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Policy Strategies for Public–Private Partnership on Broadband Infrastructure: A Systematic Literature Review

ABSTRACT: *This study aims to analyze the development of research themes in the public–private partnership (PPP) project policy strategy for broadband infrastructure from 2000 to 2021 and identify the most popular research topics. Systematic literature review (SLR) of 927 Google Scholar and Scopus publications, followed by bibliometric analysis, co-occurrence keywords, and in-depth qualitative approaches with content analysis, was performed. Articles are classified based on the source of publication, year of publication, country of origin, journal ranking, and research theme. This study finds that previous studies discussed the development of policy strategies and regulatory theory. Most articles were published in journals indexed under Q1, while only one was published under Q4. This study highlights the importance of government initiatives in developing broadband infrastructure through PPPs. The findings show that the policy strategy, legal framework, and regulations influence the success of PPP schemes. Private sector involvement can reduce costs and provide access to resources and expertise the public sector may still need to gain. This study suggests that policymakers encourage the participation of the private sector in broadband infrastructure projects and provide incentives for them, such as public funding. This study benefits governments or policymakers who intend to implement the PPP scheme to deliver public services.*

KEYWORDS: broadband infrastructure, government initiatives, policy strategy, public–private partnership

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INTRODUCTION

Background on the Importance of Broadband Infrastructure

To broaden connectivity and increase economic growth, broadband infrastructure is increasingly being developed worldwide. An increase in the penetration of information and communication technology (ICT) will reduce the gap in universal access on the one hand and on the other hand will support the digital platform market which accelerate economy and productivity (Ferro et al., 2007) as well as increase access to knowledge and education (Czernich et al., 2011). Internet access is currently becoming a universal right that supports daily activities (Adisti, 2017; Kusharjanto & Kim, 2011). It refers to changes brought by the use of digital technology, which generates processes and shares and transfers data and includes telecommunications networks, computer technology, and software engineering (Adamsky, 2017). Therefore, scholars view artificial intelligence as a vital tool for accelerating digital transformation (Khalifa et al., 2021).

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Therefore, based on the current situation, developed and developing countries aim to provide it as a public service (Huang et al., 2022). As ICT is part of the public sector, it enhances the growth of the economy in a country (Koutroumpis, 2009; Nguyen et al., 2022). The evolution of mobile technology has exerted an impact on all public areas, and rapid changes in mobile technology have resulted in the development of new capabilities in e-government and e-participation (Mishra, 2012; Vyas-Doorgapersad, 2022). Mobile phone and Internet connectivity have spawned the phenomenon of e-government, which aided in the transformation of public services (Burksiene et al., 2019).

The majority of countries organized the telecommunication sector in public/government agencies until the final decades of the 20th century (Hodge & Greve, 2010). This scheme was implemented to protect and guarantee its sector. People use digital media and the Internet for daily activities and remaining connected through digital devices will continue with the advance in technology (Bembe et al., 2019; Delponte et al., 2015). To improve the ICT infrastructure, public–private partnership (PPP) scheme is a significant arrangement for public service delivery through the development of public infrastructure in the current situation (Bohlin, 2009; Falch & Henten, 2010; Oswald et al., 2011).

Overview of PPP in Broadband Infrastructure

PPPs can be characterized as a long-term contract arrangement based on cooperation between a public authority and a private consortium with the objective of providing a mechanism for developing the public service (Fredebeul-Krein & Knoben, 2010). PPPs are agreements between a public agency and a private sector entity (Niu et al., 2022). These partnerships are used to finance, build, and operate projects for the public good. In the case of broadband infrastructure, PPPs can be used to expand access to high-speed Internet in underserved areas (Gerli et al., 2020; Niu et al., 2022; Wan et al., 2021). The public sector typically provides funding for the project, while the private sector provides expertise and resources (Valentín-Sívico et al., 2022). The public sector may also provide incentives such as tax breaks or subsidies to encourage private sector involvement (Steelyana, 2021). The private sector may also be responsible for building and maintaining the infrastructure (Zhou et al., 2022).

PPPs can be beneficial for both parties (Cordova & Stanley, 2021). The public sector can benefit from the private sector's expertise and resources, while the private sector can benefit from the public sector's incentives and access to public funds (Niu et al., 2022; Wan et al., 2021). These partnerships can also help to reduce the cost of broadband infrastructure, as the private sector can often build and maintain infrastructure more efficiently than the public sector (Valentín-Sívico et al., 2022). Overall, PPPs can be a useful tool for expanding access to broadband infrastructure in underserved areas (Gerli et al., 2020; Steelyana, 2021). They can help to reduce costs and provide access to resources and expertise that the public sector may not have (Valentín-Sívico et al., 2022; Zhou et al., 2022).

Challenges and Opportunity of PPPs in Broadband Infrastructure

In PPP projects, certain critical factors of the project are valuable strategies for better implementation such as the sharing of risks and capacity (Cheung et al., 2009). In recent years, scholars observe a steady growth in the number of PPP projects for broadband infrastructure (Gruber et al., 2014). One of the key challenges for the establishment of PPP schemes in many countries lies in the legal and regulatory frameworks. They refer to the basic platform to support the implementation of PPPs (Fife & Hosman, 2007). They provide direction for policymakers in considering certain strategies for procurement (Nucciarelli et al., 2010).

Purpose of the Study and Research Question

With the increase in the research on PPP projects in broadband infrastructure (Steelyana, 2021), this study conducts a literature review which is considered essential to determine the development of research themes in the policy strategy from 2000 to 2020 for countries in Europe, Asia, Pacific, Australia, and the United States (Xiao & Watson, 2019). Moreover, a literature review can identify the topics of research conducted in previous years and determine the direction for future research as needed (Okoli & Schabram, 2012).

The research gap in the field of policy strategies for PPP in broadband infrastructure can be determined through a systematic review and bibliometric analysis of the existing literature (Gerli et al., 2020; Niu et al., 2022). This may reveal areas where there is

a lack of research or areas where the current research is inconclusive or has limitations (Wan et al., 2021; Zhou et al., 2022). The research gap may include a lack of studies on the effectiveness of specific policy strategies in different regions or countries (Valentín-Sívico et al., 2022). There is a need to better understand the role of stakeholders in PPP in broadband (Cordova & Stanley, 2021; Tlili et al., 2022). These gaps can be used to guide future research and inform policymakers on areas that need further attention and investment (Fan et al., 2020).

It may lead to the research question for this study as what are the most effective policy strategies for promoting PPPs in broadband infrastructure development and how do these strategies compare across different countries and regions?

LITERATURE REVIEW

Overview of Policy Strategies for PPP on Broadband Infrastructure

An overview of the policy strategies for successful PPPs regarding broadband infrastructure includes the provision of incentives and support for private companies (Fan et al., 2020; Tlili et al., 2022), the implementation of net neutrality regulations, and the introduction of spectrum auctions (Goyal & Kumar, 2021). Additionally, governments may also provide financial support to build public infrastructure in order to facilitate the deployment of broadband services (Xu et al., 2021). These strategies are designed to reduce barriers to entry for private companies, stimulate investment in broadband infrastructure, and ensure equitable access to broadband services (P. Wang & Tian, 2021). Additionally, governments can also implement regulations that ensure that private companies are applying ethical and responsible practices when offering broadband services (Fan et al., 2020; Goyal & Kumar, 2021; Xu et al., 2021).

This study provided an effective method for thematically mapping out articles, which enabled a holistic view of this field. Government initiatives through policy strategy could promote the development of broadband infrastructure in their respective ways (Tlili et al., 2022; Xu et al., 2021). The review of the government initiative theme highlights evidence of significant contributions to the understanding of policy strategies for the development of broadband infrastructure (Cordova & Stanley, 2021; Goyal & Kumar, 2021). In the majority of cases, the most effective government policies are those that intend to use the potential of the investment of the private sector to promote broadband development (P. Wang & Tian, 2021; Xu et al., 2021).

Based on the review from previous papers and referred framework as presented in the chapter entitled Policy Approach in the *Broadband Strategies Handbook by the World Bank* (2012), the government or government initiatives play a role in broadband development through three major areas: (a) legal, regulatory policy reform, (b) specific policies and plans included in national broadband plan and policies for supply and demand (policies that promote demand and encourage uptake), and (c) policies that support private sector investment (Goyal & Kumar, 2021; P. Wang & Tian, 2021; Xu et al., 2021).

Bibliometric Analysis of the Literature Review of the Previous Literature

The current study is built on prior research regarding the body of knowledge related to government initiatives in PPP (Rejeb et al., 2022). The establishment of government policies for the PPP scheme may aid in the development of broadband infrastructure. One essential element in accelerating a fixed broadband penetration is the legal and regulatory frameworks (Yuliana & Asvial, 2019). The need for certainty regulations can address the lack of support on the regulatory framework for broadband infrastructure (B. E. Howell & Potgieter, 2020). In certain conditions, it makes the implementation of integrated broadband relatively challenging, and the less certain of the regulatory framework will be a key barrier to the success of PPP implementation (Ariyanti & Yuniarti, 2020). Broadband penetration significantly impacts economic development, healthcare, and quality of life in society (Steelyana, 2021). Technological innovation, especially the development of digital technology, is increasingly presented as potentially important in supporting these impacts (Marshall et al., 2022). Therefore, government policies should increase the engagement of domestic products to achieve major economic benefits from trade through broadband penetration (Djunaedi, 2021). Multi-stakeholder partnerships are an essential vehicle for solving complex societal problems (Rejeb et al., 2022; Zhou et al., 2022). Agreements that govern and government initiatives are used to enforce the affectivity of cooperation and partnership (Vayaliparampil et al., 2021). In literature on the public-sector accounting, the research on PPP demonstrates that the public policy strategy is part of the role of the

government in shaping the regulatory framework and plays an important role in catalyzing infrastructure development to the next level (Steelyana, 2021). Based on prior research, the current study explores the fundamental theory presented in this paper, which is discussed in the subsequent text (Herrera-Franco et al., 2021; Purnomo et al., 2020)

Regulation Theory

Fundamentally, regulatory theory defines three approaches, which are public interest, capture, and regulatory economic theories (Goodell et al., 2023). In PPP, two major parties collaborate in a scheme, namely, the public and private sectors. Specifically, the broadband market in PPP implementation has two viewpoints based on economic and public interest theories, which are related to governmental regulatory operations (Xu et al., 2021; Zhou et al., 2022). First, the public interest perspective suggests that the government actively influences markets for public (Cordova & Stanley, 2021). The description provided by the public interest theory is based on public perspective because the ultimate goal of the development of broadband infrastructure is to benefit society and improve public welfare (Ehrler et al., 2009; Mitrović, 2015). Second, economic theory denotes that government initiatives should support the development of broadband infrastructure, such as government/public policies intended to accelerate related projects (Picot & Wernick, 2007). Moreover, these two viewpoints are used to describe the government as an enabler or a rule maker (Fan et al., 2020; Tlili et al., 2022).

METHODOLOGY

Materials and Methods

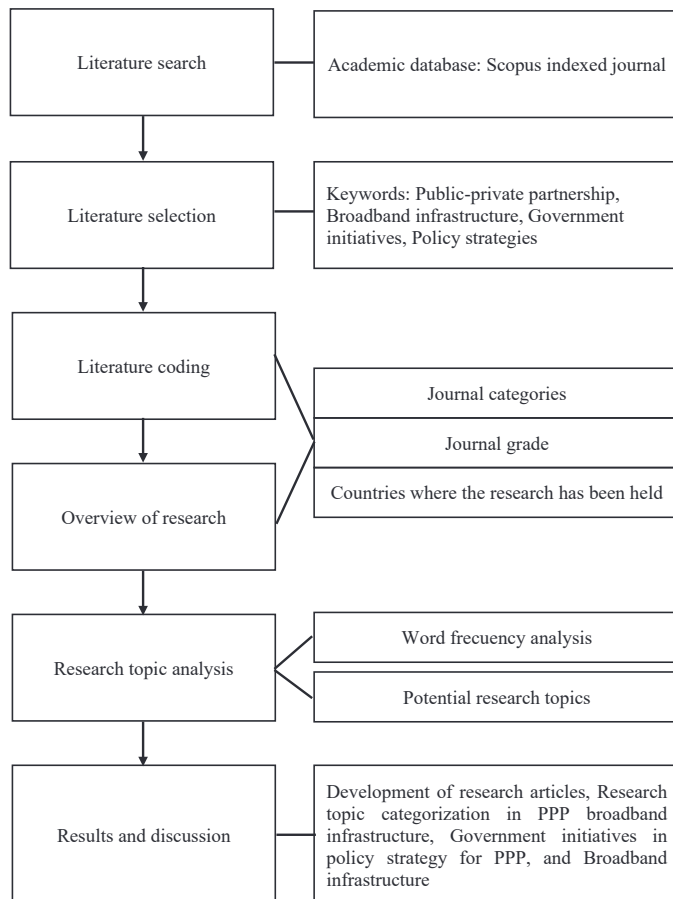
This study employed a qualitative method called contextualized systematic literature review (SLR) and bibliometric techniques, which are used to map themes and content for in-depth analysis. Figure 1 shows a flow diagram of an SLR that explains the stage of bibliometric analysis (Herrera-Franco et al., 2021). The study utilized a two-stage structured approach called Publish or Perish, and graphical evaluation was conducted using NVivo, which offers text mining functionality that can be used to build and visualize the co-occurring networks of key terms extracted from the metadata of a scientific literature. Figure 1 depicts the SLR method, which follows several steps (Goodell et al., 2023; Purnomo et al., 2020).

The first stage is a literature search or search process that is used to obtain relevant journal sources to answer research questions and other related references. The search process was carried out by exploring academic databases such as Scopus indexed journals. The second stage is literature selection. This stage is carried out to decide whether the data found are suitable for use in SLR research or not. Studies are eligible to be selected if they meet the following criteria: 1) data used in the 2000–2021 time period; 2) data obtained through the Google Scholar site and Scopus publications; and (3) the data used only relate to PPPs, broadband infrastructure, government initiatives, and policy strategies. The third stage is coding the literature and general description of the research. In this stage, research data are presented based on certain criteria such as journal category, journal value, and the city where the research was conducted. This stage can help classify empirical research in related fields and related topics. This is useful to assist in positioning the research and contributions provided. The fourth stage is research topic analysis which consists of analyzing word frequency and potential research topics. The research data source was taken from a Scopus indexed journal. The articles used have diverse characteristics in both writing style and diction. When the process of writing a journal article is underway, this can help the author identify journal keywords and the words that appear most frequently. Potential research topics on PPP project policy strategies come from various sources. Being aware of current issues in public affairs will help develop interesting research topics. The final stage is the results and discussion. At this stage, it is important to prepare a report that contains all the information related to the various stages of the summary and summaries of all the results are obtained.

Bibliometric Analysis: Methodology and Search Process

Bibliometric analysis evaluates topics of interest by tracking the number and keywords changes in time (Hassan & Usmani, 2022; van Raan, 2005). Google Scholar and Scopus are the commonly used databases for bibliometric analysis (M.-H. Wang et al., 2010).

Fig. 1: Flow diagram of a systematic literature review.
Source: Prisma, 2020.



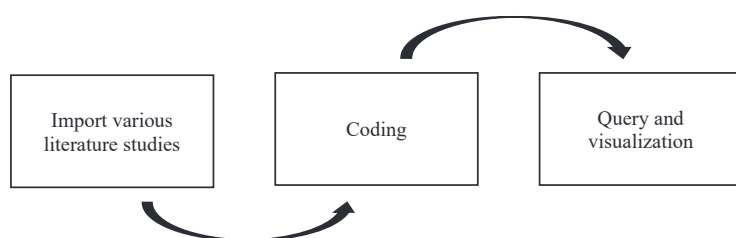
For data validation, data are cross-referenced with SCImago Journal & Country Rank (SJR). Hence, compared to the previous review papers, this study puts forward the idea of conducting an extensive bibliometric analysis that could benefit the research community and industry from various perspectives: An impediment to delivering a more solid perception of PPP, as discussed earlier and emphasized by Donthu et al. (2020), is the divergence of the extant categorizations, definitions, and terminologies. Although the discussed review studies have contributed to providing a wider outlook on this concept, there is a shortage of attention to the core practice of PPP (X. Wang et al., 2020). For instance, Nobanee et al. (2021) echoed this issue by pointing out the inadequate conceptual classifications associated with PPP, in which the practices, e.g., infrastructure and local development, and concepts, e.g., governance approach, are either mixed up or distinguished insufficiently. Therefore, we review the evolution and industrial application of PPP to not only capture the major drivers and milestones contributing to the development of this concept but also shape the grounds for better comprehension and interpretation of the results derived from the bibliometric analysis (Donthu et al., 2021; Moral-Muñoz et al., 2020).

Bibliometric analysis is a promising approach in this context, which is fueled by research in the field of library and information science in the presence of a large amount of bibliographic material, and thanks to the recent development of digital tools and rich databases, it is favored by many researchers (Esposito & Dicorato, 2020; Huang et al., 2022). There is a lot of scrutinies involved in this method, and in this paper, we choose the keywords co-occurrence and bibliographic merging, which fall into the category of science mapping (Agarwal et al., 2023; Chisika & Yeom, 2021). The first provides a substantially useful overview of a topic by analyzing the relationships between keywords used together in a document (Donthu et al., 2021; Huang et al., 2022). The latter concerns “the relationship between two items that both cite the same document,” and in this study, the items refer to sources, which is equivalent to a journal (Rosokhata et al., 2021). This examination not only facilitates the identification of journals with the highest contributions

to the topic but also reveals citation relationships between journals to enable thematic evaluation and classification of research around PPPs (Azami-Aghdash et al., 2020; Verger et al., 2020). To achieve these goals, the software Nvivo, which is characterized by strong analytical capabilities and deep visualization features, was used (Kumar et al., 2021; Rosokhata et al., 2021). NVivo offers a number of tools for flexible data organization and analysis. It may store a variety of data, including bibliometric data imported from reference manager software and transcripts of interview texts, videos, and photographs. The software allows several coders to work on the same data file. In conclusion, NVivo is a piece of software that aids in the organization and synthesis of research findings. Because of this, it is a useful tool for both theorizing and qualitative data analyses (N. Sinkovics, 2016; R. R. Sinkovics et al., 2008).

Of all the research stages, literature review is one of the research aspects that consumes the most energy and time. This is because literature review is an activity used by researchers to build a clear understanding of the area being studied and build arguments for the importance of the study, as well as providing direction for discussing research findings. The literature review process using Nvivo is carried out as illustrated in Figure 2.

Fig. 2: Nvivo Stage.
Source: (Endah et al., 2020).



In addition to the examination outlined and based on discussion regarding the evolution of PPPs, it is also useful to analyze the publication trends of studies that have been achieved, thereby facilitating an overview of the main patterns and trends in relation to impactful achievements (Mao et al., 2021; Park & Chung, 2021).

This study puts forward the goal of presenting an inclusive evaluation of the studies regarding PPP, and in order to achieve this goal and avoid leaning toward any particular direction, e.g., risk sharing and sustainability, the systematic search is conducted by using only one keyword, which is “public–private partnership” (Anwar et al., 2021; Azami-Aghdash et al., 2020; Park & Chung, 2021). In this regard and to ensure extensive coverage of materials and bibliometric data, the search string is combined with an asterisk (*) symbol—known as truncation—to include terminological variants pertaining to the ending part of the search phrase, such as plural form (Xue et al., 2022). Moreover, the search string is placed between two double quotation marks (“”) to satisfy an *exact* search and set a hard constraint for the search engine to consider the exact combination of the words that constitute the string (Rosokhata et al., 2021). Therefore, by taking the aforementioned points into account, we use “public–private partnership*” as the search string (Park & Chung, 2021). Not to mention the dash character (-) between the terms “public” and “private” has no bias effect on the search results, and this is treated either as a dash or as a space character by the search engine of Scopus, which is selected as the online database for this study. It is worthwhile to note that the search process scans the title, abstract, and list of keywords pertaining to each article based on the identified string (Anwar et al., 2021; Azami-Aghdash et al., 2020).

Data Collection

First step, the study uses Publish and Perish software. The following keywords were used:

- Public–Private Partnerships and Broadband Infrastructure
- Public–Private Partnership, Broadband Infrastructure, and Europe
- Public–Private Partnerships, Broadband Infrastructure, Africa, Asia, Pacific, and Australia

Data collection was completed in May 2022, which limited the period from 2000 to 2021. Furthermore, we downloaded full records of a total of 25,770 publications and obtained information on titles, abstracts, authors, document types, publication dates, journals,

Tab. 1: Data collection.

No	Source	Keywords	Date	Time	Results
1	Google	PPP and Broadband Infrastructure	May 3, 2022	18:15	15,300
2	Scholar	PPP, Broadband Infrastructure, and Europe	May 3, 2022	18:30	8,530
3		PPP, Broadband Infrastructure, Africa, Asia, Pacific, and Australia	May 3, 2022	19:40	1,940
Total					25,770

and references. The statistics of these records mainly include country of origin, subject matter, themes, and research institutions. Table 1 presents the steps for the collection of data from Google Scholar.

The total sample reached approximately 25,000 articles from Google Scholar for the period between 2000 and 2021. The study first identified articles published in academic journals that discussed PPP in relation to broadband infrastructure.

Data Selection: Inclusion and Exclusion Criteria

Initially, the study encountered a large number of irrelevant articles, specifically publications whose major debate was not only unrelated to the research question but also unrelated to PPP in broadband infrastructure (Gharaee et al., 2023). The total sample reached approximately 25,000 for the period between 2000 and 2021. First, the study identified articles published in academic journals that focused on PPP in broadband infrastructure (Cui et al., 2020). The study used the following inclusion and exclusion criteria to select the papers. First, the survey considered only articles published in English and indexed in Scopus. Second, the articles should only publish in Scopus-indexed journals. Third, papers that discuss only topics which related to keywords (Nobanee et al., 2021). The keywords that are connected directly to the study were imperative. All papers had to be added. The main discussion of the articles must be about PPP in broadband infrastructure that is undertaken in the countries of Asia, Pacific, Australia, USA, and Europe for the period 2000–2021. Fourth, articles were omitted in the case of duplication in the sense that one article is found in two or more academic databases (X. Wang et al., 2020). Fifth, scientific essays were excluded if they are in the form of a thesis or not published in a journal. Table 2 describes the prerequisite condition as per the inclusion–exclusion criteria.

The number of items selected was calculated using the keywords indicated in Table 1 of the search strategy followed by Table 2 for the inclusion–exclusion criteria. Finally, Table 3 encapsulates the more progressive elements after inclusion and exclusion and presents the final number of papers selected.

At the beginning of the online search, this study encountered a large number of irrelevant articles, especially publications whose major debate was unrelated not only to the research question but also to PPP broadband infrastructure (Donthu et al., 2020; Goodell et al., 2023). The total sample reached approximately 25,770 articles written in the period between 2000 and 2021.

The search for articles relevant to this topic was conducted extensively from June 2000 to June 2021. The study identified 927 articles in 24 journals whose main discussion was on Internet backbone with the PPP scheme. Out of the 927 articles, 420 were excluded because they were published in Scopus-indexed journals. Furthermore, 507 articles were also excluded because they did not discuss PPPs in broadband infrastructure for countries in Asia, Pacific, Australia, and Europe during the study period (Moral-Muñoz et al., 2020; Nobanee et al., 2021). The application of the third criterion did not change the number of articles because the study found no duplicate articles. Regarding the relevance criteria, articles that do not contain the search terms in the title or keywords were also excluded. The final number of articles included for analysis was 42.

Analysis Bibliometrics

Co-authorship analysis is used to find relationships between various studies based on research documents produced by researchers. Co-authorship networks are a tool to reveal the direction of collaboration and identify researchers and institutions leading research (Fonseca et al., 2016), and co-authorship network analysis can help overcome this, providing a substantial contribution to scientific development (Morel et al, 2009).

Tab. 2: Inclusion and exclusion criteria.

Parameter of Selection of a Paper	Inclusion Criteria	Exclusion Criteria	Rationale for Inclusion–Exclusion
Language	English	Rest of language	The researchers and the preponderance of the readership can readily understand English
Year	2000–2021	Published before 2000 and after 2021	Only a few articles were published before 2000, and investigations after 2021 are underway
Journal index	Indexed in Scopus and other academic databases	Other indexed articles	Articles must take samples from different citations such that a possibility exists that the same article is listed in various places. Therefore, duplicated articles in other citations must be excluded from the sample. The study uses Scopus as the threshold; therefore, the publications used are only international publications indexed under the Q1–Q4 categories (Scopus), whose validity was obtained through Scimagojr.com
Keywords	Keywords that are directly connected to the study. All papers should be added	No exclusion	The main discussion of the articles must be about PPP in broadband infrastructure. The article is only included if one of the three categories is fulfilled.
Duplication and completeness	No inclusion	Excluded	Duplicates that are found in two or more academic databases are excluded The study is checked for data completeness. If the entire article is unavailable or only an abstract is present, it is also excluded from the sample
Type of paper	Only papers published in journals	Scientific essays are a thesis or an article not published in a journal (unpublished literature)	Research articles, such as theses or unpublished papers, are excluded

Tab. 3: Final papers included in the sample.

