**RESEARCH ARTICLE** 



# Empirical research on policy integration: a review and new directions

Philipp Trein<sup>1</sup> • Manuel Fischer<sup>2</sup> • Martino Maggetti<sup>1</sup> • Francesco Sarti<sup>1</sup>

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### Abstract

Research on policy integration has become an important part of public policy scholarship by analyzing how policymakers create linkages between policy subsystems to deal with complex policy problems. To develop this research program further, it is crucial to know how policy integration relates to broader theoretical and methodological developments in the field of public policy studies. This article reviews the empirical literature on policy integration in the last 10 years focusing on concepts, theories, research design, and methods, drawing upon a sample of 413 articles. Results show no systematic patterns in how these four dimensions combine in policy integration research. Above all, stages and theories of the policy process appear to be incorporated in policy integration studies only to a very limited extent. These findings point to four new directions for policy integration research: (1) Striking a balance between conceptual richness and consolidation regarding "policy integration"; (2) An increased focus on the evaluation of integrated policies; (3) More attention to actor-oriented and explanatory theories; (4) The potential for combining qualitative and quantitative methods of data analysis.

Keywords Policy integration · Policy process · Concepts · Methods · Research agenda

Philipp Trein josefphilipp.trein@unil.ch

> Manuel Fischer Manuel.Fischer@eawag.ch

Martino Maggetti martino.maggetti@unil.ch

Francesco Sarti Francesco.sarti@unil.ch

<sup>1</sup> Institute of Political Studies, University of Lausanne, Géopolis 4126, 1015 Lausanne, Switzerland

<sup>&</sup>lt;sup>2</sup> Research Group PEGO, EAWAG (Swiss Federal Institute of Aquatic Science and Technology), Dübendorf, Switzerland

# Introduction

Scholars and practitioners advocate for strengthening policy integration across subsystems. Policy integration is claimed to be specifically important to tackle complex challenges that require a comprehensive approach, such as biodiversity, climate change, public health, gender equality, and migration (Adelle & Russel, 2013; Daly, 2005; Ingold & Jale, 2020; Jordan & Lenschow, 2010; Metz et al., 2020; Breugel & Scholten, 2017; Varone et al., 2013). The term policy integration has developed into an umbrella concept that can be defined "as a political process that entails the coordination of actors from different policy subsystems, the combination of instruments from different policy sectors, as well as arrangements for their consistent implementation and evaluation to address different dimensions of a complex problem..." (Cejudo & Trein, 2023).

Recently, various reviews have aimed at providing an overview of the state of research on policy integration (Candel & Biesbroek, 2016; Cejudo & Michel, 2017; Tosun & Lang, 2017; Trein et al., 2021a, 2021b). This article complements such existing reviews by focusing on four key elements not covered by previous contributions. Firstly, we examine how empirical research on policy integration relates to the different, alternative concepts used in the literature (Tosun & Lang, 2017). This is important for understanding the specific contribution of each concept, and how policy integration might evolve as a comprehensive research program. Secondly, this article takes a deeper look at how the policy integration literature has focused on different stages of the policy cycle, including policy implementation and evaluation. This is important because we need to know more about which forms of policy integration best work in practice, and which ones fail (Candel, 2017). Thirdly, this article explores how the policy integration literature uses insights from broader theories of the policy process (Weible & Sabatier, 2018), notably theories that incorporate the political aspects of policymaking derived from the structure of subsystems. This is important for improving our understanding of the higher-level processes behind policy integration, in comparison to meso-level theories that focus on policy design and instruments (Candel & Biesbroek, 2016; Cejudo & Michel, 2021). Finally, this article examines different types of methods that could be used to analyze the political aspects of policy integration, beyond the usual qualitative case studies. Knowing more about this aspect will help us learn more about general mechanisms of policy integration, and about factors that foster or hinder policy integration dynamics. The article undertakes a review of the empirical research on policy integration in the last decade, and discusses the alignment and differences between these various research design dimensions—concepts, theory, research design, and methods (Exadaktylos & Radaelli, 2009).

Specifically, the review considers academic journal articles published between 2010 and 2021 and includes 413 articles containing empirical studies of policy integration or related concepts (Tosun & Lang, 2017).<sup>1</sup> These articles are analyzed through a quantitative text analysis of variables related to concepts and theories, as well as through the hand coding of variables linked to research design and methods. Results of the review show no systematic patterns in how different elements of concepts, theories, research design, and methods combine in policy integration research. Furthermore, we observe very little explicit

<sup>&</sup>lt;sup>1</sup> The terms are: comprehensive planning, policy coherence, holistic government, joined-up government, whole-of-government, horizontal governance, holistic governance, policy mainstreaming, and boundary-spanning policy regime.

incorporation of the literature on stages and theories of the policy process into policy integration studies.

