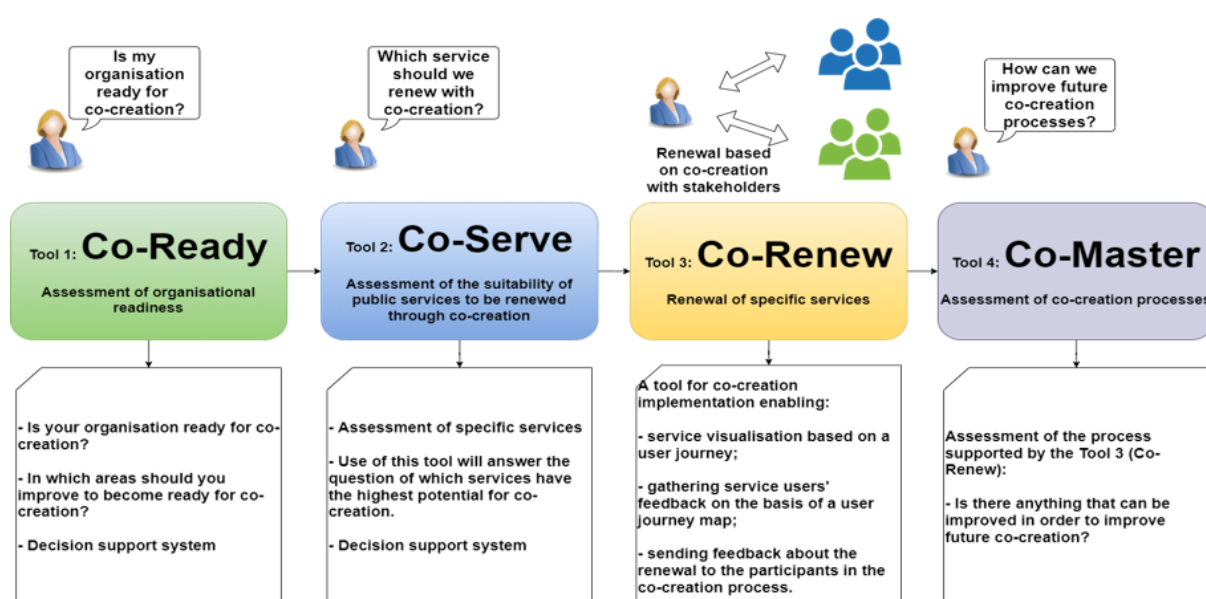# Methodology: Systematic Literature Review

The manuscript "A Decision Support Model for the Assessment of Co-creation Processes: A Case Study of the Bee Path Project" presents the development and testing of the Co-Master model, created within the framework of the COGOV HORIZON 2020 project. Co-Master is the fourth tool in the holistic Co-Gov toolkit, designed to support public organisations in their co-creation efforts. Figure 1: The Co-Gov toolkitFigure 1 illustrates the structure of the Co-Gov toolkit and its four tools, with Co-Master as the final tool, specifically developed to assess the quality of the co-creation process. Although part of an integrated toolkit, each of these tools, including Co-Master, can be used independently.

Figure 1: The Co-Gov toolkit

The development of Co-Master is based on attributes extracted from two key sources:

- Case study reports produced in the context of WP4 – Task 2.1.
- Content analysis of Web of Science (WoS) papers.

Based on these sources, 19 attributes were identified for the model: 15 relying on both sources (WP4 reports and content analysis); three deriving from the WoS content analysis; and one attribute extracted exclusively from the WP4 reports.

The purpose of this supplementary file, related to manuscript no. 9519, is to provide a detailed account of the systematic content analysis, which serves as one of the methodological pillars in the model's development.

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The selection of papers for the systematic analysis was based on the following criteria:
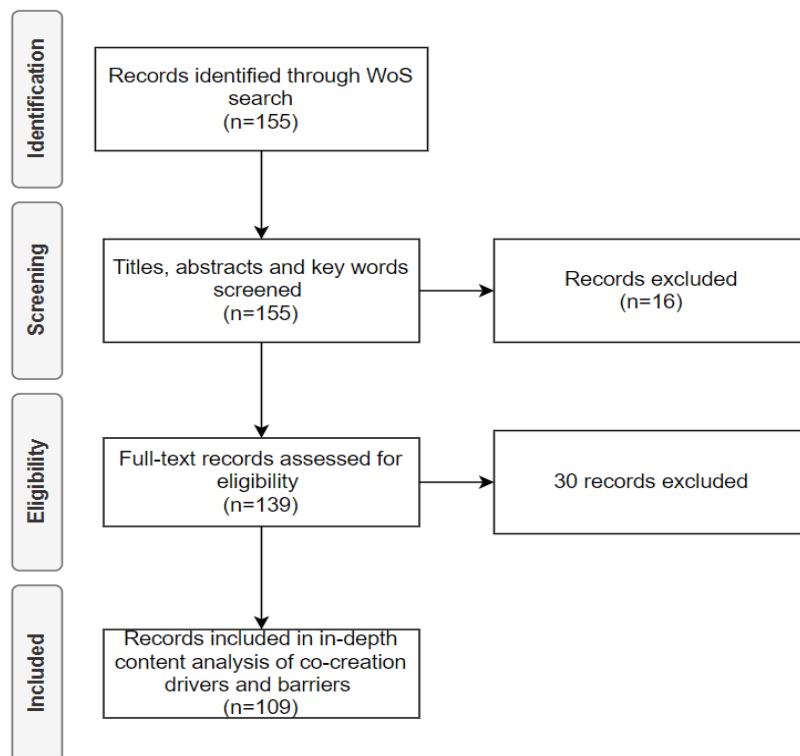
- 10-year timespan (2009–2018);
- key words: "co-creation" or "co-production";
- type: article;
- WoS category: Public Administration; and
- language: English.

