not only responds to the needs of the individual, but also has a direct impact on social well-being, thus consolidating its role as an autonomous and distinctive theory.

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Appendix 1

Overview of studies included

Author	Journal	Aim	Category	Home Country	Methodology	Sector
Osborne (2018)	PMR	Replace Public Service Dominant Logic with Public Service Logic to better represent the theoretical evolution of public management.	VCP	n.a.	Conceptual	n.a.
Skålén et al. (2018)	AJOPA	Present an elaborated Public Service Logic-based framework	VP/VP	Sweden	Qualitative (case study)	Care Services (Primary Care)
Eriksson (2019)	PMR	Explore the concept of representative co-production and broaden the scope of Public Service Logic	VCP	Sweden	Mixed methods (Research project)	Care Services (Health Care)
Petrescu (2019)	PMR	Incorporate the service ecosystems view into Public Service Logic	PSE	n.a.	Conceptual	n.a.
Eriksson et al. (2020)	PMR	Explore the potential of coordinated value propositions in Public Service Logic	VP	Sweden	Qualitative (case study)	Care Services (Health Care)
Strokosch and Osborne (2020)	P&P	Understand value creation within a service ecosystem perspective	VCP/PSE	Scotland	Qualitative (case study)	Technical Services (Social Security)
Strokosch and Osborne (2021)	n.a. (book chapter)	Explore the concept of co-production in different narratives of reform	VCP	n.a.	Conceptual	n.a.
Eriksson et al. (2021)	AJOPA	Explore the impact of turbulent times on the health ecosystem	PSE	Sweden	Qualitative (case study)	Care Services (Health Care)
Engen et al. (2021)	PMR	Explore value co-destruction in Public Service Logic from an ecosystem perspective	VCP	Sweden	Qualitative (case study)	Technical Services (Social Insurance and Tax)
Skarli (2021)	AS	Explore how cognitive impairments can affect co-creation processes and how service providers can manage this issue	VCP	Norway	Qualitative (case study)	Technical Services (Municipal services)
Jenhaug (2021)	IJOPA	Explore how value co-creation and value co-destruction can affect value outcomes for family carers.	VCP	Norway	Qualitative (case study)	Care Services (Family Care)
Osborne et al. (2021)	PM&M	Explore the implications of public service ecosystems for public	PSE	n.a.	Conceptual	n.a.

		service management practice				
Rosler et al. (2021)	AS	Understand the factors hindering value co-creation in public service ecosystems	VCP	n.a.	Qualitative (case study)	Technical Services (Public Transport)
Sonderskov and Ronning (2021)	AS	Analysis of the gap between arguments derived from Public Service Logic and theories about street-level bureaucracy	VCP	n.a.	Conceptual	n.a.
Osborne and Strokosch (2021)	GPPAG	Examine the importance for the resilience of Public Service Organisations of a strategic orientation based on the value creation in the lives of users.	VCP	n.a.	Conceptual	n.a.
Landi and Russo (2022)	PMR	Analysis of the influence of co-production on public service performance	VCP	Italy	Quantitative (Regression analysis)	Technical Services (Municipal services)
Trischler and Trischler (2022)	PMR	Examines developments in digitalisation, user experience and service design from an ecosystem perspective	PSE/VCP	n.a.	Conceptual	n.a.
Eriksson et al. (2022)	BJOM	Analysis of the influence of value configurations on value propositions through collaboration	VP	Sweden	Qualitative (case study)	Care Services (Health Care)
Osborne et al. (2022)	GPPAG	Explore virtual co-design of services	VCP	Scotland	Qualitative (case study)	Care Services (Elderly care)
Desmarchelier et al. (2022)	REEMS	Study of Public Service Innovation Networks for Social Innovation	VP/VCP	Europe (Cross-countries)	Qualitative (case study)	Cross-sector
Palumbo and Manesh (2023)	PMR	Investigate the interplay between public service co-production and public value co-creation.	VCP	n.a.	Conceptual	n.a.
Skarli (2023)	PMR	Explore the involvement of different actors in value co-creation processes	VCP	Norway	Qualitative (case study)	Care Services (Health Care)
Komulainen et al. (2023)	IJOPSM	Examine how the customer value approach can be applied in the management of	VP	Finland	Qualitative (case study)	Care Services (Health Care)

			public health care services.				
Kinder and Stenvall (2023)	PMR	Criticises significant aspects of Public Service Logic	VCP	n.a.	Conceptual	n.a.	
Gyllenhammar et al. (2023)	PMR	Understand co-creation and destruction when a variety of actors are involved in the public sector	VCP	Sweden	Qualitative (case study)	Technical Services (Welfare service)	
Leite (2023)	PMR	Understand the impact of virtual reality on private value dimensions in public healthcare	VCP	Brazil	Qualitative (case study)	Care Services (Health Care)	
Trischler et al. (2023)	PMR	Develop Public Service Logic to capture the ecosystemic nature of value creation in the context of public services	PSE	n.a.	Conceptual	n.a.	
Nasi e Choi (2023)	PMR	Understand the adoption of design practices for citizen strategic orientation	VCP	South Europe	Mixed methods (case study)	Technical Services (Municipal services)	
Cui and Aulton (2023)	PMR	Understand the concept of value in public services	VP	n.a.	Qualitative (case study)	Technical Services (Carbon reduction projects)	
Rasmussen et al. (2023)	IJSASP	Understand how co-production is perceived and practised in public health	VCP	Denmark	Qualitative (case study)	Care Services (Health Care)	
Eriksson and Andersson (2024)	PMR	Understand Public Service Logic practices in contexts imbued with an New Public Management logic	VCP	Sweden	Qualitative (case study)	Care Services (Health Care)	
Virtanen and Jalonen (2024)	PMR	Provide an integrated conceptual framework to help understand public value creation flows	VCP	n.a.	Conceptual	n.a.	
Danielsson and Westrup (2024)	PMR	Examines the value as a thick concept in public services	VP	Sweden	Qualitative (case study)	Technical Services (Municipal services)	
Sancino and Tasselli (2024)	PMR	Understand management practices that enable the co-creation of value within public service	PSE/VP	Italy	Qualitative (case study)	Technical Services (Municipal services)	

ecosystems in the context of disruption						
Rohnebaek et al. (2024)	PMR	Understand how value propositions are created and adapted to the needs of citizens	VP	Europe (Cross-countries)	Qualitative (case study)	Cross-sector
Ulvin et al. (2024)	AS	Explores value propositions and the facilitation of the Value Creation Process in the public sector	VP	Norway	Qualitative (case study)	Technical Services (Supported housing)
Jiang and Fan (2024)	PMR	Explore the value co-creation process of service users interacting with Public Service Organisations in the co-production of public services	VCP	China	Quantitative (case study)	Technical Services (Municipal services)
Oftedal (2024)	NSWR	Understand activation services through Public Service Logic lens	VCP	n.a.	Conceptual	n.a.
Zyzak and Martinussen (2024)	PMR	Explores the role of digital technologies in value co-creation	VCP	Norway	Quantitative (case study)	Care Services (Health Care)
Skálén et al. (2024)	PMR	Understand public value conflicts in the Public Service Ecosystem	PSE	n.a.	Conceptual	n.a.
Gheduzzi et al. (2024)	IJOPA	Understand the mechanisms of co-production of health and social care services	VCP	Italy	Qualitative (case study)	Care Services (Health and social care)
Strokosch and Osborne (2024)	n.a. (book chapter)	Understand Value Creation from a Public Service Logic perspective	VP/VP	n.a.	Conceptual	n.a.
Osborne et al. (2024)	n.a. (book chapter)	Understand the importance of Public Service Logic lens and value creation in the vaccination programme.	VCP	n.a.	Conceptual	n.a.
Patrucco et al. (2024)	PMR	Proposes the integration of Public Service Logic into public procurement.	VCP	n.a.	Conceptual	n.a.
Medina-Molina et al. (2024)	IRPNM	Understand how public policies and interactions between actors influence value co-creation and co-destruction in the urban mobility ecosystem.	VCP	Europe (Cross-countries)	Quantitative (Generalized Analytic Induction and Necessary Condition analysis)	Technical Services (Urban mobility)
Gong and Yang (2024)	PMR	Understand how public service organizations'	VCP	China	Quantitative (multilevel	Technical Services

		strategies influence the value creation process.			analysis)	(Cultural Services)
Skålén and Trischler (2024)	PMR	Propose a framework for public services as practices.	VCP	n.a.	Conceptual	n.a.
Iodice et al. (2025)	n.a. (book chapter)	Understand the importance of collaboration in defining citizen-driven value propositions in grassroots museums.	VP	Cross-countries	Qualitative (case study)	Technical Services (Cultural Services)
Skålén et al. (2025)	PMR	Understand the benefits of value co-creation in public services.	VCP	Sweden	Qualitative (case study)	Care Services (Social insurance)
Sergianni and Iodice (2025)	n.a. (book chapter)	Understand the impact of chatbots on the value creation process in public cultural institutions.	VCP	Italy	Qualitative (case study)	Technical Services (Cultural Services)
Hafer and Hossain (2025)	PMR	Understand how individual characteristics influence perceptions of public value.	VP	USA	Quantitative (OLS Regression)	Technical Services (State and Local government)
Hasche and Höglund (2025)	IPMJ	Explore how public service organizations interact with their users to facilitate value creation	VP	Sweden	Qualitative (case study)	Technical Services (Public Employment)
Leite et al. (2025)	PMR	Understand how the digitalisation of teaching in higher education affects private value.	VCP	United Kingdom	Qualitative (case study)	Technical Services (Higher Education)
Skarli and Stokke (2025)	PMR	Understand how situated learning can develop professionals' competence on Value co-creation skills.	VP	Norway	Qualitative (case study)	Technical Services (Welfare service)
Rønshaugen et al. (2025)	PMR	Explore how power influences value co-creation in street-level interactions.	VCP	Norway	Qualitative (case study)	Technical Services (Welfare service)
Naveed et al. (2025)	IJOPSM	Explore the concept of value co-destruction within public service ecosystems.	PSE/VC	Pakistan	Qualitative (case study)	Technical Services (Electricity service)
Yu and Gerber (2025)	PA	Understanding the co-provision of disaster-related services in the United States.	VCP	USA	Quantitative (Survey)	Technical Services (Higher Education)
Naveed	AJOPA	Understand how	PSE/V	Pakistan	Qualitative	Technical

(2025)	dynamic interactions in the ecosystem contribute to the value co-destruction.	CP	(case study)	Services (Electricity service)
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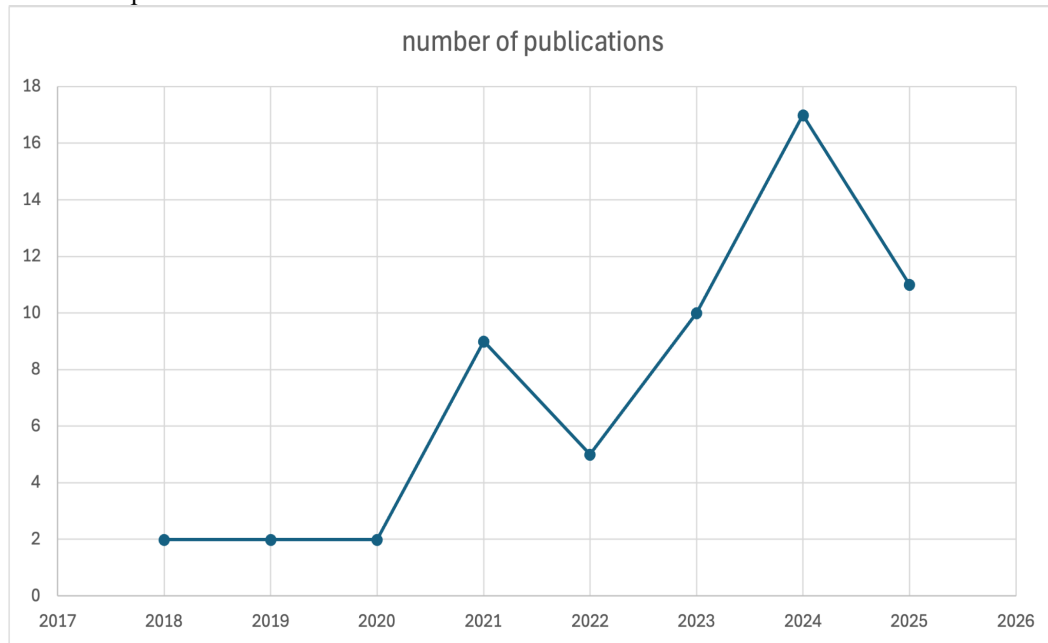
PMR: Public Management Review; AJOPA: Australian Journal Of Public Administration; P&P: Policy and Politics; AS: Administrative Sciences; IJOPA:International Journal of Public Administration; PM&M: Public Money & Management; GPPAG: Global Public Policy and Governance; BJOM: British Journal of Management; REEMS: Revue Europeenne d' Economie et Management des Services; IJOPSM: International Journal of Public Sector Management; IJSASP: International Journal of Sociology and Social Policy; NSWR: Nordic Social Work Research; IRPNM: International Review on Public and Nonprofit Marketing; IPMJ: International Public Management Journal; PA: Public Administration

VCP: Value Creation Process; VP: Value Proposition; PSE: Public Service Ecosystem

Source: authors elaboration

This research considered a total of 58 publications between 2018 and 2025, showing a clear upward trend in the number of studies over time. In the first three years, from 2018 to 2020, the number of publications was rather limited, with only 2 publications per year. However, from 2021 onwards, a significant increase was observed, with 9 publications in that year. This marks a turning point in the academic community's interest in the topic under review. The positive trend continued in 2022, with 5 publications, followed by another peak in 2023, when 10 studies were published. With 17 publications, 2024 represents the highest point so far. The 11 publications reached in 2025 confirm steady and continuous growth in recent years.

Number of publications

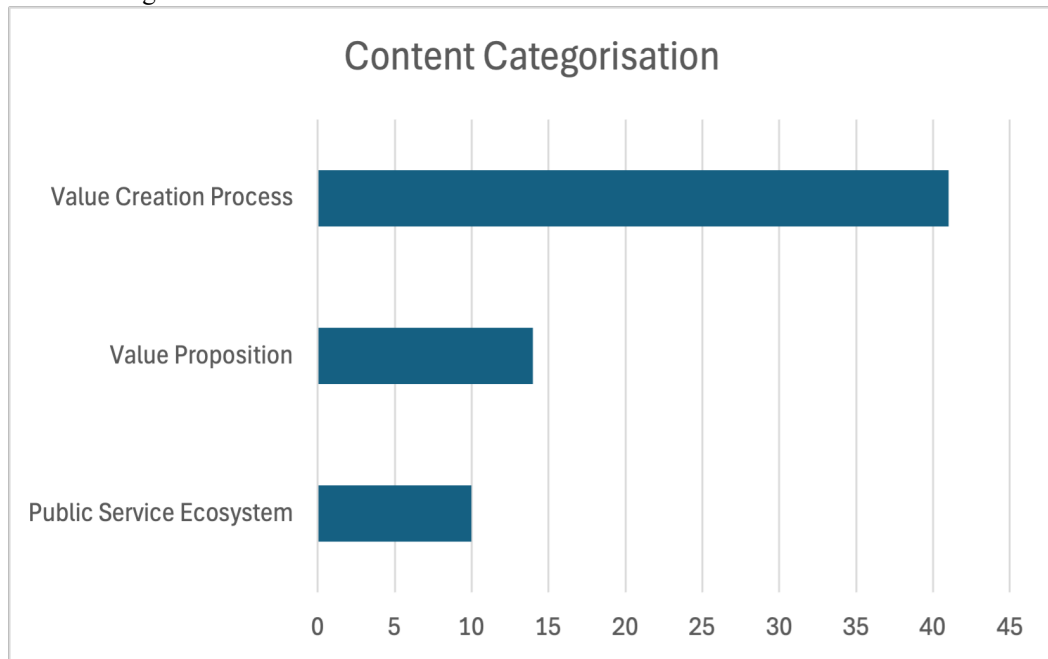


Source: authors elaboration

In terms of content categorisation, as mentioned earlier, the articles are divided into three main categories: Value Proposition, Value Creation Process and Public Service Ecosystem. Most studies focus on the Value Creation Process, which includes key concepts such as co-creation, co-production, co-design and co-destruction, reflecting an interest in the mechanisms by which value is created (or destroyed) through the interaction between users and Public Service Organisations. Another important group of studies focuses on value proposition, mainly exploring the value propositions offered by Public Service Organisations and their implications for users. Finally, several articles focus on the Public Service Ecosystem, an area that analyses the broader ecosystem in which public services operate, including the networks of actors, resources and processes that work together to deliver value to the community.

It is important to note that many studies are cross-cutting and analyse several categories simultaneously, confirming that these categories should not be considered as separate entities, but rather as mutually influencing elements.

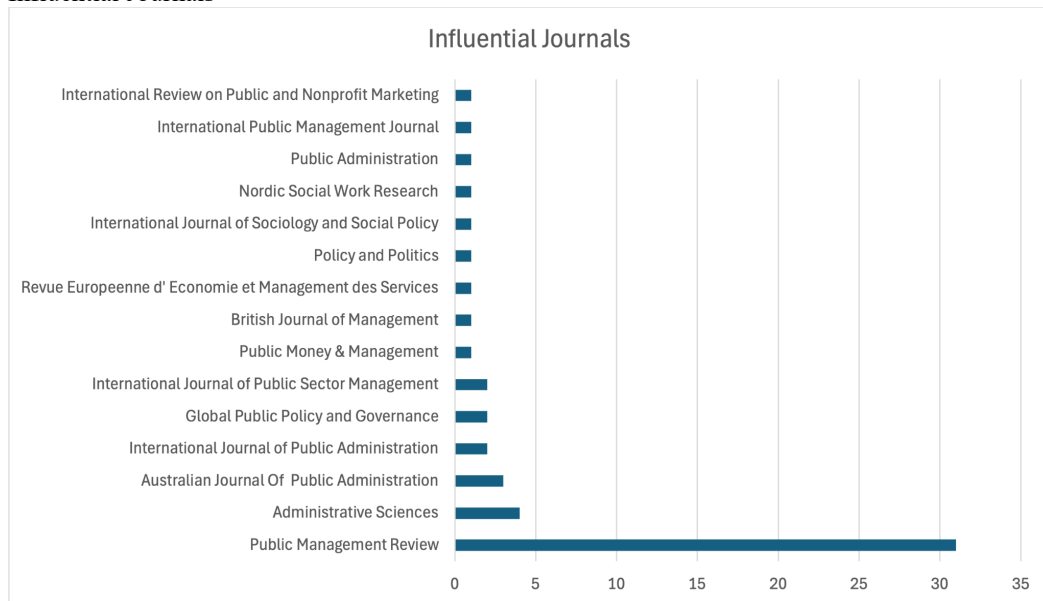
Content categorisation



Source: authors elaboration

Among the most influential academic journals is *Public Management Review*, which contributed 31 publications, underlining its centrality in the academic debate. *Administrative Sciences* come next with 4 publications, followed by the *Australian Journal of Public Administration* with 3 publications, and the *International Journal of Public Administration*, *International Journal of Public Sector Management* and *Global Public Policy and Governance* with 2 publications each, while the other journals have only one publication each.