Based on this overview, the article proposes four new directions for empirical research in policy integration: (1) Striking a balance between conceptual richness and consolidation; (2) Strengthening the emphasis on policy evaluation; (3) Focusing more on actororiented and explanatory theories; (4) Combining qualitative and quantitative methods of analysis. These suggestions aim at improving the accumulation of knowledge about the causes and consequences of policy programs that cut across policy subsystems with the goal of tackling complex policy challenges. Beyond policy integration, the insights from this study are relevant for studying the question of complexity in public policy (Bolognesi & Nahrath, 2020; Cairney et al., 2019; Pierre & Peters, 2005; Scholten, 2020). This is important especially in the light of the claim that many current policy issues and problems that societies must deal with—such as global health crises, the loss of biodiversity, or climate change—cannot be addressed within a single policy subsystem.

#### Policy integration theories and methods

Public policy research traditionally assumes that policymaking takes place within specialized policy communities, creating so-called policy subsystems (Hill & Varone, 2021; Howlett et al., 2020; Knill & Tosun, 2020). Policy subsystems (alternatively also labelled as policy sectors or policy fields) are subsets of the political system comprising an established set of diverse actors geared towards dealing with specific policy issues. Subsystems are advantageous, as they create clear responsibilities, competencies, and trusted relationships over time. Yet, a subsystem structure also fosters decision-making in separate "silos", and, as a result, interactions across policy subsystems become more difficult. Policy integration is supposed to tackle the difficulties and disadvantages of policymaking within individual and separated subsystems.

Originally, the concept of policy integration was coined in the context of environmental studies, as scholars recognized the importance of integrating environmental protection goals and instruments taking place in different policy subsystems (Briassoulis, 2017; Jordan & Lenschow, 2010; Runhaar et al., 2014; Underdal, 1980). More recently, scholars have expanded the scope of policy integration research beyond environmental protection by using different labels, including for instance work on policy coherence, whole-of-government, policy mainstreaming, and boundary-spanning policy regimes (Tosun & Lang, 2017), as well as the long-standing research on policy coordination from the public administration literature (Peters, 2015). Previous literature reviews on the subject have already pointed out that policy integration is based on a variety of conceptual approaches, focuses on different countries, and policy fields, and has mostly used qualitative research methods (Tosun & Lang, 2017; Trein et al., 2019).

Nevertheless, there are several shortcomings regarding our knowledge about the state of the literature, which call for further efforts to review existing research, notably for the following reasons. *First*, it is important to understand better how empirical research has operationalized different concepts related to policy integration. Tosun and Lang (2017) identify nine alternative concepts to convey the meaning of "policy integration", which emerge from different research traditions (cf. above, Footnote 1). As the different labels suggest, these concepts have somewhat differing foci, e.g., on government entities (holistic government, joined-up government) or on a variety of actors connected through networks

(holistic governance, horizontal governance). In this review, we explore whether empirical research to date has focused on one umbrella concept, or rather has maintained a conceptual diversity.

*Second*, previous reviews (Tosun & Lang, 2017; Trein et al., 2019) have not focused in depth on the role of theory in empirical articles of policy integration. We can infer from the literature that policy integration research builds on policy design and policy instrumentation (Candel & Biesbroek, 2016; Cejudo & Michel, 2017, 2021; Howlett & Rio, 2015; Howlett et al., 2017; Geet et al., 2021) as well as on organizational theory (Catalano et al., 2015; Feiock et al., 2017; Molenveld et al., 2020). Nevertheless the extent to which actorbased theories of the policy process figure in the empirical policy integration research remains understudied (Weible & Sabatier, 2018).

*Third*, researchers of policy integration have also argued that the implementation of integrated policies is a major challenge. The complexity of integrated policies renders implementation difficult, especially if policies span horizontally across policy subsystems and vertically across levels of government (Howlett et al., 2017; Knill et al., 2021; Vince, 2015). Therefore, evaluations of integrated policies have shown that the impact of such policies is difficult to measure (Candel, 2017; Steurer & Clar, 2015) and have indicated that implementation creates epistemological as well as politico-institutional dilemmas (Biesbroek, 2021; Russel et al., 2020; Sjöö & Anne-Charlott, 2021). Thus, we aim at determining how much empirical policy integration research has tackled the evaluation of policy integration.

*Fourth*, with respect to methods, research on policy integration typically relies on individual case studies and qualitative approaches (Ross et al., 2011; Signoretta & Craglia, 2002; Trein et al., 2019). Only the more recent studies (Metz et al., 2020) use more formal, quantitative methods for the analysis of policy integration, for instance, network analysis or regression approaches. Another goal of this review is therefore to determine the prevalence of quantitative methods.