Identification of New Studies via Databases and Registers		
Identification	Records identified: Databases (n = 927) Registers (n = 0)	Records removed before the screening: Records marked as ineligible by automation tools (n = 0) Records were removed for other reasons (n = 0)
Screening	Record screened (n = 90) Reports sought for retrieval (n = 0) Reports assessed for eligibility (n = 43)	Records excluded (n = 420) Reports not retrieved (n = 507) Reports excluded: unpublished literature (n = literature) (n = 1)
Included	New studies included in the review (n = 42) and reports of new included studies	

Co-occurrence analysis can reveal research topics statistically and is simply counting paired data in collection units. For example, buying shampoo and a brush at the store is an example of a co-occurrence. Here, the data are the brush and shampoo, and the unit of collection is the transaction. The more frequently a pair occurs between two keywords, the closer their relationship is. To reveal the structure and development of the research field, several methods of word analysis can be applied based on the word matrix, consisting of factor analysis, cluster analysis, multivariate analysis, and social network analysis. These methods are useful for researchers to study an overview of a field.

Citation analysis based on scientific and medical research databases can be validly applied in all scientific fields, including applied and technical sciences, social sciences, and humanities, but is also often debated. In science, research groups are natural “business” units and are, therefore, the most useful level of aggregation in citation analysis because scientific research is the result of teamwork. Garfield argues that a journal’s citation frequency is a function not only of the scientific significance of the material it publishes but also of the number of articles it publishes each year (Moed, 2005).

Bibliographic coupling analysis is different from direct citation analysis which produces a taxonomy; bibliographic coupling analysis will reveal what scientists are working on as the field of research will change from year to year, researchers make discoveries and turn their attention to various research problems (Klavans & Boyack, 2017). Bibliographic coupling analysis is a method for grouping technical and scientific documents, facilitating the provision of scientific information and document retrieval (Jarneving, 2007).

Co-citation analysis is useful for mapping the specialization of research subjects, and the single-link cluster method is applied for grouping co-cited articles. If all topics covered by a data set can be identified by co-citation clustering, it can only be partially answered by comparing the results for different sets of thresholds of (normalized) co-citation strength as some areas of research may lack consensual references. However, the findings suggest that co-citation clustering reflects research specialization although these can be divided into groups. It was also found that co-citation clustering only revealed part of the literature relevant to the research topic identified from the cited literature and that the interrelationships between clusters appeared to correspond to cognitive relationships at a higher level than research specialization (Jarneving, 2007).

Concept Visualization Map for Bibliometric Analysis

The selected articles were processed using NVivo. NVivo is used to create bibliometric visualization maps and enables the development of a concept visualization map and co-occurrence analyses (Huang et al., 2022). Furthermore, using NVivo for bibliometric analysis enables the mapping of the research topic and describing the pattern of content analysis. It also offers text mining functionality, which can be used to build and visualize co-occurring networks of key terms extracted from the metadata of scientific literature (Goodell et al., 2023).

Fig. 3: Concept visualization map using NVivo.



Based on the results of the autocoding analysis produced using NVivo, the selected papers are sufficiently in line with the formulation of problems and predetermined topics. The most common words that appeared are “broadband,” “public,” “private,” “government,” “policy,” “network,” “infrastructure,” and “PPP.”

Results

The following outlines are the summaries of the findings and the results of the analysis of the SLR.

Frequency Distribution of Articles by Research Topic

Out of the 42 selected articles, this study identified five themes, namely, government initiatives (n = 19; 45%), PPP framework (n = 14; 33.5%), PPP implementation (n = 4; 9.5%), technology option (n = 3; 7.3%), and value for money (n = 2; 4.7%). Table 2 indicates that the theme of government initiatives ranks highest (n = 19; 45%) and is more pronounced during the second period (2010–2015): 11 journals and third period (2015–2021): 5 journals which are followed by PPP framework 33.5%, PPP implementation 9.5%, technology option 7.3%, and value for money for 4.7%.

Table 4 provides a detailed explanation of each article and year of publication related to the themes, and Table 5 shows the distribution of theme. The number of articles in the period prior to 2010 are 7, where 2004 is the earliest year of the articles. Along with the development of this new measure, researchers began to pay attention to this topic as indicated by the relatively increasing number of articles over time since 2010–2015, which amounted to 22 or 52% of the total.

Frequency Distribution of Articles by Year, Publication Quality, and Country

According to the frequency distribution of articles by the year and publication quality, more than half (n = 26; 62%) were published in high-quality journals, which Scimago (SJR) indexed under Q1. Approximately 14% and 22% of the articles are mid-quality journals and indexed under Q2 and Q3, respectively. Furthermore, only 2% of the articles were from journals indexed under Q4.

The number of articles in journals indexed as Q1 has increased over time since 2010–2015, which reached 18 or 42% of the total; meanwhile, articles in Q2 journals have increased during the period 2016–2021 (n = 3; 7%), and those in Q3 journals have increased on the second period 2010–2015 (n = 5; 12%).

The United Kingdom has been the leading country focused on studies on PPP in broadband infrastructure for the past 20 years. It leads with a high intensity of 21 journals published on PPP broadband, which equals approximately 63.6%.

Frequency Distribution of Articles by Journal and Research Method

Table 6 presents the distribution of journal quality. The top-quality journals (Q1 ranking by Scimago) are 15 articles published in *Telecommunication Policy*, followed by two articles in *Communication and Strategies* and one in other journals, including those indexed in Q2, Q3, and Q4. 78.5% or approximately 33 studies used qualitative methods, followed by quantitative methods (n = 6; 14.5%) and mixed methods (n = 3; 7%).

Discussions

Key Policy Strategies for PPP in Broadband

This study found that crucial policy strategies need to be developed as part of government initiatives to enhance the PPP scheme’s implementation to support broadband infrastructure development (Gerli et al., 2020; Valentín-Sívico et al., 2022). In line with the

Tab. 4: Frequency distribution of articles by theme.

Themes	Years			Total	Total (%)
	< 2010	2010–2015	2016–2021		
Government initiatives	3	11	5	19	45
PPP framework	3	12	1	14	33.5
PPP implementation	1	1	2	4	9.5
Technology option	0	0	3	3	7.3
Value for money	0	0	2	2	4.7
Total	7	24	13	42	100

Tab. 5: Distribution of theme.

No	Theme	Authors	Total
1	Government initiatives	(Costa et al., 2010; Dwyer et al., 2011; Falch & Henten, 2008, 2010; Fredebeul-Krein & Knoben, 2010; Gillett et al., 2004; Girth, 2014; Given, 2010; Gyaase & Takyi, 2016; B. Howell & Sadowski, 2018; Li, 2012; Nucciarelli et al., 2010, 2013; Picot & Wernick, 2007; Qiang, 2010; H. Wang et al., 2019)	19
2	PPP framework	(Bembe et al., 2019; Drobot et al., 2010; Ehrler et al., 2009; Falch & Henten, 2010; Fife & Hosman, 2007; Fredebeul-Krein & Knoben, 2010; Ganuza & Vicens, 2011; Gómez-Barroso & Feijóo, 2010; Pant & Hambly Odame, 2017; Schneir & Xiong, 2016; Troulos et al., 2010; Williams et al., 2013; Williams & Falch, 2012; Droste et al., 2012)	14
3	PPP implementation	(Lattemann et al., 2009; Nucciarelli et al., 2010; Pant & Hambly Odame, 2017; Al-Shqairat et al., 2015)	4
4	Technology option	(Gomez-Barquero et al., 2019; Liolis et al., 2018; Neokosmidis et al., 2017)	3
5	Value for money	(Caiyun et al., 2019; Gerli et al., 2020)	2
Total			42

research question for this study, in discussions section, the paper analyzed the most effective policy strategies for promoting PPPs in broadband infrastructure development and the implementation of these strategies compared across different countries and regions (Steelyana, 2021), which is shown in Table 7.

Topics and journal articles related to government initiatives should be systematic, and comprehensive reviews of research focus with direct implications for the public policy and regulation (Esposito & Dicorato, 2020). In discussion, the topic of utilizing PPP research knowledge in public regulatory policy must be explained clearly, including the consequences resulting from the analysis of published research sources (Huang et al., 2022). In fact, PPPs have been used as a framework for commercial partnerships between governments and business leaders that have evolved and modified to suit societal needs, and as a result, PPPs are widely recognized as a business model (Chisika & Yeom, 2021). This section outlines the history of PPPs as well as key events that were instrumental in the transition to this business approach (Gillies, 2020; Shi et al., 2020). In this case, showing the stages, achievements, and phenomena related to the development of PPP are discussed in a timeline to provide a more real and concrete picture of the evolution of this model (Agarwal et al., 2023; Khawaja et al., 2021).

The most prominent application of PPP is the development of public infrastructure: Public–Private Partnerships in Broadband Infrastructure (Chisika & Yeom, 2021; Motamedi et al., 2021). As previously discussed, PPP was triggered by the community situation and the increasingly weak needs of the community so that broadband improvements were the main driver for this (Agarwal et al., 2023). This objective is in line with the development of several project sectors, and the bibliometric analysis results reveal the most important sectors, including, but not limited to, broadband, government initiatives, and policy strategy. In fact, the economic capacity and versatile characteristics of PPPs allow this business model to contribute to a wide range of sectors (Joudyian et al., 2021; Motamedi et al., 2021).

Tab. 6: Distribution of articles according to journal quality.

No	Scopus category	Journals (Scopus index categories)	Total
1	Q1	<i>Telecommunication Policy</i> (15); <i>Journal of Rural Studies</i> (1); <i>European Journal Business and Management</i> (1); <i>International Public Management Journal</i> (1); <i>Journal of Rural Studies</i> (1); <i>IEEE Communication Magazine</i> (1); <i>International Journal of Satellite Communications and Networking</i> (1); <i>Telematics and Informatics</i> (1); <i>Communications & Strategies</i> (2); <i>Government Information Quarterly</i> (1); <i>Computer Law & Security Review</i> (1)	26 Articles 12 Journals
2	Q2	<i>People, Process and Policy</i> (1); <i>Commonwealth and Comparative Politics</i> (1); <i>International Journal of Public Administration</i> (1); <i>Development Southern Africa</i> (1); <i>Journal of Infrastructure Systems</i> (1)	5 Articles 5 Journals
3	Q3	<i>International Journal Management and Network Economics</i> (1); <i>International Journal of Scientific & Technology Research</i> (1); <i>Journal Technology and Management Innovation</i> (1); <i>Information</i> (4); <i>International Journal of Project Organization and Management</i> (1); <i>International Journal of Business Governance and Ethics</i> (1); <i>Observatorio</i> (1)	10 Articles 8 Journals
4	Q4	<i>Central European Journal of International and Security Studies</i> (1)	1 Article 1 Journal
Total			42 Articles in 26 journals

Tab. 7: Theme and Journal Articles Related to Government Initiatives.

No	Government initiatives	Journal article
1	Legal, regulatory, and reform policies	(Amalia & Budhijanto, 2018; Cordova & Stanley, 2021; Dwyer et al., 2011; Given, 2010; Gyaase & Takyi, 2016; B. E. Howell & Potgieter, 2020; B. Howell & Sadowski, 2018; Li, 2012; Sadowski et al., 2013; Troulos et al., 2010)
2	Specific policies and plans	(Dwyer et al., 2011; Picot & Wernick, 2007; Kim et al., 2004)
2.1	National broadband plans and policies for supply and demand	(Dwyer et al., 2011; Frieden, 2005; Gyaase & Takyi, 2016; Kim et al., 2011; International Telecommunication Union, 2016)
2.2	Policies for supply and demand	(Costa et al., 2010; Gillett et al., 2004; Nucciarelli et al., 2010, 2013)
3	Policies that support private sector investment	(Irwin, 2003; Qiang, 2010; H. Wang et al., 2019)
3.1	Government initiatives to encourage private investment	
3.2	Universal service policy	(Dwyer et al., 2011; Ehrler et al., 2009; Falch & Henten, 2008, 2010; Qiang, 2010)
3.3	Subsidies as fiscal support	(Bauer, 2011; Cordova & Stanley, 2021; Falch & Henten, 2008; Gillett et al., 2004; B. Howell & Sadowski, 2018; Qiang, 2010)

Legal, Regulatory, and Reform Policies

Broadband is a specific infrastructure development that requires major support from the government, especially on policy strategy (Khawaja et al., 2021). The PPP scheme is well-suited for the establishment of solutions for the development of broadband infrastructure, particularly in rural areas (Joudyian et al., 2021). Notably, however, the success of the examples is heavily dependent on the regulatory, financial, legal, and political environments, as well as the desire of the public and private sectors to collaborate (Joudyian et al., 2021). As policymakers seek strategies for supporting broadband growth in their nations, certain general lessons may be learned from countries with established broadband networks and services (Agarwal et al., 2023; Chisika & Yeom, 2021; Khawaja et al., 2021).

Legal, regulatory, and reform policies discuss the key policies and regulatory trends that policymakers and regulators should take into consideration and discuss the roles that governments should play in promoting universal broadband access (Esposito &

Dicorato, 2020). Policymakers are responsible for making decisions on the mechanisms for public investment. Chisika and Yeom (2021) state that the legal amendments for specific policy areas need to be adjusted to reduce uncertainties in legal aspects, which are considered obstacles to PPP. Moreover, the political environment is considerably influenced as a fundamental structural and strategic element to the development of PPP regulations (Agarwal et al., 2023; Joudyian et al., 2021).

In the PPP scheme, public and private stakeholders collaborate in terms of funding and operation (Chisika & Yeom, 2021). Based on evidence, guidance for policymakers on establishing the PPP regulatory framework is scant (Motamedi et al., 2021); however, to establish regulatory commitment, specific regulatory frameworks should be established (Joudyian et al., 2021). A regulatory framework for PPP is a key element for many countries in the establishment of PPP and an open market system in the development of broadband infrastructure, as cited by several papers in this review (Joudyian et al., 2021; Khawaja et al., 2021; Motamedi et al., 2021).

Comparison of Legal, Regulatory, and Reform Policies across Countries

In certain countries, such as Indonesia, the legal and regulatory framework reform has been established as a platform for infrastructure development with the PPP scheme (Chisika & Yeom, 2021). The presidential regulation and government initiatives for the establishment of certain institutions aim to provide facilities and guarantees to the private sector on entering the infrastructure business (Gharaee et al., 2023). In specific cases, the PPP scheme can be conducted as part of the economic and disaster recovery plan mandated by the Congress, such as the reconstruction plan in Puerto Rico, after Hurricanes Irma and Maria devastated the island in September 2017 (Jiménez-García et al., 2020).

Adjusting the existing public procurement and investment regulation as well as its models has played a crucial role in triggering PPP in several countries. PPPs are good alternatives to building broadband infrastructure through the mutual partnership between private and public partners (Mao et al., 2021). Contributing regions: Although PPPs are not a new concept, they have not been practiced and developed evenly throughout the world (Kumar et al., 2021). Keyword analysis shows that countries and regions with more impactful and larger economies have made higher contributions to the implementation and conceptual development of PPPs, such as the United States, the United Kingdom, China, Europe, and Australia. Please note that this is by no means a ranking of the most contributing countries/regions, given the fact that this assessment is not based on a count of PPP projects associated with each geographic region (Anwar et al., 2021; Verger et al., 2020; Xue et al., 2022).

Specific Policies and Plans

The lack of broadband development policy has been the main challenge for governments and industries in developing broadband infrastructure (Gerli et al., 2020). One of the key challenges is the policies and strategies that encourage broadband network construction, particularly in communities with less interest in broadband (Niu et al., 2022; Wan et al., 2021). Moreover, investigation on the promotion of broadband is lacking: in this context, the significant effect of broadband in accessing major public sectors, such as education, healthcare, banking, and the environment (Valentín-Sívico et al., 2022). As such, specific policies and plans, which are included national broadband plans, should be established (Steelyana, 2021).

Certain countries developed national broadband plans and followed the policies for supply and demand to promote demand and encourage uptake (Gerli et al., 2020; Valentín-Sívico et al., 2022). Based on an evaluation of the supply and demand issues of a country, specific policies and strategies need to be established. This aspect included establishing specific, measurable goals for increasing broadband supply through infrastructure development as well as driving the demand for broadband services and applications (Steelyana, 2021; Wan et al., 2021). Setting precise goals or policies can offer a clear sense of direction, encouraging investment and providing a roadmap for a long-term activity (Gerli et al., 2020).

National Broadband Plans

A PPP is a funding model for public infrastructure projects and initiatives such as a new telecommunication system, public transportation system, airport, or power plant. Government agencies represent the public partner at a local, state, and national levels. The private partner can be a privately owned business, public corporation, or consortium of companies with a specific area of expertise. PPP is a broad term that can be applied to anything from a simple, short-term management contract – with or without private investment requirements – to a long-term contract that includes funding, planning, building, operation, maintenance, and divestiture. PPP projects (also known as P3 projects) are helpful for large ventures that require the procurement of highly skilled workers and a significant cash outlay to get started. They are also helpful in countries, such as the United Kingdom or the Philippines, which require the state to legally own any infrastructure that serves the public. While PPPs can cover a range of projects across various sectors, there are several sectors that are most associated with these types of initiatives. Here are a few examples: telecommunications, fund broadband networks, and other telecommunications infrastructure rollouts (Niu et al., 2022).

There are various PPP contract models based on funding and which partner is responsible for owning and maintaining assets at different stages of the government project. Example of PPP models includes (Saputra et al., 2022) design build (DB). The private-sector partner designs and builds the infrastructure to meet the public-sector stakeholder's specifications often for a fixed price. The private-sector partner assumes all risks. Operation and maintenance contract (O&M): the private firm, under contract, operates a publicly owned asset for a specific period. The public partner then retains ownership of the assets. Design–build–finance–operate (DBFO): the private-sector company designs, finances, and constructs a new infrastructure component and owns the operation and maintenance under a long-term lease. When the lease is up, the private-sector partner transfers the infrastructure component to the public-sector partner. Build–own–operate (BOO): the private party finances, builds, owns, and operates the infrastructure component perpetually. The public-sector partner's constraints are stated in the original agreement and through ongoing regulatory authority. Build–own–operate–transfer (BOOT): privatization is granted for financing, design, building, and operation of an infrastructure component (and to charge user fees) for a specific time, after which ownership is transferred back to the public-sector partner. Buy–build–operate (BBO): this publicly owned asset is legally transferred to a private-sector partner for a designated period. Build–lease–operate–transfer (BLOT): the private-sector partner designs, finances, and builds a facility on the leased public land. The private-sector partner operates the facility for the duration of the land lease. When the lease expires, assets are transferred to the public-sector partner. Operation license: the private-sector partner is granted a license or other expression of legal permission to operate a public service, usually for a specified term. (This model is often used in IT projects.) Finance only: the private entity partner, usually a financial services company, funds the infrastructure component and charges the public-sector partner interest to use the funds.

Broadband policies are becoming mainstream in several countries in terms of the implementation of competition frameworks. Broadband policies are also based on national broadband development plans and should be converted into national blueprints for broadband infrastructure (OECD, 2008). National road maps are a method for estimating projected goals and progress. However, they require a strategy for guiding progress and should be backed up by government regulations (Wan et al., 2021). At the infrastructural level, road maps are concerned with the implementation of the PPP regulatory framework with regard to civic or community-based policies, which focus heavily on digital access in rural areas and are non-financially viable (Niu et al., 2022; Wan et al., 2021). Alternatively, the stimulatory measures of many governments are most probably the establishment of national broadband systems that promotes market arrangement (Steelyana, 2021; Valentín-Sívico et al., 2022).

Comparison of National Broadband Policies across Countries

A majority of OECD members have established specific national broadband plans because digital connection is becoming increasingly essential for OECD nations, particularly in rural and isolated regions (Niu et al., 2022). However, these plans are limited to not only developed countries but also a few developing countries, which have endeavored to create national broadband policies (Valentín-Sívico et al., 2022; Wan et al., 2021). For example, Chile was the first Latin American country to announce a national broadband strategy (Gerli et al., 2020). The Turkish government recognized the importance of a vibrant telecommunications market and was eager to promote the spread of broadband. Lastly, Malaysia developed its information, communications, and multimedia service strategy in 2006, which outlined several broadband service goals (Gerli et al., 2020; Steelyana, 2021; Zhou et al., 2022). Indonesia

launched their five-year national broadband plan on 2015 with the Palapa Ring Project as the flagship initiative. A few countries, such as Brazil, Finland, France, Germany, Malaysia, Morocco, South Africa, Sweden, the United Kingdom, and the United States, have established national broadband strategies that contain specific development and publicly stated policy goals for the growth of the adoption and delivery of broadband services (Gerli et al., 2020; Niu et al., 2022; Valentín-Sívico et al., 2022).

Policies for Supply and Demand

A combination of the supply- and demand-side elements is critical for achieving maximum broadband penetration and adoption. It needs to coordinate both factors (supply and demand) in an economy to achieve their full potential if it is well coordinated (Fan et al., 2020). As a result, nations with high levels of broadband penetration employ comprehensive broadband strategies that coordinate the supply and demand sides (Tlili et al., 2022). The experience of countries with high-level penetration on broadband demonstrates that an effective broadband distribution requires a consideration of issues from the supply and demand sides (Valentín-Sívico et al., 2022; Zhou et al., 2022). Although supply-side policies encourage the construction of network infrastructure to support broadband services, demand-side policies intend to increase knowledge about and acceptability of broadband services to increase their usage (Gerli et al., 2020; Valentín-Sívico et al., 2022).

PPPs are a good method for building broadband infrastructure, especially in remote and rural areas (Xu et al., 2021). The provision of broadband infrastructure and services for private investment in rural areas is unappealing due to the low or even negative expected return rate (Rejeb et al., 2022). Moreover, certain elements are likely to be present in national broadband success stories. In fact, a majority of countries use a mix of policies, where supply-side ones focus on encouraging investment from the private sector in networks, especially during the early years (Agarwal et al., 2023; Khawaja et al., 2021). Alternatively, demand-side policies focus on how governments can support broadband demand and uptake (Chisika & Yeom, 2021). Therefore, policies and regulatory frameworks could support the operation of an efficient market and include demand-side policies and programs (Donthu et al., 2021).

Comparison of Supply and Demand Policies across Countries

Certain countries recommend the combination of supply- and demand-side policies. In the European Union (EU), the European Commission formulated policies by establishing an open and competitive single market through 2010 (Agarwal et al., 2023). Furthermore, several national broadband initiatives are being implemented across the EU such as Ireland, Spain, Sweden, the United Kingdom (Gerli et al., 2020), and Greece (Esposito & Dicorato, 2020) to expand coverage, particularly in rural and non-viable areas. In contrast to the EU, the Korean Ministry of Information and Communications also acts as a regulator of the telecommunications industry (Huang et al., 2022). The main objective of the Korea Information Infrastructure-Government was to construct a backbone network (X. Wang et al., 2020). In terms of competition, platform competition between multiple providers and hands-off policies in terms of retail prices resulted in relatively low price levels, which aided broadband uptake (Agarwal et al., 2023). The Ghana National Telecom Policy, which is a policy tool for regulating the market, provides the following opportunities to the private sector (Khawaja et al., 2021).

Evidently, the regulatory framework of the government renders possible the PPP initiative in Ghana (Motamedi et al., 2021). The United States takes a different approach than those of Korea and Europe and mainly relies on the benefits of platform competition (Rosokhata et al., 2021). Despite efforts to stimulate broadband expansion through local public initiatives, the role of the government of the United States in advancing broadband deployment may be regarded as relatively passive (Verger et al., 2020). However, in terms of broadband distribution, and particularly its leadership role in ICT, one may argue that this approach ignores the benefits of integrating public and private activities (Anwar et al., 2021).

Policies That Support Private Sector Investment

The previous sections have discussed the key drivers for encouraging the broadband development (Verger et al., 2020). The first section discusses government initiatives on the legal and regulatory framework, and the second section offers a detailed observation on how the government may develop specific plans and policies to foster the broadband development (Cui et al., 2020; Gharaee et al., 2023). This section discusses the literature that discussed other government initiatives to enhance private investment (Azami-Aghdash et al., 2020; Verger et al., 2020).

Government Initiatives That Encourage Private Investment

Private investment is pivotal in the development of broadband infrastructure because a country may rely heavily on it despite the development of sophisticated regulatory policies and specific plans (Tlili et al., 2022). Broadband access is recognized as a driver of economic growth, which promotes efficiency and overcomes geographic market constraints. According to data from the World Bank, a 10% increase in the penetration of selected ICT could boost GDP per capita growth by up to 1.38 percentage points (Xu et al., 2021). Financial resources are limited, and many sectors face competing demands (Saputra, Mu'ah, et al., 2022). Thus, infrastructure needs to be fully supported by a funding mechanism in broadband infrastructure, that is, a universal regulation on the funding mechanism (Gerli et al., 2020). The ITU has announced that each country member should implement regulations that support the infrastructure development. Although technology options are costly, universal regulations should be established if broadband infrastructure is to be extended and developed (Niu et al., 2022; Wan et al., 2021).

As such, interorganizational collaboration is critical due to these interdependencies; nevertheless, working across organizational boundaries is far from easy (Steelyana, 2021; Zhou et al., 2022). As a result, policymakers are considering the provision of direct assistance for broadband growth and carefully consider costs and advantages (Valentín-Sívico et al., 2022). The broadband development goals of governments cannot be met by a regulatory reform or private sector investment (Valentín-Sívico et al., 2022). In such cases, policymakers can use fiscal support to fill the gaps in the broadband development (Saputra et al., 2023). Fiscal assistance may be provided to a company or end users through various channels, including cash subsidies, in-kind subsidies, tax incentives, capital contributions, risk assumptions, and other fiscal resources (Niu et al., 2022; Zhou et al., 2022).