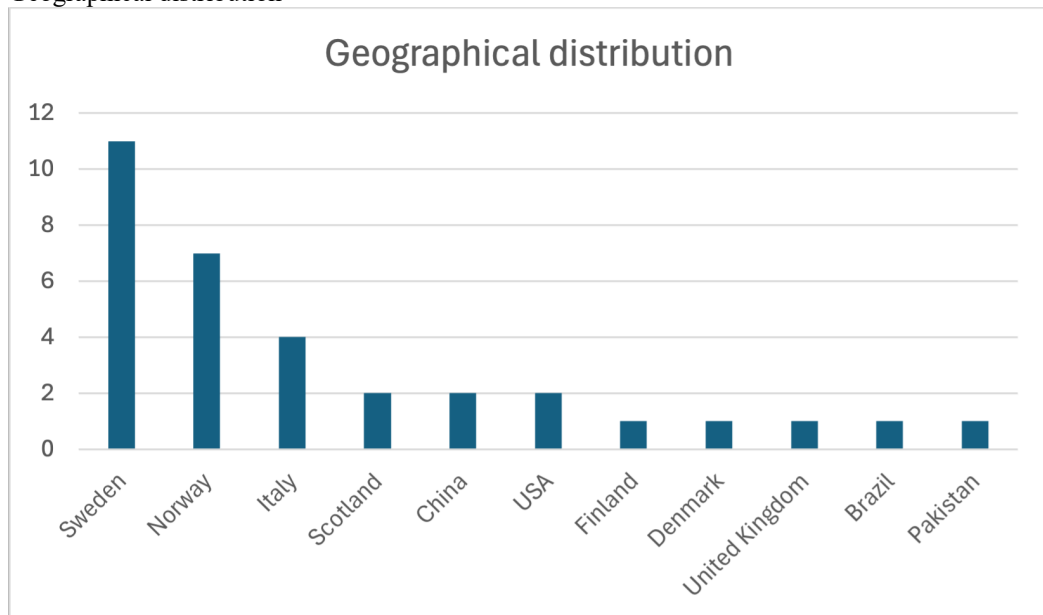
Influential Journals



Source: authors elaboration

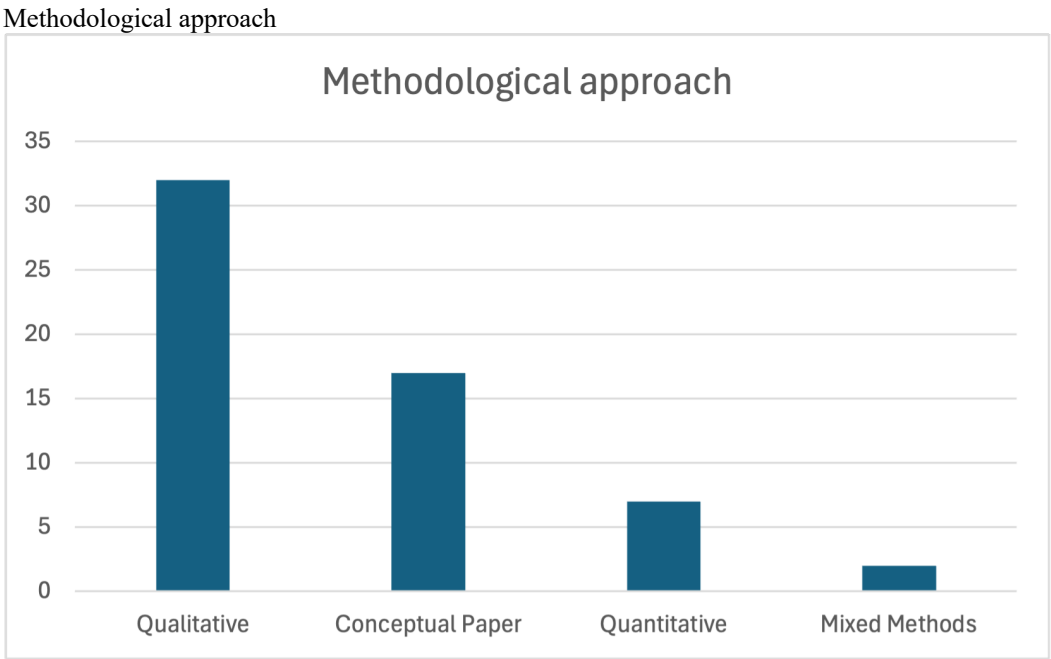
Geographically, the countries with the most contributions are Sweden with 11 studies and Norway with 7 studies. These countries stand out for their focus on public management policy and practice, areas that are the subject of many in-depth studies.

Geographical distribution



Source: authors elaboration

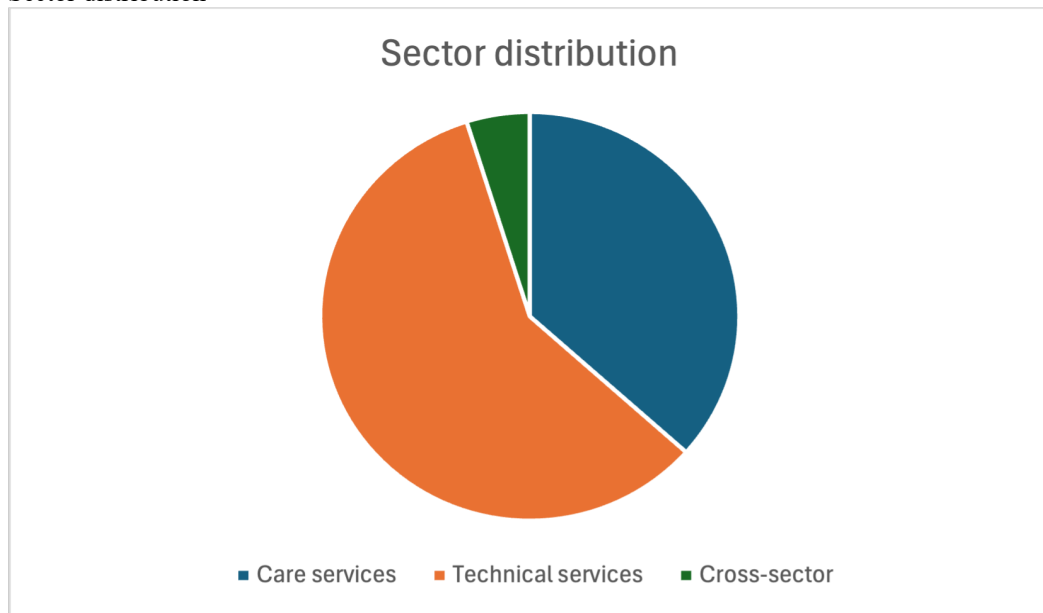
In terms of methodology, qualitative approaches predominate, with 32 studies based on case studies, confirming the interest in understanding phenomena in specific, real-life contexts. There are also 17 conceptual papers offering theoretical contributions and critical reflections, while only 7 studies adopt a quantitative approach. Finally, 2 papers combine qualitative and quantitative methods, suggesting a still limited trend towards the use of mixed approaches.



Source: authors elaboration

Finally, the areas of greatest interest in the empirical literature reviewed are technical services, with 24 publications, followed by care services, with 15 publications, and cross-sector, with 2 articles. These areas highlight the academic community's focus on management and innovation in essential public services.

Sector distribution



Source: authors elaboration

Appendix 2

This appendix presents the results of the bibliometric analysis conducted to support the article. This additional analysis aims to complement the qualitative systematic review by highlighting the intellectual structure of studies (Donthu et al., 2021) on Public Service Logic, thereby expanding and enriching the main article's contributions. The appendix begins with a brief description of the adopted bibliometric method, followed by the results obtained.

1. Overview of the bibliometric method

Zupic and Čater (2015) define bibliometrics as a method of summarising research in a given field in the form of visual maps to examine the connections between disciplines, fields, authors, and individual publications.

The first step in this integrative analysis was to define the objective, which, as mentioned in the introduction to the appendix, is to support the systematic literature review by highlighting its conceptual structure. In line with the relevant methodological guidelines (e.g. Haustein and Larivière, 2015; Zupic and Čater, 2015; Donthu et al., 2021), the next step was to collect the necessary data for the

analysis. This step is described in the “Methods” section of the main article, and the dataset used corresponds to the 58 publications identified in the main study.

The publications were imported from the Web of Science database, which imported 53 publications, a number considered adequate to proceed with further analysis.

As indicated by Zupic and Čater (2015) and Donthu et al. (2021), the next step is to conduct a bibliometric analysis and present the results. VOSviewer, free software particularly suited to creating and visualising large bibliometric maps in an intuitive way (van Eck & Waltman, 2010), was used to process the dataset. The results of the analysis are presented in the following section.

2. Results

The results presented focus on three types of bibliometric analysis: co-citations, co-authorship, and keyword. These tools enable the literature to be explored in more depth, highlighting, on the one hand, the most influential contributions and theoretical links between studies (co-citations) and, on the other hand, the collaboration dynamics between researchers (co-authorship). This allows the main emerging research themes and trajectories (keywords) to be identified. The aim is to gain a deeper understanding of the structure of Public Service Logic by highlighting the connections and fragmentation that characterise the field of investigation.

2.1 Cocitation Analysis

Figure 1 illustrates the results of the cocitation analysis. This analysis establishes connections between publications by identifying how often they appear together in reference lists (Zupic and Čater 2015). As noted by the authors, it is among the most widely applied and validated bibliometric approaches, since it highlights influential works and helps to identify the most relevant contributions in the field.

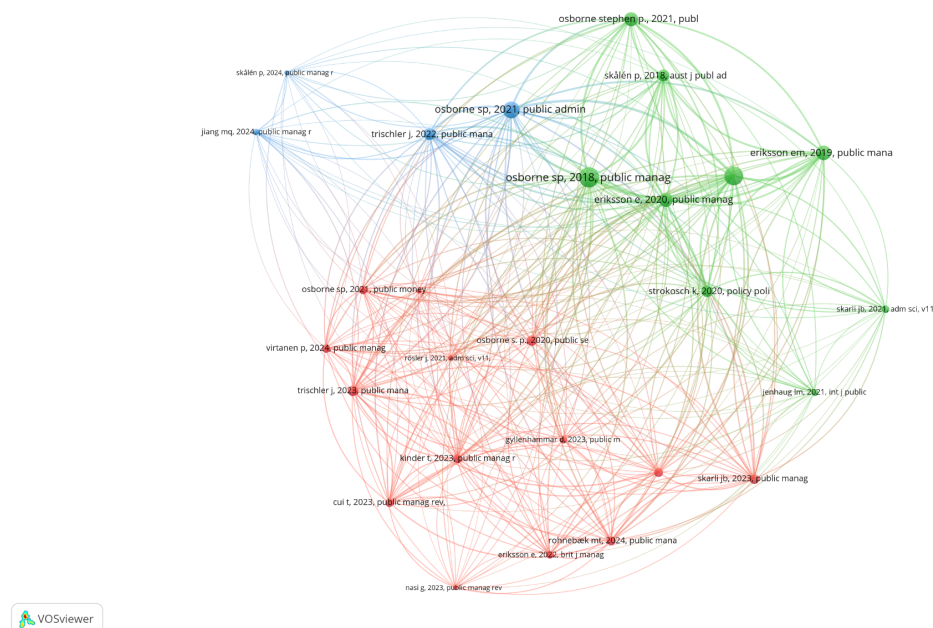


Figure 1: Results of the cocitation analysis

The results reveal three distinct clusters. The green cluster contains the most frequently cited and foundational contributions to Public Service Logic, including the work of Osborne (2018), Skålén (2018), Eriksson (2019) and Osborne (2021). These articles are considered to be the key theoretical references in the field of Public Service Logic. These articles introduced the key concepts underlying the field and established themselves as essential theoretical references. Their central position in the network and the high number of links with other nodes confirm the fundamental role of the research field.

The blue cluster focuses on conceptual development related to the public service ecosystem perspective. The articles included here (e.g. Trischler, 2022; Osborne, 2021) build upon the original ideas by offering a more systemic and relational perspective. In this sense, we could say that the blue cluster acts as a link between the established theoretical foundation (green) and subsequent developments (red).

The red cluster comprises the most recent contributions, which apply and develop the founding concepts in specific contexts. These include studies on digital innovation, smart governance and adapting Public Service Logic to new sectors (Kinder, 2023; Cui, 2023; Virtanen, 2024; Rønnebæk, 2024). This cluster therefore reflects the most dynamic and applied phase of the debate, which is aimed at

consolidating and expanding the empirical scope of the original theoretical framework.

2.2 Co-author Analysis

The co-author analysis links researchers who have written a paper together, offering insights into patterns of collaboration and the social dynamics within a research domain (Zupic and Čater, 2015). Figure 2 presents the results of this analysis.

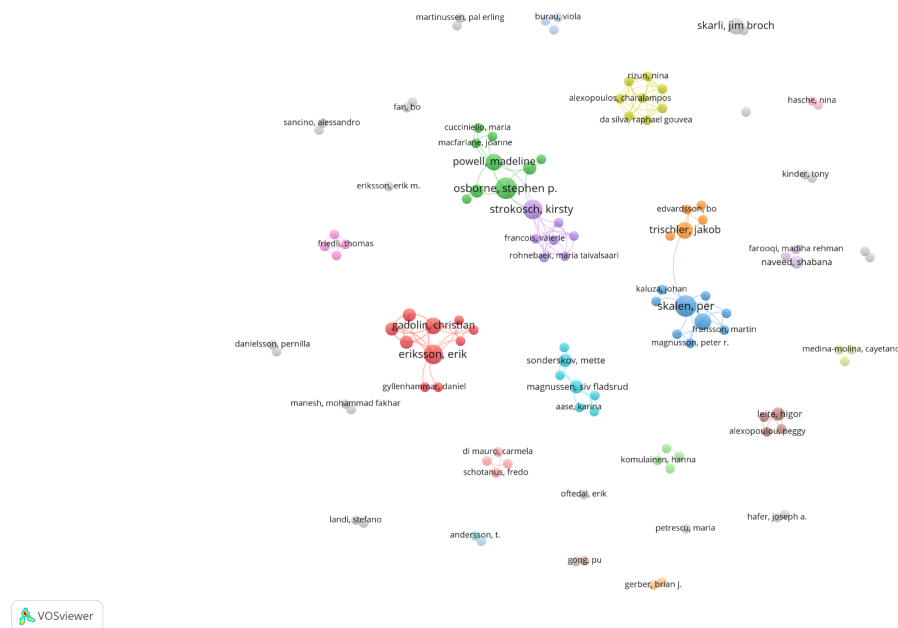


Figure 2: Results of the co-author analysis

Figure 2 shows a high level of fragmentation, with many small groups in which authors mainly collaborate within their own cluster. The most relevant groups are: the green group centred around Stephen Osborne; the purple group connected to the green group and centred around Kristy Strokosch; the blue group centred around Per Skålén and linked to the orange group, which includes researchers such as Jakob Trischler and is characterised primarily by common affiliation; and finally, the red group centred around Erik Eriksson and focused on topics such as collaboration in Public Service Logic. The other clusters represented in Figure 3 correspond to small groups of authors who have produced one or a few co-authored works.

This analysis therefore confirms the strong fragmentation of the scientific community, in which different groups address similar issues in substantially

isolated ways. These differences are not related to variations in content, but rather to the tendency of many scholars to pursue independent lines of research. For instance, Stefano Landi, Lene Gissel Rasmussen and Rocco Palumbo all empirically analyse co-production in Public Service Logic, but independently of each other.

2.3. Keyword analysis

The last bibliometric analysis discussed in this appendix is keyword analysis. This analysis is particularly useful for identifying the core conceptual elements of a body of literature and for highlighting the themes associated with a specific research stream (Zupic and Čater, 2015).

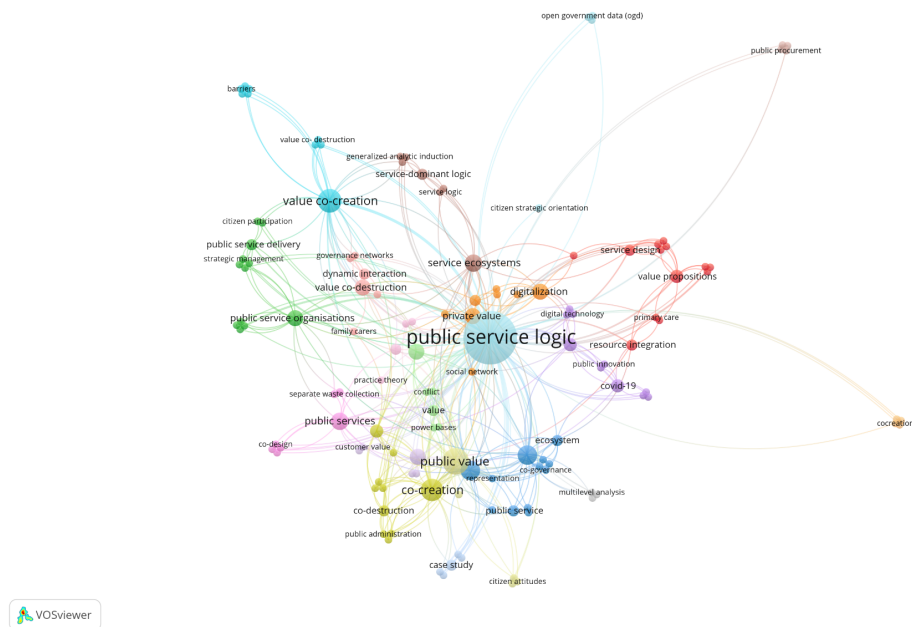


Figure 3: Results of the keyword analysis.

Keyword analysis reveals that Public Service Logic is the central theme around which all others are organised. This perspective is particularly significant, as it reveals the main thematic clusters that shape the literature in this field. Several distinct groups can be identified. The blue cluster (top left) focuses on the concepts of co-creation and co-destruction of value, emphasising the dual outcomes of value creation processes. The green cluster (top left) focuses on public service organisations and the organisational and managerial aspects of service delivery. In

contrast, the red cluster (bottom right) addresses issues of value proposition and service design, emphasising the importance of how services are conceived and structured.

The bottom right blue cluster focuses on the concept of ecosystems, paying particular attention to governance mechanisms and levels of representation. The yellow and orange clusters, closely related to this, capture the distinction between public and private value — two separate yet interconnected strands of research. The purple cluster (top right) highlights the theme of innovation in public services, with the Covid-19 pandemic serving as an important driver of change and experimentation. Finally, the brown cluster (top) reflects the theoretical foundations, linking service logic to the broader theoretical pillars of service logic and service-dominant logic.

3. Conclusions

A bibliometric analysis confirms that Public Service Logic is a young but expanding field of research. Despite its recent development, analyses reveal various themes shaping the debate.

What is particularly significant is that the thematic clusters that emerged from the bibliometric analysis are highly consistent with the main findings of the analysis presented in this article. This consistency reinforces the robustness of the findings, demonstrating that the bibliometric perspective provides further confirmation of the key research trajectories in Public Service Logic.

Overall, the study highlights the vitality and potential for growth of this emerging field as scholars continue to expand and consolidate its conceptual and empirical foundations.

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Chapter II: Reframing Public Service Value Propositions with AI: A Managerial Perspective on Conversational Agents

Abstract

Purpose:

Artificial intelligence has transformed public service design and delivery, reshaping how public service organisations operate and interact within society. Building on the Public Service Logic literature, this paper develops a conceptual framework to explain how public service organizations reframe their value propositions and examines how artificial intelligence shapes this process.

