Researching the research institute

Understanding political-scientific institutes in The Netherlands

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Abstract

The central question of this research is: How do political-scientific institutes help bridge the gap between science and politics? Three cases are analysed to find an answer to this research question. Before the analyse is started, the theory chapter selects a framework of models of knowledge exchange which are used to analyse the cases. Case A is hypothesized to be understood as the co-production model of knowledge exchange, Case B is hypothesized to be understood as the embedding model of knowledge exchange, and Case C is hypothesized to be understood as the knowledge broker model of knowledge exchange. The data used for the analysis include publications, year reports, statutes, and an interview with a representative of each case. The major conclusion is that for all cases some elements of the embedded model of knowledge exchange are present, probably due to the position of the political-scientific institute. Further, the different cases reflected diversity in activities (and understanding in terms of a model of knowledge exchange). Lastly, it was found that the used model of knowledge exchange only captures part of the bridging function of the political-scientific institutes.

Table of contents

1. Introduction

Politics is expected to react to societal problems, and science is expected to provide evidence to show what works. However, politics is more than making technocratic decisions in line with evidence of the effectiveness and efficiency of policy interventions. Decision-making in a political context is also concerned with the trade-off between different values, which was also illustrated in the Covid-19 decision-making, where a trade-off had been made between the safety of the population and the freedom of individuals. These decisions highly impacted the lives of all citizens in The Netherlands and led to disagreements and agitations which became visible via protests. To make good decisions, it is expected from decision-makers that they are well informed about the available evidence while simultaneously keeping an eye on value trade-offs.

That expectation puts institutions that mediate the worlds of science and politics at a central position. Examples of these intermediary institutes in The Netherlands are Central Bureau for Statistics (CBS) and the Scientific Council for Government Policy (WRR). They produce research outcomes with political relevance in a value-neutral manner. These institutes had been the topic of research in the past (Hoppe & Halffman, 2004; Koens, Meza, Faasse, De Jonge, 2016). In stark contrast, the research institutes of Dutch political parties – from here on political-scientific institutes - are also concerned with research activities, but do not claim to be value-neutral and had not been objects of study in the past. The scarce scientific publication mentioning political-scientific institutes only mention these institutes briefly. And when they do, there is a striking difference in understanding the function of the political-scientific institutes. Bussemaker (1993, p.274), for one, sees them as intermediaries arguing that they function as "the intermediary between scientific research and social trends on the one hand, and party politics on the other". Contrarily Aerts (2007, p.208) sees them as part of the political party arguing that their function is "contributing ideological and academic ammunition for their politicians". Also, the *Wet financiering politieke partijen*, which justifies the existence of these institutes by mentioning them and providing indirect subsidies to them, does not describe what it means to be a political-scientific institute (Wet financiering politieke partijen, 2013). In the international context, there are some scientific publications about political-scientific institutes in other countries, but this research does not help to understand political-scientific institutes in The Netherlands, because the role of these institutes differs per country (Pattyn, Van Hecke, Brand & Libeer, 2014; Stone, 2015). Altogether, there seems to be a lack of understanding of these institutes in The Netherlands because of a knowledge gap in the literature. The academic relevance of the research lies in addressing this knowledge gap.

The question of why we should care about these institutes brings us to the societal relevance of this thesis. Because the political-scientific institutes in The Netherlands have never been studied, their influence on decision-making is also unknown. Because influence is a hard thing to measure directly, this research aims to analyse how political-scientific institutes bring politics and science together.

Understanding the function and activities of political-scientific institutes also would make it possible to evaluate whether the research activities of the institutes are biased. They can do this, for example, by cherry-picking evidence to support political goals. As we saw in the first paragraph, on the Covid-19 crisis, it is important to have well-informed decision-makers, as the outcomes of decision-making processes affect the lives of citizens. The societal relevance of this research lies in addressing the possible role of bias in the decision-making of political parties, as a result of bias in the outputs of political-scientific institutes that are not value-neutral. It helps to answer normative questions such as 'is it wrong to have ideology interfering with science, or might it be beneficial to take values into account when conducting research that is relevant for policy making?'. These types of questions allow us to think about whether it is good that the political-scientific institutes are free in determining their activities, or whether regulations should be in place to increase transparency or decrease bias. But to understand what types of bias such institutes might lead to, it is necessary to first answer and understand their activities and ways of mediating science and politics.

The central question of this research is: How do political-scientific institutes help bridge the gap between science and politics?

To answer this overall question, the following four sub-questions have to be answered:

1. What does the theoretical literature say about the different types of institutions that bridge the gap between science and politics?
2. How does the way of bridging the gap influence bias in evidence-based policymaking?
3. How should the studied cases of political-scientific institutes be typologized?
4. How do the political-scientific institutes compare to one another in terms of bridging the gap between science and politics?

The rest of this thesis will address the above-mentioned questions systematically to answer the central question of the research. First, the *theory chapter* will clarify what it means to bridge the gap between science and politics to move to a framework that explains how different types of institutes connect both worlds. Second, the theory chapter will also discuss how these types of institutes possibly lead to different forms of bias. This chapter also introduces the three cases that are selected to study. The case selection is justified in the *data and method chapter*, explaining that the cases are chosen based on a structured, focused comparison. This chapter also explains how the case studies are performed. The third sub-question is answered in the *results chapter*: in this chapter each case is discussed ending with typologizing the cases. Lastly, a comparison between these cases is made in the *conclusion and discussion chapter*. Thereafter, the central question will be answered, as well as a reflection is given on the research design and process.

2. Theory

This chapter aims to outline the theoretical framework which will be used in this research. This includes a discussion of the relevant existing literature. First, the theory section starts with explaining the gap between science and politics and what it means to bridge the gap. As will be argued, bridging the gap enhances evidence-based policy. The second section of the theoretical framework explains the risks of bias coming with evidence-based policy. Thirdly, it is argued why the selected theoretical framework, and not another one, is used to analyse different actions of bridging the gap between science and politics. The chosen framework includes four models of knowledge exchange which will be explained in more depth. Due to time constraints, a trade-off had to be made between the depth of analysis and the number of cases included in the analysis. The depth of analysis is considered to be more important as little is known about how political-scientific institutes operate.

The case selection is based on the framework of models of knowledge exchange. All Dutch institutes were considered for analysis but only some were selected as cases depending on their fit with the characteristics of the different models. Because of this selection procedure, the description of a particular model of knowledge exchange is accompanied by the introduction of the case that seems to fit the characteristics. The *Data & Methods* chapter will elaborate on the choices made for the case selection.

Bridging the gap between science and politics

To understand this bridging function of political-scientific institutes, first, the gap between science and politics needs to be explained. The gap between science and politics exists in the differences between scientists and decision-makers. Firstly, scientists think that neutrality is important while decision-makers use values and ideologies in decision-making (Rich, 2004). Secondly, research takes a long time while decision-makers need quick answers (Ward, House & Hamer, 2009; Sin, 2008). Thirdly, scientists have a different jargon than decision-makers (Ward, House, & Hamer, 2009; Sin, 2008). Finally, the gap between scientists and decision-makers becomes visible when decision-makers claim that there is no scientific evidence that is relevant to them, while researchers claim that decision-makers ignore their findings (Van der Arend, 2014).

Despite these differences, there are ways to bridge the gap. On closer inspection, the science-policy landscape is broader than just organizations that operate on one side of the boundary. There are also organizations in the middle. These intermediary organizations have interaction with both communities and aim to connect them (Jasanoff, 1990**)**. The Dutch political-scientific institutes that function as the research institutes of political parties are examples of such organizations. As such, these institutes are in an intermediary position between science and politics, thus helping to bridge the gap between the two.