Based on the literature, the study noted the limited number of government initiatives that may encourage private investments such as the universal service policy and subsidies as fiscal support. The subsequent sections will discuss these two initiatives.

Universal Service Policy

The government has defined broadband as a legal right for citizens and has been considered a universal service obligation (Xu et al., 2021). The government frames broadband development in the context of providing equal treatment to citizens and ensuring that Internet services increase in terms of accessibility, affordability, and continuity (Cordova & Stanley, 2021; Fan et al., 2020; Tlili et al., 2022). Universal access could be achieved if a coherent and comprehensive national broadband plan is implemented (Steelyana, 2021; Zhou et al., 2022). This strategy indicates that the government considers intervention in the sector necessary and appropriate to achieve public goals such as universal services (P. Wang & Tian, 2021).

The universal access and service fund is one of the key funding mechanisms for the development of broadband infrastructure and for the provision of universal broadband access. National governments establish this funding mechanism to encourage access to universal telecommunications (Fan et al., 2020; Goyal & Kumar, 2021; Xu et al., 2021). Investment in competitive conditions requires positive business cases, and the USO could provide funding (Esposito & Dicorato, 2020). Certain countries convert or plan to make broadband provision a universal service obligation and reform their universal service policies (Donthu et al., 2021; Moral-Muñoz et al., 2020).

In the past, many nations defined universal service funds (USFs) as priorities for the provision of voice telephony (Xue et al., 2022). The USF expanded its definitions and scope to include broadband or Internet access (Kumar et al., 2021; Park & Chung, 2021). The fund was intended to assist rural and remote areas as well as less commercial ones. For example, the EU and the United States

increased funding for USFs to accommodate broadband. Certain countries made plans to set broadband availability as a requirement for universal services and reformed their universal service policies accordingly (Jiménez-García et al., 2020; Mao et al., 2021).

Subsidies as Fiscal Support

In certain situations, regulatory change and private sector investment are insufficient for a government to achieve its broadband growth goals (Kumar et al., 2021). Thus, governments may turn to fiscal assistance to fill the gaps in broadband expansion under such circumstances (Anwar et al., 2021; Azami-Aghdash et al., 2020). Moreover, governments may support a company or its consumers in the form of monetary subsidies, in-kind grants, tax exemptions, capital contributions, risk bearing, and other fiscal resources (Park & Chung, 2021).

Subsidies are a common form of direct intervention from governments in telecommunications markets. Subsidies are likely to exist whenever the final price paid is less than the cost of goods or services provided (Kumar et al., 2021; Mao et al., 2021). For a certain period of time, several companies may cross-subsidy one set of consumers using profits from another set (Azami-Aghdash et al., 2020; Jiménez-García et al., 2020). Subsidy involves direct government contribution to compensate for the difference between regular costs (Saputra, Subroto, et al., 2022). Innovation in the PPP scheme is essential for the sustainability of projects and considers the use of subsidies for improving the broadband access (Gharaee et al., 2023; Niu et al., 2022). In particular, it focuses on the considerations that policymakers should give to the subsidy design to ensure that subsidies are allocated appropriately (Gerli et al., 2020; Steelyana, 2021; Valentín-Sívico et al., 2022).

Conclusions

Summary of Findings

This study aims to observe the development of research themes in policy strategies in relation to PPP projects for broadband infrastructure from 2000 to 2021 and to identify the most popular topic of research conducted in countries in Europe, Asia, Pacific, Australia, and the United States. Using SLR, the study found that previous studies discussed the development of policy strategies and regulation theories. This review included 42 high-quality articles published in Scopus-indexed journals through Scimago—SJR. Specifically, the selected papers consist of 26 articles (62%) published under the Q1 category and six (14%) and nine (22%) articles indexed under Q2 and Q3 categories, respectively. Furthermore, only one article (2%) was published in a journal indexed under the Q4 category. This covers articles published from 2000 to 2021.

The findings are consistent with the notion that the policy strategy is highly influential in the PPP scheme for the development of broadband infrastructure. Moreover, the review found that government initiatives are the major theme cited in the literature. This finding indicated that the government played a significant role in the PPP scheme for the development of broadband infrastructure. Furthermore, the major role of governments lies in public interest as the top priority. Government initiatives emphasize the promotion and authorization environments that provide legal and policy frameworks for the acceleration of the PPP scheme.

In many countries, the policy strategy provides directions for the infrastructure of the telecommunication sector to increase broadband penetration. The result indicates that the studies on the PPP scheme in the literature on broadband infrastructure mainly highlighted the legal and regulatory framework as the basic point for enhancing Internet development. Its application in many countries can be considered as lessons learned for the development of broadband infrastructure through the PPP scheme, which is relatively specific per country.

This study is beneficial to governments or policymakers that intend to implement the PPP scheme to deliver public services: in addition, countries that are implementing the PPP scheme. This paper could support governments in reviewing their policy strategy frameworks for the implementation of the PPP scheme, especially in broadband infrastructure, to support the development of the ICT sector. There are several implications that can be taken as recommendation to the policymakers and to broadband infrastructure development.

Implications for Policymakers

From policymakers' perspective, PPPs could be a financing scheme for increasing access to broadband infrastructure in underserved areas, which has important policy implications. PPP schemes may have access to resources and knowledge that the public sector does not, which could enhance efficiency by lowering costs. In addition to providing public funding for these projects, policymakers should consider encouraging private sector participation in broadband infrastructure projects. Policymakers should also ensure that the public sector has access to the resources of the private sector and the capacity to implement PPP.

Despite their challenges, many public authorities and private partners continue to use PPPs to procure infrastructure and services. The following are some of the justifications given to validate the need for PPPs. The value for money test compares P3 private-partner bids to a hypothetical public sector comparable bid intended to represent the costs of a completely public option. P3s are often justified based on risk transfer from the public to the private sectors. P3s are assumed to be able to transfer more risks to the private sector than traditional procurement because P3 partners have an incentive to minimize these risks to maximize their profits. P3s are also seen to encourage innovation, since private partners are typically more agile and have more experience with new technologies than the public sector. P3s can also be used to keep infrastructure projects off the public-sector balance sheet, therefore allowing them to achieve more of their goals without incurring additional costs.

Implications for PPP on Broadband Infrastructure

From the infrastructure development perspective, PPPs have implications for broadband development by reducing costs and providing access to private resources and expertise that the public sector may not have. Additionally, PPP could support expanding access to high-speed internet in underserved, rural, and remote areas. Private sector involvement in broadband infrastructure projects can be incentivized by the public sector and by providing public funds for these projects. These implications could support PPP in ensuring that the public sector can benefit from the private sector's expertise and resources.

The implication of this research is that due to the combination of private funding and the large scale of organizations involved in PPP projects, this is highly recommended for completing complex projects. From a commercial point of view, this implies that the economic and financial aspects of PPPs must be justified by both parties. The main implication of this research is aimed at the situation of society and the increasingly weak needs of society so that improving broadband and public services is the main driver for this. This aim is in line with the development of several project sectors and the results of bibliometric analysis.

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Google Trends of political parties in Europe: a fractal exploration

ABSTRACT: *Google Trends, despite its controversial nature for some authors, can be considered an illustrative tool in exploring the political inclinations of a given audience. In the current European Union context, understanding the views and opinions of the public is of paramount importance. Through the analysis of search trends, Google Trends can provide valuable insights into the popularity of political parties in the context of the European Union along with other jurisdictions and how these trends change over time. Furthermore, by incorporating fractal dimensions and ARFIMA (Autoregressive Fractionally Integrated Moving Average) analysis into the data obtained, it is possible to reveal previously non-evident relationships, thereby providing a more comprehensive understanding of the audience's political leanings and their interest in specific political parties. The aim of this exploratory study is to assess the potential of ARFIMA, applied to Google Trends data, in characterizing political parties. Preliminary results indicate that this apparatus can be useful for that purpose.*

KEYWORDS: Google Trends, political parties, European Union, fractal dimensions, ARFIMA analysis

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INTRODUCTION

Google Trends is a popular tool for exploring the online behavior of Internet users. One of the most prominent uses of the platform is for analyzing political trends, particularly in the context of elections and other political events. Despite its widespread use, however, there are a number of controversies surrounding the use of Google Trends data for political analysis. One of the main advantages of Google Trends is that it provides a large amount of data in real-time. By tracking the popularity of certain keywords and phrases, it is possible to gain insights into the interests and opinions of a given audience. This can be particularly useful for political analysis, as it allows researchers to track the popularity of different political parties and candidates over time. However, there are several limitations to the data provided by Google Trends. One of the main issues is that the data are based on Internet searches, which means that it is not representative of the entire population. Additionally, the data are not always accurate, as it can be influenced by factors such as Internet censorship and the use of VPNs (virtual private network) that mask the origin of searches. Despite these limitations, researchers have developed different techniques for analyzing Google Trends data in order to gain a more accurate understanding of political trends. One such technique is ARFIMA (Autoregressive Fractionally Integrated Moving Average) analysis, which is used to reveal previously non-evident relationships in the data.

The European Union, comprising 27 member states after the Brexit, has been characterized by a relatively stable political

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landscape in terms of the number of political parties present in its national legislative assemblies. This stability can be observed in the period from the financial crisis of 2008 to the present day. The financial crisis of 2008 had a significant impact on the political landscape of the EU (Hutter & Kriesi, 2019; Magalhães, 2014; Serricchio *et al.*, 2013), with many member states experiencing a shift toward more populist and Eurosceptic parties (Dijkstra *et al.*, 2020). For instance, in some countries like Italy and Poland, populist parties have gained significant support, while in others like Germany, the traditional parties have remained dominant. Despite this trend, however, the overall number of political parties present in the national legislative assemblies of the EU member states has remained relatively stable. This constancy can be attributed to certain reasons, including the proportional representation systems used in many EU member states which embody a given boundary for new parties to obtain full presence in these assemblies. That system is intended to avoid that a wide range of small parties could hinder the work of the assembly and prevent any one party from gaining a disproportionate amount of power. Another important factor is the presence of larger political coalitions or alliances at the national level. These coalitions or alliances provide a platform for parties from different ideologies to work together and pool their resources.

In this context, Google Trends is an interesting tool for exploring the public interest and awareness of political parties. By tracking search data, it is possible to identify changes in public attention and engagement with specific parties and individuals. Additionally, Google Trends data can be used to identify correlations between different political entities and to understand the key drivers of public interest. In addition to Google Trends, ARFIMA (Autoregressive Fractionally Integrated Moving Average) models can provide valuable insight into the underlying patterns and dynamics of political trends. ARFIMA models are statistical models that are used to analyze time series data, such as search data from Google Trends. ARFIMA is similar to ARIMA (Autoregressive Integrated Moving Average) technique, which is widely used since the 1970s, but it incorporates fractional integration that helps capturing long memory or self-similarity in the data. By analyzing the patterns of change in the data, ARFIMA models can identify underlying trends and patterns that would not be apparent from simple visual inspection or classic time series analysis. Despite the potential of combining the analysis of Google Trends with the capabilities offered by the ARFIMA technique, the authors are aware that the use of these data is not without controversy. Therefore, the present exploratory study and the results obtained from it must be approached with caution, as preliminary empirical insights would inspire further research. By applying ARFIMA to each time series, it will be possible to assign a decimal number to each political party, as a fingerprint, which will allow us to delve into their evolution, their similarities, and glimpse differences between the audiences who are interested in them through the searches. Among other variables, the country, the age of the political party since its foundation, and the political orientation will be explored to see if they can have a detectable effect on these search patterns and the predictable character of that online visibility.

The remainder of the paper is as follows: section 2 integrates relevant literature on the key aspects of the research, section 3 provides details on the econometric apparatus and data collection processes, section 4 offers and discusses empirical results, and finally, section 5 concludes and delivers some insights into policy implications.

BACKGROUND

The surge of Internet use in politics accelerated in the wake of the 2008 presidential elections in the United States of America, where candidate Barack Obama began to develop a novel Internet presence (Curran & Singh, 2011: 27; Gibson & McAllister, 2011: 307, 227; Huberty, 2015: 993). The Internet has become an increasingly important tool for political parties, both in general and in the context of the European Union. The ability for parties to be visible on the Internet, particularly through Google and other search engines, is seen as crucial for reaching potential voters and building support. With a majority of the population having access to the Internet, political parties are recognizing the importance of having a strong online presence in order to connect with potential voters. This includes having a well-designed website, having a strong social media presence, and appearing high in search engine results. Furthermore, the Internet has become a major platform for political communication and mobilization. Political parties can use the Internet to reach a wider audience and engage with potential supporters in ways that were previously impossible. This is why many parties are investing in online advertising and targeted campaigns to reach specific groups of voters. Moreover, the Internet provides new opportunities for parties to gather data and conduct research. By tracking online behavior and analyzing data, parties can gain insights into public opinion and voter preferences. This allows them to tailor their messaging and campaign strategies to better appeal to specific groups of voters. Citizens perform different searches of political terms or names of politicians on the Internet, which serves as the basis of an informed decision (Dylko, 2013: 65, Knobloch-Westerwick, Utych & Kam, 2013: 152–153). They inform and interact in the network by relying on the main search platforms that “have become an important part of the

public dialogue” (Park, 2012: 680). It can be considered that searches for information about a particular candidate are motivated by a personal interest or by the consideration of a future vote (Wagner & Gainous, 2009: 507; Yasseri & Bright, 2014: 4)

Google is widely recognized as the leading search engine among Internet users, and it can be particularly relevant when it comes to searching for information about political parties in the European Union, as it is the preferred search engine by Western users (Urman *et al.*, 2022). Considering its ease of use, accuracy and perceived relevance of results, and the wide range of information it provides, it is the preferred entry point for many individuals looking to access the websites and social media profiles of political parties in the EU, among other related political content. One of the key advantages of Google as a search engine is its ability to provide accurate and relevant results in response to user queries. This is achieved by advanced algorithms that consider a broad range of factors, such as the relevance of the webpage, the popularity of the site, and the keywords used in the search query. Furthermore, Google’s search results are often personalized, considering the user’s location, browsing history, and previous search queries, which makes it even more relevant to the user.

Despite the usefulness of these data set and techniques, however, there are several controversies surrounding the use of Google Trends data for political analysis. Some argue that the data are not reliable enough to be used for academic research, while others claim that the platform is biased toward certain political views. Furthermore, some researchers have raised concerns about the use of Google Trends data for political campaigning, as it can be used to target specific groups of voters. Although it is a widely used tool, researchers who use Google Trends to support their academic contributions have identified some disadvantages in its use. In the first place, when comparing the searches of terms in different states, we must not lose sight of the fact that Google as a reference search engine does not have the same implantation in each state and may distort the results (Jun, Yoo & Choi, 2018: 71). Second, and related to the previous question, Google Trends offers only Google search results. Third, the methodology used to show the results is not known (Mellon, 2013: 280; Reilly, Richey & Taylor, 2012: 152). Fourth, it cannot be checked by external agents. Fifth, it is not possible to precisely know the absolute number of selected searches (Olds, 2013: 264). Sixth, more transparency is needed in the data collection process (Huberty, 2015: 1005). However, along with these limitations, Google Trends has been widely used and “has been successfully expanded to various fields over the past decade” (Jun, Yoo & Choi, 2018: 80). Consequently, it is important to exercise caution when interpreting the findings of the current exploratory study. The results should be considered preliminary and exploratory in nature, serving as a starting point for further research. By utilizing the ARFIMA model on each individual time series, we will be able to assign a unique numerical value to each political party, effectively creating a “fingerprint” for each. This will enable us to delve into the evolution of each party, identify similarities and differences, and gain valuable insights into the interests and preferences of their respective audiences as reflected in online searches.

The year of foundation of a political party can impact its visibility on the Internet, particularly if it is younger or older than the financial crisis. Younger parties, for instance, may have the advantage of being founded after the widespread adoption of the Internet and social media, enabling them to leverage these technologies more effectively for their political goals. Additionally, younger parties may have had access to more funding for their campaigns and the development of their digital infrastructure, allowing them to establish a stronger online presence. Furthermore, younger politicians and activists may be more tech-savvy and comfortable with utilizing digital tools for political purposes, providing them with an edge in building an online presence. The financial crisis, which had a profound impact on many countries, also contributed to increased political and social polarization, changes in public attitudes toward politics, and a shifting political landscape. Younger parties may be better positioned to take advantage of these changes and establish a stronger online presence as a result. Finally, younger parties may have a more tech-savvy and digitally engaged target audience, which may be easier to reach and engage with through digital channels. The terms “ideological spectrum” and “political spectrum” are used to describe the range of political ideologies held by a political party. It is often represented as a numerical continuum that ranges from the left to right of the political spectrum, with zero being considered the center, negative values representing the left, while positive values represent the right (i.e., -2 Far-Left; -1 Left; 0 Center; 1 Right; 2 Far-Right). It is also interesting to check if that political orientation has also influence in their behavior as term of interest in Google. Furthermore, the European country in which a political party operates can significantly impact its visibility on the Internet. The availability of Internet access and the extent of Internet usage, for example, can widely vary between countries, affecting the reach of the party’s online presence. Moreover, the utilization of social media platforms can differ greatly between countries, impacting the party’s ability to connect with its audience through these channels. In addition, regulations and censorship laws surrounding the use of the Internet and social media can vary greatly, potentially hindering the party’s ability to spread its message and engage with its target audience online. Furthermore, cultural norms and values regarding the use of the Internet and social media can vary between countries, influencing the perception of the party and

the extent to which its online presence is utilized. It is crucial to understand these elements to grasp the visibility of a political party on the Internet. All these characteristics of a political party, age, geographical space, and ideology contribute to their specific identity and hence could have an impact on their specific visibility. As stated by Milan (2015), the shift to a politics of visibility promoted by new technologies like – in his research – social media can have significant consequences in collective action.

In addition to our focus on analyzing dynamic web searches and interpreting them in political terms, there is a concern regarding the choice of methodological apparatus and the potential theoretical implications it may entail. There exists various mathematical models and techniques to create accurate explanations and predictions. Some authors argue that forecasting is based on the idea that the future is a singular, linear progression stemming from past events. There are a plethora of studies that utilize such models and even several researchers that use web search analytics as a source material for successful forecasting. The main mathematical models used in this research include time series algorithms such as (Autoregressive Integrated Moving Average) ARIMA, (Seasonal Autoregressive Integrated Moving Average) SARIMA, (Autoregressive Fractionally Integrated Moving Average) ARFIMA, as well as multivariate regressions and the (Autoregressive Moving Average with Exogenous Inputs) ARMAX model. It is important to note, however, that there is no one definitive method for determining which explanatory or forecasting technique should be used when analyzing a specific time series. In this exploratory work, a publicly available data set from Google Trends will be examined using the seasonal SARFIMA($p, d, q; P, D, Q$) estimation model, as proposed by Granger and Joyeux (1980), which is also connected to ideas derived from chaos theory.

Our analysis centers on the idea of predictability. If the time series data collected from social phenomena follow the random walk hypothesis, then attempting to make explanations or predictions is unnecessary, as the current levels already reflect all available information and are subject to change with new information. However, if a certain level of predictability is possible, further questions arise: to what extent can reliable explanations and predictions be made? Are there effective ways to detect significant changes in the data? Are there long-term effects of certain events on the studied phenomena? This leads to the consideration of nonlinearity and the application of chaos theory, which suggests that a certain level of modeling and forecasting is possible. Another important concept in this context is self-similarity, as it allows for connections to be found across different geographic locations and time periods.

Chaos theory, first proposed by Lorenz in 1963, suggests that certain systems, while appearing random, may actually have underlying patterns and structures that can be identified and studied. One key concept in chaos theory is the idea of limited short-term predictability, which suggests that while it may be difficult to predict the exact outcome of a chaotic system in the long-term, it may be possible to make more accurate predictions in the short-term. Another important concept in chaos theory is self-similarity, which suggests that similar patterns and structures can be found across different scales and timeframes in a chaotic system. In this context, it is important to highlight that the application of these concepts can be used to study a wide range of different systems, including meteorology and other fields. Some details about this framework can be outlined:

- Lorenz’s model shows that complex behavior can have a hidden deterministic structure, revealed by simple equations given specific initial conditions and parameters. This new type of systems tends to be very sensitive to initial conditions; additionally, they have a long memory (persistence around a certain trend).
- Other authors (e.g., Mandelbrot, 1983) have developed a geometry based on the concept of fractal dimension. In fact, under this approach, dimensions do not need to take integer values (0 in a point, 1 in a line, 2 in a plane figure, 3 in a body, like in Euclidean geometry) but may possibly also present fractional values that can be accurately measured as “fractal” dimensions. The profile presented by many economic and financial time series resembles this kind of graphical object, and it is interesting to check if this also happens with other social and political trends.
- An additional key element of chaotic systems is self-similarity (e.g., smaller parts resemble the shape and properties of a bigger piece of it). This feature could help to link short-term behavior to long-term trends.

In this empirical paper, an exploration of the visibility of political parties via Google Trends is attempted, in order to contribute to this ongoing discussion. The present article complements this view using ARFIMA processes (Granger & Joyeux, 1980) instead of Hurst exponents (Hurst, 1951) to approach the fractal nature of the processes involved, as detailed in Flores-Muñoz *et al.* (2018)⁷ which are also provided here for clarity in the next section of the paper.

⁷ Flores-Muñoz, F., Báez-García, A. J., & Gutiérrez-Barroso, J. (2019). Fractional differencing in stock market price and online presence of global tourist corporations. *Journal of Economics, Finance and Administrative Science*, 24(48), 194-204

MATERIALS AND METHODS

Different methods are available for the analysis of relevant time series related to social phenomena. In recent years, given the inspiration of chaos theory, fractal geometry, and several other instrumental advancements, along with a significantly growing availability of data, this type of empirical study has suffered a significant development. Mandelbrot (1983) dimensions relate to time series analysis by means of long-run dependence systems or long memory processes. Thus, chaos theory concepts have a certain connection with a robust methodology for time series analysis: the Box–Jenkins methodology (1971) or the ARIMA estimation process. Abraham-Frois (1998) offers a didactic view of this connection, which is not free of controversy (Graves *et al.*, 2017), and that is the view we follow here.

Let us consider y_t as a relevant time series for our purposes (i.e., Google Trends synthetic number). When running ARMA estimations, the first step is to evaluate if the series is stationary; that is, if the mean and autocovariances of the series do not depend on time. Therefore, the time series first needs to be differenced until it is stationary. The number of times the series needs to be differenced to achieve stationarity is reflected in the d parameter (Box & Jenkins, 1976). When d is allowed to be a non-integer, then the result is a fractionally integrated, autoregressive, and moving average estimation model (ARFIMA; see Appendix for some extra details on notation). Originally proposed by Granger and Joyeux (1980), the ARFIMA model follows the expression:

$$\phi_p(B)(1-B)^d y_t = \theta_q(B) \varepsilon_t \quad (1)$$

or

$$(1 - \sum_{i=1}^p \rho_i B^i) y_t (1-B)^d = (1 + \sum_{j=1}^q \theta_j B^j) \varepsilon_t \quad (2)$$

where $(1-B)^d$ allows for the fractional differencing of y_t in pursuit of stationarity, being $\mathbb{R}$ and $\mathbb{R}$, respectively, the p and q correspond to AR(p) and MA(q) estimations, B is the “lag” operator, and ε_t is the usual random residual.

$$B y_t = y_{t-1}; B^p y_t = y_{t-p} \quad (3)$$

$$B \varepsilon_t = \varepsilon_{t-1}; B^q \varepsilon_t = \varepsilon_{t-q} \quad (4)$$

Capital D , P , and Q are also added to account for seasonal effects, like in the classic ARIMA approach, being B^s such that $B^s y_t = y_{t-s}$, with $s=13, 26$, etc. in this paper with weekly data.

$$\phi_p(B) \Phi_P(B^s) (1-B)^d (1-B^s)^D y_t = \theta_q(B) \Theta_Q(B^s) \varepsilon_t \quad (5)$$

As noted by Peters (1994), a non-integer value for d is connected to the concept of the fractal dimension D developed by Mandelbrot (not to be confused with the D for seasonal effects) as follows:

$$D = \frac{3}{2} - d \quad (6)$$

The *fractal* dimension is related to a set of objects for which dimension is not an integer number, evolving from the classic Euclidean idea of dimension compared to the one studied in fractal geometry. Demand data series are among the candidates in the social sciences to be analyzed using this novel approach. The d parameter is also related to the popular *Hurst exponent* (Hurst, 1951), which is a measure of long memory in time series (Nile river behavior). This relationship allows researchers to establish certain boundaries, and to some extent decipher the behavior of the corresponding time series depending on the estimated d for the ARFIMA. The parameter d in ARFIMA models plays a crucial role in determining the memory and predictability of a time series. If $0 < d < 0.5$, the time series has long memory, meaning that past values have a lasting impact on present values, leading to slow decay in the autocorrelation function. This type of time series is more difficult to predict, as the influence of past values will persist for a longer time. On the other

hand, if $0.5 < d < 1$, the time series has short memory, meaning that past values have a rapidly fading impact on present values, leading to a faster decay in the autocorrelation function. This type of time series is easier to predict, as the influence of past values will fade away quickly. In general, the closer d is to 1, the more predictable the time series will be. The precise interpretation of the d parameter and its effect on predictability will depend on the specific context and the application of the ARFIMA model. Some authors have proposed the existence of a relationship between memory and chaos in certain systems, so long-term memory in a time series could be related to the existence of certain chaotic patterns in its evolution.