#### Review method

#### Step 1: search of publication database

We started our literature review by searching on the Web of Science database using the following search strings: "Policy integration" OR "Comprehensive planning" OR "Policy coherence" OR "Holistic government" OR "Joined-up government" OR "Whole of government" OR "Horizontal governance" OR "Holistic governance" OR "Policy mainstreaming" OR "Boundary spanning policy regime" (see (Tosun & Lang, 2017). We selected only articles written in English, limited our review to journal articles (thus excluding dissertations, books, and book chapters), and focused on the time span between 2010 and July 2021 because we wanted to focus on the most recent empirical literature. Furthermore, in Web of Science, we restricted our search to the following research areas that we expected to be the most relevant to substantively study the phenomenon of policy integration: Environmental Sciences/Ecology, Public Administration, Public/Environmental/Occupational Health, International Relations, Social Sciences other topics, Water Resources, Health Care Sciences/Services, Geography, Science Technology other topics, Development Studies, Urban Studies, Environmental Studies, Green/Sustainable Science/Technology, Regional/Urban

Planning, Political Science, Economics, Ecology, Health Policy/Service, Law. The search identified a set of 1082 articles.

#### Step 2: selection of empirical articles

In the following step, each of the 1082 articles was examined individually by reading the abstract, the introduction, as well as the methods and the empirical parts. The articles were assessed to determine the extent to which they deal with the phenomenon of policy integration (by explicitly referring to policy integration or synonyms of it). Next, the articles were separated into two groups. The first group of articles contained papers that clearly operationalize and examine policy integration empirically. The second group consisted of articles dealing with policy integration (or synonyms thereof) only in a theoretical manner, or mentioning it in an anecdotal way (i.e., there could be empirical illustrations that stopped short of an empirical analysis of policy integration). For this review, we only retained the articles from the first group (empirical studies). This selection procedure allowed us to identify 423 papers amounting to 39% of the original set of articles. We could retrieve the full texts of 413 articles through an online search.

#### Step 3: manual coding of research design and empirics

We then coded the 413 articles according to different variables related to the choice of research design and methods. Such an approach provided us with insights related to how researchers have empirically analyzed policy integration in different types of studies, notably regarding the state of play concerning methods for policy integration. We coded several binary variables at the level of the different articles. Firstly, we coded a binary variable that distinguished articles based on whether they consist of a (1) single case study or a small-N comparison of policies or countries, or, (2) whether they include medium or large-N comparisons of policies, countries, or individuals. The main challenge of this coding process was the fact that articles sometimes present several case studies without analyzing them in an explicitly comparative approach. When in such a doubt, we coded articles as being large-N comparative. Secondly, we coded five binary variables that depict different methods used to analyze policy integration: (a) qualitative analysis measures whether the paper uses predominantly qualitative instead of quantitative analyses; (b) regression analysis operationalizes whether the paper contains any kind of regression models (they can be simple regression scores in a factor analysis or multivariate regression); (c) qualitative comparative analysis (QCA) measures whether the paper uses QCA analysis (Rihoux & Charles, 2009); (d) social network analysis operationalizes whether the paper contains any kind of network analysis; (e) quantitative text analysis measures if the paper uses a dictionary analysis or topic modelling to understand policy integration. The manual coding was carried out by one person. Afterwards, two of the co-authors reviewed the coding and performed quality checks.

#### Step 4: dictionary analyses of full texts

In a next step, we executed a dictionary analysis of the sample of empirical research articles on policy integration retained from the literature review (N=413) based on the R package 'quanteda' (Benoit et al., 2018) in combination with the packages 'readtext' and

'rio'. Dictionary analysis is a form of quantitative text analysis. It allows word-frequencies in a dataset to be counted for one or more lists of pre-selected words that are grouped into dictionaries. Before conducting this analysis, we pre-processed the data by converting the body text of articles into.txt files. After that we deleted the reference list to avoid biasing the dictionary analysis by including words that are only mentioned in the titles of the cited papers. These analyses allowed us to examine the first three shortcomings in our knowledge related to policy integration: the use of concepts, theories related to the policy process, and the stages of the policy process focused on by the policy integration literature.

In the next step, we created three dictionaries to analyze the framing of the articles regarding concepts related to policy integration as well as stages and theories of the policy process. The first dictionary included the most frequently used *concepts* to describe the policy integration process.<sup>2</sup> Notably, only policy-related aspects of the terms used to find the policy integration literature in the databases were included in the dictionaries because these terms are generally used to describe other processes that not always relate to policy integration. For example, we refer to "policy mainstreaming" instead of "mainstreaming" and only search for "policy integration" and not "integration" only.<sup>3</sup> The second dictionary contained search terms operationalizing theories related to policy design and policy formulation (Howlett et al., 2015) as well as policy process theories (Weible & Sabatier, 2018). We included the following search terms that relate to established concepts and theories in this literature: "policy instruments," "policy goals," "policy design," "policy mix," "policy frame," "advocacy coalition framework," "punctuated equilibrium framework," "policy diffusion," "veto points," "narrative policy framework," "multiple stream framework," "policy entrepreneurs." The third dictionary included terms that measure stages of the policy process. We included the following search terms in the search: "agenda setting", "policy formulation", "policy implementation", "policy evaluation", and "feedback effect".