Design/methodology/approach:

The study adopts a qualitative, multiple case study approach. Data is collected through semi-structured interviews with managers from Italian public service organisations that have adopted conversational agents as an artificial intelligence-based technology.

Findings:

The study provides empirical evidence that public service organisations develop value propositions by analysing the emerging needs of users and society. It also shows that reframing the value proposition is a continuous process, driven by iterative problem-finding and problem-solving practices. The study proposes premises to guide the analysis of value proposition innovation in public services from a Public Service Logic perspective.

Practical Implications:

The findings provide public managers with guidance on leveraging artificial intelligence to redesign their value propositions and enhance service delivery.

Social Implications:

By supporting the development of value propositions that address both user and societal needs, AI adoption can foster more inclusive and responsive public services.

Originality:

This research contributes to the Public Service Logic literature by offering an original and insightful perspective on how artificial intelligence influences the value proposition of public service organisations.

Keywords: Value Proposition - Artificial Intelligence - Public Service Logic - Conversational Agents - Reframing - Public Value

3.1 Introduction

Digital transformation is a key way to improve public services (Lips, 2019), encouraging Public Service Organisations (PSOs) to leverage technological innovations to enhance service provision quality (Trischler and Trischler, 2022).

Digitalisation in public services accelerated significantly due to the COVID-19 pandemic, which catalysed the adoption of digital technologies. The crisis forced PSOs to rapidly reconfigure their value proposition (VP), shifting interactions with users to digital platforms and using new technologies to maintain service continuity, accessibility, and quality (Leite, 2023). This rapid change emphasises the potential and necessity of digital solutions, turning digital transformation from a long-term strategic option into an immediate organisational imperative.

The integration of digital technologies has included Artificial Intelligence (AI), creating a spectrum of opportunities for the public sector (Wirtz et al., 2019).

According to the World Bank (2020), many Governments consider AI to be a strategic resource for boosting national competitiveness and stimulating economic growth. Furthermore, McKinsey Global Institute (2018) estimated that AI could contribute \$13 trillion to the global economy by 2030.

Such opportunities help public services become increasingly interconnected and interactive systems (Wirtz et al., 2019), enabling PSOs to engage users more effectively and benefit from their active involvement (Osborne, 2020). Thus, AI not only improves service quality, but also strengthens trust in PSOs and increases efficiency in the service provision (Wirtz et al., 2019).

In Public Administration Management (PAM) literature over the last decade, Public Service Logic (PSL) has emerged as a theoretical lens to combine value creation with digital technologies. PSL offers a theoretical perspective that redefines value

creation in public services by moving beyond a provider-focused vision and emphasising value in use (Osborne, 2018). From this perspective, the VP plays a central role, representing a promise of value for users of PSOs rather than a definitive output (Osborne, 2018; Røhnebæk et al., 2024).

PSL emphasises the importance of incorporating digital technologies into VP analysis in a public context (Osborne, 2018). According to PSL, failing to consider the role of digital technologies when formulating a VP can compromise value co-creation (Trischler and Trischler, 2022). PSL literature demonstrates that digitalisation processes incorporated into PSOs' VPs can facilitate value co-creation by broadening interaction possibilities and promoting resource integration (Zyzak and Martinussen, 2024). Regarding AI, PSL research indicates that AI-based technologies can improve the VP by fostering more engaging environments and improving the quality and effectiveness of service provision (Leite, 2023).

Despite growing research on digital transformation and AI, studies remain in their infancy and further research has been called for (Bonomi Savignon et al., 2023), even with reference to PSL, as limited attention has focused on the impact of digital technologies and AI on the VP (Skålén et al. 2018; Trischler and Trischler, 2022; Osborne et al., 2022; Røhnebæk et al., 2024; Zyzak and Martinussen, 2024; Hasche and Höglund, 2024). For Trischler and Trischler (2022, p. 1253), *“it is therefore essential for any PSO to understand how the integration of digital technology into its value proposition may change the nature of co-production with its users from a narrow stance, and the public service user’s value co-creation activities more broadly.”*

As Eriksson et al. (2020) note, addressing this issue requires investigating the processes that precede the public service user's realisation of value.

Addressing this gap, the paper has two aims. At the conceptual level, it develops a framework by incorporating insights from the literature on VPs within PSL. Empirically, it grounds this framework in data by investigating AI's impact on the VPs of PSOs in Italy.

The study adopts a qualitative approach based on multiple case studies (Yin, 2018), collecting data through semi-structured interviews with managers of Italian PSOs who have implemented conversational agents as AI-driven technology.

Conversational agents (i.e., chatbots, virtual assistants) are among the most advanced AI applications in PSOs (Maragno et al., 2022) because they can process large amounts of data and handle routine requests efficiently (Mehr, 2017). Thus, they are valuable in the public service context.

This paper makes two main contributions. First, it articulates a conceptual framework for reframing the VP grounded in PSL, thus advancing the theoretical debate on how VPs can be understood in dynamic and multi-actor public service contexts (Trischler et al., 2023). Second, it anchors this framework in empirical evidence, drawing on insights from PSOs adopting AI tools, thereby linking conceptual developments with practice.

The remainder of the paper is structured as follows. The theoretical background discusses (i) the role of AI in public services, (ii) the drivers and innovations of the VP in PSL, and (iii) the presentation of the proposed framework. The methodology section outlines the research design and empirical setting, focusing on managers of Italian PSOs and the adoption of conversational agents. The results section reports the study's main findings, showing how the framework can interpret AI's impact on VPs. The discussion elaborates on the theoretical and managerial implications. Finally, the conclusion summarises the contributions of the paper, highlighting implications, limitations, and directions for future research.

3.2 Artificial Intelligence in Public Service

Digital technologies and AI are transforming the public service sector, creating new opportunities for users (Sun and Medaglia, 2019; van Noordt and Misuraca, 2022). In particular, public services are becoming increasingly automated and “intelligent,” offering different and complementary functionalities (Mergel et al., 2024). For example, they can collect new types of data through smart devices, enhance communication among actors via new information channels, and support analytical and decision-making processes through advanced tools like cloud computing, machine learning, and analytics (Hjaltalín and Sigurdarson, 2024; Osborne and Nasi, 2024).

A promising solution in the public sector is the use of conversational agents like chatbots and virtual assistants. These AI-based tools facilitate a new mode of

interaction between users and public administrations, thereby redefining the VP (Maragno et al., 2022). In public services, conversational agents are increasingly used to support regular interactions with users. The adoption of these AI tools is justified by their potential to ease administrative tasks, improve communication flows, and enhance service delivery quality (Willems et al., 2023). Their 24/7 availability and ability to handle a large volume of requests enable efficiency in service provision, reducing waiting times and alleviating workloads for human staff (Androutsopoulou et al., 2019).

Digital technologies are therefore meant to upend some processes, ranging from service design to service provision. Scholars adopting PSL as a lens to investigate public services and ongoing changes have focused on the impacts of digital technology and called for advances in this domain. Trischler and Trischler (2022) focused on service design in the age of digital technologies, stressing the relevance of new technologies in achieving better user experiences. In doing this, they considered digital technologies as tools to enrich the VP. Thus, they are a powerful tool for PSOs in performing service design. According to the authors, digital technologies are central to the change in the value-oriented processes in PSL, as they change “agency, dependency, engagement, roles, and relationships between public service users and PSOs” (p. 1253). Moreover, they emphasize the turning point in implementing digital technologies within the VP, as the entire nature of the processes will change.

Thus, it becomes evident that digital technologies, especially AI, are not merely technical enablers of efficiency but transformative resources that reconfigure the foundations of value creation in public services. From a PSL perspective, these technologies influence the design and delivery of VPs by shaping new forms of interaction, altering the roles and dependencies between users and PSOs, and enabling new methods of value co-creation (Trischler and Trischler, 2022). Consequently, investigating the drivers of the VP in the age of AI is crucial. Understanding how digital technologies are integrated into service design and delivery processes provides valuable insights into the evolving nature of public value creation and the redefinition of the underlying relationships. This lays the

groundwork for the next section, which will explore the key drivers of the VP in public services through the theoretical lens of PSL.

3.3 Drivers of Value Proposition in Public Service Logic

The service literature defines the VP as the set of benefits that an organisation promises to deliver to customers through its services, emphasising the value co-created during the interaction between the provider and the customer (Vargo and Lusch, 2004). In this context, the VP is not a static entity but is realized only through the customer's active participation in the process of using the service. In other words, organisations can only propose value, while the customer determines the value in the context of use (i.e., value-in-use).

The concept of VP has its theoretical roots in Service-Dominant Logic (SDL) (Vargo and Lusch, 2004), which shifts the focus from the simple exchange of goods (i.e., Goods-Dominant Logic) to the value co-creation through service. Simultaneously, Grönroos (2006) emphasises the customer's role as a co-creator of value, pointing out that companies cannot create value alone, but can only provide the conditions for its co-creation (i.e., value promise). This approach has also significantly influenced the analysis of VPs in public service contexts, where the focus shifts to the logic of value-in-use and value co-creation in complex and often multi-stakeholder contexts.

This study adopts the PSL lens, a theoretical framework based on Service Literature (Vargo and Lusch, 2004; Grönroos, 2006), to analyse VPs in public contexts, where the interactions between PSOs and users co-create value (Osborne, 2018). In this context, PSOs not only formulate VPs, but also facilitate the value co-creation process (Trischler et al., 2023).

The literature on VPs within the PSL framework emphasises the importance of moving away from a static and unilateral view of VPs and toward a more dynamic and collaborative approach. In particular, scholars emphasised the importance of considering various VPs through their multiple drivers. First, a broad, integrated perspective must consider user needs — referring to the creation of private value — and the broader needs of society as a whole, linked to the creation of public value (Skålen et al., 2024; Trischler et al., 2023). Private value refers to benefits directly

achievable from individuals according to personal preferences or needs, such as service quality, accessibility, or speed of delivery. In contrast, public value is collective; users collectively generate and enjoy it, helping construct common interests, social cohesion, trust in institutions, and, more generally, community well-being and sustainable development (Virtanen and Jalonon, 2024), including with regard to studies anticipating PSL (Benington, 2011). Thus, VPs in public services must not only respond to individual needs but also contribute to positive systemic impacts, reflecting the community's priorities, values, and challenges (Eriksson et al. 2020; Osborne et al. 2022; Petrescu, 2019). Only through this two-fold orientation towards both private and public value can public services be built to generate significant and lasting value over time.

Contextual features affect the shaping of VP in PSOs, since there is an increasingly interdependent environment (Mintzberg, 2015), affected by globalisation and rapid technological advances (e.g. AI), among others. Hence, PSO challenges became more complex and require a systemic and collaborative approach, leaning on inter-organisational cooperation to harness the skills, resources, and capabilities of multiple actors to identify effective and sustainable solutions (Eriksson et al., 2020). Moreover, information sharing and the development of collaborative networks are crucial to addressing the ongoing challenges, as previously theorized in studies on public value (Crosby and Bryson, 2005), potentially having a positive, long-lasting impact on society. Ultimately, PSL literature scholars stressed that collaborations are complicated in the public services domain, and therefore, the need exists for 'integrative leadership,' as in previous studies (Crosby and Bryson, 2010), encouraging public managers to facilitate interaction and the exchange of resources — including knowledge and skills — and explore how different stakeholders can jointly design VPs.

In summary, PSL literature emphasises the importance of collaboration as a driver for improving VPs, stating that PSOs should develop strategies for creating joint VPs (Eriksson et al., 2020).

Contexts create both complexity and an opportunity for resource combination, leading to new configurations; indeed, resources are meant to play a central role in value creation (Osborne, 2018), but they can manifest their value when mobilised

through resource integration — the combination and interconnection of heterogeneous resources enabling value creation (Skålén et al., 2018). This process occurs within complex ecosystems where various stakeholders, including citizens, professionals, and organisations, contribute by integrating experiences, needs, skills, and knowledge (Trischler et al., 2023). Furthermore, in the public sector, the value created by integrating resources has both a collective dimension and an individual one, as it aims to generate benefits for society.

The aforementioned drivers can be summarised as follows: (i) user needs (i.e., private value), (ii) societal needs (i.e., public value) (Skålén et al., 2024; Thischler et al., 2023; Komulainen et al., 2023), (iii) collaborations between actors (Eriksson et al., 2019), and (iv) resources (Skålén et al., 2018) for innovating VPs in public services. The following sections explore these drivers in more detail, clarifying their role in creating and developing VPs in public contexts.

To analytically scan the aforementioned drivers of VP, the contributions dealing with them in PSL have been identified. This review of scholarly contributions helped further fragment the drivers of a VP, thus aiming at a full understanding of the shaping of VPs in PSL. Table 1 recalls the scholars focusing on VP and offers details on the drivers. The latter will shape the remainder of this section.

Table 1

Fragmentating VP drivers in PSL

<i>Drivers of value proposition Scholars' contribution</i>	User needs	Societal needs	Collaboration	Resources
Skålén et al., 2018	Access to solutions	Addressing public goal	<i>(basic interplay between provider and user)</i>	Facilitators unleashing value potential
Eriksson et al., 2020	Featured with complexity	Links between public and private value	Joint and coordinated efforts; Joint VPs	Information; Knowledge; Financial means

Eriksson et al., 2022	<i>(generally addressed as the key focus of a provider)</i>	Coordination of fragmented services	Joint VPs; Teamwork; Network configuration	Professional knowledge
Trischler and Trischler, 2022	Also addressed through beliefs	As frameworks of micro-level needs	Coordinated VPs	Resource configuration ; Digital tools
Hasche and Höglund, 2024	<i>(addressing service strategy)</i>	As a whole also embedding user needs	In tandem with other VPs	Resource configuration ; Knowledge
Rohnebaek et al., 2024	<i>(generally addressed at the core of the VP)</i>	Adjustments to policy level	Coordinated efforts	Interaction with front-line employees
Ulvin et al., 2024	Individually assessed	Adjustments to policy level	Occurring at multiple levels	<i>(generally addressed as instrumental for value creation)</i>

3.3.1 User needs

The literature on PSL emphasises that, in defining VPs in public services, user needs are crucial in shaping the solution. Accessibility is a conceptualization very well set in service studies; PSL scholars consider accessibility to solutions (Skålén et al., 2018) and the innate complexity of needs as two key features (Eriksson et al., 2020) in shaping VPs. Accessibility is pivotal and derives from the careful planning of what users need; the variety of users of public services leads to a consideration of accessibility for all users, in line with the nature of private value to be achieved for users, besides the service provided in the domain of public services. Considering all users does not mean standardizing the VP. Trischler and Trischler (2022) noted the relevance of personal beliefs shaping what a user might need, while, more recently, Ulvin et al. (2024) stressed that user needs assessment occurs in the individual sphere, and thus is affected by single user features.

3.3.2 Societal needs

Societal needs are mostly addressed to recall public good (Skålén et al., 2018) as the general domain hosting both public and private value. Eriksson et al. (2020) stated that societal needs emerge at the interplay between public and private value; thus, the two postures are linked instead of summed. Such an interplay was further considered in 2022, when Eriksson et al. considered societal needs as being addressed by coordinating fragmented services. Otherwise, value would emerge at an individual level, resulting in the neglect of public value in favour of private value. Trischler and Trischler (2022) adopted a similar posture, as they considered societal needs as the general framework in which micro-level needs are set and emerge. Thus, they still considered a combination of services, as in the aforementioned coordination of fragmented services. Recently, Rohnebaek et al. (2024) and Ulvin et al. (2024) focused on using public policies to identify societal needs. They observed the continuous adjustment process depending on policies and affecting the perception of what societies need.

3.3.3 Collaborations

Besides being framed as the interplay between a provider and a user (Skålén et al., 2018), the debate in PSL offered multiple developments regarding what collaborations are in VPs and how they contribute to shaping them. Most scholars agreed that collaborations were well beyond cooperation between entities. They preferred to observe collaborations through the combination of efforts and VPs. Specifically, efforts are both joint and coordinated according to Eriksson et al. (2020) and Rohnebaek et al. (2024), stressing the need for coordinating mechanisms and clarifying that a VP cannot be thought of as the sum of propositions. A VP can consist of joint — or coordinated or in tandem — VPs (Eriksson et al., 2020; Eriksson et al., 2022; Trischler and Trischler, 2022; Hasche and Höglund, 2024), stressing the need for more specialized solutions and the usefulness of collaboration. A further description of such collaborative efforts in joining VPs leads to the observation of different levels of collaboration, namely, inside a company through teamwork (Eriksson et al., 2022), in networks of companies properly configured (Eriksson et al., 2022), or at multiple levels (Ulvin et al., 2024).

Regarding the multiplicity of levels, it remains whether orchestration for those levels is needed.

3.3.4 Resources

Resources are pivotal in shaping VPs. Scholars agree on the instrumental role resources play for providers in their value promises. As a driver of VPs, resources offer the widest variety of details in literature. While several studies have focused on knowledge in different guises (Eriksson et al., 2020; professional knowledge in Eriksson et al., 2022; Hasche and Höglund, 2024), there are other insights, such as financial means (Eriksson et al., 2020), digital tools (Trischler and Trischler, 2022; Rohnebaek et al., 2024), and interactions with front-line employees (Rohnebaek et al., 2024). Additionally, in a more general fashion, Skålén et al. (2018) described resources as *facilitators*, thus supporting the unleashing of value potential in VPs. Other studies (Trischler and Trischler, 2022; Hasche and Höglund, 2024) addressed the need to properly configure resources, consistent with the coordination efforts referred to in descriptions of social needs.

3.4 Innovation of Value Proposition in Public Service Logic

According to Skålén et al. (2018), the concept of VP assumes a central role in public service innovation processes within a PSL context. The authors present provision practices, which they refer to as “problem-finding” and “problem-solving,” as essential tools for identifying and developing new VPs or refining existing ones. “Problem-finding” practices focus on identifying emerging or latent problems in public services, while “problem-solving” practices aim to translate these problems into innovative solutions. However, not all detected problems can be solved immediately, as adequate or established problem-solving practices might not exist. In such cases, problem-finding practices can generate ideas that lead to the creation or modification of problem-solving practices and, thus, the creation of new VPs that stimulate innovation in public services.

In developing the Public Service Innovation (PSI) framework, Skålén et al. (2018) defined PSI as a process oriented towards creating or improving VPs within PSOs.

This framework highlights the link between the three resource integration processes — value facilitation, value co-creation, and value creation — (Skålén et al., 2018) and PSOs' ability to develop innovative VPs. The iterative relationship between problem-finding and problem-solving practices is thus regarded as a dynamic mechanism that continually drives the creation and development of VPs, establishing them as pivotal tools for public service innovation (Grönroos and Voima, 2013; Skålén et al., 2018). Additionally, in the context of complex ecosystems, innovation in public services involves configuring new combinations of resources to create new VPs (Trischler et al., 2023). Users can activate and interpret these in different ways depending on their contexts and needs.

To better frame the debate on PSI in the conceptualization of VP, scholars' posture on innovation is also recalled with reference to the other drivers of VP, namely needs (at both user and societal levels) and collaboration.