This bridging between politics and science has the potential to enhance evidence-based policy. Evidence-based policy concerns the use of evidence in political decision-making (Head, 2008). The advantage of evidence-based policy is that decision-makers make better-informed decisions, as evidence shows what policy alternative 'works' (Sanderson, 2002). This is a technocratic way of decision-making. However, because of the possibility that decision-makers dismiss, misuse, or manipulate evidence to become (re-)elected, we cannot assume that decision-makers use evidence in a good way (Parkhurst, 2017). And even when we assume that evidence is used correctly, we can't dismiss the potential underlying biased. Intermediary institutes enhance the use of evidence in politics and/or the production of policy-relevant evidence in science, but can for example present only the evidence supporting their ideals.

This research focuses on the actions and interactions of political-scientific institutes to better understand the ways they foster or hinder the exchange of knowledge. Two things are needed to reach that aim. First, a better understanding of how evidence-based policy leads to different forms of bias in the use and production of evidence. This understanding will help to evaluate the risks of bias coming with political-scientific institutes. Second, a theoretical framework needs to be selected to help understand how intermediary institutes facilitate interaction with both worlds and connect both worlds. There are several frameworks of knowledge exchange in the literature that merit closer consideration. The next section elaborates on the risks of several forms of bias coming with evidence-based policy. The section thereafter elaborates on different frameworks to understand the bridging between science and politics.

Technical bias and issue bias in evidence-based policy

Evidence-based policy entails the use of evidence in making policy decisions, because evidence shows what policy alternative is expected to work best (Parkhurst, 2017). The production and use of evidence take place in different worlds. On the one hand, science is focused on the production of evidence. On the other hand, politicians make political decisions based on values. Both worlds come together when evidence is used to inform decision-making. Where scientific research strives to produce value-free evidence, the use of evidence for policymaking incorporates a trade-off between values (Parkhurst, 2017). Therefore, political decision-making is always more than just making a technical decision. Head (2008) discusses three types of evidence bases for decision-making, moving beyond the scientific interpretation of evidence as empirical findings. The first type is the scientific evidence consisting of academic outputs, the second type is management experience referring to evidence as insights based on practical experiences, and the third type of evidence is political judgments about what is desirable (Head, 2008). When connecting this to the gap between science and politics, scientists might only consider scientific evidence as evidence, while decision-makers also include the other two types in their notion of evidence.

As discussed, Parkhurst (2017) argues that we cannot assume that politicians use evidence in a good way. Therefore, we should assume that politicians are biased in their use of evidence (Parkhurst, 2017). This is the negative side of using evidence in decision-making. Parkhurst (2016) identifies two forms of bias: technical bias and issue bias. Technical bias refers to the misuse of evidence to serve a political goal by creating, selecting, or interpreting evidence in a scientifically invalid manner (Parkhurst, 2016). To begin, technical bias is identified in the creation of evidence when a research design is made to provide outcomes that are favourable for those producing the outcome; values thus influence the research design. Second, technical bias in the selection of evidence happens when pieces of evidence are selected to confirm a predefined outcome. And, finally, technical bias in the interpretation of evidence entails drawing scientific invalid conclusions, for example by interpreting correlation as causality (Parkhurst, 2016).

Issue bias entails that evidence is focused on a particular issue and therefore influences the policy agenda in a certain direction (Parkhurst, 2016). This differs from technical bias, as technical bias is mostly concerned with invalidity, while issue bias is concerned with the choice of evidence (Parkhurst, 2016). Firstly, issue bias can be found in the creation of evidence when research agendas neglect value choices, but choose a topic based on the availability of data or use available data to determine what outcomes to measure. The chosen variables will later influence the political decisions. Second, issue bias can also be found in the selection of evidence when evidence is confirming the desired outcome. The bias in the selection of evidence is called cherry-picking both in issue bias as well as in technical bias. The difference between cherry-picking in issue bias and technical bias is that in technical bias evidence is selected as proof of a hypothesis while in issue bias evidence is used by decision-makers as support of their political position. Lastly, issue bias is expressed in the interpretation of evidence when evidence is prioritized based on its rigorousness rather than relevance (Parkhurst, 2017). Issue bias is not a problem per definition as it reflects differences in values between different political actors. Issue bias becomes risky whenever the debate is a discussion about what is the best evidence, rather than discussing the trade-off between contradictory values (Parkhurst, 2016).

Now that it is clear what types of bias can arise with the creation and use of evidence, it is possible to move on and find a theoretical framework to understand how different types of institutes bridge the gap between science and politics. When a suitable framework is selected, the acquired theory about bias will be applied to the selected framework.

Framework of bridging the gap

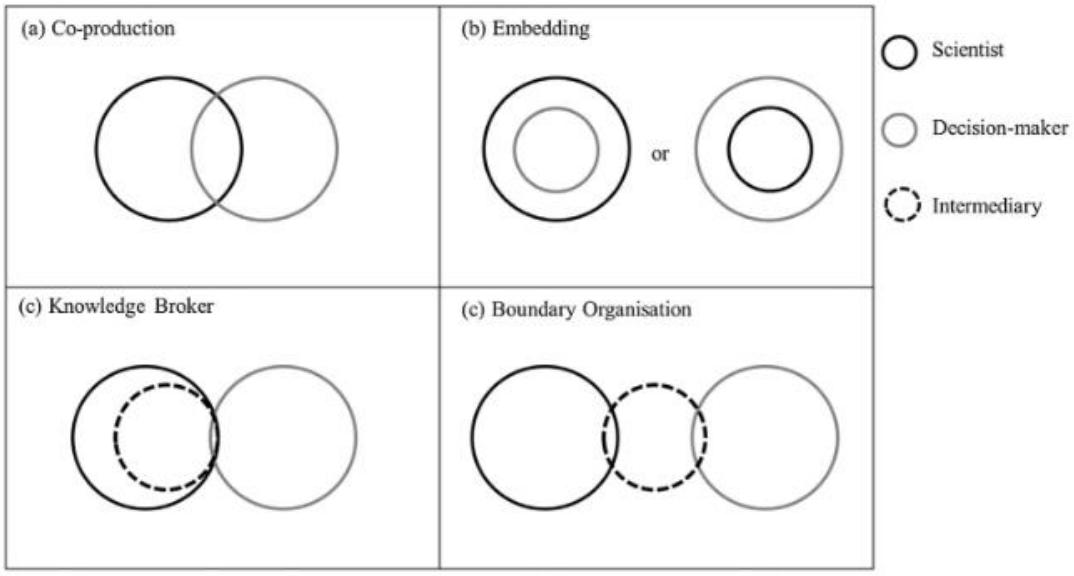
Previous studies provide different models that cover the exchange of knowledge between scientists and decision-makers. These studies offer helpful insights when trying to analyse the internal process of

intermediary organizations in detail, but also have limitations in terms of the research question about the actions and interactions of political-scientific institutes addressed here. For example Ward, House and Hamer (2009) developed a framework for a detailed understanding of how evidence is translated into usable knowledge. This framework focuses on steps to take in the translation process from scientific evidence to usable knowledge but does not elaborate on *interactions* between intermediary organizations and scientists or decision-makers. A second framework is offered by Lavis et al. (2003) who also developed a framework to analyse knowledge transfer. Lavis et al. (2003) try to describe how knowledge should be transferred, but their answer remains rather vague, by stating that interactive processes are most effective: they advocate interaction between the knowledge user and knowledge producer but do not describe how this interaction takes place. This framework, therefore, has the same problem as the one before: it is helpful to understand actions but is limited in providing an understanding of the facilitation of interaction. Lavis et al. (2006), lastly, also developed a model for linking research to action. This model includes ways in which interaction between researchers and knowledge users is possible, e.g. researchers pushing their evidence to users or research users asking researchers to provide evidence (Lavis et al., 2006). This model adds to our understanding of how scientists and decision-makers can interact but misses the institutional role of an intermediary organization to facilitate such interactions.