In the application of the dictionaries, we used 'lowercasing' and 'stemming' techniques to normalize the terms under investigation while accounting for the case-sensitiveness of the R package. For example, to extract "policy integration" we used the terms "Policy Integration", "policy integration", and "Policy integration". Finally, we performed the dictionary-based text analysis. For each search term in the three dictionaries, we created a separate variable with the count of the term at the level of the articles. We merged this dataset with the variables regarding research design, measurement, and methods described in the previous section. To more easily interpret these variables, we re-coded them to contain three categories. The first category (0) entails that the term is not at all mentioned in the text. The second category (1) is operationalized if the term appears one, two, or three times in the text. The third category measures (2) whether the term is mentioned more than three times in the text. The summary statistics of all variables can be found in the appendix of the article (Table S1, Appendix).

<sup>&</sup>lt;sup>2</sup> We included the following search terms into the quantitative text analysis: policy integration, policy coordination, policy coherence, joined-up government, whole of government, horizontal governance, holistic governance, policy mainstreaming, boundary-spanning policy regime, and comprehensive planning.

<sup>&</sup>lt;sup>3</sup> E.g., "integration" can refer to the incorporation of migrants; mainstreaming can refer to "gender mainstreaming", etc.

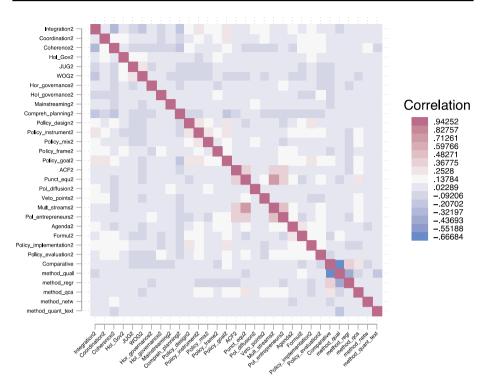


Fig. 1 Correlation between all variables

# **Results of the review**

We now turn to a presentation of our results. First, we present the correlation between all the different variables that we coded for our analysis to look for systematic patterns. Second, we focus on the usage of different concepts related to policy integration. Third, we check the extent to which the different stages of the policy process are mentioned in the articles. Fourth, we outline the theoretical concepts that authors have referred to in the papers. Fifth, we focus on new methods used in the policy integration literature.

# No clear pattern of theory and research design in empirical policy integration research

A heatmap based on correlations between all variables (Fig. 1) reveals that there are few strong correlations between individual variables. This holds especially true for the variables related to concepts, theories, and the stages of the policy process. However, there seem to be some exceptions to this finding insofar as empirical research using the term policy integration is slightly correlated with the usage of the concepts of policy mixes and policy instruments. Moreover, some theories of the policy process appear to be used in the same articles but not together with the concepts from the policy design literature (Fig. 1). For example, references to the Advocacy Coalition Framework correlate with Punctuated Equilibrium (0.37) and Multiple Streams (0.4). References to Punctuated Equilibrium

correlate with Multiple Streams (0.66) and Policy Entrepreneurship (0.38). These correlations are not very strong, but the coefficients are still higher than those indicating correlation between theories of the policy process and concepts used for the analysis of policy integration, such policy frames, policy goals and policy instruments (Fig. 1). In addition, the strongly negative correlation between comparative analysis and qualitative methods, and a positive correlation between regression analysis and comparative designs were largely expected.

We need to interpret these patterns of correlation with care. Correlations are low because most values in the data are "0", as many of the elements that we were looking for—specific references to stages of the policy process, or to specific theories of the policy process—are rare in the literature on policy integration. This becomes clear by looking at the tables with the descriptive statistics presented in the appendix of this article, as well as from the figures in the next section. For example, regarding methods, a small number of articles relies on other approaches than qualitative methods, resulting in very few "1" entries for the respective variables (Table S1, Appendix). In the following, we analyze our results pertaining to concepts, theories, research design and methods used in empirical research on policy integration in greater depth.

The main takeaway from this finding is that the coherence of the theoretical ambition of the reviewed papers is limited. Consequently, there is no clear pattern concerning different types of research design and methods employed in these articles.

#### Concepts related to policy integration

Figure 2 shows to what degree the different concepts mentioned in this article are used in the full texts of the articles included in our review. We focus on the nine most prominent concepts retrieved in our dictionary analysis. The concept of policy integration is clearly the most widespread in the literature. In more than half of our sample, it appears either up to three times (20% of the articles), or even more often (42%). Policy coherence is the second most used concept. About 22% of the papers refer to it more than three times. The heatmap in Fig. 1 suggests a slightly negative correlation between these two most prominent concepts, suggesting that they are used as alternative in different articles. Policy coordination and whole-of-government are also used quite often, as they appear 1-3times in 16% and 12%, respectively, of the articles, and more than three times in 4% and 6%, respectively, of the articles. Other concepts are mobilized much less frequently and in quite specific subfields, such as comprehensive planning in urban studies (Sandström et al., 2006) (Fig. 2).