Estimating d in a given social-related time series is relevant because, if significantly different from 0, it is related to long memory and to a certain degree of predictability. Additionally, the correct modeling of a time series allows for a more efficient detection of structural breaks. This is particularly interesting in political and social phenomena, which are subject to periods of instability, regular election processes, or the entry into force of new regulatory frameworks. We compare classic SARIMA processes with the corresponding ARFIMA ones. The comparison is made between the class of seasonal ARIMA models, SARIMA($p, d, q; P, D, Q$), with an integer non-negative value of d , and the alternative given by the seasonal ARFIMA specification with a non-integer value of d . This study considers the analysis of weekly time series as provided by Google Trends, related to the four main political parties that are present in the corresponding national parliaments of the 27 member states of the European Union (EU). In order to have a complete comparison from political perspective, and given the strong interaction between the EU-27 and the United Kingdom along with the United States in almost any area of interest (defense, trade, science, migrations, ...), the study also included the main political parties of both UK and USA. Only the two main parties were selected from USA because of the most prominent bipartisanship still present in that country. The sample period, organized in weekly data as provided by Google Trends, is April 2017 to April 2022, which means four series in each of the 28 countries plus the 2 time series for USA, including 261 observations in each time series, corresponding to 29,754 observations across the whole sample. This period of 5 years with weekly data is a standardized extraction by default from Google Trends as the authors considered a better solution for the replicability of the results. Additionally, that five-year period is strongly interested from a political point of view, including the political life of Donald Trump in the US, the role of Emmanuel Macron as President of France, and the consolidation of several new political parties in the corresponding European national parliaments since their birth as political movements derived from the financial crisis. This period also explicitly excluded the period of the invasion of Ukraine by Russia, which strong political implications could distort the present empirical experiment. Google Trends provides a synthetic artificial number that assigns the value of 100 to the week with the highest volume of search and rescales the rest of the weeks in proportion to that day. When inspecting a multitude of series, such as in the case of European political parties, it is not useful to compare relative volumes of searches. In this case, it is more useful to analyze other subtle elements such as trends or the fractal dimension that can be gleaned through the use of the ARFIMA technique.

Model selection is based on the usual test for individual significance of parameters (usual 1% and 5% levels), the normality of resulting residuals under Jarque–Bera test, and the global significance of the model using F statistics along with minimizing information criteria among models. Estimation of d was performed using EViews9 (based on Sowell, 1992; Doornik & Ooms, 2003). Estimation was performed using the standardized Maximum Likelihood (ML). For ARFIMA estimation, the fractional difference parameter is initialized using the Geweke and Porter-Hundlak (1983) log periodogram regression (Automatic), with a fixed value of 0.1. The information matrix estimate is computed using the outer product of the gradients (OPG). The optimization algorithm included in Eviews is also based on the Berndt–Hall–Hall–Hausman (BHHH) algorithm. At the time of this writing, this software does not offer the technical capabilities to perform fractional D (for the seasonal component), so D remains integer in both SARIMA and seasonal ARFIMA specifications, with $D=13, 26$ in several estimation models (weekly data). This is a limitation of this empirical work that will be overcome in future research. This research contributes to the literature because it shows the potential of a new tool for the analysis of relevant time series to monitor the behavior of political processes.

Once the fractal dimension and other estimation parameters of each of the analyzed series are obtained, it will be possible to group them using common techniques such as cluster analysis. This will allow grouping the search trends and thus verifying if they align based on certain variables such as geographic location or political alignment of each of the parties whose series the parameters correspond to. Cluster analysis is a useful tool for grouping time series data as it allows for the identification of patterns and similarities within the data. By grouping similar time series, it is possible to identify common trends and patterns, which can provide valuable insights into the underlying processes that generate the data. Additionally, cluster analysis can be used to identify outliers or anomalies within the data, which can be useful for detecting and addressing potential issues or errors in the data. Overall, the use of cluster analysis in time series data can greatly enhance our understanding of the underlying processes and trends within the data.

Tab. 1: Estimation for d in ARFIMA models.

D_ARFIMA	
Mean	0.287218
Median	0.280601
Maximum	0.500000
Minimum	0.017669
Std. Dev.	0.101826

Tab. 2: Estimation for d in ARFIMA models, categorized by country.

COUNTRY	Mean	Max
MT	0.467790	0.480633
DE	0.417325	0.500000
HR	0.379756	0.468480
SI	0.352410	0.445311
BG	0.336028	0.387812
HU	0.332779	0.421915
IT	0.328817	0.423320
GB	0.326254	0.499981
PT	0.324977	0.489017
NL	0.315021	0.433109
DK	0.314299	0.346330
GR	0.311563	0.381674
US	0.306271	0.310326
CY	0.300985	0.364048
LT	0.292472	0.499986
All	0.287218	0.500000
EE	0.274963	0.321029
SK	0.267450	0.338061
ES	0.259793	0.270768
IE	0.259560	0.303587
RO	0.259479	0.395390
FI	0.251163	0.443970
LU	0.246585	0.344729
BE	0.242305	0.416351
PL	0.233524	0.352096
CZ	0.229853	0.336539
FR	0.218335	0.393269
AT	0.207575	0.303498
LV	0.190802	0.264655
SE	0.173227	0.228533

Tab. 3: Estimation for d in ARFIMA models, categorized by year of foundation of each party.

FOUNDATION	Mean	Max
[1800, 1850)	0.264056	0.310326
[1850, 1900)	0.285222	0.500000
[1900, 1950)	0.312696	0.499981
[1950, 2000)	0.296096	0.489017
[2000, ...)	0.268265	0.468480
All	0.287218	0.500000

Tab. 4: Estimation for d in ARFIMA models, categorized by situation of each party in political spectrum scale*.

POLITICAL_SPECTRUM	Mean	Max
--2	0.343621	0.393269
-1	0.314776	0.500000
0	0.269680	0.443970
1	0.277241	0.480633
2	0.274681	0.468480
All	0.287218	0.500000

*. --2 far-left; -1 left; 0 center; 1 right; 2 far-right

RESULTS AND DISCUSSION

The first stage of the analysis refers to the values obtained for the fractal dimension d in the different parties. A first impression, offered in Table 1, is that the values of the estimated d are consistent with what is expected for the systems described previously. The time series seem to present “long memory” as the obtained values are in the interval $0 < d < 0.5$, which means that earlier values continue to affect current values to a significant extent, resulting in a gradual decrease in the autocorrelation function. This makes the time series harder to predict, as past values will continue to play a role for an extended period of time.

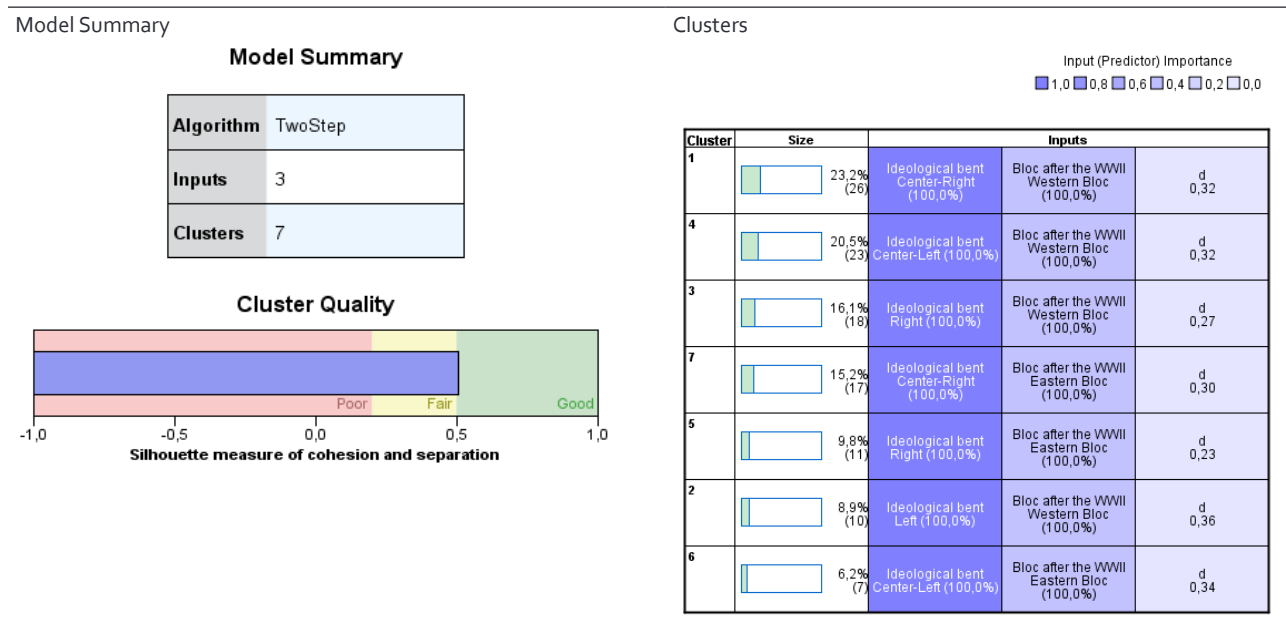
Table 2 presents an ordered list of the d estimates, and it is clearly apparent that the location of each political party within a specific country is a factor that must be given due to consideration. The countries with the largest economies have been emphasized to show that they are spread out along the ordered list rather than concentrated toward high or low values of d .

The year of foundation of each political party appears to have a minor effect on the differentiation of the d estimate, leading to lower predictability in both very old parties (19th century) and very new parties (established post-financial crisis), and higher predictability among parties founded in the first half of the 20th century (Table 3).

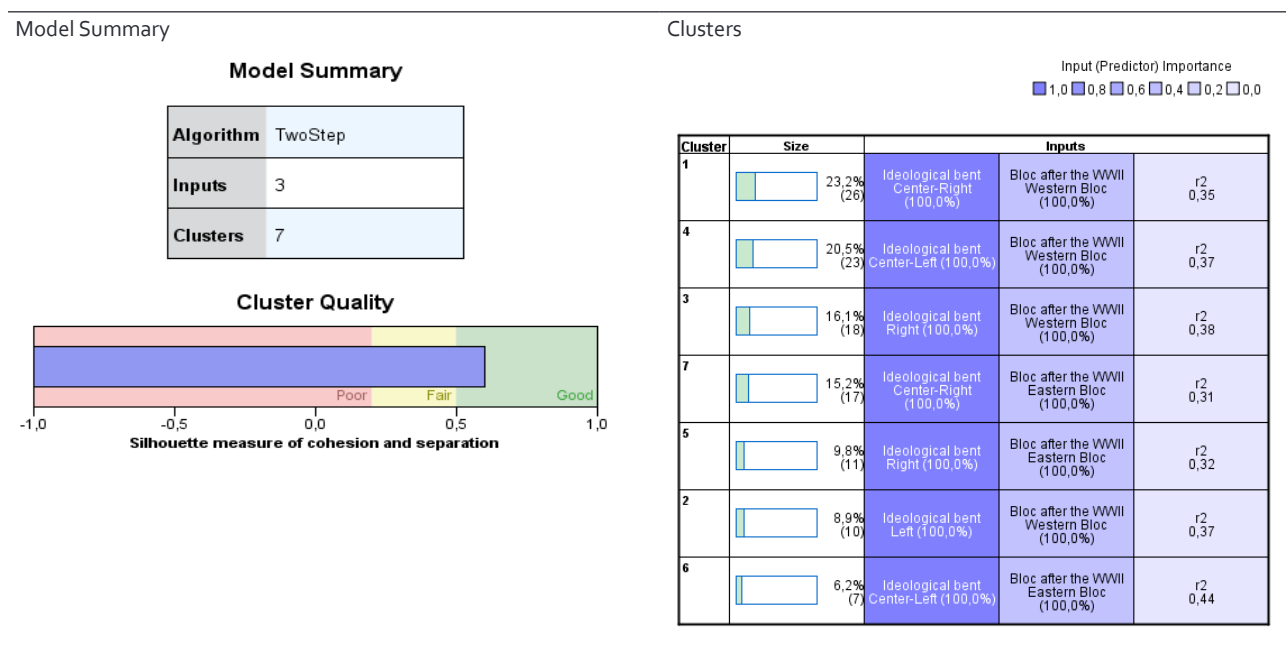
Table 4 does indeed reflect a decreasing order in the average d estimates, when they are ordered according to the political ideology scale described previously. There is higher predictability in the time series related to the political on the left and somewhat lower predictability on the right.

In order to complete the analysis, the cluster method will take into account the categorical variables of political ideology of the parties and the belonging of the countries to one of the two blocks, Western Europe (capitalist) and Eastern Europe (communist), which formed the old dichotomous political division in which Europe was divided. Ideology is a relevant factor when making a separation in behavior, especially in a world like today's where social networks filter the speeches that citizens receive and reinforce one ideology or another with interests of various kinds, whether commercial or political. The adherence of countries to one of the two political blocks formed after II World War also seems to be a relevant factor in behavior, as in the period of greatest growth and splendor of the countries, they lived from opposite ideologies and political forms, which created a completely different life experience and socialization in the over 30 years that this political division lasted. And although over the years all these countries have adopted the market economy and parliamentary democracy as a form of government, it is still very likely that the political origin will continue to be a differentiation factor.

Tab. 6: (d) Cluster analysis.



Tab. 7: (r^2) Cluster analysis.



As quantitative variables, data from the fractal value d and r^2 of the ARFIMA (fractionally integrated ARIMA) stochastic models derived from the analysis of the time series of political party searches will be considered. In Table 6, the summary of the model of the first cluster analysis is outlined. It is a two-stage cluster analysis, using log-likelihood as a distance measure and the Akaike information criterion as a clustering criterion. Three input variables are used, 2 qualitative or categorical variables are used, and 1 quantitative or continuous variable is used. The categorical variables were rearranged to express ideological inclination (4 categories) and the political block after the 2nd World War (2 categories). As a continuous variable, the fractal value derived from the ARFIMA models is used.

The cluster analysis of the first model has good discrimination between clusters, observing a measure of separation and cohesion silhouette with a value of 0.5, and it has identified 7 clusters with the clustering criterion used. These clusters belong to each of the ideologies with each of the political blocks, so the analysis determines that the fractal values of the ARFIMA models show clustering criteria regarding the ideology of the political party and the block to which they belonged after the II World War. In the detail of the data of the clusters (Table 6), two of the largest are observed (Centre-Right and Western Europe [23.2%] and Centre-Left and Western Europe [20.5%]), two intermediate (Right and Western Europe [16.1%] and Centre-Right and Eastern Europe [15.2%]), and three of smaller size (Right and Eastern Europe [9.8%], Left and Western Europe [8.9%], and Centre-Left and Eastern Europe [6.2%]). The political ideology variable of the parties is the one that has the greatest importance when forming the clusters.

In Table 7, the summary of the second cluster analysis model is also offered. This is also a two-stage cluster analysis, with log-likelihood as the distance measure and Akaike as the grouping criterion. Three input variables are also used, two of which are qualitative or categorical and one is quantitative or continuous. The categorical variables are the same as those used in the previous model (ideological inclination and the political bloc after II World War). In this case, the r^2 value of the ARFIMA models performed with the data of political party searches in Google Trends is used as a continuous variable.

This second analysis has a good discrimination between clusters, being better than in the previous case, by obtaining a higher separation and cohesion measure, with a value of 0.6 compared to 0.5 of model 1. Seven clusters have also been identified with the grouping criterion used and follow the same criteria, where each cluster belongs to each of the ideologies with each of the political blocks. This analysis determines that the values of r^2 of the ARFIMA models show grouping criteria regarding the ideology of the political party and the block to which they belonged after II World War, and, therefore, the predictive value of said ARFIMA models is related to it. The size of the clusters and the variable of greatest importance (the ideology of the political parties) are the same as in the previous model.

CONCLUSION

The Internet has ushered in a new era of interpersonal political communication, marked by an unprecedented level of citizen participation. Political actors, quick to recognize the opportunities presented by this digital landscape, have strategically leveraged their online presence. The profound impact of this shift on politics is undeniable. This evolving channel of communication and engagement, where various political formations and leaders actively seek to enhance their connections with the electorate, amplifies the reach and resonance of their messages. In parallel, citizens exhibit a growing interest in political parties that consistently navigate the complexities of contemporary times, maintaining a robust presence in public life. The conduit for this interaction is the Internet, with popular search engines such as Google serving as gateways to the web pages and social media profiles of these political entities. Our exploratory study suggests that during these searches, Internet users leave a discernible digital footprint that statistical techniques can detect. This opens avenues to infer distinctions among Internet users, unveiling potential geographical or political alignment differences.

Building upon the groundwork laid by Beyer (2012), future research extensions should explore the temporal dimension as a crucial factor in political analysis. Integrating time sequencing into political reform efforts warrants empirical studies akin to the present one, which focuses on time series exploration. Such studies prove instrumental in comprehending the evolving dynamics of political engagement. This exploratory study serves as a foundation for subsequent research into the nature of these identified differences. Understanding the predictive potential of this public data becomes paramount, especially concerning its applicability in political consulting and analysis. As we delve deeper into more sophisticated analyses, adopting techniques like breakpoint detection, as demonstrated in the work of Mora *et al.* (2021), represents a logical progression. This would provide a more nuanced understanding of the underlying patterns and trends in political communication and citizen engagement, enhancing our ability to shape effective policies and strategies.

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ANNEX

AR(p)

$$y_t = \rho_1 y_{t-1} + \dots + \rho_p y_{t-p} + \varepsilon_t$$

MA(q)

$$y_t = \varepsilon_t + \theta_1 \varepsilon_{t-1} + \dots + \theta_q \varepsilon_{t-q}$$

ARMA(p, q)

$$y_t = \rho_1 y_{t-1} + \dots + \rho_p y_{t-p} + \varepsilon_t + \theta_1 \varepsilon_{t-1} + \dots + \theta_q \varepsilon_{t-q}$$

$$y_t - \rho_1 y_{t-1} - \dots - \rho_p y_{t-p} = \varepsilon_t + \theta_1 \varepsilon_{t-1} + \dots + \theta_q \varepsilon_{t-q}$$

$$B y_t = y_{t-1}; B^p y_t = y_{t-p}$$

$$B \varepsilon_t = \varepsilon_{t-1}; B^q \varepsilon_t = \varepsilon_{t-q}$$

$$[y_t - \rho_1 y_{t-1} - \dots - \rho_p y_{t-p}] = [\varepsilon_t + \theta_1 \varepsilon_{t-1} + \dots + \theta_q \varepsilon_{t-q}]$$

$$[y_t - \rho_1 B y_t - \dots - \rho_p B^p y_t] = [\varepsilon_t + \theta_1 B \varepsilon_t + \dots + \theta_q B^q \varepsilon_t]$$

$$[1 - \rho_1 B - \dots - \rho_p B^p] y_t = [1 + \theta_1 B + \dots + \theta_q B^q] \varepsilon_t$$

$$(1 - \sum_{i=1}^p \rho_i B^i) y_t = (1 + \sum_{j=1}^q \theta_j B^j) \varepsilon_t$$

$$\phi_p(B) y_t = \theta_q(B) \varepsilon_t$$

ARFIMA(p, d, q)

If y_t is not stationary, it is required to differentiate it d times. d is allowed to be a fractional number.

$$(1 - \sum_{i=1}^p \rho_i B^i) y_t (1 - B)^d = (1 + \sum_{j=1}^q \theta_j B^j) \varepsilon_t$$

$$\phi_p(B) (1 - B)^d y_t = \theta_q(B) \varepsilon_t$$

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Elder Abuse Prevention in Brazil, Norway and Slovakia: a Narrative Review

ABSTRACT:

OBJECTIVES: With the global population ageing, concerns about the incidence, prevalence and prevention of elder abuse have become increasingly pertinent. This study presents a narrative review of empirical research, investigating the elder abuse prevention implemented in public health policies in three selected countries. The narrative review aims to enrich academic critical discussion about the theme and provide insights for policymakers and professional practitioners working towards elder abuse prevention across different regions.

METHODS: Searches in the electronic database CINAHL, Medline, PsycINFO and Web of Science databases were performed to identify and synthesise studies reporting on research aimed at investigating elder abuse prevention. The studies that handle on all prevention levels, had to be published in a peer-reviewed journal, report on empirical research, and are available in full text in Portuguese, Slovak, English or Norwegian and published within a ten-year period (2012 to 2022) were included. A total of 981 studies were retrieved, of which 13 papers met the inclusion criteria for this narrative review.

RESULTS: The evidence indicated that proactive approach within primordial and primary prevention, interdisciplinary cooperation within primary and secondary prevention, and education for healthcare professionals within all forms of prevention were implemented to various extent as elder abuse prevention in Brazil, Norway and Slovakia.

CONCLUSIONS: There is a need to further enhance public awareness of elder abuse through campaigns and advocacy programs; additionally, the routine screening and assessments by healthcare providers for early detection and intervention in suspected abuse cases require improvement; and also, legal and health policy measures must be updated regularly. Elder abuse prevention should be a collective undertaking involving community leaders, healthcare providers, and governmental and non-governmental organisations.

KEYWORDS: elder abuse, prevention, public health policy, Brazil, Norway, Slovakia

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INTRODUCTION

Elder abuse is globally recognised as a human right and public health problem affecting the quality of life and wellbeing of people being exposed, but it also affects the society in terms of economic costs of the consequences of abuse. Elder abuse is expected to increase as the world's population is getting older.

Krug et al. (2002) described violence as an umbrella term, and many terms are used to describe the phenomenon of negative actions that may occur between people in close relations: violence, abuse, mistreatment, maltreatment and neglect. In this article, 'abuse' will mainly be used, but also 'violence'. The WHO (2022) defines elder abuse as a single or repeated act, or a lack of appropriate action, occurring within any relationship where trust is expected, which causes harm or distress to an older person aged 65+. Abuse

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constitutes a violation of human rights, and it includes physical, sexual, psychological, and emotional abuse; financial and material abuse; abandonment; neglect and actions causing a serious loss of dignity and respect (Hall et al. 2016; Silva et al. 2018). Elder abuse can take place in institutions (often nursing homes) and within family settings (older adults who depend on other people to perform complex and basic activities are those most exposed to situations of abuse) or having a more structural ground taking place in the way society treats or lacks to treat the elderly population (Atkinson et al. 2023; Máriássyová & Ujházyová, 2021). Although the issue of elder abuse is commonly viewed as a problematic dyadic relationship between victim and perpetrator, Jackson & Hafemeister (2016) and De Liema et al. (2018) described the issue at the first as a monolithic phenomenon (dyadic relationship problems) and later as a multidimensional phenomenon that requires a multidisciplinary approach from various fields, including public health policies, psychology, social work, medicine, justice, criminology, sociology and gerontology.

In older adults, the decline in functional capacity, the impact of polypharmacy, cognitive deficits and age-related physiological changes can lead to impaired mobility and the worsening of clinical disorders. These health challenges, added to the context of abuse, can lead to reduced quality of life and increased risk of institutionalisation, hospitalisation and mortality (Klinedinst et al. 2022; Zilbershlag et al. 2023). Additionally, older adults may experience social isolation due to declining physical and mental health, sensory impairment, a lack of supportive relationships and immigration status, among other factors (Gallo et al. 2022). Changes that come with age may often increase vulnerability. The causes of elder abuse vary, with research highlighting age discrimination, mental and physical health problems in close relationships or as a result of the societal structure, and family and carer problems (Shepherd & Brochu, 2021; Wei & Balser, 2022). Elder abuse in close relationship spheres can occur as a result of family disputes or caregiving stress related to responsibilities in taking care of older family members. Abuse of older family members may also occur due to financial burdens, a lack of support and emotional stress. However, elder abuse in close relationship is added to the structural dimension of violence that in this research can be exemplified by a lack of educational programmes, slow implementation, inadequate revision of laws and regulations, and poorly developed support and resources which contribute to weaken the prevention chain (Atkinson & Robertson, 2023).

This study is based on new prevention strategies aiming at the prevention of stages of a disease and operating at the levels of *primordial, primary, secondary, tertiary and quaternary* prevention strategies within multidisciplinary collaboration from individual level, through community practice to national policy (Kisling & Das, 2023; Martins et al. 2018). *Primordial prevention* focuses on social and environmental conditions to reduce risk factors for the whole population. Laws and national policies often promote these measures. This prevention strategy is relevant to avoid elder abuse with the good national policies and laws with focus on social conditions like socioeconomic system within social welfare. *Primary prevention* targets the whole population to educate them and prevent exposure to risk factors; *secondary prevention* focuses on the early identification of actual elder abuse and stopping the occurrence; and *tertiary prevention* targets the treatment of elder abuse victims and focuses on preventing the recurrence of abuse and mitigation of this type of actions (Sousa et al. 2021; Day et al. 2017). According to Martins et al. (2018), *quaternary prevention* primarily concerns the risk of exposure to overtreatment or overdiagnosis. However, it is also important to protect individuals from unnecessary medical interventions. Regarding elder abuse, it is important to consider whether this preventive strategy will have an impact on the older adults over time and how they may react. The topic of quaternary prevention is currently being debated in the medical field, and it has not yet been fully integrated into medical practice.

In this study, an older adult is defined as someone aged 65 or over, and the focus is on describing common elder abuse prevention measures in three selected countries.