The main limitations of the above-mentioned frameworks are either not describing the interaction between scientists and decision-makers when describing knowledge exchange, or not providing insights about intermediary institutes. As the political-scientific institutes are understood as intermediary institutes, it is of great importance that the framework with which is proceeded does tell something about the intermediary position of the institutes. Where the previously described models lack this explanation, Cvitanovic et al. (2015) do provide a framework consisting of models for knowledge exchange that focus on institutional roles and include intermediary organizations. As this model is the best fit for the interest of the research, this framework will be used. An overview of the four models is visible in figure 1**.** Each model, and the types of biased it is prone to, is described in more detail in the following four sections**.** As indicated at the beginning of this chapter, each section leads to the formulation of a hypothesis. To connect the theory to the hypothesis, the sections introduce a case of a political-scientific institute that is expected to have characteristics fitting the model of knowledge exchange that is being discussed.

Figure 1.

Four models of knowledge exchange among scientists and decision-makers.



Note. From "Improving knowledge exchange among scientists and decision-makers to facilitate the adaptive governance of marine resources: a review of knowledge and research needs", by Cvitanovic et al., 2015, *Ocean & Coastal Management, 112,* p. 29.

Model A: Co-production

In co-production, researchers and decision-makers work together on research throughout the whole process of research (Cvitanovic et al., 2015). Co-production results in knowledge that is generally applicable, but meets the need of decision-makers to use it more specifically (Van Kerkhoff, & Lebel, 2015). The involved decision-maker fully understands the produced evidence, and is therefore able to use it within an organization (Cvitanovic et al., 2015). Co-production thus ensures that the research fits the knowledge needs of the decision-makers. The decision-makers are informed with the produced knowledge by taking part in the research process. Researchers ensure that the research is conducted rigorously. An intermediary organization can facilitate co-production with scientists and decision-makers.

The involvement of decision-makers in the research process results in the creation of evidence that responds to the knowledge need and thus the political agenda of the involved decision-makers (Oliver & Cairney, 2019). Because the values of the decision-makers influence the research design, the co-producing model of knowledge exchange is prone to technical bias in the creation of evidence. As the research might be designed to support a political position, the involved decision-maker might also select evidence to confirm the position (cherry-picking) and interpret the evidence in a scientifically invalid manner to draw conclusions in line with the desired outcome. Thus, the co-producing model is also prone to technical bias in the selection and interpretation of evidence. The involved scientists thus have

to ensure the rigorousness of the research to ensure the validity of the outcomes (Oliver & Cairney, 2019).

The first political-scientific institute selected for analyses, Case A, is chosen because of a specific type of research they conduct that is aimed to fit the needs of society. According to their website this type of research investigates whether their policy suggestions are in line with practice and that the institute works together with local aldermen and council members. Also, the website implies a relation with their affiliated political party, for instance, because the outputs of the political-scientific institute contribute to election manifestos. Because of the suggested involvement of decision-makers in conducting applicable research, Case A seems to fit the co-production model of knowledge exchange.

Hypothesis 1: It is expected that the best fit for Case A is the model of co-production, resulting in risks of technical bias in the creation, selection, and interpretation of evidence.

Model B: Embedding

In the embedding model, researchers are working inside an organization focused on decision-making, or vice versa a decision-maker is working in a research organization (Cvitanovic et al., 2015). As the political-scientific institute is affiliated with the political party, in this research the first option is meant when referring to this model. The produced knowledge is in line with the knowledge needs of the political party because the scientists are close to the knowledge needs of decision-makers, resulting in a stimulation of the use of knowledge in decision-making (Cook et al., 2013). The political-scientific institute thus works for the affiliated political party, by performing research activities in the line with the needs of the political party. Additionally, it is also possible that the political-scientific institute performs research activities based on what the institute thinks is relevant to the political party.

In terms of bias, there is a risk coming from the connectedness between scientists in the political-scientific institutes and the decision-makers. On the one hand, there is a risk of technical bias, as scientists might compromise on their scientific rigour to produce usable outcomes (Cook et al., 2013) in line with the ideology of the political party. The values of the political party then influence the design of the research, resulting in a technical bias in the creation of evidence. Secondly, the models are prone to technical bias in the interpretation of evidence, as the institute might draw scientifically invalid conclusions to produce usable outcomes. Lastly, this model enhances the risk of issue bias in the selection of evidence, as the evidence is selected because of the fit to the political position of the party.

The second political-scientific institute that is analysed, Case B, is selected because of the proximity between the political-scientific institute and its affiliated political party. The website suggests this connectedness by for example developing vision documents for the political party to provide the

politicians with policy perspectives based on their research activities. Therefore, it seems that the political-scientific institute performs actions in response to the needs of the political party.

Hypothesis 2: It is expected that the best fit for Case B is the model of embedding, resulting in a risk of technical bias in the creation and interpretation of evidence and issue bias in the selection of evidence.

Model C: Knowledge broker

The model of knowledge brokering is a model in which a scientist takes part in a research institute and performs actions to transfer their produced evidence to the decision-makers (Cvitanovic et al., 2015). In this model, the political-scientific institute acts as an independent research institute that seeks to provide insights to decision-makers. This independence includes the freedom to determine what to research, but as the political-scientific institute has a political nature, the research activities are focused on a certain ideology. Rather than only sharing the produced evidence with the decision-makers, the knowledge broker also transforms the knowledge towards the knowledge need of the user (Meyer, 2010), making the produced evidence usable to decision-makers.

The independence of the institute enhances the validity of the produced research. Therefore, this model is expected to not be prone to technical bias in the selection or interpretation of evidence. But, due to the nature of political-scientific institutes that embrace a certain ideology, the model is expected to be prone to technical bias in the creation of evidence, by performing research activities aimed at ideology-based outcome variables. Further, it is expected that the distance to the political party allows the knowledge broker to be more critical of the actions of the political party, thus also resulting in brokering knowledge that contradicts the view of the affiliated political party. Therefore, it is expected that issue bias is not enhanced by the political-scientific institute, although the political party itself remains prone to issue bias.

The third political-scientific institute that is analysed, Case C, is selected based on its expected distance to its affiliated political party. This expectation is based on their website which indicated that the political-scientific institute aims to enhance its ideology, rather than researching the knowledge need of the affiliated political party.

Hypothesis 3: It is expected that the best fit for Case C is the model of knowledge brokering, resulting in the risk of technical bias in the creation of evidence.

Model D: Boundary organization

A boundary organization strives to connect scientists and decision-makers (Cvitanovic et al., 2015).). A boundary organization is independent of both scientists and decision-makers and does not perform research activities itself (Cvitanovic et al., 2015). The independence of the boundary organization enhances the accountability of the institute (Cook et al., 201 3). A boundary organization has an intermediary position as it transfers the evidence produced by scientists to decision-makers, as well as transfers the knowledge needs of decision-makers to scientists (Cook et al., 2013). Second, the boundary organization facilitates interaction between scientists and decision-makers by bringing them together and letting them interact directly.

This model of knowledge exchange is prone to technical bias in the creation of evidence when the scientific community is influenced by the values and desired outcomes of decision-makers, as well as it enhances issue bias in the selection of evidence when the decision-makers have limited access to other evidence.

No political-scientific institute seemed to fit the fourth model of knowledge exchange after consulting the websites of the political-scientific institutes. An explanation for this is the connectedness of the political-scientific institute to the political party or a certain ideology, while boundary organizations are acting more neutral.