While these terms overlap conceptually to a considerable extent, they also account for differences between the empirical objects they analyze. For instance, policy integration typically refers to cross-cutting policy programs that include transversal policy goals and policy instruments (Cejudo & Michel, 2021; Jordan & Lenschow, 2010), whereas whole-of-government mostly focuses on horizontal coordination between public administrations. For example, researchers have analyzed the link between whole-of-government approaches and policy capacity in Australian health policy (Hughes et al., 2015). At the same time, scholars have applied the term policy mainstreaming to analyze social learning processes for disaster reduction in ecosystems (Murti et al., 2020).

Overall, however, Fig. 2 confirms the insight by Tosun and Lang (2017) who underlined that policy integration is a functional equivalent for other concepts that denote a

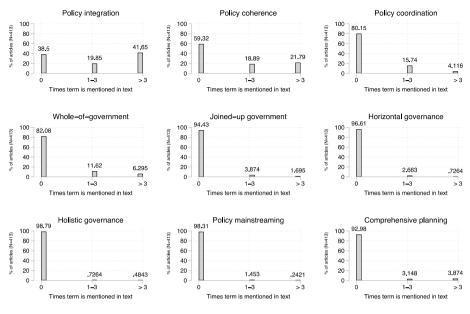


Fig. 2 Concepts of policy integration

similar phenomenon. We interpret our finding as showing that empirical research of the last 10 years increasingly converges towards the term policy integration rather than concepts which were coined earlier (e.g., joined-up government (6, 2004) or whole-of-government (Christensen & Lægreid, 2007).

#### Limited focus on policy evaluation

Regarding the analytical focus of different articles, our findings show that in most of the research on policy integration and related concepts, no specific stages of the policy process are mentioned. The stage of the policy process that most strongly connects to the literature on policy integration is "policy implementation" (mentioned 1–3 times in 21% of the articles, and more than three times in only 5% of the articles). For example, scholars have assessed how policy coherence could be improved to achieve a low-carbon economy. In this context, they have referred to "policy implementation" and underlined elements that are important for implementation (Papadopoulou et al., 2020). Another example is the analysis of policy coherence in the implementation of EU directives, such as in the case of water policy in Sweden (Söderberg, 2016). The literature on policy integration explicitly refers to the stages of policy formulation and agenda setting to a lesser extent. Finally, "policy evaluation" and "feedback effects" are even far less common (Fig. 3).

This result is interesting for policy integration research. Scholars have pointed out that the successful implementation of integrated policies is a major challenge, because integrating policy goals and instruments from different policy subsystems into a common policy program does not necessarily resolve the coordination problems at the level of implementing agencies (Gerber et al., 2009; Vince, 2015). Notably, Vince (2015) has pointed out that it is important to not forget that policy integration does not automatically imply policy success. Concerning evaluation in policy integration research, scholars have dealt with

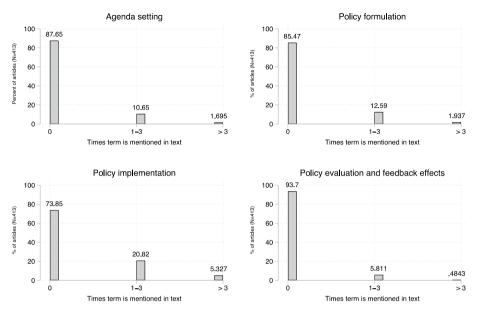


Fig. 3 Stages of the policy process and policy integration

measurement of policy integration 'outcomes' and sought to develop concepts that can facilitate such assessments. For example, (Candel, 2017) distinguishes between 'programmatic' and 'political' evaluation of integrated policies. Other contributions are more empirically oriented. In an empirical study, (Sjöö & Anne-Charlott, 2021) investigate challenges related to "integrated evaluation" of gender mainstreaming in Sweden. The authors reflect on the importance of institutional capacity and interdisciplinary expertise to overcome such barriers through policy integration. Yet another set of publications are concerned with the identification or/and the testing of criteria of evaluation for integrated programs, for example regarding climate policy integration (Dupont & Sebastian, 2012; Kettner & Kletzan-Slamanig, 2020; Rietig, 2013) and land planning (Floress et al., 2009; Jun & Conroy, 2013). Our review underlines that the problem of policy integration research is not necessarily a lack of focus on implementation, but rather that we need more knowledge about the evaluation of such policies, as well as their feedback effects (Fig. 3).