Regarding user needs, Skålén et al. (2018) criticized top-down approaches in PSI for failing to properly address user needs while considering the latter might help set more suitable VPs. On the other hand, Trischler and Trischler (2022) welcomed the use of innovative technologies to better address user needs. They also feared the risk of creating — or worsening — the digital divide, especially for some generational cohorts. Röhnebaek et al. (2024) agreed on the positive view of Trischler and Trischler (2022) by stressing the innovation to be achieved through user involvement in designing new and more suitable solutions.

Concerning collaborations, Eriksson et al. (2020) leaned on the multiplicity of collaboration in shaping co-innovation processes to improve VPs. Therefore, it is necessary to address the entire ecosystem via actors instead of focusing mainly on resources. Similarly, Trischler and Trischler (2022) highlighted PSOs' collaborations in achieving innovation and framing ecosystemic dynamics.

Röhnebaek et al. (2024) expanded on the subject of developing VPs in public services by introducing the concepts of framing and reframing within the context of PSL. They focused on the mechanisms of creating or modifying VPs, arguing that these processes are essential for adapting propositions to users' needs. This

involves continuously evaluating and modifying service offerings based on user feedback and evolving requirements.

Through an empirical analysis, Røhnebæk et al. (2024) explored the application of framing and reframing in service design projects focused on developing new VPs. This context defines framing as the manner in which a problem or phenomenon is presented and perceived, thereby influencing people's attitudes and approaches to situations. Conversely, reframing involves reformulating existing problems or phenomena to identify new courses of action or create new VPs. Dorst (2015) had already emphasised that problem framing is a pivotal practice in service design, capable of challenging traditional approaches to problem-solving. In particular, framing is described as the process of exploring new viewpoints for innovatively approaching a problem.

Røhnebæk et al. (2024) identified different forms of reframing, including the exploration of new approaches to societal problems, involving the adoption of alternative perspectives to solve complex issues.

These forms of reframing require a focus on users and societal problems, emphasising the importance of a user-centred approach in redefining VPs while considering resources and collaboration. User-centricity thus becomes a crucial element in ensuring that new VPs meet users' emerging needs and expectations.

3.5 Reframing Value Proposition Framework

By analysing the drivers and innovation of the VP in PSL, we can propose a conceptual framework — the *Reframing Value Proposition Framework* — summarising the main mechanisms of adaptation and innovation in PSOs (see Figure 1).

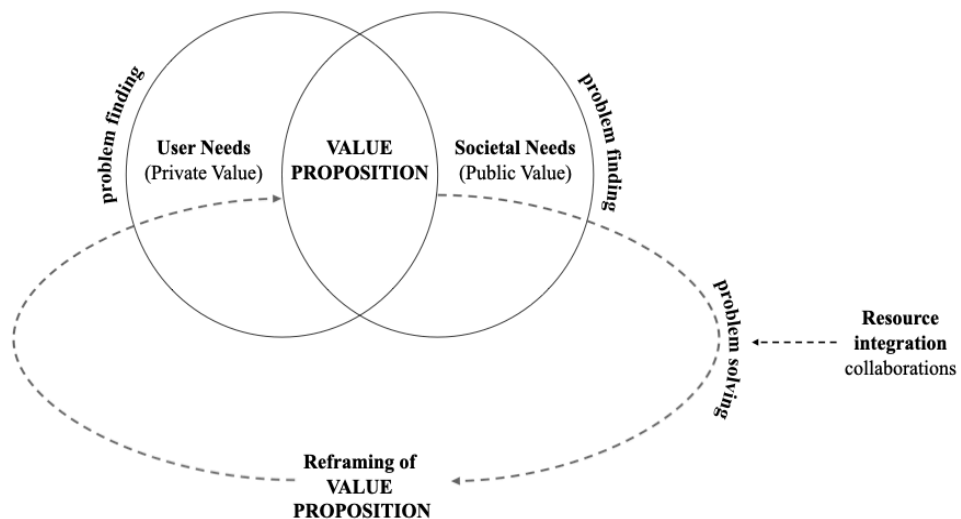
The framework is articulated around three key elements. The first is problem-finding, which concerns the identification of user needs (private value) and societal needs (public value). These needs represent the starting point for defining the VP. The second is problem-solving, through which the identified needs become concrete solutions. In this phase, collaborations play a crucial role as mechanisms for integrating resources, expanding the organisation's capacity to respond, and enabling the co-creation of value from an ecosystemic perspective. The third

element is the reframing of the VP, understood as the dynamic and iterative redefinition of the VP itself, resulting from the continuous interaction between needs, solutions, and collaborative practices.

From this perspective, the VP of PSOs is not a static construct but a dynamic one, reshaped through cycles of problem-finding practices, problem-solving practices, and reframing. This continuous process allows PSOs to balance private and public value dimensions and translate them into solutions capable of generating meaningful impacts for both individuals and society.

The framework suggests that PSOs can only develop VPs that respond to the complexity of the contemporary context by combining these three dimensions: identifying needs, translating them into solutions through collaborative problem-solving, and reframing the VP in a continuous process of adaptation.

Figure 1
Reframing Value Proposition Framework



Source: authors elaboration

The following sections will apply the *Reframing Value Proposition Framework* to empirical research involving the impact of new technologies — particularly conversational agents — on the reframing of the VP of public services from a

managerial perspective. The aim is to verify the extent to which the framework can capture the processes of continuous adaptation induced by AI adoption.

3.6 Methodology

The study adopts a multiple case study approach (Yin, 2018) to analyse projects involving the implementation of virtual assistants within PSOs. The aim is to understand how the context of digital technologies — and AI in particular — influences the reframing of the VP in public services from the perspective of managers responsible for introducing and managing the technology.

3.6.1 Case Selection and Presentation

This study focuses on conversational agents as the units of analysis, as they are the most widespread form of AI within PSOs (van Noordt and Misuraca, 2022). A targeted sampling strategy was applied to select cases that could provide evidence of conversational agents' impact on the VP in public services. Because sampling in qualitative research is challenging, we adopted scholarly suggestions on saturation, as in Guest et al. (2006) and Hennink and Kaiser (2022), among others. Generally, saturation occurs when no additional issues emerge. Thus, data collection can cease, and data can be considered adequate. Massive studies in multiple domains of knowledge indicated that thematic saturation in interviews occurs when no new themes arise or change those already considered. Several studies indicate that interview sampling is adequate after nine interviews (Hennink and Kaiser, 2022); anyway this should be considered a non-exact principle. A review of studies adopting saturation showed that most research achieved saturation after nine interviews. In only a limited number of cases did new themes emerge in larger samples, up to 17 interviews. Moreover, the homogeneity of research contexts and units of analysis informs a limited impact of further interviews, confirming the missing emergence of new themes as a stopping criterion, usually after nine interviews.

The process began with preliminary online research to identify managers of Italian PSOs that had introduced, or were experimenting with, conversational agent solutions. Based on this initial mapping, managers from different sectors and time

periods were selected to ensure heterogeneity and enable comparison between different organisational and technological contexts. Hence, 34 managers were each sent an e-mail to plan an interview. Due to missing responses or an unwillingness to comment on the process of setting and deploying the conversational agent solution, the selection process resulted in 11 project managers identified (32,35% rate response), covering different PSOs' institutional levels and service areas. These include local, regional, and central government, as well as PSOs operating in the healthcare, higher education, and business services sectors. A summary of the selected managers appears in Table 2.

Table 2

Summary of selected managers

Manager	Sector	Type of Conversational Agent	Year / Stage of Implementation
1	Healthcare	Virtual assistant for patient information services	2025 - Fully Operative
2	Education	Virtual assistant for student inquiries	2019 - Fully Operative
3	Local government	Virtual assistant for citizen information services	2025 - Fully Operative
4	Education	Chatbot to support staff in adult education centre	2024 - Ongoing
5	Local government	Chatbot to support citizens in finding information	2023 - Fully Operative

6	Local government	Chatbot to support citizens and other stakeholders (e.g., private companies, associations)	2025 - Fully Operative
7	Central government	Chatbot to support employees in their work activities	2023 - Ongoing
8	Local government	Chatbot to support users in finding information	2022 - Fully Operative
9	Education	Chatbot to support students in finding information	2022 - Fully Operative
10	Education	Virtual assistant for student inquiries	2019 - Fully Operative
11	Local government	Chatbot to support citizens and other stakeholders (e.g., private companies, associations)	2025 - Fully Operative

Source: authors' elaboration

3.6.2 Data Collection

The data for this study were collected through semi-structured interviews, which are considered an appropriate method for exploring new and complex phenomena like the public sector use of AI (De Sousa et al., 2019) and in PSL-framed studies (e.g., Jenhaug, 2021). The managers were directly involved in implementing and managing the conversational agent projects.

The interviews took place digitally via the Google Meet platform between 11 February and 16 September 2025, and lasted between 30 and 65 minutes. The authors shared the interview structure to achieve agreement on questions and topics.

Then, to ensure homogeneity in data collection, one of the authors conducted the interviews. All interviews were recorded with the interviewees' consent and subsequently transcribed in full. These transcripts were checked for accuracy and anonymised to protect the confidentiality of the interviewees and organisations involved. As per the premises on thematic saturation, data collection stopped when no new themes emerged after rounds of interviews. Hence, the number of interviews was not preset, but the authors checked the emergence of new themes after the first six interviews — as per the methodological suggestions from Hennink and Kaiser (2022) — verifying that the four drivers of VP covered the content. An additional three interviews showed no new themes. Therefore, a final round of two interviews was conducted to increase reliability.

The interview guide, developed from the *Reframing Value Proposition Framework*, focused on two main areas. Firstly, it explored user and societal needs as a basis for problem-finding practices in public services. Secondly, it analysed the impact of AI tools, specifically conversational agents, on problem-solving practices. Particular focus was given to collaboration's role in facilitating technological resource integration.

This structure enabled the analysis of how the adoption of conversational agents triggered VP reframing. This approach ensured consistency with the theoretical framework, while allowing respondents to express their experiences and reflections.

3.6.3 Data Analysis

Data analysis used the directed content analysis approach of Hsieh and Shannon (2005). This approach has previously been used in PSL studies investigating digital technologies' impact on public services through semi-structured interviews (Zyzak and Martinussen, 2024). This method aims to validate or expand a theoretical framework or theory by using literature to construct a coding system. The authors state: "*Existing theory or research can help focus the research question. It can provide predictions about the variables of interest or about the relationships among variables, thus helping to determine the initial coding scheme or relationships between codes*" (Hsieh and Shannon, 2005, p. 1281).

Accordingly, the coding scheme stemmed from the *Reframing Value Proposition Framework*, developed to articulate the process of adapting the VP into three fundamental elements: problem-finding, problem-solving (with a focus on collaboration), and reframing the VP. The interviews were then read and coded manually to highlight the text passages referring to these categories.

Two researchers conducted manual analysis to boost reliability. Differences in interpretation were discussed until a consensus was reached to ensure consistency in the coding process.

3.7 Findings

This section presents the results of an analysis of interviews conducted with project managers from Italian PSOs. The data were analysed using the *Reframing Value Proposition Framework* as an interpretative lens. The results are organised according to this framework to understand the changes induced by adopting AI tools and how this has influenced solution identification and reframing PSOs' VPs.

3.7.1 Problem-finding

Interview analysis reveals different needs characterising the problem-finding practices in PSOs. The first is timeliness. Managers recognise the importance of rapid and immediate responses to everyday services (e.g., requests for basic information) and more complex procedures requiring continuity and promptness.

“People today want quick and fast answers.” (PSO2 – education)

This need is often reinforced by comparison with the private sector, which is generally considered to handle requests more quickly and efficiently. Thus, users tend to expect immediacy in their interactions with public services, placing pressure on PSOs.

“So there is still work to be done to make it faster, in short. Yes, there are always two speeds: between public and private, this is something we often encounter.” (PSO1 – healthcare)

“Let's say that, obviously, technologies in the world of public administration run on a completely different track, at a completely different speed compared to private companies.” (PSO3 – municipality)

This expectation conflicts with staff shortages and associated organisational limitations. Managers contend that the chronic shortage of human resources in public services impedes consistent and continuous service.

“The main problem is the staff situation: the increase in workload and, above all, the stress, which is very intense.” (PSO7 – economic affairs)

The second need is for clear information. The interviewed managers say that users have difficulty not only accessing information, but also understanding and using it. Institutional communication is often fragmented or redundant; websites contain a wealth of information, but it is not easily traceable or comprehensible.

“Citizens often get confused, especially during holiday periods, and ask us: what will be collected tomorrow?” (PSO3 – municipality)

In this context, clarity is not just a technical requirement; it is also a valuable feature for users who want simple, timely, tailored answers. Lack of clarity creates the impression of distance between users and the administration, reinforcing the idea that the bureaucratic system is incomprehensible.

“In order to simplify processes for end users, it is necessary to conceal complexity and provide accurate and relevant information in a simplified manner.” (PSO8 – business services)

Finally, the interviews revealed a widespread need to simplify procedures. Managers recognise that administrative processes are often perceived as repetitive and time-consuming. Simplification is essential to reducing the distance between users and institutions while providing equitable access to services.

“We are obliged to follow the rules and procedures, but there is a need for simplification. A procedure can take anything from one day to many days.” (PSO7 – economic affairs)

These user needs converge on the requirement for enhanced collective trust in services, which is a societal need. Public service managers seek to not only provide quick responses, understandable information, and streamlined procedures, but also to ensure their organisations are perceived as reliable and capable of guaranteeing fairness and transparency in service provision. In this sense, identifying problems translates into a broader challenge: building and reinforcing societal trust in PSOs.

3.7.2 Problem-solving

The interviews highlighted that introducing conversational agents in PSOs could resolve the needs identified during the problem-finding phase.

A key aspect is interoperability, that is the ability of technology to integrate data and services from different sources into a single access point. Managers believe this can overcome information fragmentation, improving clarity for users and reducing the risk of errors or misunderstandings.

“We have integrated maps, car parks and emergency services in real time: a single point of access where users can find all the information they need.” (PSO1 – healthcare)

A second emerging aspect concerns active support, representing the conversational agent’s transformation from a simple response tool to a real facilitator. Managers have observed that, through guided interactions, the system supports users in carrying out complex procedures, such as filling out forms. In this way, technology reduces perceived complexity and responds to the need for simplification.

“The tool is not limited to simple questions and answers: it can assist the user, for example, in filling out a form, guiding them step by step until the application is ready.” (PSO3 – municipality)

Another contribution is made through simplification, achieved by the conversational agent's ability to translate bureaucratic language into clear, concise, and accessible responses. This function addresses users' needs to better understand the information.

“The user prefers that route (cfr. virtual assistant) rather than other complex forms of support.” (PSO7 – economic affairs)

“The chatbot can definitely facilitate the dialogue process.” (PSO4 – education)

The fourth aspect is the acceleration of procedures, specifically the speed at which the AI tool provides information. Managers noted that, unlike institutional websites — often disorganised and difficult to navigate — interaction with conversational agents guarantees direct, immediate access. Speeding up procedures partially bridges the gap with the private sector by responding to the need for timeliness.

“The bot has acted as an accelerator, enabling us to respond to user requests more quickly.” (PSO8 – business services)

“With the bot, it was possible to start providing quick information in a way that young people like, even to those who are not familiar with it.” (PSO2 – education)

“Direct access to information is the fundamental element, avoiding all the red tape. Speed of response is crucial.” (PSO7 – economic affairs)

The fifth aspect is continuity, which is enabled by the conversational agent’s 24/7 availability. The interviewed managers argue that this feature overcomes structural limitations associated with staff shortages and the difficulty of ensuring constant supervision, thereby improving the responsiveness of public services and reducing staff stress.

“Today’s technologies enable us to offer continuous service without additional staffing costs.” (PSO5 – provincial authority)

Additionally, there is the emotional dimension. Some managers emphasised that avatars and personalised conversational interfaces meet a functional need and make the experience more engaging and trustworthy. Thus, the emotional connection with the user becomes an integral part of the VP, reinforcing the perception of closeness and humanity, even in a technology-mediated context.

“The Avatar not only provides information, but also creates emotions: with its voice and interaction, it becomes a companion close to people.” (PSO1 – healthcare)

Finally, managers emphasised the importance of collaboration, particularly with external partners. These collaborations are considered essential given the actors’ high degree of technical specialisation — a skill often lacking within PSOs. Therefore, the involvement of external partners is crucial for developing and maintaining effective technological solutions, reinforcing PSOs’ ability to respond to user and societal needs.

“The support provided by the external company was fundamental in terms of technology.” (PSO7 – economic affairs)

“We created the avatar with an external company, which has expertise that we did not have within our organisation.” (PSO2 – education)

“Without collaborations, this experiment will not take off.” (PSO4 – education)

3.7.3 Reframing Value Proposition

Interviews with managers reveal that reframing the VP is an ongoing process fuelled by successive problem-finding and problem-solving practices. Adopted solutions pave the way for new critical issues and room for improvement, triggering successive cycles of adaptation. In this sense, reframing becomes a dynamic mechanism enabling PSOs to maintain alignment between their VP and evolving user and societal needs.

Identified future developments demonstrate this process. Recurring themes include promoting inclusion by improving conversational agents' ability to interact with users who have limited digital skills or specific accessibility requirements.

"It would be good to learn sign language. They are working on it and it is a priority for our private partner, with whom we collaborate." (PSO1 – healthcare)

Another point is to assist staff by using conversational agents as tools for citizens and as resources to simplify daily activities.

"I believe that one of the main challenges for chatbots — and artificial intelligence in general — is to help employees perform monotonous and repetitive tasks more easily. The idea is that anything that can be automated or managed by an assistant can be delegated, allowing employees to focus on more creative and decision-making tasks. So, yes, assistants are useful for employees, too. This is a very important point that has been raised several times." (PSO3 – municipality)

There is also a need to eliminate chatbot hallucinations — incorrect or misleading responses that undermine trust — and develop self-learning mechanisms so the system can improve its response quality based on past interactions.

"The next challenge is to eliminate the hallucinations completely; that has now become our mantra." (PSO7 – economic affairs)

"We expect technology to be able to self-learn in the future because it is essential. Chatbots learn from recurring requests and know how to adapt their responses, even when the questions do not match up exactly." (PSO5 – provincial authority)

These elements confirm that reframing the VP is an iterative and open-ended process. Each cycle of implementation and use generates new needs, problems, and

solutions. This dynamism enables public services to adapt to current needs and evolve for future challenges.

3.8 Discussion

As Hsieh and Shannon (2005) highlight, interpreting the results in light of the categories that emerged from the literature on VPs from a PSL perspective has enriched the theory. The main strength of a direct approach to content analysis is that it can support and advance existing theory. This study's results confirm and expand upon the existing PSL literature, particularly with regard to the concept of VPs in public services. Following the *Reframing Value Proposition Framework*, the study provides empirical evidence that PSOs develop new VPs through analysis of emerging user and societal needs, seeking solutions that can generate both private and public value.

The study proposes a set of premises to guide the analysis of innovation in the VPs of public services from a PSL perspective.

Premise 1: From private value to public value

A key contribution of this study is the insight it provides into the relationship between user and societal needs. In line with the PSL literature (Skålen et al., 2024; Trischler et al., 2023), VPs in public services should be developed from an integrated perspective that combines private and public value. Users express needs related to the creation of private value, such as timely responses, clear information, and simplified procedures (Osborne et al., 2022). However, interviews revealed that these solutions have broader implications, fostering public value through increased institutional trust, reduced service access inequalities, and strengthened social cohesion.