Hypothesis 4: It is expected that none of the analysed cases has the best fit with the model of boundary organization.

3. Data and methods

Research design

The problem that fuels this research is the lack of knowledge on the nature of political-scientific institutes in The Netherlands, and how these institutes influence decision-making. The emphasis in this research lies on the facilitating role of the institutes to bridge the gap between science and politics. The theory chapter provided insights into types of institutions in the intermediary between science and politics and the forms of bias these models are prone to.

The research design is case study, based on a structured, focused comparison: the cases will be analysed on the same criteria following a coding scheme (structured), focused on the characteristics of the different models of knowledge exchange (George & Bennett, 2005). First, each case is analysed so that the hypotheses related to the cases can be tested. Thereafter, the cases can be compared to create a more general understanding of the bridging function of political-scientific institutes.

Due to time constrains, a trade-off has been made between the number of political-scientific institutes includes in the research design and the depth in which the institutes could be studied. The depth of analysis is considered as most important because the central question asks for an in-depth understanding of the bridging function, rather than a superficial description. Because not all cases could be included, a selection has been made. The goal of the case selection was to select a set of political-scientific institutes with great differences in terms of bridging the gap between science and politics to reflect the diversity in the landscape. The theoretical framework of models of knowledge exchange functioned as a guide in the selection processes to capture the diversity between political-scientific institutes. The political-scientific institutes of rather new political parties were excluded, as new institutes are still developing their way of working while this is already established at longer existing institutes. Thereafter, the websites of the remaining twelve political-scientific institutes were consulted. On their websites, publications, statutes and mission statements were scanned to select a case with a seeming fit for each model of knowledge exchange. Combined, the theory on the models of knowledge exchange, the theory on bias, and the selection of cases resulted in four hypotheses that will be tested in the study.

Data collection

To perform this structured, focused comparison, data from the selected cases are collected. This data includes both documents of the political-scientific institutes as well as an interview with a representative of each case.

The documents of the institutes provide necessary data about the outcomes and actions of the political-scientific institutes. These documents include: (a) publications, (b) statutes and year reports, and (c) the website of the institutes. All three types of documents are publicly available.

Documents alone are not sufficient, because the interaction with politics and science, as well as information about internal processes, is often not described in documents. Therefore, interviews are conducted to get insights into this. All respondents are working at the political-scientific institute for a longer period, resulting in a good understanding of the working of the institute. The interviews were semi-structured to allow follow-up questions to be asked. The interview guide is added in Appendix A. The questions were related to the internal processes, interaction with scientists, and the interaction with decision-makers. The interviews were transcribed and sent to the interviewees to correct the transcripts if necessary. Appendix B provides an overview of analysed data, including a description of the analysed document as well as a description of what parts of the documents are analysed.

Operationalisation

To perform the analysis three concepts need to be operationalised: political-scientific institutes, the gap between science and politics, and bridging. Political-scientific institutes are research institutes that are officially affiliated with political parties and are financed by the government via their affiliated party which receives the subsidy. Because of the affiliation to a political party, the activities of the institutes are related to the ideology of the political party. The gap between science and politics is understood as different relations that scientists and decision-makers have to research and evidence: where the scientific community assigns importance to neutrality, actors in the political practice assign importance to values related to a certain ideology. Therefore, there is a gap between scientists who strive to be independent and value-free and decision-makers who need evidence to inform decisions related to the core values of their ideology. In this research, bridging is concerned with closing this gap via (a) interaction with politicians and scientists, and (b) connecting politicians and scientists. The different types of bridging the gap are understood via the typology of models of knowledge exchange as provided by Cvitanovic et al. (2015).

Research methods

The way political-scientific institutes try to close the gap between science and politics will be analysed according to the models of knowledge exchanged, as defined in the theory chapter. This chapter also includes a part on bias in the making and use of evidence. Both the models of knowledge exchange and the forms of bias are transferred into a coding scheme (tables 1 and 2). These coding schemes are used

to code the collected documents and transcripts of interviews via ATLAS.ti. While coding the documents, notes have been taken about striking and meaningful observations. A report including all quotations and associated codes is downloaded from ATLAS.ti. These quotations and codes are sorted based on case and dimension, to create a visual overview of the findings. Subsequently, for each case, the relevant observations are described according to the codes given in the coding scheme, and the findings for each dimension were interpreted together to typologize the case in terms of the models of knowledge exchange.

Table 1.

Coding scheme of models of knowledge exchange.

Theory ➡ Dimension ⬇	**Co-production**	**Embedding**	**Knowledge broker**	**Boundary organization**
Institutional role	Institute as a place for scientists and decision-makers to co-produce research	Institute is the scientific department of the political party	Institute is a research institute	Institute as the facilitator of interaction between scientists and decision-makers
Relation to political practice	Decision-maker involved in research ensures that research fits knowledge needs AND/OR Decision-maker involved gets informed by evidence via involvement in research	The political party determines the research agenda AND/OR Institute researches what they think is relevant for the political party	Research evidence is translated into usable knowledge for decision-makers	Institute receives the knowledge needs of decision-makers AND/OR Institute provides decision-makers with usable knowledge
Relation to the scientific community	Scientists take part in the co-production of research	Scientists inside an institute that is part of a political party	Scientists inside an institute that is part of an academic environment	Institute translates knowledge need of decision-makers to the scientific community
Actions to connect scientists and politics	Stimulate co-production of research by scientists and decision-makers	Evidence-based advice from scientists is given to the decision-makers	Institute provides knowledge to decision-maker	Institute brings decision-makers and scientists together
Type of publications	Co-produced articles	Evidence-based advisory reports	Scientific publications AND/OR Research findings of the institute translated into usable knowledge	Scientific articles translated into usable knowledge AND/OR Articles about knowledge needs

Table 2.
Coding scheme for bias

Form of bias	Found in	Expresses by
Technical bias	Creation of evidence	Values influence the research design (e.g. values influence the selection of the topic or outcome variables)
	Selection of evidence	Evidence is used because it confirms a hypothesis (e.g. cherry-picking)
	Interpretation of evidence	Evidence is interpreted in such a way that it confirms the desired outcome
Issue bias	Creation of evidence	The availability of data influences the research design (e.g. a dataset determines the topic of study or outcome variables)
	Selection of evidence	Evidence is used because it confirms a political position
	Interpretation of evidence	Interpreting methodological rigour as an indication of relevance.

4. Results

The previous chapter about data and methods includes a description of the data collection and the methods used to analyse the data. This chapter discusses the findings of the data analysis. The chapter is divided into three subchapters about the three different cases. Each subchapter first discusses the observations for each dimension of the models of knowledge exchange, as reflected in the coding scheme. Second, a description of evidence pointing towards bias is given. Lastly, the observations are interpreted to conclude whether the hypothesis is accepted or rejected.

Case A

Dimension 1: the institutional role

The outputs of the political-scientific institute include a journal and separate publications. The separate publications are research-based, advisory documents. The advice is based on the ideology that is embraced by the institute. The year report of the institute indicates that the actors involved in conducting this research are scientists, decision-makers, and employees of the institute. "In the run-up to publication meetings are organized with scientists, decision-makers, and experts" (year report). After the co-producing actors defined their ideas, these are tested to reality via interviews. The outcomes of these interviews are used to revise the advice (work plan). When asking the interviewee about the co-production, the interviewee indicated that actors involved "are not decision-makers necessarily" but are rather those who are experts based on their experience, e.g. "school principals" when the problem is about education. The institute thus facilitates the co-production of research by involving scientists, decision-makers, and experts by experience.