#### Focus on policy instruments

In the next step, we analyzed the focus on policy process theories that can be found in different studies in the policy integration literature. The main results of our analysis demonstrate that, again, key concepts related to the broader theories of the policy process do not appear very often in empirical articles on policy integration. The concepts of "policy instruments," "policy goals," and "policy design" (top row of Fig. 4) are the ones that are most strongly referred to in policy integration studies. The expressions "policy instruments" and "policy goals" appear up to three times in 21% and 25% of the articles, respectively. For example, scholars have focused on "policy goals" concerning policy integration in forest policy in different European countries, such as France, Germany, the Netherlands, and Sweden (Sotirov & Storch, 2018). Although these theoretical concepts are used more

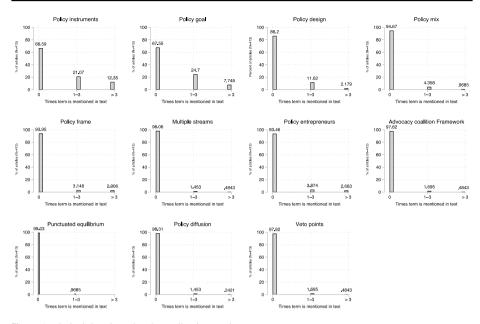


Fig. 4 Analytical theories related to policy integration

often in relation to policy integration, we cannot identify a clear bias towards policy design in the literature. In such a case there would have been a stronger correlation between policy design and policy integration (cf. Fig. 2 above).

Nevertheless, our review reveals that few articles dealing with policy integration systematically include policy process theories. Analytical approaches such as the Advocacy Coalition Framework (Jenkins-Smith et al., 2018), the Punctuated Equilibrium Approach (Baumgartner et al., 2018), and the Veto Player Theory (Ganghof, 2003), appear in only about 1% of the articles. One exception to the rare application of these theories is a piece on policy coordination regarding forestry and environmental protection in Slovakia that refers to the Advocacy Coalition Framework (Sarvašová et al., 2013). The term "punctuated equilibrium" and "veto player/points" are rarely used in the set of articles reviewed. We could not identify a single empirical article that systematically applies these theories ("punctuated equilibrium" is mentioned at most 3 times and veto players 6 times). The main takeaway of this figure is therefore that prominent theories of the policy process—such as the "advocacy coalition" framework, "punctuated equilibrium," "policy diffusion," "veto points"—are not *explicitly* incorporated into policy integration studies (Fig. 4).

The currently almost non-existent combination of policy integration literature with policy process theories is somewhat understandable. First, many pieces of research on policy integration have a descriptive scope, and do not explicitly apply an explanatory model. Second, policy integration research typically adopts an institutional or organizational perspective that does not include a discussion of micro-foundations based on actor-related factors and mechanisms, relying for instance on ideational frameworks. Third, many policy process theories have an explicit focus on a given sector or subsystem, thus relegating cross-sectoral dynamics to "external factors", or ignoring them altogether.

#### Mostly qualitative case studies

Regarding the methods of analysis used in different papers, the results of our review show that qualitative methods dominate the empirical policy integration literature (over 82% of the papers in our sample use qualitative methods) and most studies focus on a single country (approx. 85%). These findings are in line with other review articles on the topic, indicating the validity of our results (Trein et al., 2019). Nevertheless, the results also suggests that the policy integration literature is slowly moving towards quantitative and formal qualitative comparative methods. In our sample, we could identify 26 articles that use regression analysis, seven articles that use Social Network Analysis or Discourse Network Analysis, three articles that employ QCA, and two papers that use quantitative text analysis.

Table 1 illustrates how scholars have applied more formal methods to subjects that are relevant for policy integration. Notably, researchers have used regression analysis to assess the perception of elites regarding the practice of policy coordination (Christensen et al., 2019). At the macro-level, scholars have analyzed what determines the integration of sustainable consumption into national policies (Koide & Akenji, 2017). By using network analysis, authors have assessed policy integration in water policy through the study of how actors and legal documents combine different issues related to flood protection, and how both types of integration correspond (Metz et al., 2020). Scholars have also used QCA analysis to examine necessary conditions for policy integration reforms. This work has demonstrated the importance of problem pressure as a necessary condition for such reforms (Trein et al., 2021a, b). In a more recent strand of research, scholars have begun to assess climate policy integration by using machine learning models that compare whether legislative texts contain policy goals related to climate change (Biesbroek et al., 2020). In another example, researchers have studied how the issue of biodiversity is integrated into a set of policy sectors in Swiss politics over time. Such automated text analysis has relied on a large set of policy documents and found that biodiversity integration tends to occur in cycles, without observing a general increase over time (Reber, et al., 2022).

#### Four new directions for empirical policy integration research

What are the implications of these findings for the research agenda that lies ahead? How can future research build on the findings from this review? These are important questions that require an answer in order to turn the insights from this study into practical suggestions. In the following, we propose four new directions for empirical policy integration research, which emanate from our review of the policy integration literature.