BACKGROUND ON SELECTED COUNTRIES

Comparing vastly different countries might seem to have difficulty in identifying the fine-grain differences which are more apparent when studying similar countries, whereas comparing similar countries may miss the bigger picture of transnational differences. The researchers selected three different countries to maximise diversity along the dimension in question. *Brazil* represents a developing country with a rapidly ageing population and unique challenges in elder care, highlighting strategies in resource-constrained settings. *Norway* exemplifies a Scandinavian model with a robust welfare system, offering insights into elder abuse prevention in a context of social equality and extensive public services. *Slovakia* offers a perspective from a post-socialist European country, shedding light on the evolution of elder abuse prevention amid transitioning policy frameworks. The latest statistical overview of elder abuse in each of the three countries is presented. In order to investigate elder abuse prevention, the researchers from Norway created a network of researchers from the three following countries to participate in this study.

Norway

There has been only one national prevalence study on elder abuse among home-dwelling older persons in Norway (n=2,463) (Sandmoe et al. 2019), which uncovered that the overall prevalence for all types of abuse was between 5.2 and 7.2%. This study did not include persons with severe cognitive impairment or dementia nor the very oldest (90 years old and above); therefore, it is assumed that the actual prevalence rate is higher. A recent study on informal caregivers of home-dwelling persons with dementia (n=549) found that two-thirds of informal caregivers had committed at least one abusive episode towards the person with dementia in the past year (63.5% psychological abuse, 9.4% physical abuse, 3.9% financial abuse, 2.4% sexual abuse and 6.5% neglect) (Steinsheim et al. 2022). A national survey of 3,693 nursing staff from 100 nursing homes found that around 60% of staff reported that they had committed at least one act of either physical, psychological, financial/material or sexual abuse or neglect in the previous 12 months. The most frequent types reported were psychological abuse (40.5%) and neglect (46.9%) (Botngård et al. 2020). Even though there is evidence that older persons are exposed to abuse and neglect, there is a lack of national laws and guidelines on how to detect, report and handle such cases in Norway.

Brazil

In Latin America about 37% of older adults suffer from some type of abuse (Brandão et al. 2021). Indicators show the prevalence of abandonment in 10.3% and physical aggression in 6.3% of cases (Castro et al. 2018). According to Santos et al. (2021), violence against older adults in Brazil is characterised by being perpetrated within the family and aggravated by the societal structure. In Brazil, older adults are 30 times more likely to be abused than that of non-older adults. In cases of violence, the perpetrators are in 30.3% of the time related to the victim, characterising the problem as also violence in close relationships. Older adults are more than twice as likely (2.37) to eventually die because of violence; they are also eight times more likely to be abused by formal carers than non-older adults with carers. According to Rodrigues et al. (2017), elder abuse in Brazil occurs within a family context aggravated by the societal structure, being not fully reported or recorded.

Slovakia

In 2019, 1,653 crimes against all older citizens were recorded; violent crimes accounted for 44% of all cases, property crimes 25%, economic crimes 21% and other crimes 10%. The violent crimes most reported were threatening behaviour, intentional harm, violation of domestic freedom, abuse of loved ones and entrusted persons, and robberies. Abuse occurred in families (64.8%), medical facilities (32.5%) and social homecare facilities (2.7%). Economic crime was overwhelmingly fraud, property crime and theft of money and belongings. Common types of abuse committed within the family include psychological abuse, pressure to transfer assets, financial abuse, undignified and humiliating treatment, not providing medicines, basic life or hygiene needs, and physical abuse. Psychological abuse often associated with coercion and blackmail is considered the worst form of violence; it is difficult to prove as older people are reluctant to talk about it (Máriássyová & Ujházyová, 2021).

With this context in mind, our aim was to investigate elder abuse prevention implemented in public health practice and policy in three selected countries. The research question: *How are Brazilian, Norwegian and Slovakian public health policies implemented to prevent elder abuse?* This review aims to enrich the academic critical discussion about the theme and provide insights for policymakers and practitioners working towards elder abuse prevention and intervention across different regions. This study describes the common prevention strategies implemented in these three countries and shows their significance.

THE ECOLOGICAL FRAMEWORK FOR UNDERSTANDING ELDER ABUSE

Elder abuse is a multifaceted issue that has implications for individuals and societies worldwide, and the strategies for prevention vary depending on the context. This study outlines the common preventive measures adopted in three different countries. In order to comprehend and elucidate the phenomenon of abuse, as well as its connection to the various dimensions of elder abuse and

prevention, the ecological framework, specifically the multisystemic Bronfenbrenner's ecological framework (1979) along with Krug et al. (2002), is employed. This framework offers a perspective encompassing four interconnected levels, which evolve over time in what is known as the chronosystem. It highlights the intricate factors associated with elder abuse: (1) The micro-level pertains to individuals' relationship with themselves and their immediate environment, considering demographic factors like education, income or age within smaller social circles like family and friends. This includes experiences of abuse during childhood and the physical and mental health of individuals. (2) The meso-level describes the closer relationships between individuals and their immediate environment, particularly within the family context. For example, it examines the dependence between older adults and their caregivers who are often relatives and the living conditions in which they coexist. (3) The exosystem-level refers to the broader social milieu that indirectly affects the individual, encompassing social networks, community-based activities, and community or local social and healthcare providers. Here, the quality and availability of evidence-based knowledge among healthcare providers can have an impact on elder abuse. (4) Macrosystems are shaped by the societal norms, traditional cultural values, criminal justice policies and social welfare systems of a country. Inadequate legislation or socioeconomic changes within the social welfare system can have adverse consequences for elder abuse. All these levels are complementary and interconnected, and the individual's circumstances within these processes must be considered over time, as denoted by the chronosystem level (Bronfenbrenner, 1979). Furthermore, the 'World report on violence and health' (WHO, 2002) outlines levels of abuse prevention and public health intervention that closely align with the levels of Bronfenbrenner's ecological framework and continue to hold relevance to this day.

MATERIALS AND METHOD

Narrative review

The format of a narrative review was followed with the aim of identifying and providing an overview of previously published evidence concerning elder abuse prevention. According to Sukhera (2022), narrative reviews provide a flexible, readable and practical synthesis of diverse literature and are often useful for teaching or learning about a topic by providing a general overview. Narrative reviews can also set the stage for future research by identifying any discrepancies between practice and theory, gaps and critiquing existing research (Paré & Kitsiou, 2017). To improve the quality of a narrative review, it may be beneficial to incorporate systematic review methodologies that aim to reduce bias in article selection and employ an effective bibliographic research strategy (Ferrari, 2015).

The purpose of this narrative review is to provide social work and public health practitioners, as well as students enrolled in these programmes, with an introduction to elder abuse prevention issues as an educational tool (Green et al. 2006). The narrative review aims to enrich the academic critical discussion between researchers and university students and provide insights for policymakers and practitioners working towards elder abuse prevention and intervention across different regions. During this process, we: (1) reviewed article titles, abstracts or keywords with any mention of aspects related to elder abuse prevention in the three selected countries; (2) evaluated the abstracts of the identified studies as to their relevance; (3) reviewed the full articles connected to those abstracts we classified as relevant; and (4) analysed the identified articles to find similarities or connections and provide an overview of the current knowledge in this specific topic. Therefore, this narrative review links together several studies to present quality and timely summarised knowledge and identifies further questions that need addressing.

Literature searches

The PICOt strategy framework was adapted according to the research topic and then used for the literature search (Riva et al. 2012). The researchers arranged a research question consisting of the population (P), intervention (I), context and countries (Co) and time for data collection (T).

The researchers (MT, JS, VNF, MMN, MY, WM, and AB) performed an initial literature search of CINAHL, Medline, PsycINFO and Web of Science databases in August 2022 to find the most pertinent evidence in the languages that the authors speak (English, Norwegian, Portuguese, Slovak) relating to implicit or explicit descriptions of elder abuse prevention. Google Scholar was used for the grey literature search, especially in connection with the relevant Slovak empirical documents. The database was used to collect articles with the relevant keywords (PICOt) with a combination of 'AND' and 'OR'. The researchers limited the year of

publication to the period 2012–2022. All the processes were carried out by implementing the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) strategy, which is divided into three steps: identification, screening and inclusion (Page et al. 2021). This resulted in the following chain of keywords (Table 1).

Tab. 1: Five components for searching strategy according to PICoT methods.

Population	Intervention	Context	Country	Time
senior	abus*	Public health & security	Brazil	2012–2022
age*	violen*	Public policy & documents	Slovakia	
old*	maltreatment	Preventive strategy	Slovakia	
elder*	assaultive behaviour	Risk assessment Guidelines	Norway	
geriatric*	atrocities	State healthcare		
pensioner*	mistreat*	Public healthcare		
Ageing	neglect	Population health		
aged	harm	Health of citizens/ inhabitants		
patient*	ill-treat*	Health safety		
	bully	Environmental health		
	intimidat*	Community health		
	extort*	National/general healthcare		
	stigmati*	Public welfare		

Five authors (MT, JS, VNF, MMN, MY) independently screened literature search results and identified original studies based on the inclusion criteria. To ensure that the data collection was reliable, triangulation was used to collaborate with the researchers (WM and AB) for possible interpretations of the analysis.

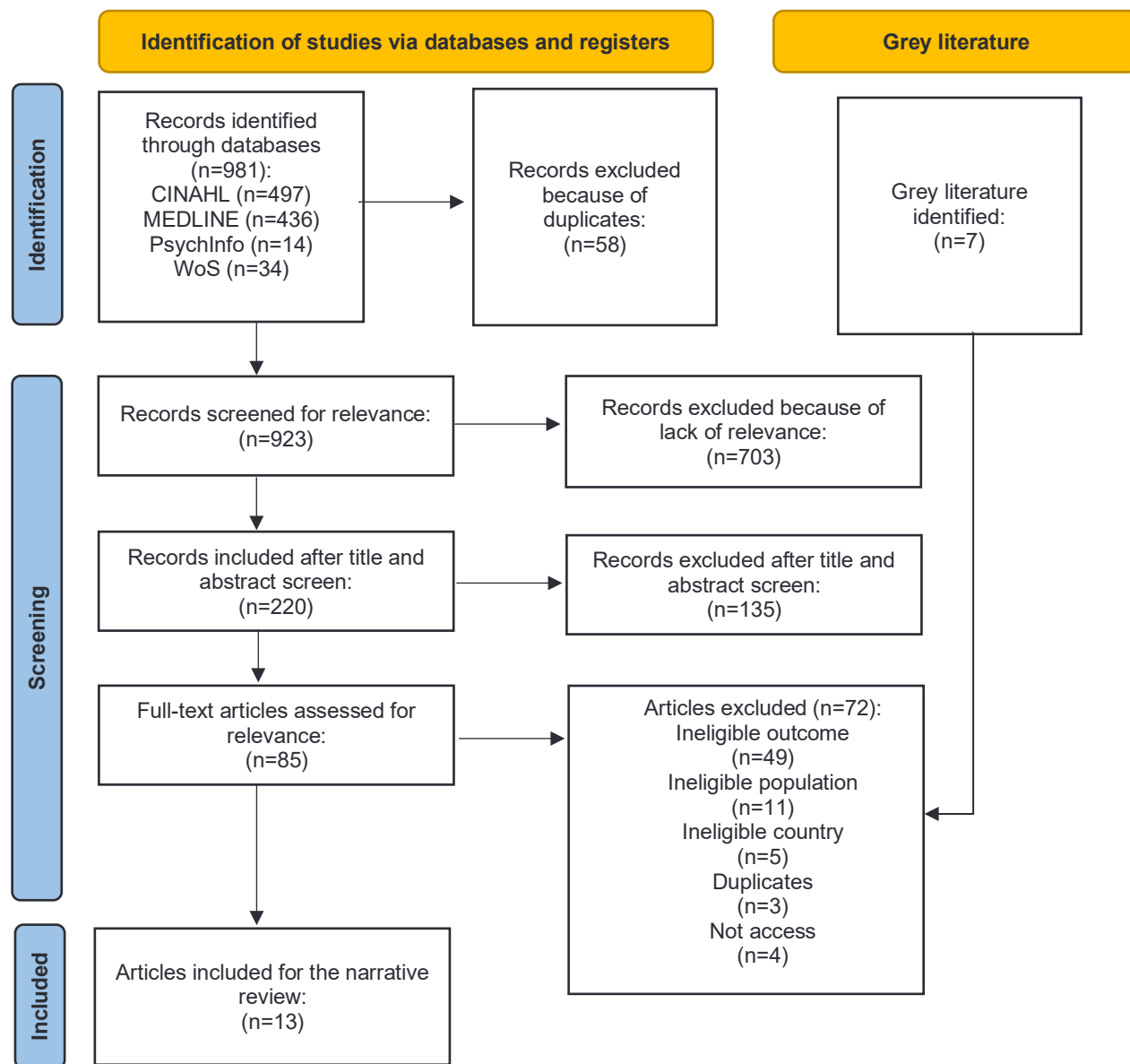
Inclusion and exclusion criteria

For inclusion, original articles or national research reports had to focus on people explicitly described as ‘older adults’ OR ‘older people’ OR ‘elderly’ OR ‘seniors’ and report on abuse in various synonyms and public health context in various terms, and their relevance to Brazil, Norway and Slovakia (see Table 1). The titles, abstracts and content of articles related to the search terms were assessed. Only articles dealing with the prevention of elder abuse in different aspects were included. The prevention should also include a description of the programme design or measures with the potential for implementation at the national or community level. Articles were excluded if the full text was unavailable, or the research did not concern elder abuse and public health. We also excluded books, chapters, posters and doctoral theses because we wanted to explore recent, peer-reviewed empirical research. Duplicates were removed and the remaining articles were screened against the following criteria based on title, abstract and full text. See Figure 1 for an overview of the selection process.

Search Outcome

A total of 981 articles were identified. When duplicates and articles in other languages were excluded (n=58), we screened 923 articles titles and abstracts for relevance. 703 articles did not meet commitment criteria or focus on the study context (e.g., they only mapped prevalence) and were excluded. We read 220 titles and abstracts and excluded 135 because they did not fit in the inclusion criteria

Fig. 1: PRISMA Flow diagram of the search process for the narrative review.



once the majority reported epidemiological data and do not have as main issue prevention of elder abuse. A full-text reading of the remaining 85 articles resulted in the further exclusion of 72 articles, leaving **13 articles** for further analysis. Reasons for exclusion were that the retrieved several articles described the following: mortality due to violence against the elderly, PTSD as a consequence of violence against women, frailty syndrome, nutritional status and sociodemographic characteristics, shame and guilt of women after sexual abuse in the context of trauma, correlation between childhood abuse and geriatric depression, violence against women across the life cycle, childhood emotional abuse and adult depression, Mexico City, Denmark, Czech Republic or duplicates, etc.

The review sample included original qualitative, quantitative and review studies. We followed the format of a narrative review to summarise the results, with the aim of identifying and providing an overview of previously published evidence. All included studies were rigorously and critically appraised. For summary of selected articles, see Table 2 in Appendix.

RESULTS

Results revealed that research in this area has utilised a diverse range of methodological approaches to investigate elder abuse prevention within the three selected countries. Three main categories for the implementation of public health policies in Brazil, Norway and Slovakia for the prevention of elder abuse were identified. These categories are as follows: (1) proactive approach within primordial and primary prevention, (2) interdisciplinary collaboration within primary and secondary prevention, and (3) education for healthcare professionals within all forms of prevention.

Proactive approach within primordial and primary prevention

Elder abuse prevention and enhancement of resilience should be part of public policies, and mental health sequelae of trauma should be better recognised and treated. In Norway, the system of preventive home visits (PHV) from healthcare professionals is a proactive approach to mapping the needs of the older adults (Cronfalk et al. 2017). In Slovakia, 'field social workers' have the competence to deal with problems at the community local level (Máriássyová & Ujházyová, 2021), and dissemination of information is usually practised through public authorities' websites such as the police or various ministries. The police, in cooperation with the Ministry of Interior of the Slovak Republic (2020), published the paper 'Safe Seniors' (2020) which illustrated various situations and information about who can help and who should be contacted. Information was disseminated through posters in public places and on transport such as trains and buses, through radio broadcasts and public discussions, especially during October – Slovakia's 'month of respect for elders'. In Brazil, health workers are expected to focus on the prevention of elder abuse and make recommendations to ensure that vulnerable older adults are not the victim of violence. Community and district nursing employees are increasingly seen as effective professionals in the fields of individual and collective care related to violence, and they are trained to work in primary, secondary and tertiary care (Rodrigues et al. 2017; Souto et al. 2015). Paiva and Tavares (2015) state that one of the most opportune moments for identifying female elder abuse is during the nursing consultation, where there is the possibility of strengthening the bond between patient and nurse.

Interdisciplinary collaboration within primary and secondary prevention

The Police Force, Elderly Protection Services in Norway, intervention centres, nursing home leaders, healthcare professionals, community (field) social workers, psychologists, Legal Aid Centres, Ombudsman for Persons with Disabilities or Information Offices for Helping Victims of Crime, municipalities and community centres are often depicted as having an important role in the prevention and intervention of elder abuse (Souto et al. 2015; Aas, 2018; Cintulova & Kafkova, 2021; Čereyová, 2020; Myhre et al. 2020). Rodrigues et al. (2017) stressed the need for collaboration between researchers, police and providers of social services to tailor their services, prevention and education. According to Aas (2018), the results show that the presence of the police was perceived as a clear moral message to both the victims and perpetrators. Any dialogue with them may have preventive effects in the sense that the victims can identify their own limits, and at its best may clarify choices and priorities on the victim's own terms.

Health professionals should be alert to potential abuse and apply prevention procedures to increase the safety of older adults. An up-to-date curriculum, proper training and screening tools are feasible mechanisms to improve awareness and recognition of abuse in this vulnerable population (Blay, 2017). Souto et al. (2015) mentioned that addressing cases of domestic violence involves specialised services comprising professionals trained to help older people in these situations. There is also a support network of various entities involved in the protection of the elderly against abuse and intervening in cases involving violence. According to Paiva and Tavares (2015), the Family Health Strategy (ESF), through a team of health professionals, in one such body empowered with diagnosing cases of intra-family violence and carrying out prevention and integration actions.

Education for healthcare professionals within all forms of prevention

One of the important prevention that researchers emphasised, especially those from Slovakia, is the need for education to strengthen the ability of people working in services for older adults (Máriássyová & Ujházyová, 2021; Cintulova & Kafkova, 2021; Čereyová,

2020). Myhre et al. (2020) stressed that professionals working with older adults (nursing home directors or leaders) have procedural knowledge and courses of action to follow up incidents on three levels: individual, group and organisational. Botngård et al. (2020) concluded that findings from Norwegian nursing homes show practical and theoretical implications for policy, research, care and education.

Healthcare personnel require a screening tool that can be used to identify signs of mistreatment (Máriássyová & Ujházyová, 2021; Sousa et al. 2021; Botngård et al. 2020; Rodrigues et al. 2017; Myhre et al. 2020). Investments in the training and building of special knowledge about various typologies and risks of elder abuse together with gerontological knowledge for healthcare professionals, as well as organising educational courses or updating knowledge based on the progressive development of hidden and advanced forms of abuse of older people, are essential. A multidimensional strategy is needed to deal with elderly abuse, including better education and legal protection and greater public understanding. Finally, Paiva and Tavares (2015) pointed out that health professionals have the responsibility of informing older adults about prevention and violence protection.

DISCUSSION

The prevalence of elder abuse is becoming an increasingly urgent public health issue (Sousa et al. 2021; Botngård et al. 2020; Paiva & Tavares, 2015; Blay et al. 2017; Galisova & Flimelova, 2014). To effectively address this problem, governments and organisations have implemented various measures to prevent violence and protect older adults.

In Brazil, elder abuse is a growing concern. In response, the Brazilian government has implemented various laws, policies and prevention measures including public campaigns aimed at raising awareness and reducing stigma, as well as support hotlines and social services for victims. Non-governmental organisations also play a crucial role in the prevention of elder abuse in Brazil, providing legal and psychological support to victims. Despite these efforts, much work remains to be done to improve the effectiveness of prevention measures and reduce the rates of elder abuse in Brazil (Sousa et al. 2021; Rodrigues et al. 2017; Blay et al. 2017).

In Norway, the prevention of elder abuse is still developing. The public health system includes mandatory protection of citizens from abuse in the context of providing care for patients and the recipients of social services according to the Norwegian Act on General Health Services §3-3a and the Act on Specialised Health Services §2-1f (Ministry of Health and Care Services, 2023). Some Norwegian municipalities have adopted a model called SafeEst – TryggEst in Norwegian – which aims to create an interdisciplinary action between the police and social care organisations and to help prevent, uncover and deal with cases of abuse against vulnerable adults (Ministry of Health and Care Services, 2023; Elvegård et al. 2020). In addition, Norwegian Centre for Violence and Traumatic Stress Studies (2022) described that the government has implemented a national programme of violence prevention, including training programmes for healthcare providers and a focus on inter-organisational cooperation. This public webpage provides an overview of support and protection services, including information on a violence and abuse hotline, local crisis shelters, centres for victims of assault, protective services for older adults, a national contact line, anger management services and family counselling services. There are contact services for both victims of domestic violence and people who are vulnerable or suspected of being at risk. Botngård et al. (2020) pointed out that explicit laws against child maltreatment, intimate partner violence and sexual violence all exist in Norway, but there is no specific law concerning elder abuse. The preventive home visits (PHV) which are already provided are well-organised forms of care that map individual needs and support coping strategies for older adults. It is a targeted proactive approach with a preventive effect aimed at ensuring well-being (Cronfalk et al. 2017). Through visits, interdisciplinary cooperation for health care in the community is facilitated and the feeling of safety is increased, and at the same time, information about possible help for abuse is disseminated individually.

In Slovakia, elder abuse prevention measures include training programmes for healthcare providers, crisis centres for victims and public awareness campaigns targeting both older adults and their families (Čereyová, 2020). A national action plan is in place to combat violence against older adults (Máriássyová & Ujházyová, 2021). However, implementation of these measures remains a challenge due to limited funding and resources, and there is a need for continued evaluation and improvement of the effectiveness of these measures. Cintulova and Kafkova (2021) stressed that the intervention centres, in close cooperation with the police and other institutions, generally provide victims of domestic violence with comprehensive counselling services consisting of legal, socio-legal and psychological assistance to older adults threatened by domestic violence. The centres are legally obliged to aid the older person seeking assistance within 48 hours of receiving a copy of the police record. The services they provide consist of social therapy activities, assistance in exercising rights and legitimate interest, and in the making of personal arrangements; the services are provided

as outpatient, field and residential services. Intervention centres can also be contacted in an informal way by older adults or someone in their vicinity such as neighbours, acquaintances or friends who notice potential signs of threats against a vulnerable older person; valuable advice and information is then offered to ensure effective assistance. The intervention centres assess the family situation to see if this is indeed a case of domestic violence and provide an overview of legal services and other options available to the older adult; they also coordinate information between institutions within the framework of interdisciplinary cooperation and educate the relevant professions, including the police force, social workers, carers, etc. Intervention centres either operate in the towns and cities or operate as a home-visit service (Cintulova & Kafkova, 2021).

The public health policies implemented to prevent elder abuse align with the multisystemic Bronfenbrenner's ecological model considering various factors influencing elder abuse. The Bronfenbrenner model emphasises personal characteristics, proximal processes, context and time in understanding phenomena. Our analysis of the ecological framework highlights the importance of interventions at different ecological system levels. For instance, ageism interventions often focus on societal macrosystem approaches, but there is a need for more active-oriented interventions at personal and relational levels (Gendron et al., 2022; Cintulova & Kafkova, 2020; Blay et al., 2017; Suoto et al., 2015). Additionally, studies emphasise the significance of understanding intergenerational trauma within an ecological framework to develop effective treatment plans (Phelan, & O'Donnell, 2020; Galisova & Flimelova, 2014). When addressing elder abuse, according to Vincenti & Chapman (2019), factors like personal characteristics, proximal processes, context and time play crucial roles in identifying and preventing financial exploitation. By incorporating ecological perspectives, interventions can be more comprehensive and impactful in safeguarding older individuals. Similarly, the elder abuse prevention framework categorises prevention efforts into primordial, primary, secondary, tertiary and quaternary levels, addressing factors like ageism, education, intervention, screening tools, professional responses and policy impacts (Kisling & Das, 2023; Martins et al. 2018). By integrating these frameworks, a comprehensive approach can be developed to identify, prevent and intervene in cases of elder abuse, considering individual, familial, societal and systemic factors.

According to Pillemer et al. (2016), preventive measures that are considered the most promising include the following: interventions by carers with a focus on relieving the burden of family caregiving; increasing financial literacy through target education courses or follow-up programmes for vulnerable older adults; establishing emergency telephone helplines for persons who have experienced abuse; and multi-disciplinary teams and collaborations between professionals from various helping professions and other stakeholders. Gutterman (2023) describes several possibilities to improve the implementation of prevention: recognising elder abuse (physical, sexual, psychological, financial and neglect) and encouraging the prosecution of offenders; training law enforcement officers, health and social service providers, spiritual leaders, advocacy organisations and groups of older people to recognise and deal with elder abuse; increasing awareness of the injustice of elder abuse through public information and awareness campaigns; and involving the media in these efforts.