This search strategy initially identified 155 scientific papers as the starting point for our systematic analysis. Following a preliminary screening focused on titles, abstracts, and keywords, 16 papers were excluded from further analysis as they did not address co-creation/co-production in the context of (core) public administration. This left 139 papers for full analysis (see Figure 2).[1]

A subsequent in-depth reading of these 139 papers revealed that 78% (109 papers) directly or indirectly referred to factors related to co-creation, specifically drivers and/or barriers. However, in many cases, rather than being explicitly labelled as co-creation drivers or barriers, these factors were discussed as broader concepts relevant to the co-creation process. Given the lack of explicit categorisation, we identified and coded these issues as drivers or barriers based on their connotation—whether their impact on co-creation was positive (driver) or negative (barrier).

An additional challenge encountered during the content analysis was that drivers and barriers were rarely the primary focus of research, meaning they were not systematically examined or analysed. This lack of systematisation was also reflected in our findings, resulting in a highly diverse set of drivers and barriers. The substantial variation among these factors made it impossible to automatically integrate them into a multi-attribute decision support model.

Figure 2: PRISMA diagram

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[1] In addition, we included one relevant paper that had not been part of the initial sample, as it was published prior to the defined timeframe but was recognised as important for our research.

The literature review initially identified 502 drivers and barriers. Many of these were recurring or too case-specific, necessitating a thorough cleaning process and a more general redefinition. Once this refinement was completed, we identified a common denominator among the drivers and barriers—namely, the aspect of the co-creation process they influence (e.g., the structure of public organisations, relationships among co-creators, external and internal co-creators, and the broader context). Consequently, this aspect—the subject/area affected by a driver or barrier— was adopted as the key criterion for categorising them into the following five categories:

- structural/organisational drivers and barriers,
- drivers and barriers related to internal (public organisation) co-creators,
- contextual drivers and barriers referring to the wider societal, political and legal environment in which the public organisation operates,
- drivers and barriers related to external co-creators, and
- drivers and barriers referring to the quality of the relationship between co-creators.

The Co-Master attributes were primarily derived from the fourth and fifth categories, which refer to external co-creators and the quality of the relationship between co-creators. However, the remaining categories were also revisited to identify and incorporate any additional relevant drivers and barriers. Since most drivers had a corresponding barrier, we defined the attributes in their positive form, ensuring consistency in their representation.

The refined list of attributes extracted from the content analysis was subsequently compared with and integrated into the list of attributes identified in the case studies, resulting in the final set of model attributes (see Table 1).

Table 1: List of model attributes

Attributes referring to identification and mobilisation of stakeholders		Source
1.	Identification and inclusion of all affected and relevant stakeholders	WP4 and WoS
2.	Information about the process	WoS
3.	Communication of the potential benefits	WP4 and WoS
Attributes referring to the co-creation process itself		**Source**
4.	Appointed team embedding horizontal, distributive and integrative leadership	WP4
5.	Clear definition of appropriate roles	WP4 and WoS
6.	Inclusion of external stakeholders at the early stage	WP4 and WoS
7.	Clear explanation of the framework	WoS

8.	Channels of communication	WP4 and WoS
9.	Equal access	WP4 and WoS
10.	Clear and common goal	WP4 and WoS
11.	Reconciliation of different views	WP4 and WoS
12.	Meaningful data	WP4 and WoS
13.	Easy and clear tasks	WP4 and WoS
14.	Sufficient time	WP4 and WoS
15.	Shared ownership	WP4 and WoS
Attributes referring to the effects of co-creation		**Source**
16.	Open-mindedness	WoS
17.	Change	WP4 and WoS
18.	Resources	WP4 and WoS
19.	Clear communication of the results	WP4 and WoS

In the manuscript, we discuss each of the identified attributes, referencing both case studies and papers included in the systematic literature review. Moreover, as highlighted in the manuscript, the 19 model attributes were grouped into three categories, each corresponding to a different phase of the co-creation process:

- identification and mobilisation of stakeholders — referring to the phase before the actual act of co-creation takes place,
- the co-creation process — capturing the very act of co-creation and
- effects of co-creation — referring to the post-co-creation phase.

The decision to categorise attributes into these three groups was made in response to their relatively high number and clear alignment with specific phases of the co-creation process. This categorisation serves to provide a logical framework, ensuring a structured flow of thought for end users of the tool.