#### New direction 1: striking a balance between conceptual richness and consolidation

The first new direction for future research refers to the concepts used in empirical studies dealing with policy integration. Figure 2 shows to what degree the different concepts mentioned in this article are used in the full texts of the articles included in our review. Thus, our suggestion in the light of these findings is to enhance concept formation and pursue two goals, which may imply a trade-off. On the one hand, the state of the literature warrants streamlining and harmonizing this conceptual diversity to enable crossfertilization across different research niches and to favor knowledge accumulation about largely similar empirical phenomena across different policy fields. This approach is

	Examples
Non-qualitative analyses of policy integration	Analyses
Table 1	Method

nomati		
Regression analysis	Determinants of policy change at the country level Perception of coordination by elites	e.g.: Christensen et al. (2019), Koide and Akenji (2017)
Network analysis	Ties between policy subsystems (issues) and actors	e.g.: Metz et al. (2020), Schmitz and Eimer (2020)
Qualitative comparative analysis (QCA)	Necessary and sufficient conditions for policy integration	e.g.: Baulenas and Sotirov (2020), Careja (2011), Trein et al. (2021a, b)
Quantitative text analysis	Integration of policy goals into documents	e.g.: (Biesbroek et al. 2020), Isoaho et al. (2019), Reber et al. (2022)

especially useful for research projects comparing different policy problems and/or countries. On the other hand, it would be worth preserving the above-mentioned conceptual richness, which enhances conceptual accuracy and contributes to a nuanced, multifaceted understanding of the phenomenon under investigation. Among others, such a multifaceted understanding of policy integration could lead to an improved appreciation of synergies and trade-offs between different empirical phenomena related to policy integration (e.g., integration through laws or through actors, see, e.g., (Metz et al., 2020). This type of conceptual development is especially pertinent for in-depth case studies. Overall, the conceptual apparatus should be able to serve these two analytical goals, but it should be clearer how the different conceptual elements relate to each other in the study of policy integration.

#### New direction 2: increase the focus on policy evaluation

Figure 3 has indicated an absence of references related to policy evaluation in existing empirical articles. This finding calls for more systematic research on the outcomes of policy integration, and on the reasons for potential unintended effects. Four main issues stand out as crucial directions for future research. First, at a policy level, there is a need for a systematic assessment of whether policy integration reforms achieve the aims they were designed for, and of the reasons why they either achieve those aims, or fail to do so. Second, at a system level, it would be important to examine the extent to which policy integration brings into being more coherent and comprehensive governance arrangements, and to assess whether the conflict between policy subsystems diminishes because of such reforms. Third, a focus on feedback effects may help understand the dynamics of policy integration over time, and the potential unintended effects but also self-reinforcing or self-undermining tendencies. How and why might policy integration programs influence the next rounds of policymaking in the affected policy areas remains, indeed, an unknown question. Fourth, we suggest the adoption of an explicit research focus on the many obstacles to policy integration in the context of other mechanisms and forces driving the evolution of political institutions or the behavior of political actors. There are many good reasons why policymakers do care about other things than policy integration across policy sectors in the first place. Other integration challenges, e.g., across levels of government or across administrative boundaries between sub-states, might be more important to policymakers. Furthermore, and probably more importantly, policymakers might not see the need to integrate policies across sectors or might not have the capacity to do so. We should not forget that actors involved in politics primarily defend substantive individual goals and objectives within a specific specialized sector. Studying policy integration as one among several goals of policymakers and thinking more explicitly about trade-offs between different goals will help us understand outcomes, failures, and unintended effects of policy integration attempts.

#### New direction 3: focus on actor-oriented and explanatory theories

Figure 4 has indicated the limited reference to actor-oriented theories of the policy process in policy integration scholarship. Against this background, further research could consider operationalizing more explicitly an explanatory perspective geared towards the political role of actors in policy integration processes (see, e.g., Cejudo & Trein, 2023). Such an approach would help us to better identify conditions under which different types of political actors, in specific stages of the policy process, could foster the integration of sectoral policies. It would also potentially provide us with a more extensive and realistic overview of the barriers that often impede effective policy integration at different stages of the policy process. Finally, it could illuminate how the conflict between actors belonging to different policy subsystems (with diverging values, interests, and routines) plays out along the different dimensions of the policy integration process.

#### New direction 4: combine qualitative and formalized methods

The fourth new direction for empirical research on policy integration concerns research design and methods. Our review has shown that most research on policy integration relies on qualitative case study approaches (see also (Trein et al., 2019)). Such approaches have advantages in terms of identifying detailed developments of policy integration over time and related causal mechanisms. Now that various pieces of review of the literature on policy integration have been published, providing us with a broad overview of the main factors, elements, and mechanisms at play, we encourage researchers to continue adopting non-qualitative and more formalized methods, and even more on multi-method approaches. Doing so should not replace the identification of detailed mechanisms in individual cases, but rather would allow testing some of the main mechanisms around policy integration more strongly for external validity and generalizability across different contexts. This will come with the need to simplify and rely on assumptions, as many situations of policy integration are not comparable, as they imply different political institutions, different actors, different policy sectors, and so on. Research on policy integration should refine itself through an ongoing conversation between different approaches, as it were. Such a dialogue can most likely not happen within one single piece of research, but rather at the level of the research program, for instance by the means of ex-post systematic reviews and meta-analyses.