But this is not the only activity of the institute. The institute also aims to "build and sustain thematic and professional knowledge networks where the spheres of politics, societal movements, science, and arts meet" (year report). Therefore, a second role of the institute is to be a "knowledge- and contact broker" (work plan) by facilitating interaction between these spheres, for instance by facilitating interactions between decision-makers and authors of articles or scientists, because there is a need to talk about the topic or because the institute thinks that it is an important theme (interview).

Dimension 2: the relation with politics

Because the data is gathered from the political-scientific institute, the relation to the political practice is merely described from the point of view of the institute. The interviewee made one comment suggesting that decision-makers get informed by involvement in the research activities of the institute: "and because there are scientists in there…. the knowledge that is gained there, he [the decision-maker] can use for

motions in the Chamber". This shows that decision-makers get informed by participating in the co-production of research.

More empirical data exists for the code that the political party influences the research agenda of the institute. For example, the leaders of the political party asked the institute to conduct research to support and supplement their political course (year report); a new research agenda was formulated in consultation with the political party (work plan); and the board of the institute establishes the program of the institute (year report) while some of the board members are part of the affiliated political party (website).

Lastly, the relation with the political practice is visible in the interplay between decision-makers expressing their knowledge needs and the institute providing knowledge accordingly. The work plan indicates that decision-makers indicated their knowledge need, although the interviewee stated that "it does not happen so much". Additionally, the institute provides the needed knowledge or seeks this knowledge elsewhere (work plan).

Dimension 3: the relation with science

As identified earlier, scientists take part in the co-production of research publications, by providing their insights. When discussing their involvement, the interviewee indicated that the scientists help describe reality as it is, as well as provide different policy perspectives. The decision of what policy advice is given is not determined by what is efficient or effective, but is the result of what alternatives fit with the values of the institute and whether experts by experience expect this would work in practice (interview).

The employees of the institute have a relation to science as well as to politics. The relation to politics also becomes clear as the year report indicates that the goal of the institute is "to indicate societal problems, analyse these scientifically from a long term perspective and [ideological] disposition" (year report), as well as indicating that the institute contributes to strengthening the program of the affiliated political party (year report). As the research activities are directed towards a certain ideology and serving a political party, it is expected that the employees of the institute also adhere to this ideology. However, the scientists involved are part of an academic environment, as a lot of them are researchers or professors at universities (website). This holds for both employees, board members, and the editors of the journal.

Dimension 4: connecting scientists and decision-makers

Firstly, the research activities facilitated by the institute in the form of co-productions stimulate interaction between scientists and decision-makers. Next to scientists and decision-makers, experts by experience are also involved in the co-producing research activities (work plan; interview Case A).

The employees in the institute, who are often scientists, also provide advice in addition to their research. The separate publications of the institute often end with advising remarks. But the employees also advise in other ways, for example by providing input for the election program of the affiliated political party (year report), or as input for a bill (interview). The different forms of advice have in common that it consists of political choices. In this sense, the evidence is derived from "research" on what options fit with the values coming from the embraced ideology.

Lastly, the political-scientific institute brings decision-makers and scientists together in a different way than via co-production: for example via gatherings. "The goal of these gatherings is to make insights from science known to our decision-makers, as well as for decision-makers to discuss their plans with these experts" (interview).

Dimension 5: publications

As mentioned, the institute publishes a journal and separate research publications. The latter give advice in the conclusions and are thus evidence-based advisory reports. The actors involved in the publications are decision-makers, scientists, and experts: the separate research publications are thus co-produced, evidence-based advisory reports.

The journal also includes pieces of advice. The interviewee indicated that they stimulate scientists who write for their journal to include advice in their articles.

The institute, lastly, indicates in their workplan that they translate "discussions and reports in the scientific community" to make it usable. This is acknowledged by the interviewee who tells that they first read scientific reports, for example from the WRR, and then think about what to do with the report and how to translate the scientific evidence to ideological politics (interview).

Presence of bias

Ideology plays a big role in the activities of the institute: ideology is the starting point to interpret social problems and fuel the advice given. The research activities of the institute are thus based on these values: the values determine what they will look for when researching the ideal situation. This influence of values is reflected in their publications (e.g. co-produced research report; research report, work plan, and interview).

Contradicting the ideological basis of the research publications, the interviewee says "we do not ask them [the authors] to write something pro-[ideological]" when referring to publications in the journal. They, thus, do not cherry-pick the sources of evidence to confirm a political position in their journal.

Assessing hypothesis 1

Before conducting the research, it was hypothesized that Case A could be understood in terms of the model of co-production. The coding scheme covered several dimensions that would enable systematic assessment of the institute in terms of the available models of knowledge exchange.

The first dimension covers the *institutional role.* Because of this involvement, the institutional role of the institute is at least a big part of facilitating co-production. Another finding in this dimension is the role of the institute in bringing scientists and decision-makers together in other ways, although this is evaluated as a side-effect rather than an institutional role.

The second dimension covers *the relation to politics.* Case A has a close connection to the affiliated political party, reflected in the influence of the political party on the (research) agenda of the political-scientific institute. Also, decision-makers take part in the co-production of research, although it is hard to find data about the code for the co-producing model of knowledge in this dimension, as this would be reflected in data from the decision-maker and this analysis does not include that type of data. There is only a sign of decision-makers that get informed by co-producing, but no empirical evidence.

The third dimension is the *relation to science.* This dimension is harder to assess unambivalently. In terms of the coding scheme, both the co-producing model of knowledge exchange, as well as the embedded model of knowledge exchange fit, because lots of employees, board members, and editors in the institute participate in an academic environment as well as they are expected to adhere to the ideology of the scientific institute.

The fourth dimension is *facilitating interaction between scientists and politics.* This dimension is also understood in terms of both the co-producing and embedded model of knowledge exchange: the research is conducted as co-producing, but the research results in advice from scientists to politicians.

The fifth dimension is about the *publications*. The co-produced, evidence-based advisory report preaches to understanding the publications of the institute in terms of co-producing or embedding.

Added together, there seem to be two models of knowledge exchange dominant in this institute: first, the embedded model of knowledge exchange (present in four dimensions), and second the co-production model of knowledge exchange (present in five dimensions). Because the analysis shows both support for understanding Case A in terms of co-production, as well as it shows elements of the embedding model of knowledge exchange, it is concluded that understanding the bridging function of Case A is more nuanced than one model of knowledge exchange. The data do not reject the hypothesis but are also not evident in supporting the hypothesis. Because there is evidence concerning two models instead of only the hypothesized model, the hypothesis is not accepted.

The institutes were also coded to find risks of bias. Technical bias in the creation, selection and interpretation of evidence was hypothesized. In terms of bias, the analysed documents only show an indication of the influence of values, coming from the embraced ideology, in the creation of evidence. This is in line with the expectation to find technical bias in the creation of evidence. No indications of bias in the selection or interpretation of the evidence are found. A possible explanation for this is that this is hard to determine whether evidence is selected or interpreted for the sake of confirming a hypothesis.

Case B

Dimension 1: the institutional role

The second analysed political-scientific institute publishes a journal, advisory reports, and vision documents that are written collaboratively with decision-makers (interview; website). The interviewee indicated that the institute creates 'guiding groups' to support the institute. "The real work comes from" the employees of the institute who are the scribes of publications, but the scribes get informed by the guiding groups they create "for each subject, for every separate publication" (interview). Such a guiding group "exists of 7 to 11 people, both decision-makers as scientists" (interview; research report) and they come together three or four times to discuss a chapter of a publication (interview). As the guiding groups are discussing these chapters, the political-scientific institute facilitates co-production with scientists and decision-makers. However, the actors in the guiding groups do not write the publications, and thus do not produce evidence. Therefore, the actors in the guiding groups could be seen as sources of evidence informing the research of the author. In this sense, the employees of the institute are the ones producing publications either as a scientific department of the political party or as a research institute. At the same time, creating guiding groups results in interaction between scientists and decision-makers. Although, this interaction is a side-effect rather than a manifestation of facilitating interaction between scientists and decision-makers as the institutional role of the political-scientific institute.