The adoption of conversational agents in the analysed cases confirms that the value creation in public services is not limited to responding to user needs; it must also be considered a process capable of impacting community well-being (Skålen et al., 2018). Continuity and inclusion demonstrate how technology can operate at multiple levels, generating shared, lasting benefits. PSOs can develop meaningful

and sustainable VPs only by focusing on both private and public value (Eriksson et al., 2020; Petrescu, 2019).

Premise 2: Collaborations as a driver for innovation

A second theoretical contribution concerns the role of collaboration. In line with literature emphasising the importance of networks and collaborative leadership (Crosby and Bryson, 2010; Eriksson et al., 2019), evidence from interviews with managers indicates that implementing conversational agents is not an exclusively internal administrative process, but requires external specialists. The managers emphasised effects at multiple levels (as in Ulvin et al., 2024), showing that actors in the ecosystem — mostly technology partners, universities, and private companies — play an essential role in developing and maintaining AI solutions, enabling innovation that would not be achieved otherwise.

This finding supports the ecosystemic approach of PSL (Trischler et al., 2023), which states that value creation in public services is the work not of one actor, but of collective processes involving multiple entities. AI fits into this posture as a catalyst for new collaborative configurations, capable of expanding the system's overall capacity to respond to complex needs.

Premise 3: Technology as a resource integrator in problem-solving practices

Another key contribution concerns AI as a resource integrator. In line with PSL (Osborne, 2018; Trischler et al., 2023), the results emphasise that value in public services is created by the integration of different resources (Trischler and Trischler, 2022), including users, organisations, and external stakeholders. AI, and conversational agents in particular, reinforce this dynamic by enabling the problem-solving arising from the analysis of user needs (private value) and societal needs (public value). Thus, technology not only improves operational efficiency (Wirtz et al., 2019; Neumann et al., 2022), but also becomes a tool supporting PSOs' problem-solving practices and fuelling reframing processes.

The results show how data interoperability, simplified procedures, and faster responses lead to improved problem-solving practices, which would have been impossible without AI. This confirms the observations of Skålén et al. (2018) on

problem-finding and problem-solving practices as drivers of innovation in public services, enriching them with a heretofore little explored perspective on AI.

Premise 4: Reframing the value proposition as a continuous process

Another aspect is the nature of reframing the VP. In line with the debate put forward by Røhnebæk et al. (2024), the results confirm that the VP in public services is not a static promise, but a dynamic construct. The interviews reveal that each new AI technology implementation generates new needs after the reframing, such as the need for inclusion, support for staff, and the development of self-learning capabilities. Thus, reframing is not confined to a single phase of adaptation; rather, it is an iterative, self-perpetuating process whereby each cycle of problem-finding and problem-solving paves the way for the subsequent reframing of the VP.

This evidence supports the view of Trischler and Trischler (2022) that digital technologies fundamentally alter the nature of interactions between users and PSOs, redefining roles, dependencies, and engagement mechanisms. The continuous reframing observed in Italian PSOs confirms that the introduction of AI helps transform not only service provision, but also trust in relationships and user collaboration.

3.9 Conclusion

This article contributes to the PAM literature and the growing field of PSL research in three main ways.

First, it proposes a conceptual framework for reframing the VP, summarising the dynamics through which PSOs adapt and redefine their VPs. The framework articulates the relationships among problem-finding, problem-solving, and reframing, highlighting the impact of introducing digital technologies, specifically AI, on these processes.

Secondly, the study provides original empirical evidence through a qualitative analysis based on the implementation of conversational agents within Italian PSOs. Semi-structured interviews with project managers have generated in-depth descriptions of how conversational agents affect the reframing of VPs. This fills a

gap in the literature, which has rarely investigated the impact of AI on VPs in public services from a PSL perspective.

Finally, the discussion further developed PSL theory by elaborating foundational premises for the study of innovation in public service VPs. These premises aim to advance PSL research by offering interpretative lenses that capture the dynamic, collaborative, and multidimensional nature of VPs in public services.

In terms of the study's practical implications, the results provide valuable insights for public managers considering digital technologies. Conversational agents should be viewed as strategic tools for addressing structural needs, such as ensuring timeliness and clarity of information, and simplifying procedures. Furthermore, AI can integrate resources, helping PSOs overcome staff shortages and expand their response capacity, with support from external partners.

As with any qualitative study, this research has some limitations. It is based on different cases of conversational agent implementation in Italy, selected through targeted sampling. This restricts the ability to generalise the results to all contexts, particularly those outside Europe. Furthermore, the interviews were conducted exclusively with project managers. While this approach enabled an in-depth exploration of the managerial perspective on the phenomenon, it did not provide direct insight into the perceptions of staff — particularly frontline employees — tasked with integrating technology into daily service practices, as well as users, the ultimate beneficiaries of the new VPs.

These limitations present opportunities for further research. Future studies could systematically incorporate the views of frontline employees and users to gain insight into perceptions of new VPs among individuals who interact directly with AI tools. Thus, the managerial vision could be compared with the perceptions of all entities involved in the value-creation process, highlighting areas of convergence or divergence. Furthermore, longitudinal research could investigate how these perceptions evolve alongside the development of conversational agents' capabilities (e.g., self-learning) and the resulting reframing cycles. Finally, international

comparative studies could explore how institutional and cultural contexts influence PSOs' ability to balance private and public value in AI-mediated VPs.

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Chapter III: Let's Talk with Chatbots: Frontline Employees' Experiences in Public Services

Abstract

Purpose

The purpose of this paper is to explore how frontline employees in public service organisations perceive and interact with chatbots within their organisational contexts. The study employs the Willingness to Collaborate framework as an interpretive lens to analyse the interactions between frontline employees and robots in public service contexts.

Design/methodology/approach

This study adopts a qualitative approach based on 33 semi-structured interviews conducted with frontline employees from various public service organisations. The collected data were analysed in depth using the qualitative analysis software ATLAS.ti.

Findings

The findings indicate two distinct dimensions of engagement. The first - Willingness to Interact - captures the initial appraisal of the robot's usefulness, threat, or potential advantages. The second - Willingness to Collaborate - represents a more deliberate and trust-oriented form of engagement, grounded in role negotiation and the deployment of coping strategies to navigate organisational change.

Originality

This research contributes to the growing research on integrating service robots in public service contexts by offering empirically grounded insights into how Public Frontline Employees perceive and engage with these technologies.

Practical implications

The findings offer practical implications for public service organisations, emphasising the importance of promoting continuous learning support for frontline employees through the integration of training initiatives.

Keywords: Frontline Employees, Chatbot, Public Service Organisations, Service Robots, Artificial Intelligence, Appraisal.

4.1 Introduction

Artificial intelligence (AI) has evolved rapidly in recent years, emerging as a transformative technological innovation in service management. AI-based systems are being integrated into core processes across industries to enhance efficiency, precision, and decision-making capabilities. In the service sector in particular, AI technologies are playing a fundamental role in reshaping human-machine relationships, redefining professional roles and transforming the value creation process (Neumann et al., 2022).

AI is having an increasingly significant impact in particular on the public sector by introducing innovative solutions that are transforming the design and delivery of public services (Bullock, 2019). Technologies such as automated decision-support systems, service robots and conversational agents are reshaping traditional administrative processes and enhancing operational efficiency.

The integration of AI within public service organisations represents a strategic opportunity to make services more accessible, personalised and effective while responding to citizens' growing expectations regarding quality and convenience (Lee et al., 2011; Hjaltalin & Sigurdarson, 2024). Across Europe, almost 90% of public sector organisations are currently improving their digital administration or have already digitised their core services (The Nation, 2023).

This evolution is redefining the concept of public service, driving it towards more advanced, intelligent and user-centred models. Consequently, a more integrated and interactive service system is emerging (Wirtz et al., 2021), enabling public service organisations to engage with users more effectively, gather immediate feedback, and continuously improve the efficiency and accuracy of service delivery.

Service robots — autonomous or semi-autonomous systems designed to support service delivery — are one of the driving forces behind this transformation. Designed to interact directly with users, these solutions perform front office tasks. They are increasingly prevalent in settings such as hotels, airports, and shopping malls (Wirtz et al., 2018). These robots perform functions such as greeting

customers, providing information, transporting luggage, and escorting people within a physical space (Song & Kim, 2022). Integrating service robots into operations improves the customer experience, enabling companies to optimise human resources, reduce operational costs, and increase the availability and responsiveness of their services.

Service robots are increasingly employed also in public service organisations, including healthcare, education, and administrative services. They perform a wide range of functions, from providing information and scheduling to facilitating interaction (Wirtz et al., 2018). Their growing presence is changing the nature of work, particularly for frontline employees, who are directly involved in managing interactions between public service organisations and its users.

Among service robots, chatbots—AI-driven conversational agents—represent one of the most widespread applications in public services (Maragno et al., 2022). As virtual service robots (De Keyser & Kunz, 2022), chatbots can process large amounts of data and address routine questions (Mehr, 2017).

Indeed, they are used to answer citizen inquiries, manage requests, and provide real-time assistance through digital interfaces. Their promise lies in enhancing accessibility and responsiveness while reducing administrative workload. Chatbots operate both in external use cases (citizen-facing services such as information portals or municipal requests) and internal use cases (employee support systems, HR management, or IT helpdesks).

However, Despite the growing adoption of these technologies, there is a lack of research exploring their impact on the public sector workplace. In particular, the literature has neglected to analyse the perceptions and implications of these tools for frontline employees, i.e. those who interact directly with citizens and often find themselves working alongside chatbots (Chen et al., 2024).

Existing studies often treat frontline employees as passive users rather than active agents influencing technology adoption. However, Paluch et al. (2022) argue that the success of the collaboration with collaborative service robots depends on frontline employees' willingness to interact and collaborate with these AI-tools. Understanding how frontline workers evaluate chatbots, manage perceived risks,

and develop coping strategies is therefore essential for designing effective and sustainable implementations in the public sector.

To address this gap, this study aims to deeply understand how public frontline employees perceive and interact with chatbots. Accordingly, the research question guiding this paper is: *How do public frontline employees perceive and interact with chatbots in their work practices?*

The research adopts the Willingness To Collaborate framework developed by Paluch et al. (2022), which offers a useful conceptual lens for analysing how frontline employees evaluate interaction with chatbots and what strategies they adopt to integrate them into their work practices.

The study adopts a qualitative approach based on 33 semi-structured interviews with frontline employees from a diverse range of public service organisations, including administrative, educational, and cultural institutions. Participants were selected through purposive sampling to capture variation in roles, experience levels, and exposure to chatbot technologies. Data were analysed using the qualitative data analysis software ATLAS.ti. A deductive coding strategy was adopted, guided by the dimensions of the Willingness to Collaborate framework.

This research makes a valuable contribution to the literature on frontline employees in service research. It offers a perspective focused on their perceptions, expectations, and adaptation strategies with regard to adopting virtual service robots in the public sector. Based on previous conceptualisations of human–robot interaction, the study provides new insights into how frontline employees manage change, extending the focus beyond technical acceptance.

The remainder of this paper is structured as follows. Section 2 reviews the theoretical background on frontline employees in service and public service organizations, with a focus on their interactions with technology. Section 3 details the research methodology and data analysis procedures. Section 4 presents the findings, organised around the two dimensions of Willingness to Interact and Willingness to Collaborate. Section 5 discusses the implications for theory and practice, and Section 6 concludes with the study’s contributions, limitations, and directions for future research.

4.2 Frontline Employees In Service

Frontline Employees (FLEs) are defined in the literature as individuals who maintain direct interactions with customers (Suprenant & Solomon, 1987). Their role is central within organisations and is often described as boundary-spanning, as they frequently serve as the sole link between the organisation and its customers. This positioning renders them the “voice of the organisation,” enabling them to understand, anticipate, and meet customer needs and expectations (Keller, 2003; Solomon et al., 1985). Moreover, FLEs engage with other stakeholders, including colleagues and supervisors, whose expectations they are equally required to address (Aldrich & Herker, 1977).

Over time, scholarly attention to FLEs has developed, initially focusing on stress-related factors (Kao et al., 2014; Naik and Srinivasan, 2016). Early research highlighted social and emotional stressors originating from colleagues, supervisors, or customers as key contributors to negative outcomes, such as heightened turnover intentions or service sabotage. However, these effects can be mitigated by supportive and caring service climates (Kao et al., 2014; Whiting et al., 2011). Recent studies have emphasised the role of resources in moderating FLE experiences. Namin et al. (2022) identified distinct FLE profiles, demonstrating that employees react differently to adverse situations depending on the resources at their disposal. Similarly, Riedel et al. (2023) introduced the concept of employee vulnerability, asserting that excessive demands placed on FLEs can produce negative outcomes, while access to specific resources can mitigate these demands and enhance well-being.

In these contexts, the introduction of technology into FLE workplaces, particularly robotic and conversational technologies such as chatbots, is already reshaping their roles and responsibilities (Chen & Cai, 2024; Lv et al., 2024). This transformation introduces either new forms of stress, concerns, and challenges (Liu et al., 2025), or alternatively, functions as a valuable resource that alleviates strain by reducing the number of requests and demands placed on a single employee assisting them in their job responsibilities (Le and Cayrat, 2024).

Studies in this area suggest that also robot-related characteristics, such as human likeness, anthropomorphism, social presence, or empathy, can elicit contrasting

psychological responses. On the one hand, these features may generate positive effects, including reduced mental and physical fatigue and increased comfort (Sehgal et al., 2025). On the other hand, they can also provoke negative reactions, particularly when they heighten ambiguity or feelings of discomfort or threat to human identity (Shum et al., 2024; Wang et al., 2024).

The introduction of robots also emerged as an increasing source of anxiety and fear, frequently connected to employees' apprehensions about being replaced by technology. These perceptions have been shown to fuel negative behavioural outcomes, including heightened turnover intentions, absenteeism, and even robot sabotage (Chen and Cai, 2025; Zhang et al., 2023).

Taken together, these contributions enrich the growing body of literature on Human–Robot Interaction (HRI) and Human–Robot Collaboration (HRC). Whereas HRI is primarily concerned with the design and evaluation of robotic systems that interact directly with users (Galin et al., 2020), HRC refers to a deeper and more intensive form of relationship in which humans and robots work side by side in pursuit of shared objectives within the same physical space (Hoffman & Breazeal, 2004; Ajoudani et al., 2018). Consequently, while research on HRI has largely concentrated on customers and their interactions with robots (Moriuchi & Murdy, 2024; Ruiz-Equihua et al., 2023), studies on HRC, given its stronger emphasis on collaboration, have increasingly centred on employees and the factors that facilitate or hinder such partnerships (Tan et al., 2025).

Recent studies have sought to understand not only how HRC can enhance FLE performance (Tan et al., 2025), but also how it may influence employees' well-being compared to work conducted exclusively in human–human contexts (Yang et al., 2025). Furthermore, emerging evidence highlights the importance of examining the antecedents of employees' intentions and attitudes toward working with robotic partners, underscoring the role of autonomy and control in shaping such attitudes (Wu & Zhang, 2024).

4.3 Frontline employees in Public Service Organisations

In public service organisations, frontline employees (FLEs) consistently serve as the voice of the organisation, maintaining direct contact with service users. In this

context they provide public services and are often referred to as street-level bureaucrats (Lipsky, 1980, 2010). These FLEs operate at the public encounter, the interface between public service organisations and citizens, described by Goodsell (1981) as “where state and citizen meet.” This category encompasses a broad range of professionals, including social workers, teachers, police officers, and physicians (Tummers et al., 2015).

Their role is particularly significant, as they are also considered knowledge workers. Through tasks such as responding to citizens’ requests, gathering documentation, and applying rules and regulations, FLEs possess, access, and share specialised knowledge (Schmidt & Farshchian, 2024). This knowledge work empowers them to make decisions with potentially significant consequences for citizens’ lives. Indeed, Lipsky (2010) argued that FLEs function almost as policy-makers, due to the level of discretion they are often required to exercise.

However, public service FLEs frequently face multiple constraints, including limited resources, conflicting demands from different actors (e.g., policy rules vs. client needs), and increasing pressure related to digitalisation (Breit et al., 2021). These challenges can generate stress, frustration, and a perceived inability to meet citizens’ expectations (Gofen, 2014; Tummers et al., 2012). Consequently, much of the public administration literature, starting with Lipsky’s seminal work in the 1980s, has focused on the coping strategies employed by these actors. Building on Lipsky’s work and drawing from Lazarus and Folkman’s (1984) concept of coping, Tummers (2015) provided a definition of coping in the context of public service delivery and identified three distinct coping strategies used by FLEs: moving towards clients (modifying or bending rules to assist clients), moving away from clients (relying on standardised procedures to maintain distance), and moving against clients (strictly enforcing rules to control the interaction) (Tummers et al., 2015).

Over time, the literature on public service delivery has shifted from focusing on dyadic interactions to broader concepts such as networks or public service ecosystems (Osborne et al., 2022; Trischler and Charles, 2019). This shift has also influenced how interactions between citizens and FLEs, who may represent multiple public service organisations, are understood (Gyllenhammar et al., 2023).

For example, Gyllenhammar et al. (2023) in a service ecosystem perspective, highlighted how, in complex cases such as sick-leave procedures, citizens interact with FLEs across various organisations (e.g., healthcare, social security, employment services). This approach not only considers co-creation of value but also the potential for co-destruction, which arises when divergent organisational logics, rules, and responsibilities are misaligned, leading to inefficiencies and frustration for both citizens and FLEs.

More recent studies have revisited the topic of coping in light of growing digital transformation within public service organisations. The increasing integration of technology is reshaping both the role of FLEs and their interactions with citizens (Breit et al., 2021; Kirjavainen and Jalonen, 2025; Schmidt & Farshchian, 2024). The transition from street-level bureaucracy to system-level bureaucracy (Bovens & Zouridis, 2002; Fest et al., 2023), where citizens interact with digital systems rather than with individual FLEs, has altered the citizen-FLE relationship. While this shift may empower some citizens by enhancing transparency and control over their cases, it also risks exacerbating inequalities due to digital illiteracy or other capability gaps (Ebbers, Jansen, and van Deursen, 2016; Kirjavainen and Jalonen, 2025). Breit et al. (2021) explored these dynamics further, arguing that the increased availability and demand for transparency, enabled by technological tools, has led FLEs to develop digital coping strategies. These strategies aim to reduce the pressure associated with new technologies and include educating clients in the use of digital tools (to externalise responsibility), filtering requests, and establishing clear boundaries to manage workload.

Finally, as noted, digitalisation can intensify inequalities, especially for vulnerable clients, thereby increasing the administrative burden on FLEs. These employees must balance the efficiency required by new digital systems with the ongoing expectation to deliver services that are empathetic, human-centred, and tailored to individual needs (Kirjavainen and Jalonen, 2025).

4.4 Methodology

This research employs a qualitative methodology, following the recommendations of De Keyser and Kunz (2022), to investigate how FLEs perceive the use of

chatbots within public service organisations. The study is grounded in the Willingness to Collaborate (WTC) framework proposed by Paluch et al. (2022), which provides a lens for analysing interactions between humans and robots in frontline service contexts. The selection of the WTC model aligns with recent scholarly trends that highlight the need to examine how FLEs assess and interpret the role of artificial intelligence in service delivery (Castaneda et al., 2025). WTC framework categorises the factors that influence FLEs' willingness to collaborate with robots into two forms of appraisal — primary appraisal, which refers to the cognitive evaluation of the robot's potential benefits and risks, and secondary appraisal, which concerns the employees' coping strategies in response to robot adoption. According to Paluch et al. (2022) these appraisals are influenced by attributes of (i) FLEs, (ii) collaborative service robots, and (iii) jobs.