Elder abuse prevention in all three countries could be improved by the following:

- i) *Raising public awareness:* Campaigns with a focus on ageism prevention, advocacy programmes and educational programmes for older adults and their families can raise awareness of the importance of ageing in place, care options and the different forms of abuse and risk factors. Information about the local support services and legal procedures relevant to elder abuse should be made easily accessible and freely available to the public.
- ii) *Legal and policy measures:* The implementation of legal frameworks and regulations to protect older adults could help to prevent elder abuse. Laws and regulations at the international and national levels should be updated regularly. Governmental and non-governmental actions are necessary to provide older adults with healthy ageing and ensure their rights, dignity and autonomy.
- iii) *Screening and assessment:* Healthcare staff and care workers need to be provided with the tools that they require to complete the necessary screening and assessments. Risk assessment is important for the field social worker who has close contact with older adults and their families in the community. Politicians, in cooperation with public health experts, must constantly work to update these important and necessary tools to strengthen the hand of those who work against elder abuse.

CONCLUSIONS

Older adults can become victims of abuse due to their advanced age, poor health and greater dependence. Elder abuse has profound negative socioeconomic impacts on older adults as well as their immediate families, which can have significant social, psychological and health implications. The prevention of elder abuse requires a solution involving community leaders, healthcare providers, and government and non-governmental organisations. By striving to eliminate this epidemic with comprehensive education, protection and support, we can ensure that older adults live their latter days in dignity and without fear of violence. Their protection is in the hands of society and the responsibility of the state through its public health policy and preventive programmes, alongside the increased awareness of the lay population and experts through education. Our findings bring a greater understanding of elder abuse prevention in place for protecting the elderly in Brazil, Norway and Slovakia and bring possibilities for critical discussions, bench learning and addressing the complexities of elder abuse on academic level and also on international level. While each country has its own strengths and weaknesses, there is still room for improvement and for collaboration between the countries. More effective prevention measure and lower rates of elder abuse worldwide could be achieved through increased knowledge sharing and international cooperation.

While there are limitations associated with presenting a review of such a diverse group of studies, this paper presents a valuable synthesis of the empirically derived prevention and allows the reader to obtain a comprehensive overview of the quality of research in this area. Finally, several applied implications and research directions are highlighted, which may contribute to the development of further study and ultimately to improvements in prevention on the public health level and a reduction in future instances of abuse and neglect.

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INSTITUTIONAL REVIEW BOARD STATEMENT

Not applicable.

INFORMED CONSENT STATEMENT

Not applicable.

DATA AVAILABILITY STATEMENT

The data presented in this study are available on request from the corresponding author.

CONFLICTS OF INTEREST

The authors declare no conflict of interest.

APPENDIX

Tab. 2: Details of the selected articles and the characterisation of the studies.

	Author(s), year and title	Research method	Context and the aim of the study	Sample size	Conclusion/ key findings
BRAZIL					
1.	Blay SL, Laks J, Marinho V, Figueira I, Maia D, Coutinho ESF. et al. <i>Prevalence and correlates of elder abuse in São Paulo and Rio de Janeiro.</i> 2017	Cross-sectional exploratory of older adults	Assessment of the prevalence of elder abuse and investigation of potential sociodemographic, health behaviour and medical correlates	267 participants from San Paolo and 202 from Rio de Janeiro	The need to develop measures to increase awareness about ageism, facilitate prevention and fight against the abuse of elderly adults
2.	Souto RQ, Merighi MAB, Guruge S., Pinto de Jesus MC. <i>Older Brazilian women's experience of psychological domestic violence: a social phenomenological study.</i> 2015	Qualitative study	Domestic violence	11 older Brazilian women	A support network from public health policy is crucial to help older adult women leave their abusive circumstances
3.	Sousa RCR, Araújo-Monteiro GKN, Souto RQ, Santos RC, Leal CQAM, Nascimento NM. <i>Interventions to prevent elder abuse in the community: a mixed methods systematic review.</i> 2021	Literature review	Prevention and intervention strategies against elder abuse among community-residing elders	Not identified	All the studies selected had a positive outcome, and all interventions can be implemented in nursing care practice
4.	Rodrigues RAP, Monteiro EA, Santos AMRD, Pontes MDLDF, Fhon JRS, Bolina AF et al. <i>Older adults abuse in three Brazilian cities.</i> 2017	Ecological study – document analysis of police reports	Analysis of police reports filed by older adults who had suffered abuse; the analysis identifies the sociodemographic characteristics of victims and aggressors, the type of violence, location, as well as comparing rates in three Brazilian cities in the period 2009–2013	1,025 women and 1,587 men aged 60+	Planning of support services for families in collaboration with researchers and social services is needed, along with further development in conjunction with the police to standardise the tool for recording the abusive event. Additionally, a tool for medical professionals to enable the identification of the abuse victim should be created
5.	Paiva MMD, Tavares DMDS. <i>Violência física e psicológica contra idosos: prevalência e fatores associados.</i> 2015	Survey	Verification of the prevalence and associated factors of physical and psychological violence against elderly people, including details of the sociodemographic and clinical indicators of this population	729 older adults aged 60+	The need for early identification of domestic violence and investment in both protective actions and in maintaining functional capacity and social inclusion

Continued **Tab. 2:** Details of the selected articles and the characterisation of the studies.

	Author(s), year and title	Research method	Context and the aim of the study	Sample size	Conclusion/ key findings
NORWAY					
6.	Botngård A, Eide AH, Mosqueda L, Malmedal W. <i>Elder abuse in Norwegian nursing homes: a cross-sectional exploratory study.</i> 2020	Cross-sectional exploratory of nursing staff	First national survey to estimate the prevalence of observed and perpetrated staff-to-resident abuse in Norwegian nursing homes	3693 nursing staff from 100 Norwegian nursing homes	Preventive strategies should improve the quality of life and safety of residents in Norwegian nursing homes; specific laws against elder abuse are needed in Norway
7.	Aas G. <i>The Norwegian police and victims of elder abuse in close and familial relationships.</i> 2018	Qualitative study	Police attempts to prevent elder abuse in close relationships, especially in parent–child relationships	27 participants from three groups in Norway: police officers, employees in Older Adult Protection Services, and managers of four shelters	Cooperation between professional agencies and the police creates a breathing space for elderly victims, thus preventing family violence
8.	Cronfalk BS, Fjell A, Carstens N, Rosseland, LMK, Rongve A, Rønnevik DH et al. <i>Health team for the elderly: a feasibility study for preventive home visits.</i> 2017	Survey	Description of the development, utilisation and feasibility of a model of preventive home visits, carried out in an urban municipality and a rural municipality in Norway	167 participants from the urban and rural municipalities	Preventive home visits and collaboration between highly specialised healthcare professionals are important factors for reliable health-promoting risk assessments of elderly home dwellers
9.	Myhre J, Saga S, Malmedal W, Ostaszkiwicz J, Nakrem S. <i>React and act: a qualitative study of how nursing home leaders follow up on staff-to-resident abuse.</i> 2020	A qualitative explorative design	How nursing home leaders follow up on reports and information regarding staff-to-resident abuse	43 participants; 28 participants attended focus group interviews and 15 individual interviews with nursing home directors	Evaluation tools that facilitate systematic organisational learning are needed
SLOVAKIA					
10.	Galisova L, Flimelova I. Prieskum týrania a zlého zaobchádzania so staršími ľuďmi. (<i>Elder abuse and ill-treatment survey</i>). 2014	Quantitative survey	Description of experience and prevention of abuse involving older adults in urban and rural areas in Slovakia	375 participants aged 55–85	A need to improve awareness at the national level, actively involving older adults through “community clubs for older adults” and increasing collaboration with the police and the municipality, regularly updating laws and regulations

Continued **Tab. 2:** Details of the selected articles and the characterisation of the studies.

	Author(s), year and title	Research method	Context and the aim of the study	Sample size	Conclusion/ key findings
SLOVAKIA					
11.	Cintulova LL, Kafkova G. <i>Domestic violence against self-reliant elderly resulting from COVID-19, and potential solutions.</i> 2020	Qualitative study	Description and mapping of the problems often encountered by the intervention centre workers who help older adults threatened by domestic violence	50 participants	Intervention centre workers are important because of their awareness-raising activities and practice help such as psychosocial support or contact with the police; organise courses for medical university students
12.	Čereyová I. <i>Zneužívania seniorov je veľmi vážnym problémom v spoločnosti (Elder abuse is a very serious problem in society).</i> 2020	Review	Overview of the types of violence and what can be improved in the Slovakian society	Not applicable	Dissemination of existing laws and regulations pertaining to older adults; establishment of a hotline and preventive home visits; increase education for healthcare professionals
13.	Mariassyova A, Ujhazyova M. <i>Nasilie pachane na senioroch a seniorkach a ich diskriminacia. (Abuse and discrimination against the elderly).</i> 2021	Quantitative study	Description and mapping of all types of violence in older adults	131 participants	Psychological violence represents the biggest challenge concerning the prevention and detection of violence. It is necessary to further disseminate information and educate society and experts, foster deep interdisciplinary cooperation and create a safe space for victims

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Participatory Budgeting as a Democratic and Managerial Innovation: Recent Trends and Avenues for Further Research⁵

ABSTRACT: *Participatory budgeting was introduced in Latin America in 1989, and within 10 years, this innovation spread all over the world. At the same time, researchers outside Latin America showed a growing interest in the issue, resulting in more diversified research. A few scholars have already tried to provide comprehensive literature reviews; however, these efforts have had a narrow focus or have appeared as embedded parts of analyses of specific issues. This article aims to (1) identify recent worldwide research trends in participatory budgeting, (2) identify the most popular issues addressed by international research and (3) suggest avenues and subfields of further research. We employed bibliometric techniques to analyse articles published in journals that were indexed and abstracted in the Web of Science database from 2001 to 2020.*

KEYWORDS: participatory budgeting, bibliometric analysis, Web of Science, research trends

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INTRODUCTION

Participatory budgeting (PB) was invented at the end of the 1980s in Porto Alegre, Brazil. After spreading across Latin America, it became a worldwide phenomenon at the beginning of the 2000s. PB is characterised by institutional centrality. At its heart is civil society, and it can express deliberations on neighbourhood budgets without incurring sectoral governance interferences (Baiocchi, 2001, 43). According to Baiocchi and Ganuza (2014), PB has been accompanied by different drivers and expectations from governments, policymakers, active citizens, and non-governmental and international organisations, which has led to diverse implementations (Sintomer et al., 2008; Krenjova and Raudla, 2013). As a result, the dimension of empowerment has ceased to be a central element of the concept.

Initiatives supporting the introduction of PB outside Latin America were often removed from broader projects on improving participatory or deliberative democracy (Ebdon, 2002; Sintomer et al., 2008). Instead, they offered a closed set of tools for target-oriented spending and the building of trust and co-creation in public service delivery. More precisely, PB became a suitable tool for supporting and promoting citizens' engagement in the work of government (Secinaro et al., 2021). Further development of this concept has been characterised by the spread of two emerging logics of management and community building that have replaced or coexisted alongside traditional political logic (Bartocci et al., 2019). In the two decades that followed the first implementation of PB, researchers focused on formal political logic (Cabannes, 2004; Goldfrank and Schneider, 2006; Rossmann and Shanahan, 2011). The unconventional logics mentioned above have recently inspired researchers to look at the relationship between resource allocation and citizens' preferences (Im et al., 2014), the potential of PB to enhance governmentality and transparency (Brun-Martos and Lapsley,

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2017), organisational complexity as a suitable environment for the adoption of innovations such as PB (Ewens and van der Voet, 2019), the contribution of PB to better urban governance (Kuo et al., 2020), influences and effects of PB on public policies and programmes (Aleksandrov et al., 2018; Touchton and Wampler, 2020), and links between PB and public spending (Shybalkina and Bifulco, 2019; Calabrese et al., 2020). Differences between the adoption of PB and the managing of budgetary routines (Balážová et al., 2022; Murray Svidroňová et al., 2023) and the application of tools to manage PB itself (Sintomer et al., 2008; Sintomer et al., 2012) have also been examined. As a research theme on innovations of a political nature, PB works within fields such as accounting and performance; it can thus have an incisive impact on public management (Kumar et al., 2020).

Hundreds of journal articles, book chapters and books focusing on PB have been published since the beginning of the 1990s, and it is difficult to follow all current research flows. This bibliometric analysis unravels the global thematic trend of academic publications on PB and dwells upon future avenues of research in the field.

The following section comprises an in-depth analysis of related works confirming the originality of the research purposes; the methodology section presents the tools used to perform the analysis; the fourth section shows the results obtained from the quantitative analysis; the fifth section discusses the results presented in the literature; and the final section concludes the analysis and provides an extensive research agenda.

RELATED WORKS IN THE FIELD OF PB

The conceptual definition of a participatory budget – and consequently of PB and its research growth – dates back to the 1990s (de Sousa Santos, 1998; Allegretti, 1999). A significant increase in academic publications occurred from 2000, and there were also notable advances in 2011 and 2014.

Over the last 20 years, there has been a substantial amount of research. Nonetheless, thus far, there has not been a single work that bibliometrically analyses the spread of this rather complex concept into several topics or aspects and their interconnections. Previous bibliometric work in this area has only focused on South Korea, and the sources of that analysis were journal articles published exclusively in Korean (Cho et al., 2020a).

Works presenting the state of the relevant literature are somewhat fragmented. There have been in-depth examinations of aspects and fields related to PB, including a literature review based on 21 databases looking at the impact of PB on health and well-being (Campbell et al., 2018), literature reviews on public sector management accounting (Anessi-Pessina et al., 2016), identification of barriers to accessibility and the use of PB in Germany (Gerlit et al., 2017), co-production (Verschuere et al., 2012) and trust in e-government and e-participation (Scherer and Wimmer, 2014).

Research dedicated to PB has sought to establish frameworks for certain aspects (Sintomer et al., 2013; Wampler, 2012), investigate particular cases and sector outputs (de Sousa Santos, 1998; Abers, 1998; Allegretti, 2003; Ebdon and Franklin, 2016) and analyse comparisons between them (Sintomer et al., 2008; Dzinic et al., 2016). Such works are usually narrowed down to specific geographical locations. To present an overview and offer support for research arguments, several works have included literature reviews. Both Wampler (2007) and Van Cott (2008) presented an overview of PB in Brazil; Matheus et al. (2010) focused on radical democracy participation in the public management and social control of governments in Latin America; Goldfrank (2011) discussed the role of the left in deepening democracy; and Voorberg et al. (2014) focused on public co-creation and co-production with citizens. Zafeiropoulou et al. (2015) provided a literature review identifying success factors for implementing PB projects in a digital environment.

More recently, other qualitative mapping studies have been published. Van Helden and Uddin (2016) presented their results on public sector management accounting in emerging economies; Wampler et al. (2018) provided an in-depth perspective on PB; Omar et al. (2018) stressed the engagement of citizens in decision-making; and Mancilla-García and Bodin (2019) and Falanga et al. (2020) studied environmental governance and undertook a comparative study of the cities of Canoas in Brazil and Cascais in Portugal regarding the drivers of success of PB.

A summary of the literature is given in Table 1.

To the best of our knowledge, a broad bibliometric analysis that includes the administrative, economic and political aspects of PB, and which is based on works written in English and which explores the current situation while also covering developments on a global scale, has not been undertaken. This article attempts to fill this gap in existing knowledge.

Tab. 1: An overview of literature reviews (including embedded ones) focusing on PB (2000–2020).

Reference	Year	Type of work	Field	Main focus
Wampler	2007	ELR	P	The state and spread of PB
Van Cott	2008	ELR	P	Radical democracy
Matheus et al.	2010	ELR	P	Social control of the government in Latin America
Goldfrank	2011	ELR	P	The role of the left in deepening democracy
Verschuere et al.	2012	LR	A	Co-production
Scherer and Wimmer	2014	LR	P	ICTs and trust
Anessi-Pessina et al.	2016	LR	A	Public sector management accounting
Ebdon and Franklin	2006	ELR A		The organisational capabilities of PB
Gerlit et al.	2017	LR	A	The barriers of PB
Wampler et al.	2018	ELR	P	The spread of PB
Omar et al.	2018	ELR	P	The engagement of citizens
Campbell et al.	2018	SR	A	The impact on health and well-being
Mancilla-García and Bodin	2019	ELR	P	Environmental governance
Cho et al.	2020	BA	P	PB
Falanga et al.	2020	ELR	P	The drivers of success of PB

This table shows an overview of related works and their types – an embedded literature review (ELR), a literature review (LR), a bibliometric analysis (BA) and a scoping review (SR) – which correspond to the main topics of politics (P) and administration (A).
Source: the present authors

Tab. 2: A list of studies using the bibliometric method in public administration and accounting.

References	Fields
Cho et al. (2020)	PB in South Korea
Di Vaio et al. (2020)	Sustainable business models
Zhao et al. (2019)	Smart cities and participatory governance

Source: the present authors

Bibliometric methods use bibliographic data from online databases. A bibliometric analysis based on this data allows for an academic study and a comprehensive view of the area of investigation. Various studies have applied this type of analysis, which is an effective method in making research credible and reliable.

Table 2 lists the documents published in the observed period that use a similar approach to the present article. These works reported substantial differences in the databases for research and keywords concerning the topics under review. For example, the article by Cho, No and Park (2020) is a scientometric work based on the keywords ‘participatory’ and ‘budgeting’; it is a review of selected studies conducted in three stages, where the first phase is a bibliometric analysis using Gephi (a visualisation and exploration software program). The study by Di Vaio et al. (2020) is related to the ‘participatory process’, which requires the collaboration of different actors from institutions and civil society to achieve sustainable development goals (SDGs).

This article is original because it uses the Web of Science (WoS) database, which has been helpful in research related to PB in public administration and accounting; for instance, Zhao, Tang and Zou (2019) used the WoS Core Collection to examine ‘smart cities’ in participatory governance.

The next step focused on the bibliometric methodology used to accurately select the articles.

METHODS

As stated by Aria and Cuccurullo (2017), the mapping process and tools were described by Börner et al. (2003) and Cobo et al. (2011). In addition, analyses by Zupic and Čater (2015) and by Secinaro et al. (2020) comprised the following rigorous steps: study design, data collection, data analysis, data visualisation and interpretation. This study adopted the mapping workflow method, while taking the five steps followed by Zupic and Čater (2015) into consideration.

The following research questions were examined (Zupic and Čater, 2015):

Q1: What is the global thematic trend of academic publications on PB, and what information is revealed when applying a bibliometric analysis?

Q2: What are the future avenues of research in this field?

The bibliometric analysis does the following:

- (a) It provides bibliometric information on 319 academic studies extracted from the WoS database.
- (b) It uses the bibliometric R-package and the Biblioshiny application to obtain and record the quantitative data of different selected articles.
- (c) It uses variables such as authors per article and the author's dominance index to identify the leading researchers in the field.
- (d) It uses citations analysis and a collaboration map to understand the network of this research stream.
- (e) It studies countries to evaluate participatory budgets, citations and networks.

The main objective is to offer a clear analysis of relevant research outputs in the field of PB. The analysis is quantitative, and bibliometrics were used to facilitate identification of the essential quantitative variables of a particular research stream (Junquera and Mitre, 2007). This analysis can significantly contribute to the development of research on PB. In addition, it tries to formulate some directions for further research.

Firstly, the three research questions were defined. Subsequently, 'participator*' and 'budget' were selected as the primary keywords from the WoS database. The WoS meta-search engine was used, and it accessed the most well-known academic databases. This multidisciplinary database allows researchers to identify critical articles for academic research (Marsilio et al., 2011).

The bibliometric method used in this study can help readers quickly identify the main research domain variables, thereby contributing towards the integration of these elements into the relevant literature.

The evidence from the literature in Table 1 and from the disciplines highlighted by Ebdon and Franklin (2006) shows that the theme of PB is interdisciplinary and requires a particular multi-perspective vision. This bibliometric review study selected sources concerning the fields of political science (118), public administration (108), economics (54), environmental studies (51), management (42), environmental sciences (41), urban studies (41), interdisciplinary social sciences (40), computer science and information systems (39), regional urban planning (36), development studies (35), electrical and electronic engineering (34), sociology (28), computer science and interdisciplinary applications (24), computer science and artificial intelligence (23), business finance (20), green sustainable science technology (20), business (15), operations research and management science (9) and computer science and cybernetics (8). There were 533 results in total. The next step involved focusing on peer-reviewed articles, and the final sample was to contain only articles in English. In total, the final number of articles to analyse was 319. The progression of the theme spans two decades (2001–2020), and there were 319 documents as selected sources.

After the study design phase, the second step entailed using the R open-source statistical application to conduct the analysis. The data collection stage involved creating a .bib file for data analysis as the third phase. The R software and the bibliometric codes were used to perform a descriptive bibliometric analysis and create a matrix comprising all the documents. In addition, the Biblioshiny application was used for the creation of a conceptual map and co-citation network. The analysis of the results entailed a visualisation of the knowledge structure using the data reduction technique.

RESULTS AND ANALYSIS

The analysis of the bibliometric results began with a description of the main bibliometric statistics; the investigation included consideration of the authors, indicators, information and countries of research. Subsequently, each of the aforementioned categories was thoroughly analysed using the following elements: (1) type of document, (2) annual academic production, (3) academic sources, (4) source growth, (5) authors' keywords, (6) topic dendrogram, (7) factorial map of documents with the highest contributions, (8) article citations, (9) country production, (10) country citations, (11) country collaboration maps and (12) country collaboration networks.

Table 3 shows the main information about the data set based on the 319 articles published between 2001 and 2020. The overall number of keywords used among the documents is 921, which is approximately three times higher than the number of documents; this means that we can assume there were three keywords per document on average. The number of 'keywords plus' – words or phrases that frequently appear in an article's title (Campira et al., 2021) – was a bit lower than double the number of documents, which means there were two keywords plus per article on average.

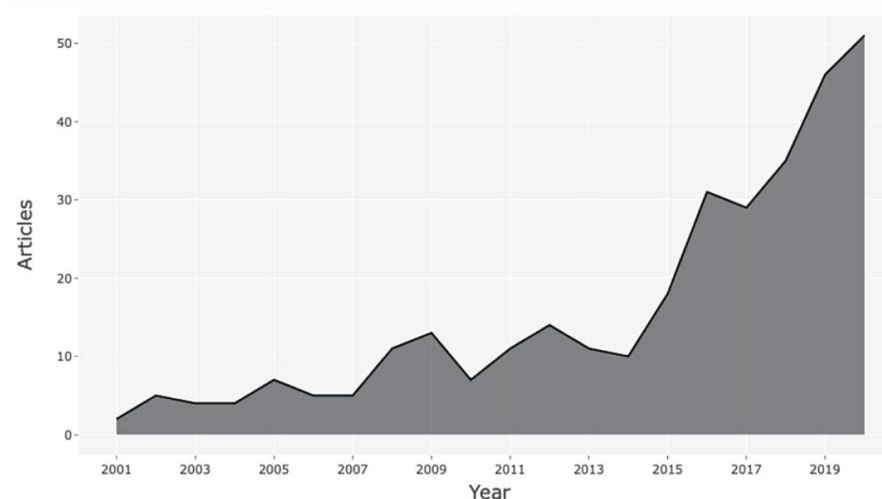
Looking closer at the authors' collaboration patterns, we can observe that two authors on average wrote each article (2.09). The collaboration index was calculated from multi-authored articles and did not take single-authored articles into account. More precisely, it is a rate of involvement of co-authors calculated only using a multi-authored article set. It showed that the average number of authors in a team was between two and three (2.77) per article.

Tab. 3: The main information about the data.

Description	Results
Main information about the data	
Timespan	2001–2020
Sources (e.g. journals and books)	195
Documents	319
Average number of years since publication	6.05
Average number of citations per document	14.56
Average number of citations per document per year	1.7
References	12.17
Document types	
Article	300
Article: book chapter	11
Article: proceedings paper	8
Document contents	
Keywords plus (ID)	448
Authors' keywords (DE)	921
Authors	
Authors	668
Author appearances	773
Authors of single-authored documents	86
Authors of multi-authored documents	582
Authors' collaboration	
Single-authored documents	109
Documents per author	0.478
Authors per document	2.09
Co-authors per document	2.42
Collaboration index	2.77

Source: the present authors

Fig. 1: Academic production.



Source: the present authors (based on the WoS database)

Figure 1 illustrates the annual production of academic publications on PB. The number of published articles has grown considerably. Notable growth in research output can be identified in 2008, 2011, 2014 and 2020. Interestingly, most of these years were turbulent (2008 from an economic standpoint; 2011 from a political standpoint with turmoil due to the Eurozone crisis and anti-government protests in the Middle East and North Africa, often referred to as the Arab Spring; and 2020, which featured a global pandemic that had impacts far beyond the health sector). One year that did not follow this logic is 2014, which saw a visible growth in academic production connected to PB topics and with a peak occurring in 2016. Indeed, interest in PB grew considerably because the number of PB participants and allocated financial resources in the United States roughly doubled each year from 2011 (Gilman, 2016), and initiatives introducing PB reached other regions (Kersting et al., 2016). From 2014, Josh Lerner, the co-founder and executive director of the PB Project, pushed for the adoption of the project in Canada and the United States, which, taking the experience of Porto Alegre as an example, has spread across the American continent (Gilman, 2016). By 2021, the diffusion of PB could be identified in over 7900 municipalities (Dias et al., 2021); these were mainly developed ones with over 50,000 inhabitants (Spada, 2014; Gilman, 2016).