Dimension 2: the relation with politics

Concerning the relation with the political practice, the previous paragraph already identified the presence of decision-makers in the guiding groups. Empirical data is pointing towards a close relation between the political-scientific institute and their affiliated political party, resulting in the political party influencing the institute's agenda. The strongest empirical data suggesting this is the year report including a section about the role of the institute in the political party, stating that they have a "serviceable attitude towards" the political party and that the institute "supports and advises - asked and unasked - national and local [political party]-politicians", as well as "advising the national parliamentary

fractions and party board". Additionally, decision-makers from Parliament and a delegate of the party board have a seat on the board of the political-scientific institute, which is concerned with among other things deciding about actions and publications of the institute (interview).

Dimension 3: the relation with science

The relation to science is twofold. First, employees of the political-scientific institute and the editors of the journal are connected to the academic world. Second, the employees of the political-scientific institute have a network of scientists in the academic world. The coding scheme reflects a distinction between scientists related to academic institutes and scientists that are part of the political party. Concerning the first element of the twofold, data shows that the employees are both: the employees, board, and editors of the journal have both relations to universities as well as to the political party (website). This code is not a dichotomy but exists together.

The second part of the twofold is the network of scientists. As we saw in the section on the first dimension, scientists of other universities take place in guiding groups, which may or may not be understood as co-production. Additionally, some publications include the contributions of scientists concerning a specific topic. The scientists are asked to give insights into their research on the topic, "which is not necessarily the same as that of the political-scientific institute" (book). Asking scientists to write about a specific topic results in the provision of knowledge by scientists based on a knowledge need, although it is unclear whether this is the knowledge need of employees of the institute or from

Dimension 4: connecting science and decision-makers

The institute connects scientists and decision-makers via the earlier discussed guiding groups. The publications of the institute include policy perspectives and background studies, reflecting advice to decision-makers. Defining these policy perspectives could be seen as a non-academic approach to research as it investigates how, based on ideological values, the government should act in response to a societal issue. In this sense, the employees of the institutes are researchers. Thus, the interaction between employees of the institute and decision-makers is also the interaction between 'scientists' and politics. The ideological considerations are the 'evidence' resulting in advice for decision-makers.

Dimension 5: publications

This political-scientific institute publishes two kinds of publications. First, they publish separate publications on policy perspectives, including policy reports, and vision documents which are produced in collaboration with politicians of their affiliated political party (interview). Second, they publish journal articles about current topics. The interviewee explained that the separate publications are often structured similarly: first, the problem is explained, then, the ideological vision of how it should be is

framed, and finally, the required actions are defined. When analysing the separate publications, this structure is found back (research report). The policy reports could be seen as evidence-based advisory reports: rather than a theoretical framework these publications include a framework of values that is used to advise on a policy perspective. Viewing political judgment as evidence, as suggested by Head (2008), the ideological values are the evidence-base that is used to define policy suggestions or advice.

The vision documents are co-produced with members of national politics that are part of their affiliated political party (interview; research report).

The journal includes contributions of scientists and decision-makers, either by writing a piece or by being interviewed. The experience of the decision-makers which is evidence according to Head (2008), as well as the contributions of scientists, are articles in which evidence is translated to usable knowledge, as the texts are short (journal).

Presence of bias

The ideology of the political party plays a central role in the purpose of the political-scientific institute and can be found back in almost all of their published documents (statutes**;** year report; journal; vision document on topic**;** research report). Seeing political judgment as evidence, the research activities of Case B are affected by technical bias. To start, technical bias in the creation of evidence, as only the values fitting the ideology are consulted in their reports (interview; statutes; vision document on topic**;** research report). Second, technical bias in the selection of evidence, as the scientists outside the institute are often selected because of a fit with the ideology (interview), resulting in cherry-picking of scientists to inform the viewpoint institute. This form of cherry-picking is interpreted as technical bias and not as issue bias, as it is about the selection of evidence to confirm the (ideology-based) hypothesis rather than to support a political standpoint. These two things are closely related to each other, but the difference lies in whether the selection of evidence is biased with the risk of internal invalidity of the publication, or whether the bias in the selection of evidence risks the misuse of evidence in a decision-making process. As the selection of scientists to inform the institute contributes to the research function of the institute, this form of bias in the selection of evidence is technical bias.

In terms of issue bias, there is not a topic that is studied more often than other themes.

Hypothesis 2

Before conducting the research, it was hypothesized that Case B could be understood in terms of the model of embedding. The coding scheme covered several dimensions that would enable systematic assessment of the institute in terms of the available models of knowledge exchange.

The first dimension covers the *institutional role*. 'Guiding groups' inform the employees of the institutes. This informing role contrasts with the involvement of actors we saw in Case A: in Case A the insights were translated to outputs, rather than merely informing. The employees of the institutes are scientists in the institute that publish reports, reflecting the institutional role of. Therefore, the first dimension is understood in the terms of the embedded or knowledge broker model of knowledge exchange. This depends on the proximity of the institute to the political party, as reflected in the second dimension.

The second dimension covers *the relation to politics*. The analysis showed a close relation to the political party, resulting in understanding this dimension in terms of the embedded model.

The third dimension is the *relation to science*. It was found that the employees are often both involved in the political party as well as in an academic environment. Therefore, this dimension is understood in both the embedding and knowledge brokering model. There was also an observation concerning asking scientists to write about a certain topic, although it is not known whether this topic is a knowledge need or not, and it included just one observation: this is not enough to draw conclusions.

The fourth dimension is *facilitating interaction between scientists and politics*. It was found that the employees of the institute could be understood as scientists and that they provide advice to decision-makers, which is in line with the embedded model of knowledge exchange

The fifth dimension is about the *publications.* The separate publications are evidence-based advisory documents and thus understood as the embedding model of knowledge exchange, at the same the journal does not provide advice but rather translates evidence from outside the institute to usable knowledge and is therefore understood in terms of a boundary organizations.

Summing this up, the dominant models, in this case, are the embedded model of knowledge exchange (present in three dimensions) and the knowledge brokering model (present in three dimensions). In terms of the hypothesis, this means that the data is inconclusive.

Concerning bias, technical bias in the creation and selection of evidence is found. The hypothesized risk for bias in the interpretation of evidence and issue bias in the selection of evidence is not found.

Case C

Dimension 1: the institutional role

This institute publishes two types of journals and besides separate publications. Working groups are created to assist with the separate publications (year report). The working groups consist of experts outside the institute. Just as in Case B, an employee of the institute is a scribe. The experts are often

scientists (interview), but also decision-makers and experts by experience (year report). It is not clear whether the working group is a source of evidence or a group that co-produces the research.

What is noticed is the research function of the political-scientific institute. With this research they "hope to…contribute to the current debate. Not solely for the [ideological] circle, but also beyond" (book). The interviewee indicated that looking through these ideological lenses is the added value of these institutes compared to bigger scientific institutes such as Clingendael. The institutional role of the political-scientific institute is thus acting as a research institute with an ideological frame. This rubs against the institutional role of conducting research for a political party that adheres to an ideology but is distinct in the goal. The goal of the political-scientific institute is to research the (use of the) ideology and not to serve the political party. This is supported by the interviewee, indicating that it is important "to serve the public interest, and that is done by weighing interest with an ideological value frame" (interview).