4.4.1 Chatbots in Public Service Organisations: An Overview

The analysis focuses on chatbots as the main unit of analysis because they are the most widely implemented artificial intelligence solution in public services (van Noordt & Misuraca, 2022).

Participants were selected through a combination of purposive and referral sampling (Zickar & Keith, 2023), focusing on individuals with direct experience of using or managing chatbots in public services.

In line with the methodological recommendations of Hennink and Kaiser (2022), data collection continued until theoretical saturation was reached — the point at which no new relevant themes emerged and no new information changed the already-identified categories.

The final sample comprised 33 FLEs from various institutional levels and public service sectors, including municipality, central government, healthcare institutions, universities, and culture and heritage Institutions.

The diversity of sectors and institutions enabled various perspectives on the nature of the services offered to be explored, including support activities for citizens and students, assistance for internal employees, and the management of technical and operational issues. This variety has highlighted the different impacts of chatbots

depending on the type of mediated interaction, showing how collaboration and perception dynamics can vary according to the context of use.

The technological maturity of the solutions considered varies significantly. While some chatbots, introduced in 2019, are now fully operational, others, implemented more recently, are still in the pilot phase. This temporal heterogeneity enables the inclusion of both established experiences and initial impressions of ongoing experiments in the sample, providing a longitudinal perspective on the evolution of technology adoption in the public sector.

Table 1 provides a summary overview of the characteristics of the participants and their organisations.

Table 1. Overview of the chatbot’s contexts of implementation

	Sector	Year	Operationa l/Pilot	Type of Service Provided
FLE 1: Student Secretary Officer	Education	2019	Operational	Student Support
FLE 2: Public Relations Officer FLE 3: Web Editorial Officer	Local Government	2021	Operational	Citizen Support
FLE 4: Welfare Credit Officer FLE 5: Social Inclusion Officer	Central Government	2023	Operational	Employee Support
FLE 6: Economic and Financial Officer	Central Government	2024	Pilot	Employee Support
FLE 7: Public Relations Officer	Culture and Heritage	2023	Operational	User Support
FLE 8: Public Relations Officer	Local Government	2023	Operational	Citizen Support
FLE 9: Social Policy Officer FLE 10: Social	Local Government	2024	Pilot	Employee Support

Policy Officer				
FLE 11: Social Policy Officer FLE 12: Social Policy Officer	Local Government	2024	Pilot	Employee Support
FLE 13: Activity Coord. Officer FLE 14: Education Centre Officer	Education	2024	Pilot	Employee Support
FLE 15: Technical Officer FLE 16: Design Officer FLE 17: Design Officer	Local Government	2025	Pilot	Student Support
FLE 18: Data Governance and Smart City Officer	Local Government	2025	Operational	Citizen Support
FLE 19: Administrative Officer FLE 20: Administrative Officer FLE 21: Administrative Officer	Local Government	2025	Operational	Citizen Support
FLE 22: Pub. Relations Officer FLE 23: Pub. Relations Officer FLE 24: Pub. Relations Officer	Local Government	2024	Operational	Citizen Support
FLE 25: Tech. and Web Officer FLE 26: Tech. and Web Officer	Education	2025	Operational	Student Support
FLE 27: Pub. Relations Officer FLE 28: Pub. Relations Officer	Culture and Heritage	2020	Operational	User Support

FLE 29: Tax Officer	Local Government	2024	Operational	Citizen Support
FLE 30: Tax Officer				
FLE 31: Tax Officer				
FLE 32: Tax Officer				
FLE 33 Pub. Relations Officer	Local Government	2024	Operational	Citizen Support

Source: authors elaboration

4.4.2 Data Collection

Semi-structured interviews (Creswell & Creswell, 2017) were conducted with FLEs working in public contexts that have already implemented a chatbot or are in an experimental phase of adoption.

The interviews were conducted remotely between February and September 2025, with 33 FLEs from various Italian public service organisations. Participants were selected through purposive sampling, based on preliminary online research of organisations that had already introduced or were testing chatbot solutions on their institutional websites. To expand the sample, referral sampling (Zickar & Keith, 2023) was also used, asking initial participants to suggest additional colleagues with relevant experience.

All interviews, lasting between 30 and 65 minutes, were recorded with informed consent and transcribed in full to allow for subsequent thematic analysis.

In order to reach a common agreement on the questions and topics to be covered, the authors shared and discussed the interview structure. To ensure consistency in data collection, the interviews were then conducted jointly by the authors. All interviews were recorded with the informed consent of the interviewees and transcribed in full. These transcripts were then carefully checked for accuracy and anonymised to protect the confidentiality of the interviewees and organisations involved.

In line with the methodological recommendations of Hennink and Kaiser (2022), data collection was concluded when no new relevant themes emerged after several rounds of interviews. Consequently, while the total number of interviews was not

predefined, theoretical saturation was assessed after the first eighteen interviews. To strengthen the validity of the saturation achieved, an additional ten interviews were conducted. No new themes emerged from these further interviews, thus confirming and reinforcing the attainment of saturation. Finally, to enhance the reliability of the results, a last cycle of five interviews was carried out.

The interview guide was developed based on the Willingness to Collaborate (WTC) framework proposed by Paluch et al. (2022). This framework categorises the factors influencing FLEs' willingness to collaborate with collaborative service robots into two forms of appraisal: primary appraisal (i.e. the cognitive evaluation of the robot's potential benefits and risks) and secondary appraisal (i.e. the coping strategies adopted in response to the introduction of the robot).

These evaluations are influenced by (i) individual FLEs attributes, (ii) robot attributes, and (iii) job attributes.

4.4.3 Data Analysis

All audio interviews were initially transcribed in full. The transcripts were then carefully reviewed by three researchers to identify and correct any errors. Each researcher then read the texts thoroughly and independently to gain a complete understanding of the FLEs' experiences. The data from the 33 interviews were then imported into ATLAS.ti qualitative analysis software (version 25) for subsequent analysis. The choice of this tool derives from its increasing use in the literature to examine frontline employees' perceptions (Eposi, 2024), including in studies concerning the adoption of robots (Moyle et al., 2016) and chatbots (Andrade and Tumelero, 2022) in workplace contexts.

The interviews were analysed within the software by assigning codes that corresponded to the theoretical categories of the WTC framework developed by Paluch et al. (2022). Each relevant text segment was associated with one or more codes, enabling the key dimensions of the model to be mapped systematically. This framework was carefully chosen to ensure a robust and comprehensive examination of FLEs' experiences of using chatbots in their public service work, in line with the aim of the study.

4.5 Findings

Analysis of the interviews shows that the integration of chatbots into public services generates different levels of engagement among FLEs: *Primary Appraisal* and *Secondary Appraisal*. The next two sections examine these two types of appraisal in more detail, showing how FLEs interpret and react to chatbots in the workplace

4.5.1 Primary Appraisal

The concept of primary appraisal refers to the initial, intuitive evaluation made by FLEs, through which they perceive the chatbot as either a helpful or irrelevant tool for their work. At this stage, initial engagement does not imply operational collaboration; rather, it reflects the degree to which employees are open to or resistant towards the technology. This primary evaluation, conducted by FLEs, clearly illustrates their readiness while also highlighting both positive and negative perceptions regarding chatbot integration. This primary appraisal is influenced by a combination of factors relating to the chatbot's attributes, the FLEs' individual attributes, and the job's attributes. Table 2 illustrates the structure of the themes identified in relation to the chatbot attributes.

FLEs perceive the level of autonomy assigned to chatbots as risky due to the potential for compromising the quality and credibility of information. For this reason, public service organisations tend to implement constant monitoring and limit autonomy when assigning greater autonomy to chatbots, in order to ensure consistency and credibility of service.

However, autonomy can gradually be reconsidered over time, during which trust in the chatbot is consolidated. In this sense, the relationship with the chatbot evolves: what initially appears to be cautious surveillance becomes a practice that is experienced less as a necessity and more as a form of engagement, or even as a source of interest or personal satisfaction.

Social presence and humanoid appearance are perceived differently across public sectors. In particular, in the public administration, FLEs express concerns related to the risk that chatbots with a high social presence or a “humanised” communicative register may generate ambiguity in communication, causing the user to lose awareness of the fact that they are interacting with a machine, this aspect emerged

particularly in contexts where the chatbot is employed with a broad and heterogeneous audience, often characterised by varying levels of digital literacy. In addition to generating ambiguity, a chatbot that appears overly human may, when it fails to respond as users expect, create the perception of insufficient attention or consideration, thereby eliciting feelings of frustration and annoyance.

This is considered problematic as it could compromise the transparency of the interaction and call into question the authority of the entity. For this reason, these contexts emphasise the need to maintain a clear, formal institutional profile, avoiding excessive personalisation that could compromise the organisation's communicative identity. However, in many cases, social presence and humanoid appearance is perceived by FLEs as a secondary concern or not a priority compared to the practical objective of ensuring service efficiency and user satisfaction.

In contrast, in public sectors that focus more on user experience, such as cultural services, the possibility of equipping chatbots with a greater social presence is viewed positively. In these cases, FLEs recognise that a more engaging communication style can strengthen the sense of welcome, reassure users and improve engagement in digital interactions.

Table 2. Themes in Chatbots' Attributes with their constituent codes and representative quotations

Theme	Code	Quotation
Autonomy	1. Source of risk	FLE 26: We chose it first, unfortunately traditional, but for a trivial reason: because we wanted to arrive at the adoption of a structured chatbot in a slightly more gradual manner.
	2. Gradual development	FLE 3: We cannot give autonomy to the chatbot, from this point of view, because obviously, these are critical information issues, so we have to be

		sure that the information is correct, the information that reaches the user.
	3. Intentionally limited	FLE 6: So, he is only independent in those areas where I have told him to be independent, in the sense that he does not go beyond that.
Social presence	1. Institutional tone	FLE 25: Yes, both to make it more appealing and to bring it closer to us and our dialect. For example, if you ask her what your favourite dish is, she will mention a typical local dish.
	2. Improving engagement	FLE 8: An empathetic chatbot is not appropriate when I have to address a cooperative or another public administration in an official capacity.
	3. Ambiguity	FLE 32: At least I think it's also right to understand that it's a machine, not a person, and that the risk is that this kind of ambiguity will be introduced, which I think is dangerous.
	4. Non-priority	FLE 12: It's not empathetic because, let's say, we weren't interested in that.
Humanoid appearance	1. Facilitates user guidance	FLE 19: You can enter your query directly, but we have tried to guide users who open the form with “technical area” and “administrative area”, and then various buttons open up and citizens can choose the topic.

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| 2. Temporarily non-priority | FLE 18: No, we haven't done that yet. It wasn't considered necessary at the time. |
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Source: authors elaboration

In terms of FLE attributes, a recurring theme that emerged from the interviews was the need for more comprehensive and structured training for FLEs to bridge the knowledge gap regarding the chatbot’s functioning and potential. In several cases, the tool was introduced without adequate preparation, with training often limited to technical communications or access to short user manuals. This lack of accompanying training contributed to uncertainty and misunderstandings, fuelled by a perceived alienation from the introduced technology.

In terms of individual characteristics and bias, a form of techno-optimism was often observed in user-oriented contexts. In cases of internal use, however, FLEs tended to underestimate the chatbot's capabilities and were more aware of their own bias. In all cases, a highly curious and exploratory personality prevailed, stimulating proactive engagement with the technology despite limited formal training. Table 3 summarises the themes identified in relation to the characteristics of FLEs.

Table 3. Themes in FLE Attributes with their constituent codes and representative quotations

Theme	Code	Quotation
Bias	1. Underestimation of capability	FLE 11: I don't trust chatbots very much. Because, by nature, psychologically, I don't trust them; I always go the other way.
	2. Techno-optimism	FLE 17: I am absolutely convinced that technology is developing faster than the human mind can keep up with.
	3. High awareness	FLE 5: These tools are effective when

implemented well from the outset.

Individual characteristics	1. Ambivalent attitude	FLE 6: On the one hand, it intrigues me because it has real potential; on the other hand, it scares me a little because there are possibilities that could be a bit more dangerous.
	2. Curiosity	FLE 10: I am very curious about new technologies; in fact, I consider myself an experimenter.
	3. Lack of curiosity	FLE 26: I'm quite lazy, so I don't enjoy learning about technology, but I do it anyway because I so,. I do it for work, so it's out of necessity.
Technological readiness	1. Gradual adaptation	FLE 2: I think I am prepared, but once these technologies are implemented within the public administration, training courses will certainly be necessary.
	2. Need for training	FLE 3: I feel quite prepared, but in my opinion, in public administration it is necessary to take courses that are a little more in-depth.
	3. Rapid learning	FLE 10: From a technical point of view, in my experience, it is quite easy to use and understand the mechanisms of the chatbot.

Source: authors elaboration

In terms of Job attributes, the introduction of chatbots has different effects depending on how they are used.

With regard to job roles, the analysis revealed that FLEs frequently experienced teamwork enhancement, work process modification and professional valorisation, particularly in user experience use cases. In these contexts, chatbots were perceived as supportive tools that facilitated coordination among colleagues and reinforced employees' sense of competence and professional recognition. By contrast, in internal use cases, prevailing patterns remained unchanged, reflecting more limited transformative effects on collaboration dynamics.

In terms of job demands, FLEs perceive a reduction in workload especially in externally oriented implementations. This is because the chatbot can autonomously handle a significant proportion of recurring requests, providing quick, standardised answers and reducing the volume of direct interactions dealt with by employees. In such scenarios, the chatbot essentially acts as an operational filter, enabling FLEs to focus on more intricate tasks and thereby enhancing the service's overall efficiency.

Conversely, in internal use cases where the chatbot is designed to assist employees, the tool is often perceived as an additional management responsibility. Rather than simplifying work, the chatbot can create additional workload, particularly when the answers provided are incomplete, out of date or require verification and integration by FLEs. In these scenarios, automation does not reduce cognitive or organisational load; rather, it introduces new tasks related to system supervision, malfunction management, and mediation of answers provided to internal users.

In light of these dynamics, the interviews reveal a recurring need to introduce new specialised resources within the organisation. In the absence of such roles, many of these activities are absorbed by FLEs, altering the balance between the required skills and the job profile for which they were hired.

Finally, in terms of their functional contribution, chatbots differed depending on the job type. They operated primarily as user support tools in external use cases and as informational support systems in internal use cases. This distinction demonstrates how the role of a chatbot adapts to the specific functional demands of a given service context.

Table 4 summarises the themes identified in relation to the Job attributes.

Table 4. Themes in Job Attributes with their constituent codes and representative quotations

Theme	Code	Quotation
Job Role	1. Teamwork enhancement	FLE 11: I see this tool as an opportunity to develop relationships, given that we spend so much time at work.
	2. Work process modification	FLE 2: Once this technology has been implemented, it is important to establish new internal rules for managing the platform and preventing its misuse.
	3. Professional valorization	FLE 25: It made me more important because my colleagues knew that it had been created by our unit. The fact that I came up with the name also made our office more important.
	4. Unchanged	FLE 20: It's just a form of work support; it hasn't changed what I have to do.
Job demands	1. Low awareness of impact	FLE 5: It is generally felt that it was a positive thing, but unfortunately there are no objective tools with which to quantify this.
	2. Additional work	FLE 12: It will complicate my life, because it will create a new channel with users that will probably impact me directly.
	3. Workload reduction	FLE 9: My workload was reduced

		because my phone stopped ringing, and I no longer had a clogged-up inbox.
Job type	1. User support	FLE 22: The chatbot is designed to guide users through our platform and provide them with answers and suggestions.
	2. Informational support	FLE 4: In-depth analysis of regulatory and administrative issues, enabling us to resolve the questions we encounter every day in our work.

Source: authors elaboration

4.5.2 Secondary Appraisal

At a secondary level, aligned with the concept of secondary appraisal, FLEs assess their perceived control and their coping abilities when engaging with collaborative service robots. This involves the evaluation of different coping strategies based on how they appear to be manageable or threatening change. The two main strategies that emerged are: Problem-focused and Emotion-focused coping. Table 5 illustrates the structure of the themes identified.

Problem-focused coping is particularly evident in the proactive behaviours adopted by employees to expand benefits and mitigate the challenges posed by chatbot integration.

One of the most significant actions is the ongoing commitment to continuous training. Frontline employees recognise that updating and expanding their skills is essential to remaining relevant in an ever-changing work environment. This involves familiarising themselves with how chatbots work and developing an understanding of their impact on workflows and customer relationships.

At the same time, there is a growing need for monitoring and clear formalisation of workflows. FLEs demand defined rules, clear operational boundaries, and precisely defined roles. This strategy aims to reduce the risk of inefficiencies and ensure that human–machine interaction takes place according to clear, shared logic. Therefore,

the structured definition of operational flows represents a form of active control over one's working environment. This effort to create a structured and regulated use of the technology tool demonstrates the FLEs' proactive attitude towards mitigating potential risks.

Finally, external support is seen as essential for ensuring the reliability of the chatbot. Having such support available helps to reduce uncertainty and promote a sense of organisational security and shared responsibility for managing the technology.

Emotion-focused coping is a strategy used to manage the emotional effects related to the implementation of the chatbot. These responses are particularly evident when FLEs perceive a limited ability to act or exert control, often due to the availability of key resources. In the context of chatbot adoption, resources such as time, staffing and digital competence play a pivotal role.

A lack of time is perceived as an obstacle to fully understanding how the new system works and adapting to the change gradually. When implementation timeframes are perceived as too short or imposed from above, workers may become frustrated.

Staff shortages also have a profound effect on the perception of FLEs. In contexts where workloads are already high, the introduction of a chatbot may not be perceived as support but as an additional source of pressure. Without internal reinforcement or reorganisation, staff may view technological innovation as a threat to their own and their colleagues' well-being.

However, in external use cases, staff shortages were identified as the main driver for technological adoption. In these cases, the chatbot was perceived not only as an additional burden but also as a potential support tool that could mitigate the negative effects of understaffing. This dual interpretation reveals how the same resource constraint can trigger different coping strategies: for some FLEs, it reinforces frustration and emotional withdrawal, while for others it stimulates problem-focused coping through the search for innovative solutions.

Digital skills also represent a crucial resource. Without adequate training, interaction with chatbots can lead to feelings of insecurity and exclusion. In such

situations, emotional coping mechanisms may include the devaluation of technology, the idealisation of traditional working methods, or resignation.

Finally, particularly in internal use cases, FLEs emphasise the importance of preserving human judgement in decision-making processes. This is considered essential for ensuring contextual understanding and accountability — elements that cannot be fully replicated by automated systems.

Table 5. Themes in Secondary Appraisal with their constituent codes and representative quotations

Theme	Code	Quotation
Problem-focused coping	1. Clear formalisation of workflows	FLE 24: It is a substitute for the most mundane and routine tasks, which do not detract from any type of work and, in fact, only add stress, so it is much better that there is something to replace it.
	2. Monitoring	FLE 15: Sometimes it does not respond well in certain areas, so these need to be corrected. We constantly monitor user feedback.
	3. Continuous training	FLE 20: Through hard work, commitment and gathering all the necessary information from other departments, we gradually managed to see the light at the end of the tunnel.
	4. External support	FLE 32: We had good external technical support.
Emotion-focused	1. Lack of time	FLE 4: We simply don't have the time for training, and those who need it most

coping

are often the least likely to receive it. In this case, returning to more familiar and traditional tools was not necessarily a rejection of technological innovation, but a rational response to constrained temporal resources to manage the stress associated with perceived unpreparedness.