The study analysed 319 articles published in peer-reviewed journals. As Table 4 shows, the distribution of the articles was concentrated in five journals. *Environment and Urbanization* published 10 articles on PB topics in the 20-year period and mainly focused on dealing with the roles of the public sector in urban housing and on the impact of climate change on cities. *New Political Science* also published 10 articles; it focused on topics such as social justice, political and cultural development, human rights and sustainable democratic society. *World Development* is a multidisciplinary journal that published nine articles on PB. *Sustainability* is a peer-reviewed journal focusing on economic, environmental, cultural and social sustainability topics; it published eight PB-related articles. The *International Journal of Urban and Regional Research*, which is a peer-reviewed academic journal covering social science and urban and regional research, also published eight PB-related articles. The analysis highlights the transversality of the theme. PB has been addressed by different disciplines and adopted in social, environmental, managerial, accounting and sustainability contexts as well as the contexts of economic development and social policy.

The distribution frequency of articles in these journals is shown in the loess regression in Figure 2. This method is flexible and suitable for modelling complex processes for which no theoretical models exist. In addition, it sufficiently fits our sample, since it requires large and densely sampled data sets. The number of articles on PB in *Sustainability* has rapidly increased; the journal is indexed in Scopus, Science Citation Index Expanded, Social Science Citation Index, WoS, Geobase, Research Papers in Economics and other databases, achieving an SJR 2020 of 0.612 and a Q1 ranking on SCImago for Geography, Planning and Development. The journal seems to have become a fundamental source of knowledge on PB and has aided in the discovery of many aspects and

Tab. 4: Studies on PB.

Sources	Articles
Environment and Urbanization	10
New Political Science	10
World Development	9
International Journal of Urban and Regional Research	8
Sustainability	8
Journal of Civil Society	5
Local Government Studies	5
Administration and Society	4
Chinese Public Administration Review	4
Comparative Politics	4
Latin American Politics and Society	4
Politics and Society	4
Public Administration and Development	4
Public Performance and Management Review	4
Widening Democracy: Citizens and Participatory Schemes in Brazil and Chile	4
Accounting, Auditing & Accountability Journal	3
ACM Transactions on Intelligent Systems and Technology	3
Biodiversity and Conservation	3
European Journal of Operational Research	3
Habitat International	3

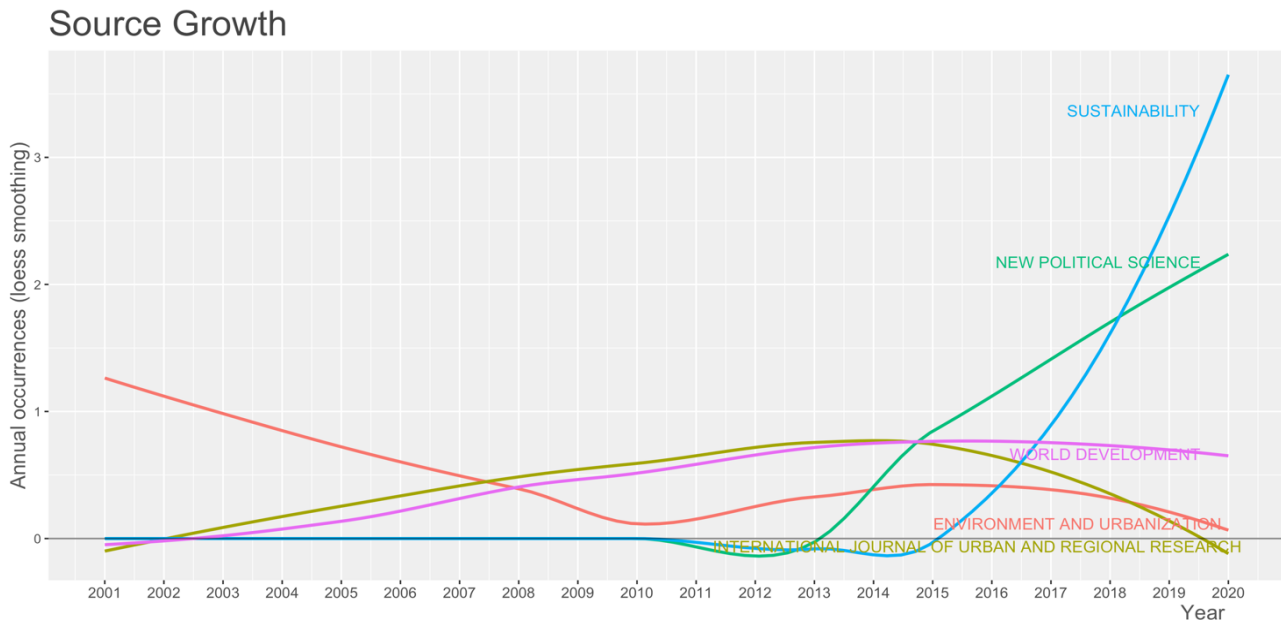
Source: the present authors

environmental benefits related to various SDGs, such as in waste management and in health. The fast growth in the number of articles in Sustainability since 2014 indicates that environmental issues and the challenges related to sustainable development were increasingly in the hands of citizens, and that the public and private sectors could find suitable approaches to socioeconomic, academic and integrated problems through PB. It is essential to develop participatory forms of governance to avoid the unequal distribution of environmental ‘goods and bads’, and PB is treated as a practical and tangible solution to democratic problems by theories on deliberative democracy (Calisto Friant, 2019).

The increase in articles published in New Political Science and in Sustainability reflects the increase in the production of research articles connected to PB in Figure 2.

This section analyses the keywords most often used by the authors. As shown in Table 5 and in the tree map in Figure 3, ‘democracy’ is the most frequently used word, having 46 occurrences. The term is mentioned in many contributions and mainly refers to the union between direct participation and representative democracy, thus defining the concept of ‘participatory democracy’ (Aragones and Sánchez-Pagés, 2009). The involvement of all actors in the democratic process provides a balance between the power of citizens and politicians. The first contributions refer to the case of Porto Alegre and then cover other Latin American cities such as Montevideo and Mexico City (Postigo, 2011; Cabannes, 2004). Subsequently, PB became a model that was spread by representatives of non-profit organisations which promoted it for adoption in the United States, Canada, Europe and Asia (Porto de Oliveira, 2019). In some studies, PB acquired different uses and concepts of democracy. In Russia, it has been used to reach and involve the inhabitants of decentralised rural areas in processes (Beuermann and Amelina, 2018). There is a similar use in American countries, where PB has been able to reach poor communities which suffer from a low level of education and a low involvement in democratic life (Pape and Lim 2019). The applicative translation of democracy can translate into a neoliberal approach (the post-military regime in Brazil) or a new dialogic model of response to new needs and limits (Aleksandrov et al., 2018), often with the use of new technologies (Touchton

Fig. 2: A loess regression.



Source: the present authors (based on the WoS database)

et al., 2019). Democracy and the use of PB are adopted to protect specific interests, such as sustainability and urban regeneration, and are also associated with SDGs and new tools for protecting a population's well-being (Weymouth and Hartz-Karp, 2015). The studies show how the new democratic process and PB are supported and strengthened by the younger sections of the population in particular (Cabannes, 2006). With 31 repetitions, 'governance' is second in the ranking. These keywords from political science are then followed by keywords from public administration and management: for example, 'policy' (21), 'government' (18), 'management' (12) and 'accountability' (11). These terms and strands are directly connected with the meaning and trends defined by democracy. In particular, this concerns the redefinition of the policy process; the involvement of all actors in the decision-making process – including citizens, who acquire a role of direct participation and the capacity for the governance and resolution of social issues such as democratic equality (even for the poorest); the involvement of rural areas, sustainability, and the use of water and other resources; and financial sustainability in the processes of the rationalisation of spending and austerity. All these acquire an essential role with the sharing of responsibility and accountability.

Figure 4 shows the research trends based on the analysed keywords. In the WoS database, the frequency of the topics dealt with before 2012 is not sufficient to reach a common cluster showing an evolution of common topics; however, from 2012 onwards, the frequency certainly shows a common trend. The figure shows the data gathered from 2012 to 2020. In 2012, PB presented the measurement of performance of entities in the public sphere, indicating more decentralisation and less of a focus on community participation than today. PB is associated with deliberative forums in which citizens' consultations include the training of participants oriented towards the achievement of specific performances translated into resource allocation objectives and efficiency with a consequent legitimization of choices (Ganuza and Francés, 2012). In 2013, the role of PB in the participatory governance process started with the involvement of all actors in the decision-making sphere (Allegretti et al., 2013), and the definition of 'democracy' from a neoliberal point of view was revived (Sintomer et al., 2013). The foundations for the identification and political approach of the PB process were laid down in 2014 in a period of budget cuts and redefinition of allocative powers in the legitimacy of spending (Baiocchi and Ganuza, 2014). At the same time, approaches through gamification and the educational process in involving citizens were studied (Lerner, 2013). In 2016, field research trends appeared, which discussed Brazil and Porto Alegre in terms of the adoption of new technologies to manage PB processes and participatory governance (Spada et al., 2016; Barros and Sampaio, 2016). In

Words	Occurrences
Democracy	46
Governance	30
Porto Alegre	24
Politics	24
Citizen participation	21
Policy	21
Government	18
Framework	13
Management	12
Accountability	11
Brazil	10
Public participation	10
Decentralisation	9
Institutions	9
State	9
Civil society	8
Impact	8
Knowledge	8
Performance	8
Decision-making	7

Fig. 3: A tree map.

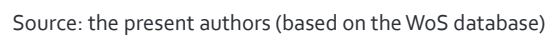
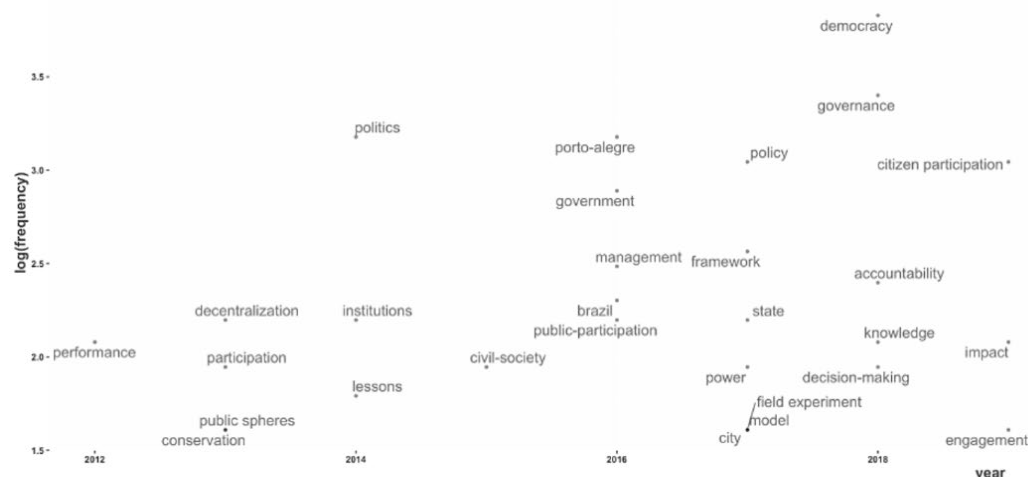


Fig. 4: Trending topics.



Source: the present authors and Biblioshiny (based on the WoS database)

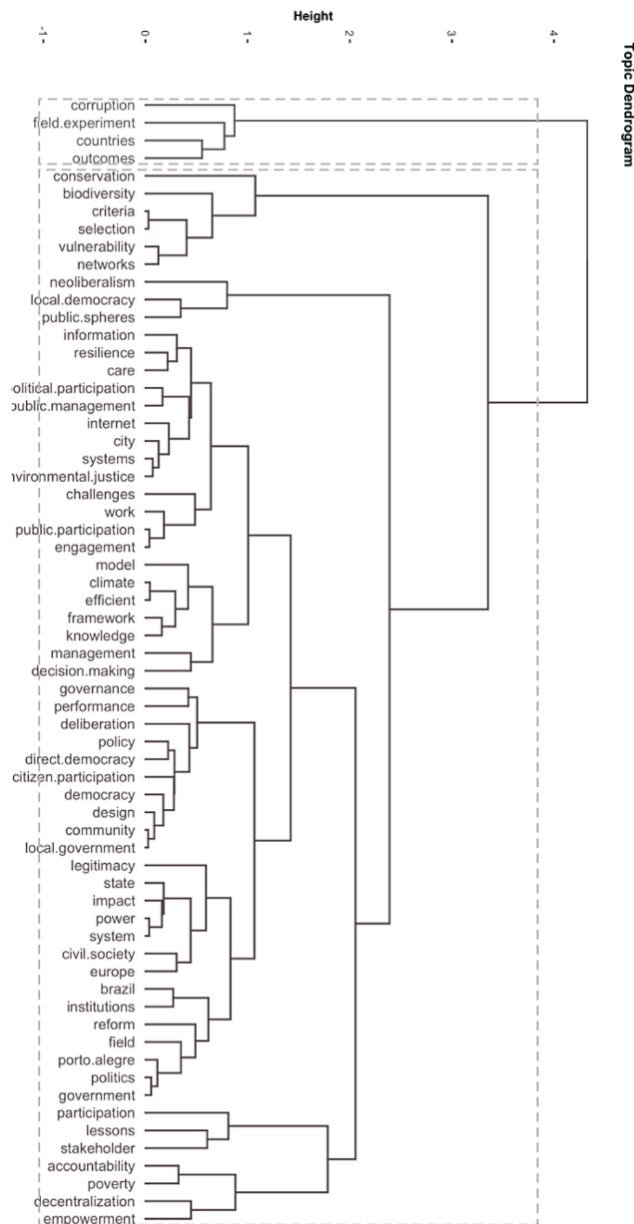
2017, the study of new frameworks suitable for guaranteeing the correct adoption of PB was started, and a technocratic process was launched to increase the transparency of state and local policies (Cabannes and Lipietz, 2018). In 2018, new solutions appeared that were related to the adoption of PB in cities globally, and the concept of co-governance and the involvement of all actors was redefined to eliminate access barriers to participation through smart solutions and the adaptation of tools as required (Aleksandrov et al., 2018). There are cases where the internet has been very useful in developing participatory forms, as shown by Mitozo and Marques (2019). However, there have also been cases which presented unexpected results; a case in point is the i-voting case presented by Mellon, Peixoto and Sjöberg (2017), where online voting was not as productive as expected. Emerging themes include the impact generated by PB on the well-being of the local community (O'Hagan et al., 2020; Kempa and Kozłowski, 2020; Wampler and Touchton, 2019) and community engagement (Touchton and Wampler, 2020; Holler et al., 2020). A community's involvement is a necessary condition for the performance of PB. Only in cases of real involvement is there a greater efficiency in the allocation of resources and a more significant impact on the efficiency and effectiveness of adopted public policies.

As one of the keyword analysis techniques presented herein, the dendrogram analyses detected keywords and categorises the connections between them in different clusters. Figure 5 shows a topic dendrogram where it is possible to identify groups dealing with topics in various fields. In one field, researchers identify PB as a tool for visualising vulnerabilities in the environment, such as in the articles by Topp-Jørgensen et al. (2005) and Sandker et al. (2009), which touch on themes such as 'biodiversity' and 'selection'. This demonstrates that, in addition to considerations on human capital, PB is also being used as a tool to select targets for mapping conservation priorities across features related to landscape conservation and environmental vulnerability (Didier et al., 2009). Thus, PB assumes a strategic relevance to show citizens the biodiversity of cities.

There is a cluster that is different and longer because there are many topics to deal with. The first of these highlights the importance of participation by citizens – who are the main actors in PB – in countries where PB is already widespread and where direct democracy allows for a relevant participatory policy. Citizens are not obliged to participate, but their self-recognition as citizens should lead to engagement and participation in many local government decisions (Oh et al., 2019).

The relationship between the public and private sectors is fundamental and must positively impact the community, giving importance to civil society and the power of the decision-making of citizens. With acts of parliament such as the Localism Act (2011) and Scotland's Community Empowerment Act (2015), the United Kingdom has assigned powers to local communities by relying on them and involving civil society and residents in the decision-making process regarding the allocation of public funds. This is an example of PB as a political tool that is nonetheless sustained through the capacities and trust assigned to citizens (Wilkinson et al., 2019). Many articles explain their objective to use frameworks to solve and manage problems related to PB (Rios and Insua, 2008). A support framework is proposed to solve the problem of the knowledge of decision-making and negotiation rights in the participatory system.

Fig. 5: Topic dendrogram.



Source: the present authors (based on the WoS database)

The internet, and especially its social aspect, is a very powerful form of communication which deviates from traditional modes in the public sphere in promoting PB and society's approach to knowledge and the deepening of awareness. Kim (2008) talks about a model for supporting PB and presents e-democracy as a form of participatory and direct democracy that uses modern communication technologies to play an essential role in public decision-making.

Another important issue is poverty and the decentralisation of decision-making power related to PB. The situation has improved over time because communication channels have multiplied and become accessible to many citizens; however, this always depends on the political context in which a population finds itself. Several examples can support this argument, including PB in Peru, which also deals with gender diversity, and PB in Bangladesh (McNulty, 2015; Chowdhury, 2017).

Tab. 6: The total number of articles published in each country.

Region	Frequency
The United States	291
The United Kingdom	103
China	60
Spain	47
Canada	42
Brazil	37
Australia	36
Poland	31
Italy	23
Sweden	23
France	22
South Korea	19
Germany	17
The Netherlands	17
India	16
Thailand	16
Japan	13
Indonesia	12
Norway	12
Ukraine	11

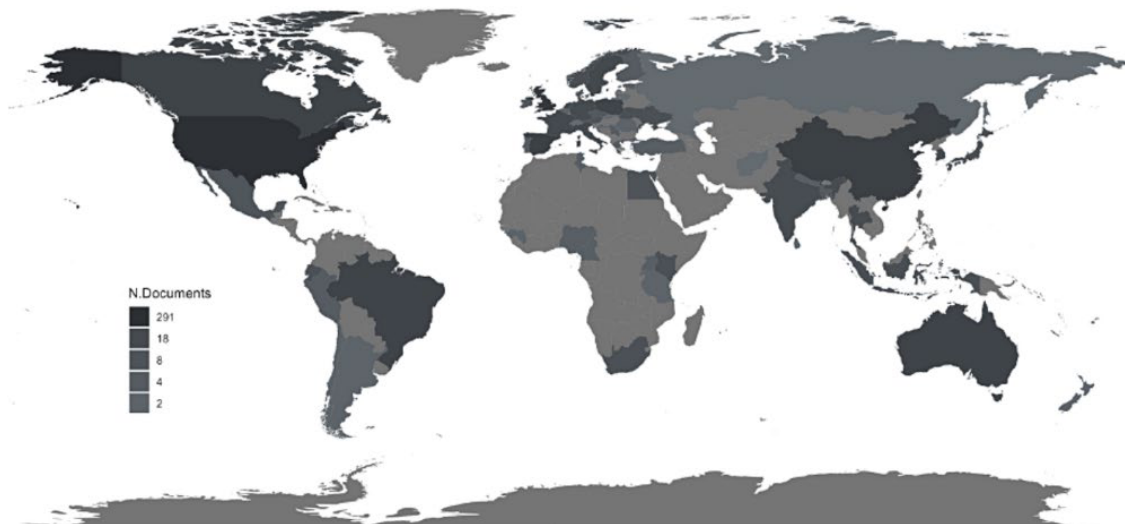
Source: the present authors (based on the WoS database)

Figure 6 shows the diffusion of PB themes and highlights individual countries to show the research geographies. It defines the largest concentration of publications in each country. Table 6 includes the total number of articles published in each country and the collaboration network. The following subsections start with an analysis of the total number of published articles. Figure 6 and Table 6 show the countries where published research has presented PB as a topic of interest. The United States has the highest number of publications on the topic (291). As already highlighted, the diffusion of PB in Latin America was well known, given that PB had originated in Brazil. The United Kingdom (103), China (60), Spain (47), Canada (42) and Brazil (37) follow the United States in terms of publication output. It is immediately evident that this research area developed similarly in countries that are on different continents; Spain and Canada had an almost equal number of articles, much like Brazil and Australia. There is a lag in research in Central and Eastern Europe, which can be explained by the late introduction of this budgetary innovation to that region; however, Poland is an exception because the first experiments with PB occurred there much earlier than in neighbouring countries (Dzinic et al., 2016; Kukučková and Bakoš, 2019). The Americas are the most prolific region, with South America, in particular, helping to draw attention to participatory politics and citizen engagement in the fight against inequality and poverty.

Figure 7 shows worldwide partnerships. The shades of grey on the map indicate the intensity of research collaboration. The countries highlighted in dark grey have the highest intensity of creating associations in publishing articles regarding PB. The lines show the collaboration connections between countries, and the width of these lines indicates the extent of that collaboration.

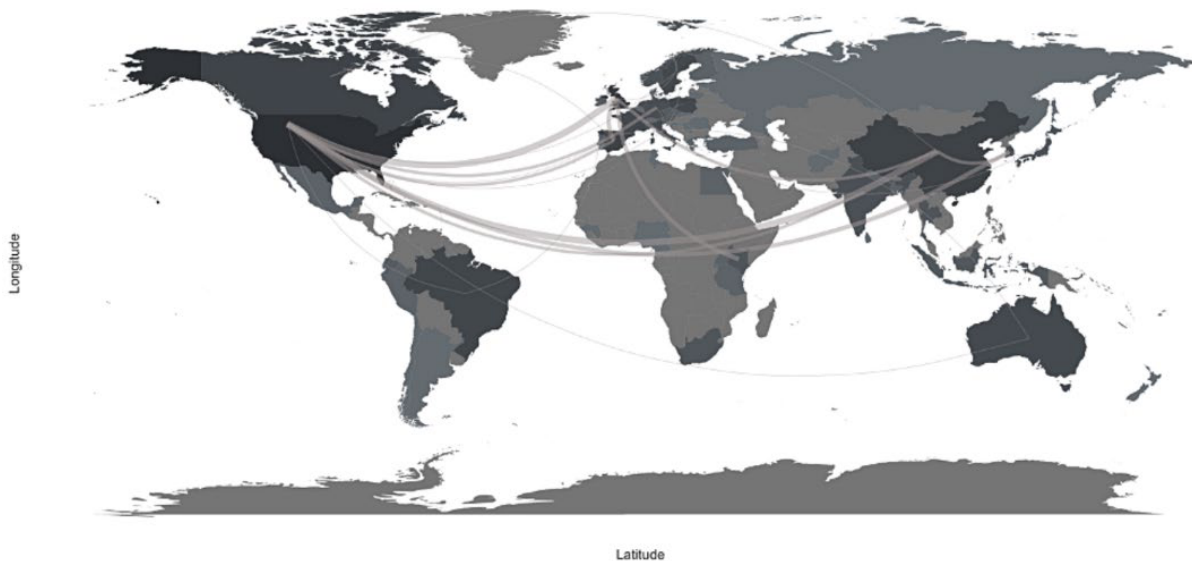
Figure 7 highlights how the countries with the highest number of publications on PB have engaged in such collaborations. Without a doubt, China, Australia, the United States and Brazil have engaged in critical collaborations with distant countries. As we can see, the greatest frequency in collaboration is between the United Kingdom, the United States, China and South Korea, which are the countries with the highest total number of published articles and the most developed research in this area. Since 2007, a national and international PB network has been built with collaboration between municipalities and governments; this has also influenced the study and dissemination of collaborations between academics (Nelson, 2018).

Fig. 6: Production in individual countries.



Source: the present authors and Biblioshiny (based on the WoS database)

Fig. 7: Country collaboration map.



Source: the present authors and Biblioshiny (based on the WoS database)

DISCUSSION AND CONCLUSIONS

This study is based on 319 articles and book chapters which were published in 195 journals and books over two decades. PB spread in Porto Alegre after the military regime legitimised and involved citizens in direct decision-making. This led to a diffusion firstly in Brazil and then to other Latin American countries before becoming a worldwide phenomenon, thanks to projects and networks aimed at the adoption of good practice. Since 2012, PB has evolved due to temporal needs and has led to the verification of performance and results in response to the corruption of regimes and the processes and administrative changes of the neoliberal

period. The reformulation of the European Union's budget from 2014 to 2020 and the American federal budget crisis of 2013 led to a certain relationship developing between budget cuts and the correct allocation of PB resources. The process of involving citizens that had started in 2014 developed from 2016 to 2018 into the adoption of new technologies aimed at increasing citizen participation and voting and eliminating the governance barriers created by public managers and other actors – which was where decision-making power in the past had been concentrated.

The PB approach is aimed at involving actors in the co-planning process of public services. The association of PB with new civic participation tools provides new perspectives involving the definition and assessment of impacts; it goes beyond a mere vision of the tool's performance and the commitment of resources. The dendrogram revealed two families of topics connected to PB. The first of these is associated with sustainability and biodiversity and reflects the outcomes of PB; the second is more robust and more populated, being aligned with deliberative democracy as such and with a tight connection to government, policies and reform. This is also reflected in the figure showing trending topics – from conceptual ones such as democracy, decentralisation and participation through to the more administration- and execution-oriented topics of decision-making, management and administration. The global spread of the argument can explain this phenomenon. The dominant strands include 'democracy' as a term associated with PB, which touches on different themes and changes the theoretical approach adopted over time from involvement and collaborative participation to a neoliberal approach orienting PB towards technocracy and dialogic approaches in response to a need for greater transparency and accessibility to allocative choices and the planning of services of public interest. The democratic approach of PB involves the processes of governance and representation, the levels of involvement of actors and a degree of accountability.