Dimension 2: the relation with polics

The political-scientific institute has a relation with decision-makers of their affiliated political party: the interviewee indicated that the institute speaks to decision-makers in the Second Chamber to discover their viewpoint and to get informed about the actions in politics. But sometimes they involve the decision-makers only after the research is done to inform them (interview).

Secondly, it is observed that the research is steered by the development of the ideology "in general and also for the benefit of [the political party]" (book). This indicates that the research activities of the institute, even if not steered by the political party, are relevant to the political party. However, the code for this is a bit more complex, as the code entails that the research is conducted *because* of its relevance to the political party.

Third, the political party has some influence on the research agenda of the institute, as their representatives of the Second Chamber, First Chamber, and the board of the political party are part of the board of the political-scientific institute (statutes). Via this board, they influence the research agenda of the political-scientific institute.

Dimension 3: the relation with science

The relation with science is present in the institute, as employees of the institute, as well as the majority of board members of the institute, are part of an academic environment: they work as researchers or professors at universities (website; interview). The interviewee indicated that the majority of the board members of the institute are recruited from the academic environment. This does not rule out the possibility that they are also connected to the political party.

Dimension 4: connecting scientists and decision-makers

For this dimension, the data analysis of Case C did not result in pieces of data coded with codes in the dimension of connecting scientists and decision-makers. This does not mean that the political-scientific institute performs no effort to connect scientists and decision-makers. But not having codes for this dimension does suggest that the efforts of the institute to connect scientists and decision-makers are not obvious, as obvious actions to form this connection would be coded. An alternative explanation for not finding data for this dimension is that the institute does connect scientists and decision-makers but in a manner that is not fitting the framework of models of knowledge exchange.

In normal circumstances, I would recode the data of this institute to see whether a mistake is made in the coding and to see whether recoding the data would result in observations concerning this dimension. Unfortunately, the research is restricted in time and there is no time to code all data again. Additionally, a drawback of recoding the data is the possibility to code for this dimension based on interpretation because of the willingness to find something, influencing the validity of the findings.

Dimension 5: publications

The separate publications are either publications that serve as background information about the ideology, or that have a political message as they contain advice (interview). The first is coded as scientific publications, the latter as evidence-based advisory reports. The advisory reports include a study of a societal problem "for which ideological policy advice is formulated" (year report). The interviewee underlines this structure of the advisory reports and recalls that the last chapter uses values coming from the ideology to consider how to deal with certain dilemmas.

The publications about ideology are coded as scientific publications as these publications are seen as descriptive research outputs: the interviewee describes these publications as publications about the "historical or political-theoretical background of [the ideology]". This thus does not result in policy advice.

Presence of bias

The ideological starting point of this political-scientific institute also suggests the presence of technical bias in the creation of evidence. This is seen in a document stating that it is a publication "written from an [ideological] perspective", as well as in an edition of one of their journals aiming to answer the questions "what would [broad concept] mean in an [ideological] sense?". Although this results in bias in the creation of evidence, this is also part of what it means to be a political-scientific institute, as captured in a quote of the interviewee: "we are a small institute. What we can add is that we are approaching it from an [ideological] perspective, that we work from [ideological] values".

Hypothesis 3

Before conducting the research, it was hypothesized that Case C could be understood in terms of the model of knowledge brokering. The coding scheme covered several dimensions that would enable systematic assessment of the institute in terms of the available models of knowledge exchange.

The first dimension covers the *institutional role.* The institutional role is seen as producing research. Based on the distance to the political party, as reflected in the second dimension, this role is interpreted in terms of the embedded model (close distance) or knowledge broker model (more independent) of knowledge exchange.

The second dimension covers *the relation to politics.* There is interaction with decision-makers that leads to the decision-makers getting informed, but this is not in the context of co-production. It is also observed that the research is relevant to the political party, but not developed to serve the political party. Therefore, the relation to politics is more independent, thus seen as the knowledge broker model of knowledge exchange. Although there are also clear connections to the political party, suggesting the embedded model of knowledge exchange.

The third dimension is the *relation to science.* It is observed that scientists are present in the institute and strongly relate to the academic environment. There is no data about their relation to the political party. But the presence of the scientists results in concluding that the fourth dimension could either be understood in terms of the embedded or the knowledge broker model of knowledge exchange.

The fourth dimension is *facilitating interaction between scientists and politics*. There was no data coded with codes of this dimension, thus there is no interpretation of this dimension.

The fifth dimension is about the *publications.* The types of publications that are of interest for the fifth dimension include both evidence-based advisory reports and scientific articles. Therefore, the fifth dimension is also understood in terms of the embedding and knowledge broker model of knowledge exchange.

Adding the analyses of those five dimensions, it is hard to draw harsh conclusions about what model of knowledge exchange is the best fit with Case C due to the lack of information in multiple dimensions. The embedded model (found in three dimensions) and knowledge broker model (found in four dimensions) are present most dominantly. For the hypotheses, this means that the data does point towards the expected model, but also point towards another model. Therefore, the hypothesis is rejected.

In terms of bias, the presence of technical bias in the creation of evidence is found, although this seems to be in the nature of the political-scientific institute (as well as in the nature of other political-scientific institutes).

5. Conclusion & discussion

Conclusion

This research aimed to answer the central question: how do political-scientific institutes help bridge the gap between scientific research and political practice? To answer this question, four sub-questions were formulated. The first sub-question was a theoretical question about different types of institutions to understand intermediary organizations between science and politics. This question was answered in the theory chapter, by selecting a framework with models of knowledge exchange that functioned as the base for further analysis.

The second sub-question was also a theoretical question about how the bridging function of the political-scientific institutes enhances bias in evidence-based policymaking. This question is also answered in the theory chapter that explains issue bias and technical bias as well as how this can be found in the different models of knowledge exchange.

The third sub-questions asked how the selected cases of political-scientific institutes in this study can be understood in terms of bridging the gap. This question is answered in the results chapter that systematically analysed all dimensions from the coding scheme for each case, which was eventually evaluated against the hypothesis. Found was that Case A can be understood as a combination of the embedded and co-production models of knowledge exchange. Case B is understood as a combination of the embedded and knowledge broker models of knowledge exchange. And, finally, Case C is understood as a combination of the embedded and knowledge broker models of knowledge exchange. The fourth hypothesis, stating that it is expected that none of the analysed cases is understood as the boundary organization model of knowledge exchange, is accepted.

The fourth sub-question asks for a comparison of the three analysed cases. The general expectation was diversity in understanding the cases. Although this diversity is found, as the analysed cases were understood in terms of different models of knowledge exchange, there are also great similarities: the embedding model of knowledge exchange was found in all cases. This similarity in the presence of the embedding model can be explained by the position of the political-scientific institutes; the political-scientific institutes are affiliated to and receive subsidies via a political party. This explains the proximity and embeddedness of a political party. It can be concluded that the presence of the embedding model of knowledge exchange in all three cases, suggests a close relation to the affiliated political party. Secondly, it is striking that all analysed political-scientific institutes make use of groups consisting of decision-makers, scientists and/or experts that inform or co-produce publications. This manifestation can be explained due to the small size of the institute, resulting in the need to involve actors from outside the institute. Thirdly, the presence of scientists in the institutes is remarkable: all institutes have employees

and board members that are also working in the academic environment. Lastly, it is also striking that all institutes create advisory reports and that these pieces of advice are based on value frames.

To answer the central question: the political-scientific institutes bridge the gap between politics and science by having obvious ties to their affiliated political party and thus to the political practice, related to the embedding model of knowledge exchange. In addition, the political-scientific institutes all have ties to the scientific community by employing scientists. The presence of scientists in the institute who provide advice to the political party and its decision-makers is the way that the political-scientific institutes help to bridge the gap between science and politics. Although this general description hold for all three analysed cases, the processes and outputs of the institutes differ, as reflected in the diversity of models of knowledge exchange found in the analysis.