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| 2. Staff shortages | FLE 21: No, I don't feel supported. This is mainly due to the shortage of staff. Often, we find ourselves doing other people's work as well. |
| 3. Digital skills | FLE 9: Some people here didn't even open the chatbot out of fear or because they thought it was too complicated. |
| 4. Maintaining human judgement | FLE 5: A useful tool, but it is always the analytical ability of the human being on the other side that verifies whether the response is consistent. |
| 5. Reliance on traditional methods | FLE 8: I'm going back to using my usual tools. I won't abandon them, even when I use the chatbot. |

Source: authors elaboration

4.6 Discussion

The introduction of chatbots into public services represents more than a technical upgrade; it marks a significant organisational shift. Building on Paluch et al. (2022), the mentioned findings distinguish two dimensions of engagement: willingness to interact and willingness to collaborate. These reflect different levels of appraisal

and adaptation in response to chatbot integration, shaped by perceived risks, benefits, and coping strategies.

The first, Willingness to Interaction, reflects a surface-level, affect-driven response shaped by primary appraisal processes, whereby employees assess whether the robot is beneficial, harmful, threatening, or challenging. At this initial evaluation stage, both the chatbot's attributes and the characteristics of the work environment and the employees themselves play a crucial role. Autonomy, particularly when associated with social presence as a potential threat to the reliability of information, generates a sense of discomfort and decreases Frontline Employees' willingness to interact with such tools. This is especially problematic in public administration settings, where information reliability is essential and interactions involve a diverse audience. In such cases, chatbots with highly human-like features may lead to confusion regarding whether one is interacting with a machine or a human being. This evidence supports earlier research that underscores how perceptions of autonomy and the robot's ability to function accurately are central to human-robot interaction (Serholt et al., 2022; Wirtz et al., 2018).

Consequently, organisations tend to intentionally limit chatbot autonomy and maintain a formal, institutional tone of communication. While this strategy helps preserve transparency and authority, it is often perceived by FLEs as a secondary, non-prioritised concern in daily operations.

On the contrary, in user-oriented sectors (educational and cultural), these high anthropomorphic features are evaluated positively, enhancing engagement with users. In these cases, chatbots are primarily perceived as providing User Support, directly assisting citizens and improving service accessibility. Conversely, in internal use cases, they mostly act as Informational Support systems, offering guidance to facilitate work processes.

In terms of job transformation, and consistent with recent literature (Lee et al., 2019; Zhang et al., 2023), it emerged that while chatbots may reduce workload and increase efficiency, particularly in routine tasks, their integration in more complex administrative contexts tends to introduce entirely new forms of work. These contexts often demand specialised skills and knowledge. Without adequate training,

the management of chatbot systems risks being concentrated among a few already highly skilled employees, thereby exacerbating existing digital divides.

Furthermore, as Wiese et al. (2021) argued, the findings highlight the importance of considering individual characteristics and biases. Indeed, a form of techno-optimism emerged, especially in user-facing contexts focused on user experience, whereas in internal use cases employees often displayed an underestimation of the chatbot's capability and were more aware of its limitations. Across contexts, a strongly curious and exploratory personality prevailed, driving proactive engagement with the technology.

In line with Ajoudani et al. (2018), Willingness to Collaboration entails a deeper, trust-based engagement involving role negotiation and mutual dependence. It requires employees to assess their ability to adapt to and manage the human–robot partnership effectively. This level is governed by secondary appraisal processes, through which FLEs evaluate their perceived control over the interaction and their ability to cope with it. Two coping strategies were identified in this phase: problem-focused and emotion-focused coping. Firstly, many public frontline employees demonstrated proactive behaviour by advocating for clearer formalisation of organisational processes and continuous training to improve their understanding of, and ability to manage, chatbot technologies. They also emphasised the need for external technical support to help resolve issues that are beyond their expertise. They called for the chatbot's performance to be continuously monitored to ensure that the information it provides is accurate, up to date and in line with institutional standards. These requests reflect the findings of Lu et al. (2020), who emphasised frontline employees' desire to maintain control over the development and implementation of robotic systems in frontline settings. They also reflect a broader intention to proactively manage human–robot interactions and ensure that chatbot outputs align with public service delivery expectations and responsibilities.

On the other hand, emotion-focused strategies emerged particularly in contexts marked by limited resources, unclear goals and a lack of shared understanding. Technical and IT skill gaps, cultural barriers, resistance to change, the need to preserve human judgement and continuous coordination demands — especially when time and infrastructure are limited — contribute to employee frustration and

can undermine their willingness to collaborate with technology. Nevertheless, such negative attitudes are often mitigated through peer support and collaboration, which serve as important coping and adaptation resources.

These results extend the insights of Lu et al. (2019), who argued that collaborating with a service robot can generate adverse reactions such as frustration, discomfort, and confusion among FLEs. In this direction, the findings further illuminate the underlying reasons for such frustration, showing how limited resources, unclear goals, skill gaps, and insufficient organisational support can exacerbate FLEs' difficulties in managing chatbot integration.

4.7 Conclusion

This study contributes to the expanding body of research on the integration of service robots in the public sector by offering empirically grounded insights into how FLEs perceive such technologies (Wirtz et al., 2018; Wang et al., 2021; Chen et al., 2024). Additionally, it offers a new perspective for the analysis of engagement with collaborative service robots, connecting the appraisal theory to the two levels of engagement: Willingness to interaction and Willingness to collaboration (Paluch et al., 2022; Chen et al., 2024; Parvez et al., 2022). Furthermore, this study broadens the understanding of HRI and HRC in public services. It provides valuable new insights into the willingness to interact and collaborate, offering analytical leverage for future investigations into the organisational implications of service robots in public service provision.

From a practical perspective, the study highlights the importance of supporting learning processes among FLEs by providing opportunities to develop the skills necessary for effective engagement with chatbots. Embedding training within existing operational workflows can facilitate seamless adoption and reduce resistance. A structured and transparent implementation of robotic solutions can further minimise confusion and uncertainty. Clarifying roles, responsibilities, and shared goals is also essential to foster engagement of FLEs in public contexts.

This study has several limitations. First, it is based on semi-structured interviews with Public Frontline Employees in Italy, and thus the findings reflect the perceptions of participants within a specific national and organisational context.

Future research could replicate the study in different national or institutional settings or explore how employees' perceptions evolve or vary among employees with similar roles. Second, the results suggest that the impact of chatbots differs depending on whether they are applied to frontline tasks involving direct contact with end-users or to internal support activities. This distinction underscores the need for future studies to examine how the context of use shapes the effectiveness, adoption, and broader implications of these technologies.

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Chapter IV: User Perception of Value Proposition Driven by Conversational Agents in Public Service Context

Abstract

The use of conversational agents in public services has expanded rapidly, driven by increasing digitalisation and the need for greater efficiency. However, existing literature has mainly focused on the technicalities and the chase for efficiency, still neglecting user perception. By adopting a Public Service Logic perspective, this study explores how AI-Conversational Agents affect the value proposition of Public Service Organisations, focusing on user perception.

Using a netnographic approach, the research analyses spontaneous conversations between users on Facebook, a platform frequently used by Public Service Organisations and their audiences. The analysis is guided by the Technology Acceptance Model (TAM), whose two key dimensions—perceived usefulness and perceived ease of use—serve as interpretive lenses for categorising user attitudes. By mapping user comments onto these dimensions, four personas emerge: the Supporter (high usefulness, high ease of use), the Opponent (low usefulness, low ease of use), the Skeptic (low usefulness, high ease of use), and the Traditionalist (high usefulness, low ease of use).

This framework, grounded in TAM, provides a valuable interpretive tool for designing technology-driven value propositions that better align with user perceptions, thereby contributing to the development of user-centred digital public services.

Keyword: Value Proposition, Public Services, User Perception, Conversational Agents, Public Service Logic, Chatbot

5.1 Introduction

In recent years, conversational agents such as chatbots, voice assistants, and AI-based conversational interfaces have become widespread in many areas (Crolic et al., 2022). Their ability to automate interactions, provide immediate responses, and customise the user experience has established them as essential tools for providing assistance in service contexts (Ranieri et al., 2024).

According to a report by Verified Market Research (2023), the global virtual assistant market is expected to reach \$25.36 billion by 2027, growing at a compound annual rate of 34.2% between 2020 and 2027. This growth is being driven by the increasing adoption of remote working, a trend exacerbated by the Covid-19 pandemic. This has prompted many companies to opt for more agile, scalable workforce solutions to efficiently respond to evolving needs.

In public services, conversational agent use has grown significantly (Maragno et al., 2022), making these tools popular for facilitating access to information, streamlining bureaucratic processes, and expanding service availability outside of traditional hours (Lee et al., 2023). The adoption of these tools responds to the need to improve service efficiency and continuity by reducing the human workload and making interactions more immediate.

However, while research in the private sector has focused primarily on customer service experiences and outcomes (Zhou et al., 2025), studies in the public sector have emphasised technical performance and operational efficiency (Lin et al., 2023). The crucial role of public trust is often overlooked in these studies. According to Aoki (2020), if users do not perceive these technologies positively, the implementation of technology could fail. Therefore, it is crucial to understand how users perceive the introduction of new digital solutions in public services and to address any factors that could undermine trust.

Adopting the theoretical lens of Public Service Logic (PSL), Zyzak and Martinussen (2024) call for future studies investigating users' perceptions of public services, in order to obtain more information on the effectiveness of Public Service Organisations' AI-embedded value propositions. Similarly, Strokosch and Osborne (2020) emphasised the importance of considering user perceptions when defining a new value proposition in public services. Designing or improving value

propositions in public services without considering how they are perceived by users can jeopardise value co-creation.

However, this aspect has so far been neglected in the case of value propositions related to new AI-based systems, particularly when integrated into public digital platforms (Trischler & Trischler, 2022). Therefore, understanding how users perceive conversational agents within public services is crucial for evaluating the effectiveness of implemented technologies and for designing value propositions that truly align with user perceptions.

This study aims to contribute to the literature on PSL by exploring how the introduction of artificial intelligence, particularly conversational agents, affects the value proposition of public services from users' perspectives. In line with PSL relational orientation, the analysis focuses on users' perceptions, which are considered fundamental to understanding how value is co-created in interactions between users and Public Service Organisations (PSOs).

To achieve this, the study adopts a netnographic approach, analysing the spontaneous conversations and narratives of users on Facebook. This social platform is widely used by PSOs (Wirtz et al., 2020), and discussions about the value propositions of these organisations take place there, including debates on experiences of using conversational agents integrated into public services. Netnography provides access to in-depth qualitative insights, capturing the emotional, symbolic, and practical dimensions through which users attribute meaning and value to these tools, with the advantage of being unobtrusive, thus achieving an understanding of a phenomenon in an objective way, since there is no influence in data collection..

The analysis process is informed by the Technology Acceptance (TAM) Model (Davis, 1989), which emphasises the influence of perceptions of usefulness and ease of use on the adoption of new technologies. Although the TAM was originally developed in private businesses contexts, it is a useful starting point for interpreting acceptance dynamics related to conversational agents in public service contexts, particularly when these dynamics emerge from spontaneous, unsolicited narratives. The analysis reveals different categories who perceive the implementation of a conversational agent differently, and a theoretical framework emerges that

describes different user personas based on recurring perceptions according to the adoption of a chatbot. This provides a useful interpretative tool to guide more targeted and informed future implementations.

The remainder of the paper is structured as follows: The next section provides a literature review on the use of conversational agents in public service contexts, as well as the concept of value proposition in the context of PSL. This is followed by the methodology section, which describes the adopted approach, as well as the data collection and analysis processes. The main results are then presented, followed by a critical discussion. The paper concludes with the theoretical and practical implications of the study, its limitations and suggestions for future research.

5.2 Conversational Agents in Public Service Context

Conversational agents have now taken on an increasingly central role in public services in response to the growing demand for efficiency, accessibility, and digitalisation (Ahn & Chen, 2020; Misuraca et al., 2020). These systems, which are based on artificial intelligence, are designed to interact with users through natural language, providing information, support and services in an automated and continuous manner (Lee et al., 2023). They are being adopted in various areas of the public sector with the aim of streamlining bureaucratic processes, reducing operating costs, and improving the user experience (Maragno et al., 2022).

The literature emphasises the potential contribution of conversational agents to make public services more inclusive and accessible to those who struggle to access traditional channels. Numerous studies demonstrate how conversational agents can facilitate interaction between users and PSOs by breaking down barriers related to opening hours, location, and technical capabilities (Wirtz et al., 2018; Larsen and Følstad, 2024). Recently, scholars focused on how artificial intelligence can be embedded into chatbots in order to make them more effective (Larsen and Følstad, 2024); indeed, artificial intelligence can be used in predicting the user intent and in ensuring service quality. Anyway, such conversational agents have fallen short due to a low ease of use from both employees and users. As it regards the first, technology providers offered support when infusing artificial intelligence in the ongoing system, while the problem is still open when it comes to users.

Despite the widespread use of conversational agents - both based or not on artificial intelligence -, studies focusing on user perception in the public services literature are lacking (Zyzak & Martinussen, 2024), mostly due to their newness. Understanding how users perceive conversational agents in public services is thus essential to ensuring satisfaction. Consequently, it is becoming increasingly important to understand users' experiences with conversational agents in order to develop solutions that are technologically advanced, accepted and appreciated by users.

5.3 Value Proposition in Public Service Logic

Within the framework of PSL, the value proposition is defined as the set of benefits that a PSO intends to provide to users through its services (Røhnebæk et al., 2024). PSL is a theoretical perspective analysing value creation dynamics in the realm of public services; it was initiated by Osborne (2018) providing a shift from performance as the key metric of public service organizations (PSOs) and adopting a processual view. It has further evolved towards being a logic on its own, besides starting from some concepts brought by service logic and service-dominant logic. In this strand of literature, Eriksson et al. (2020) stressed the role of collaboration in enabling the process of value creation; such collaboration is not seen as a B2B or B2C tie, but as the sum of the interactions taking place in the social system centred on public services provision. Such systems are the *locus* where value propositions are set, rooted in the mission of PSOs and enabling the joint value creation process between public and private actors. The value proposition is not a static element determined uniquely by the provider (PSO), but rather a commitment to co-creating value realised through interaction between PSOs and their users (Osborne, 2018; Trischler et al., 2023).

In this context, value does not simply transfer from the PSO to the user; rather, it emerges dynamically from the user's active involvement in the service delivery and use process (Osborne, 2018). Therefore, PSOs can only propose value through the design and structuring of services; it is the user who attributes meaning to this proposal and determines its actual value in the specific context of use (the concept of value-in-use).

In line with these assumptions, PSL literature increasingly emphasises the need to investigate how user perception shapes the value proposition in public services. Understanding how users perceive the value proposition is essential for designing interventions that truly align with their needs, contexts, and expectations. User perception is therefore not a marginal element, but an active and decisive component in the process of co-creating public value (Strokosch and Osborne, 2020). Finally, recent studies highlight the need to analyse value perception in the users' sphere - besides recognizing the relevance of collective value, too - and call for investigation of such perception (Cui & Aulton, 2023).

5.4 Methodology

This study adopted a qualitative methodological approach (Yin, 2013) to investigate how users perceive the integration of conversational agents into public service organisations' value propositions. This approach is widely recognised in the literature as being well-suited to analysing emerging phenomena, such as the adoption of artificial intelligence in the public sector.

The methodological approach involves collecting data through netnographic analysis. This is defined as a valid 'qualitative research method that adapts netnographic research techniques to study cultures and communities that emerge through computer-mediated communication' (Kozinets, 2002, p. 62). This approach uses available online information to understand user perceptions (Mkono and Markwell, 2014), favouring objectivity in data collection, since it does not force users in stating considerations that would be necessarily appreciated by the person collecting data. The focus is on a series of cases concerning the adoption and implementation of chatbots by public sector institutions in Italy.

In particular, this research used Facebook as the main platform to gather empirical data, as it represents a widely used social media space where users actively share opinions, feedback, and criticisms regarding public services (Wirtz et al., 2020).

Indeed, Facebook has emerged as a significant platform for public service communication and citizen engagement. Public service broadcasters using Facebook have demonstrated higher performance in terms of content diversity compared to their television counterparts (Steiner et al., 2019).

This allowed us to explore users' spontaneous perceptions and narratives about the implementation of chatbots in public service delivery. The focus is on a series of cases concerning the adoption and implementation of chatbots by public sector institutions in Italy.

The research process is based on the TAM, a robust theoretical framework developed by Davis (1989) to analyse the factors influencing users' acceptance of technology. This model is particularly useful in the context of PSOs (Wirtz & Piehler, 2016) as it enables a systematic investigation into how users perceive and adopt digital solutions within public services.

As Piehler et al. (2016) have highlighted, TAM is a particularly suitable approach for analysing the specific context of PSOs. Specifically, the model enables us to explore two complementary dimensions: (i) the feasibility of using a conversational agent to automate communication activities and (ii) users' perceptions of adopting a conversational agent in public service delivery processes.

This study adopts the approach proposed by Tubaishat (2018) that perceived usefulness and perceived ease of use are the main determinants of users' intention to accept and use a new technology. These two key TAM constructs allow us to measure acceptance levels and gain an in-depth understanding of users' perceptions of introducing a chatbot to the public service experience.

5.4.1 Data Collection

This study collects data by analysing the Facebook pages of 8 PSOs. Specifically, 91 posts published between 2020 and 2024 containing the terms 'chatbot' or 'virtual assistant' are identified. For these posts, 206 user comments related to implementing chatbots in PSOs are systematically downloaded and documented, providing a robust basis for analysis. Finally, saturation was reached when no new themes or categories were identified despite the addition of new data; indeed, according to Guest et al. (2020), saturation was achieved as follows: first, the categories used to describe the reaction of users emerged as either positive or negative; the first part of the analysis led to highlight some comments showing the unfriendliness of the technology, instead of being just either positive or negative; this led to the third category. Then, after analysing the 30th post - namely the run as per Guest et al.

(2020), approx. one-third of the sample - a new category emerged, namely scepticism; previous posts were reviewed, showing no need to re-categorize any post. From that moment on, no new categories emerged; thus, twice the number of the previously analyzed posts - from 30th to 91st - made categories stable in the series, showing saturation was achieved. Table 1 summarises the data collected for the study.

Table 1: Number of Posts, Interactions and Comments

Public Service Organisation	Number of Selected Posts on Conversational Agents	Total Interactions (Likes, Comments, Shares)	Number of Comments
Istituto Nazionale Tumori IRCCS "Fondazione G. Pascale"	67	4057	74
Fondazione Policlinico Universitario Agostino Gemelli IRCCS	6	1463	30
Regione Toscana	5	373	46
Comune di Siena	3	573	8
Comune di Latina	2	152	3

Parco archeologico del Colosseo	5	560	21
Galleria dell'Accademia di Firenze	2	71	4
Università degli Studi di Salerno	1	280	20
Total	91	7529	206

Source: authors elaboration

5.4.2 Data Analysis

The collected data was analysed using a two-tiered approach, with each tier operating at a distinct level. At the first level, user comments on technology adoption were categorised manually according to the two main dimensions of the Technology Acceptance Model: perceived ease of use and perceived usefulness. Two researchers coded the material independently, working separately in the initial phase to improve reliability and minimise bias. They then compared their individual results, addressing any differences through discussion until complete agreement was reached to ensure consistent final categorisation. This process determined whether each user perceived the technology as easy or difficult to use and useful or not. A total of 47 comments were excluded from the analysis as they were not relevant.