Therefore, we argue that future research should aim to better combine qualitative and more formalized, quantitative methods. Such an approach could bolster some of the abovementioned new directions, for example by focusing on measurements that consider an actor perspective to link policy integration to theories of the policy process.

# Conclusion

In the context of the increasing importance of policy integration as a part of public policy research (Tosun & Lang, 2017), this article provides a comprehensive review of the literature on policy integration and related terms. The review focuses on different key dimensions of empirical research, including concepts, theories, research design, and methods. The main goal of this article is to explore if some systematic patterns have emerged across these key dimensions, in the sense that a specific concept of policy integration could be associated with a given theoretical focus, and related methodological approaches. Yet, our results suggest that these dimensions do not form consistent and clear patterns. To a large degree, this is due to the rather sparse use of some of these elements in the literature on policy integration. Many "alternative" concepts to policy integration exist in given

subniches but are not widely used, there is little focus on broader theories of the policy process, and there is limited (albeit increasing) reliance on methods other than qualitative case studies. Such a situation, however, also emphasizes the great potential that lies in the more consolidated and intersubjective use of thus far under-represented conceptual, theoretical, and methodological elements in relation to policy integration research.

More specifically, the individual analyses of descriptive results of the four dimensions have led us to suggest four new directions for policy integration research: First, we encourage researchers to improve the balance conceptual richness and consolidation concerning policy integration. In other words, we encourage scholars to find concepts that theorize different nuances of various aspects of policy integration but also allow for rigorous comparative analysis of different stages of the policy process. Second, we highlight the importance of increasing the focus of policy integration research on the evaluation of integrated policies and on the reasons for policy (integration) failure—a topic understudied to date. Third, based on what we find in our review, we suggest that more attention to actor-oriented and explanatory theories would be beneficial for policy integration research. Fourth, we suggest that combining qualitative and quantitative methods of data analysis would allow pushing policy integration research forward. These directions could guide future research on policy integration towards a better understanding of policy integration and its role in policymaking. This is paramount because policy integration is considered to be particularly important to tackle increasingly complex issues society has to deal with, such as the loss of biodiversity, climate change, global health crises, or-most generally-a transition towards sustainable development (Díaz et al., 2018; Messerli et al., 2019).

The new directions we suggest here can ideally be developed in a synergetic manner, that is, advances on one direction might also trigger advances in another. For example, relying on methods of network analysis could in turn enable a stronger focus on actors and their activities, which comprise the centerpiece of many policy process theories. Alternatively, working with automated text analysis could help analyzing relevant documents linked to implementation and evaluation of policy integration reforms across different political systems. Finally, the reliance on comparative methods would likely push researchers to think more about the context conditions that facilitate or hinder given types of policy integration, which would again allow for a link to policy process theories. These are just some examples of how the combination of the different new directions for policy research could lead to exciting new research questions, as well as highly relevant findings.

The review presented in this article has a few limitations. To begin with, we acknowledge that our coding—and related simple counting of key words—based on automated text analysis only provides a first step towards recognizing patterns, as well as gaps in the literature. A more in-depth understanding would require a full reading and hand coding of the relevant articles. Yet, it is important to note that the link between different theories is mostly made by relying on the relevant key concepts. These are recognized by the automated text analysis, and the absence of key concepts likely hampers the integration of different strands of literature, e.g., on policy integration and on punctuated equilibrium. Second, there are other potentially interesting variables with respect to methods, such as the empirical sources used for assessing policy integration (surveys, documents, interviews, budgets, etc.), the exact measurement of policy integration, or the "loci" of policy integration (e.g., regions, policy sectors, and levels of government). Most likely, a meaningful assessment of these additional variables would require further hand coding of the relevant articles, which have been indeed covered by other reviews (Trein et al., 2019). Finally, we assume that the lessons about theory and research design that we derive from this research could be valid for different policy problems, sectors, countries, and levels of government, and that they can (and should) be addressed based on different empirical sources.

Overall, the intention of this article is not to suggest that scholars should pursue one particular type of research in terms of conceptual foundations, theoretical anchoring, and methodological orientation of their work. Rather, we endeavor to illustrate some specific new directions for research that emerge from the current state of the empirical literature on the topic. We argue that pushing research in these new directions, in a pluralist way, could help us move ahead our shared knowledge on policy integration processes.

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## Declarations

Conflict of interest The authors do not have any conflict of interest.

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