Discussion

Reflecting on the research process and research design, a few strengths and weaknesses of the research can be defined. To start with the strengths, first, the case selection resulted in capturing the diversity in the landscape of political-scientific institutes. A second strength is the systematic approach using an existing theoretical framework which guided coding and interpreting the data. This results in more reliable results.

A weakness of the study is that the used framework does not seem to capture the bridging function of the political-scientific institutes to the full extent: an example of this is that the journals of the political-scientific institutes are not captured in the codes about publications. The codes for the dimension of *publications* do not apply because the articles are not co-produced, not evidence-based and often do not have outspoken advice. The articles are not scientific publications nor translations of scientific evidence, and the articles do not provide a knowledge need. This shows that not all relevant actions of political-scientific institutes are covered in the results section. The models of knowledge exchange are, of course, focused on knowledge exchange, but do not work for the ideological and political function of the institute. The codes do not reflect the broader notion of evidence as presented by Head (2008)**,** including political judgment and practical experience, but merely reflect the academic notion of evidence as the product of science. During the analysis, it was noticed that bridging the gap is more than stimulating evidence-based policy by enhancing knowledge exchange, as it also includes thinking about societal problems that are captured in scientific evidence to develop a political long-term vision. The interviews and the documents reflect this idea, but due to the manner of analysis, this is not found back in the results and the conclusions of this research. Therefore, the conclusions drawn in this research do provide insights into the way political-scientific institutes contribute to knowledge exchange between science

and politics, which relates to bridging the gap between science and politics, but are not able to grasp the bridging function of the institutes to the full extent.

The theoretical implication of this research is threefold. First, the research adds to our understanding of political-scientific institutes in The Netherlands that have not been the key subject of research earlier. Second, it is found that the used framework does not provide us with a complete understanding of political-scientific institutes, because the political function of the institutes is not reflected in the used framework. This asks for follow-up research that is descriptive to define all actions and interactions of political-scientific institutes. Third, the used methods turned out to be an objective, systematic manner to analyse a subjective institute. Therefore, when follow-up research described the activities of the institutes, an analysis with a broader framework reflecting the political function of the institute could be performed to categorize the institutes.

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Appendices

Appendix A: interview guide

Interviewvraag	**5 minuten**
Inleiden van het interview - Bedanken voor vrijmaken van tijd - Zoals aangegeven zou ik het interview graag opnemen zodat ik het kan transcriberen. - *aanzetten en nogmaals consent vragen* - Het interview is als volgt gestructureerd: eerst zou ik wat vragen willen stellen over jullie publicaties, dan over de onderzoeken die jullie uitvoeren, vervolgens wat vragen over de relatie naar de wetenschap en politieke praktijk -	
Als eerst, de publicaties in	**5 minuten**
Ik zag dat jullie twee soorten publicaties hebben, [naam blad] en losse publicaties. Wat is het verschil?	
Wat is het doel van publicaties in [naam blad]?	
Hoe komen de artikelen in [naam blad] tot stand?	Worden auteurs van artikelen gevraagd om een artikel te schrijven of dragen ze dit zelf aan? Hoe worden onderwerpen bepaald?
Waar wordt naar gekeken om te beoordelen of een artikel in aanmerking komt voor publicatie?	Worden er verschillende dingen in acht genomen bij een artikel van iemand uit de wetenschap of uit de politiek?
Jullie onderzoek	**10 minuten**
Wat verstaan jullie onder het doen van onderzoek?	
Welke stappen gaan er vooraf aan het publiceren van de losse publicaties?	Zijn hier wetenschappers aan verbonden? Zijn hier politici/beleidsmakers aan verbonden?
Wat doen jullie met de resultaten als een onderzoek is afgerond?	*Wordt er contact gezocht met politici? Bestuurders? De partij?*
Relatie tot wetenschap	**3 minuten**
Hoe heeft het instituut contact met wetenschappers buiten het instituut?	
Relatie tot politiek	**3 minuten**
Speelt jullie kennis een duidelijke rol in de politiek?	Zo ja: kunt u voorbeelden noemen?
Tot slot	**3 minuten**
Hoe merkt u dat jullie een liberaal instituut zijn en niet een ander (academisch) instituut?	
Afronding	
Dat was de laatste vraag. Is er nog iets anders wat u kwijt wilt?	
Bedanken, aangeven dat ik transcript opstuur.	

Appendix B: data appendix

Institute	Data source	Description	Use of the document
Case A	Website	Website of the political-scientific institute. Contains information about the institute, its employees, and its publications	All pages of the website were read but not coded. When specific information was needed, for instance about the background of employees, the website
	Year report 2020	Describes the purpose of the institute, the activities of the institute in the past year, the plans for the coming year, and the budget plan	All pages of the document except for the budget were read and coded
	Work plan for 2022	Describes the purpose of the institute and the planned activities for the next year	All pages of the document were read and coded
	Co-produced research report	The research is published in a few parts as text on the website, not as PDF.	The introduction and conclusion was read and coded. The rest was scanned and coded.
	Research report	Research document published on website.	The title page, table of contents, introduction and conclusion were read and coded. The rest of the document was scanned and coded.
	Journal	Journal of the research institute containing including short articles.	The articles were scanned and coded.
	Transcript of interview	Interview with a representative of the political-scientific institute. The interview was recorded, transcribed and sent to the interviewee for review.	The transcript was read and coded.
Case B	Website	Website of the political-scientific institute. Contains information about the institute, its employees, and its publications	All pages of the website were read but not coded. When specific information was needed, for instance about the background of employees, the website
	Statutes	Describes goal of the institute and formal structures in the institute	All pages of the document were read and coded
	Year report 2020	Describes the purpose of the institute, the activities of the institute in the past year, the plans for the coming year, and the budget plan	All pages of the document except for the budget were read and coded
	Research report	Research document published on website.	The title page, table of contents, introduction and conclusion were read and coded. The rest of the document was scanned and coded.
	Vision document on a topic	Document written in collaboration with decision-makers on a specific topic	The title page, table of contents, introduction and conclusion were read and coded. The rest of the document was scanned and coded.
	Long term vision document	Document written about the long term vision on the ideology	The title page, table of contents, introduction and conclusion were read and coded. The rest of the document was scanned and coded.

	Book	Research based book	The title page, table of contents, the first chapter and the last chapter were read and coded. The rest of the document was scanned and coded.
	Journal	Journal of the institute with a specific theme consisting of short articles	The articles were scanned and coded.
	Transcript of interview	Interview with a representative of the political-scientific institute. The interview was recorded, transcribed and sent to the interviewee for review.	The transcript was read and coded.
Case C	Website	Website of the political-scientific institute. Contains information about the institute, its employees, and its publications	All pages of the website were read but not coded. When specific information was needed, for instance about the background of employees, the website
	Statutes	Describes goal of the institute and formal structures in the institute	All pages of the document were read and coded
	Year report 2019	Describes the purpose of the institute, the activities of the institute in the past year, the plans for the coming year, and the budget plan	All pages of the document except for the budget were read and coded
	Year overview 2020	Describes the purpose of the institute and the activities of the past year	All pages of the document were read and coded
	Book	Research-based book published on the website.	The title page, table of contents, introduction and conclusion were read and coded. The rest of the document was scanned and coded.
	Journal type 1	Journal existing of short articles with an overarching theme	All articles in the document were scanned and coded
	Journal type 2	Journal existing of short articles without an overarching theme	All articles in the document were scanned and coded
	Transcript of interview	Interview with a representative of the political-scientific institute. The interview was recorded, transcribed and sent to the interviewee for review.	The transcript was read and coded.