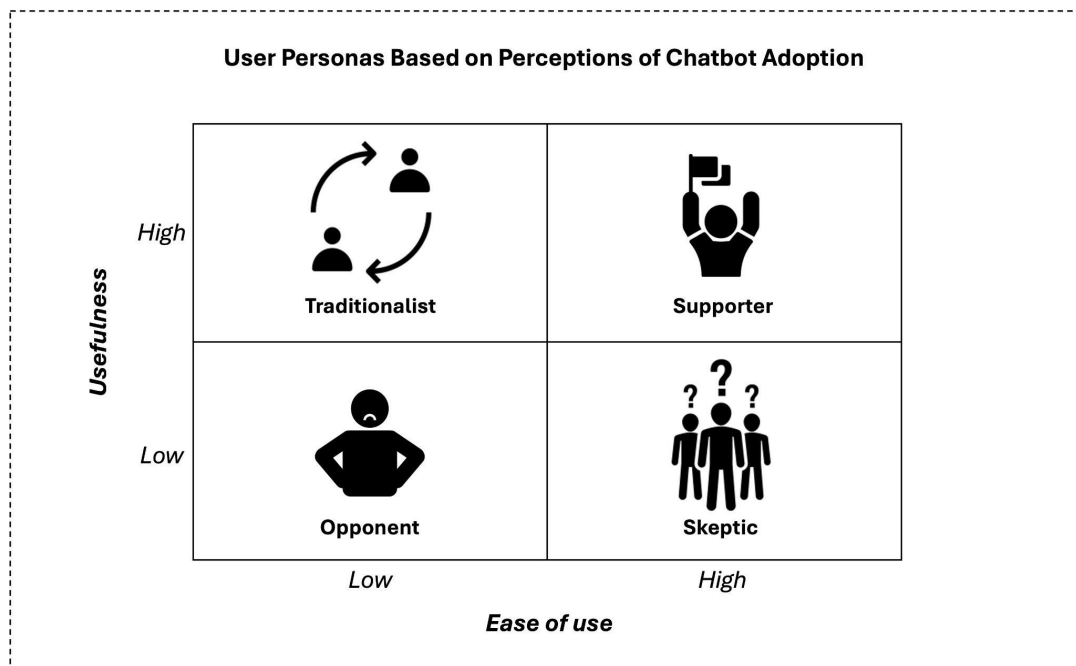
The second level of analysis involved an automated content review using Sketch Engine software. The "word list" function was used to identify the most frequent terms in the dataset. These key terms, which were considered to be the most informative for interpreting user perceptions, were then explored in more depth through concordance checks and n-gram analysis. Combining manual and

automated techniques provided a more comprehensive and objective view of public attitudes towards chatbot integration in public service organisations.

5.5 Findings

A netnographic analysis of users' spontaneous conversations about the use of conversational agents in public services revealed an interpretative model based on four recurring user personas: *Supporter*, *Opponent*, *Traditionalist* and *Skeptic* (see Figure 1). These summarise the main perceptions expressed by users regarding ease of use and usefulness — two central dimensions in the subjective evaluation of technologies according to TAM (Tubaishat, 2018).

Figure 1: User Personas Framework



Source: authors elaboration

Personas are not rigid categories, but rather recurring configurations of attitudes, expectations and experiences that help us to understand how conversational agents are adopted, accepted or rejected in public service contexts.

The *Supporter* has a positive attitude towards conversational agents, considering them to be useful and user-friendly tools. They recognise the added value offered

by chatbots, particularly in terms of the speed and availability of the service, and emphasise their advantages over traditional channels. The Supporter readily adapts to digital interaction and actively contributes to legitimising innovation, demonstrating widespread trust in the institution that introduced the tool.

At the opposite end of the spectrum is the *Opponent*, who clearly rejects conversational agents, perceiving them as useless, ineffective or frustrating. They criticise the chatbot's lack of understanding, its inability to handle complex requests and the resulting isolation from human contact. From this perspective, not only does the agent fail to produce value, it also compromises the public service experience, generating disaffection and institutional mistrust.

Traditionalists have a low level of familiarity with and confidence in digital technologies, which often generates cautious or slightly distrustful attitudes toward conversational agents. While they don't openly oppose innovation, they tend to view chatbots as tools that differ from their communication habits. They prefer direct human interactions because they find them more reliable and reassuring. They only use conversational agents when there are no alternatives or for simple tasks, and they do not feel a sense of mastery over the tool. This reflects a technology-unfriendly profile in which digital adoption is slowed not by ideological rejection but by a sense of alienation, insecurity, and attachment to traditional relational models.

The *Skeptic* is in an ambiguous position. The users shaping this persona potentially recognize the usefulness of conversational agents but doubt their effectiveness. Their assessments are often influenced by negative past experiences, a lack of confidence in the public body's ability to properly implement the technology, and unrealistic expectations. Chatbots are perceived as incomplete innovations that are still far from guaranteeing a satisfactory experience. Table 2 provides examples of comments related to each persona.

Table 2: Description Comment Examples

Personas	PSOs	Description Comment Examples
Supporter	Istituto Nazionale Tumori IRCCS "Fondazione G. Pascale"	<i>"Very interesting, I think the institute is getting ahead and can grow even more!"</i>
Supporter	Istituto Nazionale Tumori IRCCS "Fondazione G. Pascale"	<i>"So far it has always been perfect. I've been happy with it. I hope it always goes on like this."</i>
Supporter	Comune di Siena	<i>"I thought it was mediocre ... instead right now it's perfect!"</i>
Supporter	Galleria dell'Accademia di Firenze	<i>"What a brilliant idea! I love it!"</i>
Opponent	Regione Toscana	<i>"It's just a big waste of time, you have to go back to using the phone cup or the physical cup."</i>
Opponent	Regione Toscana	<i>"The guaranteed way to lose your mind"</i>
Opponent	Parco Archeologico del Colosseo	<i>"Please don't, grace us!"</i>
Traditionalist	Regione Toscana	<i>"When are free courses for the digitally unfamiliar? We make ourselves available."</i>

Traditionalist	Istituto Nazionale Tumori IRCCS "Fondazione G. Pascale"	<i>"How do you use it? On the Facebook page I can't find it ... thank you."</i>
Traditionalist	Istituto Nazionale Tumori IRCCS "Fondazione G. Pascale"	<i>"How do you talk to Pasqualino???"</i>
Traditionalist	Università degli Studi di Salerno	<i>How do you chat with Matthew?</i>
Skeptic	Istituto Nazionale Tumori IRCCS "Fondazione G. Pascale"	<i>"Interesting if it works."</i>
Skeptic	Istituto Nazionale Tumori IRCCS "Fondazione G. Pascale"	<i>"Wasn't an information office better?"</i>
Skeptic	Istituto Nazionale Tumori IRCCS "Fondazione G. Pascale"	<i>"and let's hope it works in the facts."</i>

Source: authors elaboration

Finally, the results of the analysis show that perceptions vary depending on the public sector. For instance, the analysis shows an overall positive perception of usefulness and ease of use in the healthcare sector. Users appreciate the introduction of this technology because they find it useful and efficient for healthcare services. In contrast, comments from the public administration sector reflect a predominantly negative perception. Users believe that the technology does not improve the service and prefer personalized human interaction.

5.6 Discussion

This research offers a new perspective on how users perceive the adoption of conversational agents in public services. The results highlight the importance of subjective factors in determining the perceived value of these tools. The emergence of four user personas — *Supporter*, *Opponent*, *Traditionalist*, and *Skeptic* — shows that adopting a conversational agent in a public service context is not a neutral or solely technical process. Rather, it is an experience mediated by past experiences, expectations, and trust in the institution promoting the innovation.

These findings reinforce the PSL assumption that value in public services is co-created through interaction between users and PSOs (Osborne, 2018). Therefore, it is crucial to consider users' perceptions when defining value propositions, particularly when implementing public digital services (Osborne, 2018; Trischler & Trischler, 2022).

Users do not merely "receive" an automated service; they also interpret its meaning, evaluate its usefulness, and compare it with pre-existing models of legitimacy and quality. In this dynamic, the conversational agent is a tool and a symbolic touchpoint that reflects — and sometimes challenges — the relationship between users and PSOs.

The articulation of personas along the two dimensions of *usefulness* and *ease of use*—which are central to the TAM—suggests that acceptance of Artificial Intelligence technologies cannot be interpreted exclusively in functional terms. For example, some users, such as *Traditionalists*, may perceive a tool as easy to use but

not very useful, while others, such as *Skeptics*, may recognise its potential but doubt its reliability or ease of use.

These differences highlight the fact that PSOs cannot adopt a one-size-fits-all strategy when designing AI-embedded solutions. Instead, they must develop value propositions that address the specific expectations, concerns, and needs of each user. This requires technical design work as well as targeted cultural support, institutional communication, and trust-building measures tailored to different user profiles. Only through this users-centred approach can promote the inclusive, informed, and sustainable adoption of Artificial Intelligence technologies in public service context.

5.7 Conclusion (including implications, limitations and further research)

The infusion of artificial intelligence in addressing value proposition through conversational agents proved being a proper way to widen the chances to experience public services; indeed, the use of such agents supports the breaking down of barriers as previously theorised (e.g., Wirtz et al., 2018) and supports the understanding of what users might want, namely their intent (Larsen and Følstad, 2024). In addition to what extant studies proposed, this research shows the understanding of the need supported by artificial intelligence. Therefore, the embedding of artificial intelligence is beneficial in this way. Anyway, it has not to be thought of as a one-fits-all solution, due to the differences emerging among users. Indeed, the use of artificial intelligence-driven conversational agents might clash with the perception of a very limited ease of use. This proved the suitability of TAM in studies on innovative ways of service provision (Tubaishat, 2018), while stressing the need for further development of tools. This is due to different backgrounds, willingness to participate in service provision, and personal features hindering some users from fully enjoying what the offering is about and how to experience it. This consideration is fully new when it comes to the use of artificial intelligence in conversational agents, also due to the newness of such solutions .

From these considerations related to the conceptual side some more derive with reference to managerial suggestions; indeed, public managers planning to introduce artificial intelligence in conversational agents should properly address the novel

value proposition, otherwise the digital divide and the digital illiteracy would further isolate some users. This is very relevant in an area where service provision is very often related to urgent and basic needs for users, thus PSOs should properly know and assess the plethora of potential users to understand what can hinder the full acceptance of novel conversational agents and how to contrast such issues. A multiplicity of solutions and training in the use of new technologies can represent the way to widen the chance of accepting such value propositions for multiple users. Being social networks the research context for data collection there is a chance to consider the interplay among different users - according to the personas - to favour a mutual learning effect, thus leveraging on peer-to-peer interactions instead of just having a PSOs setting video tutorial, online support, or any other form of training. Further research is needed to explore the distinctive characteristics of the four user personas that emerged, as well as the response strategies that PSOs should adopt. It is particularly important to investigate how the most reluctant figures, such as the *Skeptic* and the *Opponent*, can be guided toward more favorable positions.

Additionally, in line with the considerations above, this research would benefit from a wider understanding of the reasons why the ease of use and the usefulness are perceived as limited. Therefore, next research might address such limitations via the use of qualitative methodologies to investigate single users and have a wider interpretation of the considerations emerged from online comments. Moreover, time is another feature to be considered, since over time there might be self-learning processes or community effects to increase the ease of use and favour a higher understanding of the usefulness. Similarly, the direct interaction with the companies providing technology services to PSOs as well as to PSOs themselves in order to analyse data and better frame users behaviour in the interaction with conversational agents.

Finally, further research might compare the evidence of this study with new ones carried out in other geographical contexts, in order to understand whether digital divide and illiteracy is an issue mostly affecting some areas. This would lead to consider the managerial implications for further service offering, since a great relevance of user digital illiteracy might lead to a limited application of some

solutions in multiple countries, hindering the scaling up of new ways to offer services.

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Conclusion

6.1 Achievements

This thesis investigated the impact of artificial intelligence on public services through the lens of Public Service Logic (PSL), adopting an ecosystemic perspective to understand how AI reshapes the processes underlying value creation in public services. Across four interconnected studies, the research provided both theoretical and empirical insights into how AI-driven technologies influence the public service provision.

The first chapter addressed the question: 1) *“What do we know and what more should we know about Public Service Logic?”* through a systematic literature review encompassing 58 peer-reviewed studies. The analysis clarified the theoretical roots of PSL and its related concepts and co-concepts, offering a comprehensive overview of how this theoretical framework has evolved. The findings advanced a deeper understanding of the foundational dimensions of PSL and positioned it as an autonomous and distinctive theory within the field of Public Administration and Management (PAM). Building on this foundation, the chapter proposed a conceptual model to guide future PSL research and to support a more structured exploration of value creation in public services.

The review also identified future research directions, emphasising the need to investigate how digitalisation and, more specifically, AI technologies influence the value proposition of public services.

In response, the second chapter addressed the research question: 2) *“How does the adoption of artificial intelligence influence the value proposition of public services from a managerial perspective?”* Building upon prior research on the drivers of value propositions within PSL, this study proposed a framework explaining how public service organisations reframe their value propositions. The framework outlines the interconnections between problem findings, problem solving, and reframing, emphasising the pivotal role of AI-based technologies as catalysts for innovation across these stages.

From an empirical standpoint, the research offers novel insights derived from a qualitative multiple-case study of Italian public service organisations that have

adopted AI-driven conversational agents. The results reveal several key premises for analysing innovation in public service value propositions, thereby enriching PSL with new perspectives of value creation processes in AI-enabled contexts.

Furthermore, this chapter underscored the importance of adopting an ecosystemic lens, highlighting two key actors - frontline employees and users - as essential for understanding how public service provision is shaped within AI-enabled public service ecosystems.

Building on this insight, the third chapter addressed the question: 3) *“How do public frontline employees perceive and interact with AI tools in their work practices?”*

The findings revealed variability in frontline employee engagement with AI-based conversational agents across different public service contexts. Two distinct levels of engagement emerged: (i) Willingness to Interact, representing an initial, affect-driven assessment shaped by primary appraisal processes, in which employees evaluate whether the technology is beneficial, harmful, or challenging; and (ii) Willingness to Collaborate, reflecting a deeper, trust-based evaluation that involves role negotiation and mutual reliance. This level is guided by secondary appraisal processes through which employees assess their perceived control and coping strategies when interacting with AI tools. The study further identified two types of coping strategies—problem-focused and emotion-focused—that influence how employees adapt to organisational change and collaborate effectively with AI.

Finally, the fourth chapter explored the question: 4) *“How do users perceive the value proposition driven by conversational agents in the context of public service?”*

Using a netnographic approach, the study analysed spontaneous user conversations on public organisations’ social media channels. The analysis identified four recurring user profiles - Supporters, Opponents, Traditionalists, and Skeptics - each characterised by distinct attitudes toward AI-enabled public services. These findings reinforced the importance of incorporating user perceptions into the design of value propositions, particularly in digital service contexts. Public service organisations, therefore, cannot rely on a one-size-fits-all strategy for AI adoption but must develop value propositions that align with users’ expectations, concerns, and needs.

Taken together, the four studies contribute to advancing the theoretical and practical understanding of how AI influences value creation within public services. By integrating the perspectives of managers, frontline employees, and users, this thesis offers an ecosystemic and multidimensional view of the crucial role of AI in public service innovation.

6.2 Theoretical, managerial, and policy implications

This thesis offers several theoretical contributions by adopting an ecosystemic perspective to analyse the impact of artificial intelligence on public services within the framework of PSL.

First, it develops a new conceptual framework that clarifies the theoretical foundations and conceptual overlaps within PSL literature, addressing long-standing ambiguities about “what is what” among related concepts and co-concepts. This contribution provides a more structured understanding of PSL and reinforces its position as a mid-range theoretical framework for studying value creation in public service contexts, in line with and further developing the argument advanced by Trischler et al. (2023) regarding the need to consolidate PSL as a coherent and distinctive theoretical perspective.

Second, the study introduces a set of premises for analysing innovation in public service value propositions through a PSL lens, building on the conceptual foundations of public service innovation proposed by Skålen et al. (2018). These premises provide theoretical guidance for examining how AI-driven technologies reshape value propositions as dynamic, collaborative, and multidimensional constructs, in line with Røhnebæk et al. (2024), who highlight the importance of reframing value propositions as evolving configurations that continuously adapt to societal changes.

Third, this research provides a new interpretative view on frontline employee engagement with AI technologies, particularly conversational agents, thus responding to the research call by Chen et al. (2024) for a deeper understanding of how frontline employees perceive, interpret, and adapt to the integration of AI in public service delivery. It identifies distinct coping strategies that frontline employees employ to adapt to technological change, thus enriching growing

research on integrating service robots in public service contexts (Wirtz et al., 2018; Wang et al., 2021; Chen et al., 2024).

Finally, the study contributes to PSL by highlighting how AI supports more inclusive and responsive interactions between public service organisations and users (Osborne 2018; Larsen and Følstad, 2024).

From a managerial standpoint, the findings provide actionable insights for public sector managers navigating digital transformation and AI adoption in both designing and providing public services.

First, the study offers valuable guidelines for public managers considering the implementation of digital and AI-based technologies, helping them design strategies that align innovation with organisational goals and societal needs.

Second, it highlights the need to create learning opportunities for frontline employees, supporting the development of skills required to confidently interact with AI-enabled service systems.

Third, the research underscores the importance of planned and transparent implementation of AI and robotic systems to minimise misleading effects, resistance, and role ambiguity. Clearly defining roles, responsibilities, and objectives can foster effective Human-robot collaboration and maintain employee trust and motivation.

Finally, from a user-oriented perspective, public service organisations must carefully assess and understand user expectations and potential barriers to AI acceptance. Designing value propositions that respond to user needs, concerns, and levels of digital readiness is essential for ensuring the legitimacy, inclusiveness, and effectiveness of AI-enabled public services.

Beyond its theoretical and managerial contributions, this research also provides relevant policy implications for governments and public institutions seeking to harness artificial intelligence to improve public service delivery.

First, an ecosystemic approach to AI adoption calls for cross-sectoral collaboration among policymakers, public service organisations, technology providers, and citizens. Policies should encourage open innovation environments, fostering

partnerships that facilitate knowledge exchange and the joint design of AI-based solutions that respond to societal needs.

Second, the study underscores the importance of investing in digital and organisational capacity-building. Public policies should prioritise programmes that enhance the digital literacy of both employees and citizens, ensuring that all actors within the public service ecosystem are equipped to engage effectively with AI technologies.

Third, policymakers should adopt a user-centred policy design perspective, recognising that citizen perceptions and trust are fundamental to the success of AI-enabled public services. This involves continuous public engagement, participatory evaluation mechanisms, and communication strategies that make the benefits and limitations of AI transparent to all stakeholders.

By addressing these aspects, policy initiatives can move beyond technological adoption toward building inclusive, human-centric, and value-oriented AI ecosystems that reinforce the legitimacy and sustainability of public service innovation.

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