Based on the analysis of journals and the trend of publications, there is an increasing prevalence of issues related to environmental and social sustainability (overcoming marginalisation and differences in elective and participatory participation) with repercussions on the impact and adoption of SDGs and a lower prevalence of studies associated with accounting aspects, orienting more studies towards participatory and decision-making processes. This multidisciplinary theme was highlighted by the journals with the highest number of articles; these journals dealt with developing environmental topics, urban development, social sciences, political science, and management and accounting.

The main journals identified by the bibliometric analysis on management and accounting are the *Accounting, Auditing & Accountability Journal*; *Public Performance and Management Review*; *Chinese Public Administration Review*; and *Public Administration and Development*. There is a prevalence of issues concerning public management, legitimacy theory, dialogic accounting and new approaches to new public management that follow the trend concerning new technology and administrative capacity to locate resources and evaluate the impact of the results. The analysis highlights how diffusion and collaboration between countries are more significant in some places than others; however, the adoption and study of PB is present worldwide with different characteristics, thanks to new work and projects emerging from the experience of Porto Alegre and its diffusion in Brazil (Gilman, 2016; Nelson, 2018).

In terms of future research on the diffusion and adoption of PB, a few avenues can be put forward for consideration. The first of these is to use a micro-level approach and to employ behavioural theories (Ajzen 1991). Researchers could then deal with local public servants, policymakers and decision makers and their intentions in adopting PB. Taking into account the conclusions of Felin et al. (2012), any analysis of collective phenomena, including PB, cannot avoid aspects on the micro- and individual levels, such as the skills, attitudes and experiences of those directly involved (e.g. public servants, policymakers and decision makers at the local level). Nowadays, this research avenue is underdeveloped because the micro-level approach is usually used to address the attitudes or motives of citizens (Gustafson and Hertting, 2016), politicians, public officials, consultants, auditors and other stakeholders (Holdo, 2016; Porto de Oliveira, 2017). This approach would uncover the constraining and enabling effects of formal and informal rules that influence the behaviour of various stakeholders within PB. In this avenue of inquiry, there is quite a strong body of literature aimed at political constraints and enablers (Baiocchi, 2005; McNulty, 2015; Montambeault, 2019; Holdo, 2020). However, research focused on constraints and enablers of an administrative or managerial nature is somewhat fragmented (Gerlit et al., 2017; Falanga et al., 2020), and this field requires more intensive and systematic activity. A third avenue would be to use a macro-level approach and employ much broader theories and concepts. A better understanding of PB diffusion and adoption in different economic, political, social and cultural environments may require diverse research streams and room for an interplay between political leadership and collaborative innovation (Torfing and Ansell, 2017), as well as local autonomy and discretion by local decision makers in introducing PB innovations (Ladner et al., 2019). Some researchers have already offered all-encompassing typologies presenting several models that reflect the diverse diffusion and adoption of PB (Sintomer et al., 2008; Krenjova and Raudla, 2013); however, a much more

common approach has been a research-based one focusing on separate country studies (Baiocchi, 2001; Hernández-Medina, 2010; Stewart, 2014; Célérier, 2015; Hajdarowitz, 2018). Within this context, it would be interesting to compare international experience, and therefore, more comparative studies are necessary to understand the similarities and differences in PB around the globe (Bartocci et al., 2023: 769). Last but not least, it would be useful to compare empirical contributions from regions where research focusing on PB has lagged with empirical results from countries and regions where this research has much stronger roots. For example, even though recent research focused on PB in Eastern European countries includes numerous interesting publications (Baláž Benzoni and Gašparík, 2023; Balážová et al., 2022; Boc, 2019; de Vries and Spacek, 2023; Dzinic et al., 2016; Klimovský et al., 2021; Klimovský and Hrabínová, 2021; Kukučková and Bakoš, 2019; Murray Svidroňová and Klimovský, 2022; Svaljek et al., 2019; Sześciło and Wilk, 2018, etc.), it remains significantly fragmented in terms of topics.

In addition, our analysis uncovered a dominance of qualitative methods. There is an evident need for systematisation and a comparison with standard methods. This article has highlighted the main trends and theoretical implications that future academics will need to investigate. The adoption of experiments related to the impact assessment and adoption of PB and the overcoming of the obstacles generated by some actors in the collaborative governance process and in citizen participation are issues which practitioners should invest more in to increase diffusion and output of PB as a tool. This conclusion is also confirmed by Milosavljević et al. (2023), who pointed out that the research focused on PB had already reached the point of saturation, and it would require further specialisation, which will make PB an advanced tool for direct democracy implementation.

At this juncture, it is important to acknowledge the limitations of the presented approach. First of all, this article is focused on publications indexed or abstracted in the WoS database. There are numerous journals on other bibliometric databases (e.g. Scopus) that can provide an implemental and integrated vision of the results obtained in the WoS database. These journals include the Journal of Public Budgeting, Accounting & Financial Management; Public Money & Management; and Financial Accountability & Management. In addition, the bibliometric analysis does not highlight the events that have followed the coronavirus disease 2019 (COVID-19) pandemic. Our main intention was to analyse the global spread of PB outside its region of origin. This period started at the beginning of the 2000s and lasted up to 2020, when the pandemic started to influence its further spread. On this matter, some research-based reflections on pandemic events in terms of the resilience or durability of PB have already been published (Grossi et al., 2020; Bardovič and Gašparík, 2021). In addition, Bartocci et al. (2023) have already stressed that return to a new normal (i.e. after the global crisis) can revive a great potential of PB. In certain cases, we worked with absolute numbers instead of share indicators. It is obvious that populations of researchers in individual countries vary a lot, but this is not a mainstream research field, and shared indicators could offer distorted data. We did not look at the impact factors of analysed journals or any other quality metrics, which opens avenues for further analyses. It might be interesting to see when this topic attracted the attention of the most influential international research journals and whether this has been supported by the gradual global spread of this budgeting innovation.

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Learning in Lending: The World Bank's Organisational Learning Journey in Albanian Health Financing Reform Projects, 1994–2022

ABSTRACT: *Fostering a learning culture is crucial for aid and development organisations to address the complexities and uncertainties in their operating environments. This case study examines the World Bank's learning processes in lending projects, focusing on the Albanian health financing reforms from 1994 to 2022. Using the Learning in Lending conceptual framework developed by the World Bank's Independent Evaluation Group, the qualitative analysis of World Bank documents and reports offers valuable insights into the dynamics of learning processes in health projects. The findings illustrate a feedback loop process encompassing three distinct steps and reveal three types of learning: learning into lending, learning while lending, and learning from lending. By shedding light on the intricacies of the World Bank's learning processes in health lending projects, this study not only deepens our understanding of how the organisation learns from its experience but also highlights the shortcomings and limitations of the process. Moreover, it emphasises the dual value of learning for multilateral and aid organisations, such as the World Bank, namely improving project results and addressing challenging developmental issues.*

KEYWORDS: World Bank, organisational learning, health projects, Albania, case study

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INTRODUCTION

The role of aid in the development of low- and middle-income countries (LMICs) has been extensively studied, with many scholars adopting a critical viewpoint. For instance, Easterly (2002; 2006) argues that despite substantial investments and efforts, donors, including the World Bank (WB), have often fallen short of achieving meaningful impacts. Similarly, Sachs's (2015) findings suggest a tenuous relationship between official aid and economic growth. Within this discourse, the role and effectiveness of the WB in fostering development have come under intense scrutiny.

While the WB aims to address global challenges, promote sustainable development, and reduce poverty through its interventions, concerns have been raised regarding its effectiveness in addressing the unique needs of different countries and varied sectors (Heyneman, 2003; Mosley et al., 1995). A critical determinant of its effectiveness lies in the organisational commitment to continuous learning (Ravallion, 2016). However, the extent to which the WB adheres to this criterion in practice, particularly in social sectors, remains uncertain. In these sectors, “where lending and policy operations have had to work hard to justify themselves”, the WB encounters challenges compared to other sectors, such as infrastructure (Ravallion, 2013, p. 27).

This article explores the WB's lending projects for health financing reforms in post-communist Albania from 1994 to 2022 and addresses the research question: *How does the World Bank learn during its health lending projects?*

There are two compelling justifications for focusing on the WB's health projects. First, the WB is the largest funder of health-related projects in LMICs (Ruger, 2005). This significant financial contribution underscores the WB's influence on health policies (Noy, 2017; Sridhar et al., 2017), making it a crucial area to examine. Second, the WB is also the second-largest funder of global health initiatives (Lancet, 2023). This highlights the WB's substantial involvement in shaping global health policies and programmes, making it imperative to understand its approach and learning activities in the context of health projects.

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Additionally, paying attention to post-communist Central Eastern Europe (CEE) – by focusing on Albania, an under-researched country in the region – is noteworthy due to the WB’s involvement in the political, economic, and social transformation of the CEE alongside the criticisms it has faced. Scholars studying the post-communist healthcare reforms in CEE have highlighted the WB’s “politico-ideological” approach and its tendency to overlook domestic contexts when shaping policy changes (Nemec & Kolisnichenko, 2006; p. 24; Deacon & Hulse, 1997; Wedel, 2015).

The selection of lending projects in Albania’s health financing reforms is particularly relevant, as the WB has been involved in four health projects in the country from 1994 until 2022, offering a rich and comprehensive basis for deep analysis. The Health Services Rehabilitation project (1994–2001) initially focused on infrastructure reconstruction and healthcare service rehabilitation, with limited attention to health financing policy reform. The Health System Recovery and Development project (1998–2005) continued this focus on infrastructure while also targeting institutional capacity building. In contrast, the Health System Modernization project (2006–2012) marked a shift towards structural healthcare reforms, moving away from infrastructure reconstruction. The Health System Improvement project (2015–2022) focused extensively on health financing reforms, addressing issues in all financing policies: revenue collection, pooling, purchasing, coverage, and benefit entitlements.²

The analysis employs a sociological lens on International Organisations (IO) by incorporating insights from management studies into International Relations (IR) scholarship. The interest is in scrutinising *documented knowledge*, conceptualised as a form of explicit and collective knowledge that is codified and communicated using language (written documents) and deposited in a collective or public knowledge repository (WB repository’s online platform), making it easily shareable and assessable over time (Nonaka, 1994; Duncan & Weiss, 1979). In the context of WB lending projects, these documents primarily comprise project management reports, with the majority being monitoring and evaluation reports, as detailed in the method section. These reports epitomise a model of result-based project management that considers accountability and learning as inseparable entities, as noted by Kogen (2018), “two sides of the same coin: that by addressing one we are necessarily addressing the other” (p. 101). The implications of this conflation are discussed in the final section. The focus on *documented knowledge* means that I will not look at individual learning, while recognising that all organisational processes involve individual action. Instead, I am considering organisational learning as “a social process [...] of exchange, evaluation and integration of knowledge ... that is extraindividual”, one intended to produce “a general organisational knowledge base” that is crucial for organisational effectiveness (Duncan & Weiss, 1979, p. 89).

The qualitative analysis of data obtained from the WB project documents revealed three types of learning during lending operations in Albania: *learning into lending*, *learning while lending*, and *learning from lending*. Additionally, findings showed that the WB’s country-level interventions in health financing reforms were influenced by prior knowledge and lessons learned during and after project completion. However, these processes resulted in adjustments to activities and were intended to achieve project aims and goals, mainly by detecting and swiftly correcting errors and project bottlenecks rather than leading to learning.

The article elucidates the challenges the WB faced in supporting Albanian health financing reforms, thus enriching debates on the effectiveness of the WB’s lending activities and its ability to meet the specific needs of the healthcare sector (Ravallion, 2013). It offers insights into the WB’s involvement in post-communist healthcare reforms in CEE, particularly focusing on health financing, an area marked by inconclusive findings (Kaminska et al., 2021). It also sheds light on an under-researched country, Albania, within this context (Druga, 2022). Moreover, the study advances our understanding of organisational learning in IOs, an area underexplored in existing literature (Lindenthal & Koch, 2013; Koch, 2015). Notably, it empirically illustrates IOs’ challenges in balancing standardised approaches and customisation, particularly in operational knowledge (rather than policy recommendations). What sets this study apart is its unique perspective. While past research has primarily focused on examining the impact of IOs’ activities on national contexts, this study addresses a notable gap (Zapp, 2020, p. 1038) by exploring IOs’ responses to country-specific demands and contexts.

The article is organised into six sections. The following section outlines the state of knowledge in the current literature, analysing both WB lending projects and WB learning processes. It underscores the limitations of existing studies and informs the conceptual framework applied in the analysis. Next, the method section explicates the multiple case design, the strategy for document collection, and how data analysis proceeded. Based on the conceptual framework, the fourth section examines the WB’s learning processes in the four projects. Section five discusses the findings, and the paper concludes with final remarks in the sixth section.

2 For detailed information on these policies, see Kutzin et al. (2010).

LITERATURE REVIEW AND THEORETICAL POINT OF DEPARTURE

Perspectives on World Bank Lending Projects

Researchers have employed various theoretical perspectives to analyse and understand the dynamics and impact of the WB's lending projects. For instance, relying on dependency theories, scholars have examined the WB's use of lending arrangements to impose preferred policies on recipient countries. They have delved into the intricate power dynamics that unfold between the WB and recipient countries, seeking to gain insight into how conditionality affects domestic policy processes and shapes policy outputs (Mosley et al., 1995; Paloni & Zanardi, 2006; Cormier & Manger, 2021). Other researchers have provided valuable insights into the factors influencing the performance of WB projects, such as project characteristics, staff expertise, and country-specific factors (Heinzel, 2022; Ika et al., 2012). They suggest that a substantial analytical input during the preparation stage is positively associated with project quality and improved outcomes, particularly in lower-income countries and fragile settings (Bulman et al., 2016). Honig (2020) emphasises the importance of staff presence in recipient countries, stating that “[I]n the most fragile states, the presence of senior personnel is associated with greater project success” (p. 749). On the recipient side, higher institutional quality correlates positively with successful project outcomes, while economically unstable environments are associated with poorer outcomes (Denizer et al., 2013; Geli et al., 2014). This article introduces a different perspective by zooming in on organisational learning processes and scrutinising how the organisation navigates and responds to the environment in which it operates.

The exploration of knowledge and learning processes in the WB is not novel. Learning is a broad concept, encompassing policy and social learning (Heclo, 1974; Hall, 1993), lesson drawing (Rose, 1991), and organisational learning (Haas, 1990). However, current research predominantly focuses on analysing processes generating policy-oriented knowledge (Hall, 2007; Heneghan, 2022). For instance, Hall (2007) investigated the evolution of the WB's social policy agenda, revealing its responses to internal and external stimuli (p. 166). He underscores the challenges of integrating an enhanced social policy framework conceptually and operationally, stressing the need for political support to integrate the social agenda into mainstream operations (p. 169). Similarly, Heneghan's (2022) study examines policy learning dynamics and consequential policy changes within the WB's Social Protection and Labor department following the abandonment of its flagship pension policy. However, despite their valuable contributions, these studies provide limited analysis of organisational learning and related processes.

In contrast, another group of studies informing this study examines the WB's organisational learning processes by applying management concepts to IR literature. Notable examples include Lindenthal and Koch's (2013) investigation into forty years of WB-financed development projects, exploring the role of organisational learning in environmental protection, and Siebenhüner's (2008) study on how the WB's deliberate reflection and learning led to a fundamental re-evaluation of strategies related to environmental issues. This article builds upon and synthesises insights from this perspective, aiming to contribute to understanding organisational learning at the operational level – specifically lending activities – in the context of a different policy area, health.

International Organisations and Organisational Learning

The sociological perspective on IOs has significantly enriched IR studies by examining how these entities leverage their legal autonomy to establish authority and wield influence (Barnett & Finnemore, 1999). This perspective underscores the importance of knowledge and learning in shaping and governing IR, facilitating a more profound analysis of IOs' activities and their ability to adapt to dynamic environments (Aldrich, 2008). Learning is a fundamental aspect of IOs' functioning, and organisational learning is crucial in integrating learning within these organisations (Haas & Haas, 1995, p. 259). The WB is a notable example of an IO that emphasises knowledge management and organisational learning, positioning itself as a repository of knowledge and a continuously learning organisation (Dethier, 2007; Kramarz & Momani, 2017).

Research on organisational learning in IOs has drawn upon two main approaches: Principal-Agent (PA) theory and Sociological Organisation (SO) theory (Weaver, 2007, pp. 495–8). PA theory, rooted in economics, focuses on understanding the interaction between IOs and their principals (such as creditors and borrowers, as seen with the WB) to investigate why IOs engage in processes of learning and change. Conversely, SO theory, grounded in the constructivist perspective of IOs, explores how bureaucratic culture influences IOs' organisational behaviour and practices.

Addressing the WB as an organisation (see Ness & Brechin, 1988) and a collective actor in its own right, which involves considering its shared rules, norms, goals, resources, and autonomy (Barnett & Finnemore, 1999), this article relies on SO theories and is complemented by theoretical insights from organisational and management studies. The following section explores these theoretical insights and presents the conceptual framework.

Theoretical insights on organisational learning

In this article, organisational learning is understood from a process and a product perspective (Meyer, 2002). The process refers to how the organisation produces and integrates new knowledge; the product refers to “the knowledge as an outcome” of the learning process (Duncan & Weiss, 1979, p. 85). Such understanding recognises that organisational learning involves acquiring and utilising new knowledge, as delineated in the framework section below. The aim is to enhance an organisation’s performance or achieve desired results (Bennett & Howlett, 1992).

Some theoretical clarifications are, however, needed. Knowledge can be explicit or tacit, individual or collective. Explicit knowledge, easily shared through signs and symbols [including written documents (Nonaka, 1994, p. 16–7)], contrasts with tacit knowledge, which resides in an individual’s mind or is embodied in know-how, making it challenging to express. Additionally, individual knowledge is a straightforward concept – specified as “private, i.e., non-communicable” – while collective knowledge is considered “communicable, consensual, integrated knowledge” that is generally stored in a knowledge repository (Duncan & Weiss, 1979, p. 87) and linked with shared knowledge. This article relies on explicit and collective knowledge, termed here *documented knowledge*, to study organisational learning processes and outcomes through document analysis. Accordingly, the second concept, organisational learning, is defined as an organisational process that reflects incremental changes in organisational knowledge that is “[O]ccasionally, however, [...] disrupted by paradigm revolutions which in a sense redefine aspects of the organization or its environment for the members of the organization” (Duncan & Weiss, 1979, pp. 96–7).

Learning processes are categorised into *single-loop* or *lower-level* and *double-loop* or *higher-level* (Argyris & Schön, 1978; Fiol & Lyles, 1985). *Single-loop* learning processes involve detecting and correcting errors within the organisation’s existing framework, norms, and objectives, aiming to achieve present goals by addressing deviations from pre-existing expectations (Argyris & Schön, 1978, pp. 18–20). These processes encompass temporary surface-level changes that fall under *lower-level* learning, which is limited to routine-level activities (Fiol & Lyles, 1985, p. 810). On the other hand, *double-loop* learning processes go beyond error correction and involve questioning and challenging the underlying norms, policies, and objectives, leading to transformative shifts in thinking and behaviour (Argyris & Schön, 1978, pp. 20–6). This *higher-level* learning process is characterised by the development of complex rules and associations related to new actions, impacting the entire organisation (Fiol & Lyles, 1985, p. 810). Meyer (2002) calls it “learning to learn”, explicating that “the operating norms are called into question, and consequently can be changed”. (p. 464)

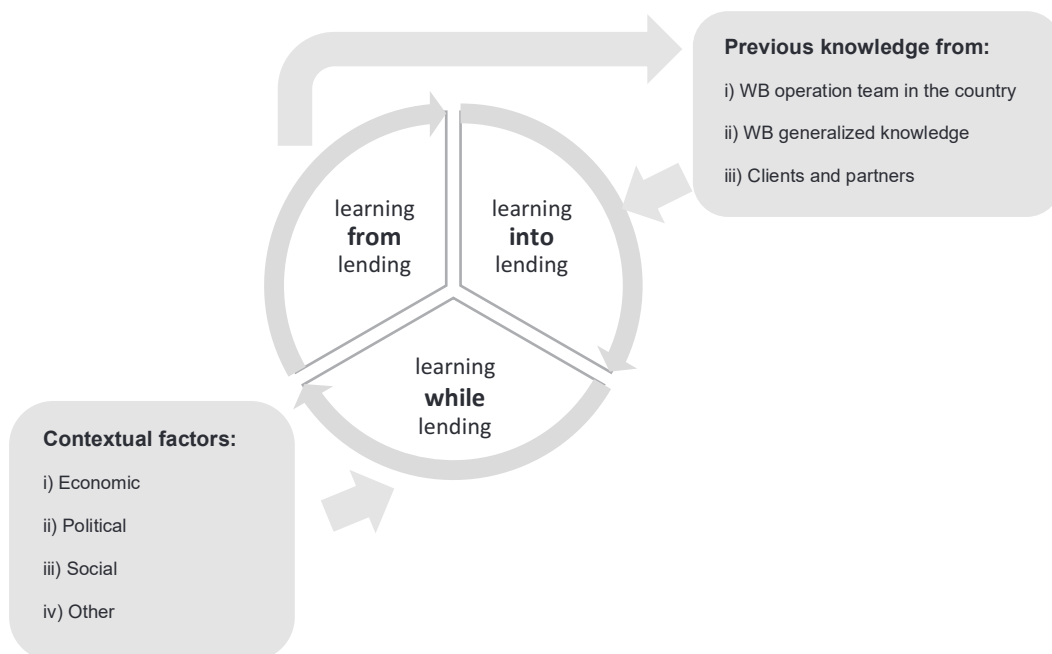
Adaptation is another crucial dimension of organisational learning, referring to the organisation’s ability to make incremental adjustments to activities in response to changes in the external and internal environment (Fiol & Lyles, 1985, p. 811). However, it is essential to note that the assumption that learning always enhances future performance is not always supported by evidence. Learning can be effective or ineffective depending on the theory of action adopted (*single-loop* or *double-loop*) (Argyris & Schön, 1978).

Drawing on the abovementioned concepts, Siebenhüner (2008) distinguishes between three forms of organisational learning in IOs: *no learning*, *adaptive learning*, and *reflexive learning*. *No learning* occurs when an IO demonstrates reluctance and indifference in responding to new and external challenges and developing new knowledge. *Adaptive learning* refers to the process of incorporating new knowledge into existing frameworks and beliefs, enabling adjustments based on tangible outcomes and error correction, yet not encompassing significant changes to the organisation’s fundamental purpose. *Reflexive learning* involves significant changes beyond incremental adjustments. These changes are informed by a shift in the prevailing knowledge structure (pp. 96–7).

The conceptual framework of *Learning in Lending*

I employed the *Learning in Lending* framework developed by the Independent Evaluation Group (IEG)³ (see Figure 1) to operationalise and examine organisational learning as both a process and a product. The framework is well aligned with the theoretical concepts discussed earlier – it outlines a learning process model that illustrates how acquiring, sharing, and engaging with knowledge can lead to learning in lending operations (IEG, 2014, p. 3). It was originally utilised “to delineate attributes of effective learning” in WB lending operations between 2004 and 2012 (IEG, 2014, p. 5). I, however, used it (i) to empirically test its applicability in the case of lending operations in Albanian health financing reforms, (ii) to illustrate the WB learning approach in such a case, and (iii) to understand the various aspects and types of learning within lending operations in health. Importantly, employing this framework enabled me to expand the discussion of the study’s findings, exploring the interconnected relationship between learning and accountability; the latter usually pertains to whether a project achieved its stated goals.

Fig. 1: The process of *Learning in Lending*.



Source: Author’s conceptualisation based on the Independent Evaluation Group framework (IEG, 2014, p. 2)

The *Learning in Lending* process has a looped shape with three distinct steps (or hooks). Reliance on previous knowledge represents the first hook of the loop – *learning into lending*. Prior knowledge consists of the existing analytical work required during the preparation and implementation of projects. This knowledge can be generic, global, and local, secured from either the WB or other actors. Furthermore, lessons learned during project implementation – *learning while lending* – are used to improve existing and future project outcomes. This knowledge is mainly attained through mid-term project evaluations. Finally, ex-post evaluation(s) of projects enables the WB to draw lessons from lending operations – this is what *learning from lending* consists of (IEG, 2014, p. 2).

³ The IEG is part of the World Bank Group (WBG) and independent of the Management of the WBG. Instead of reporting to the President, the IEG reports directly to the Executive Board.

RESEARCH DESIGN

The study employed a descriptive and exploratory approach, utilising qualitative research methods (Yin, 2017, p. 39). A multiple case study method (Stake, 2013) examined four WB health projects in Albania between 1994 and 2022, as depicted in Table 1, to understand the commonalities and differences in learning across these cases. First, each case was analysed individually to gain insights into the specific learning processes within their contextual setting. Subsequently, through cross-case analysis, the study explored the commonalities and differences in learning across these cases, offering insights into how learning manifested in different temporal contexts (p. 27).

Before elucidating the criteria employed to select documents for qualitative content analysis and elaborating on the analysis process, it is essential to offer an overview of the WB's lending instruments and associated processes. This overview facilitates reflection on the nature of the project documentation retained for analysis, recognising that lending project documents encompass various types, each characterised by specific attributes and tailored to address distinct issues (like presentations to governing boards).

The WB employs three instrumental approaches in its lending projects: policy-based lending, investment project loans, and programme-for-results lending. Policy-based lending involves conditionality, requiring borrowers to implement specific policies. Investment project loans are tied to particular projects, with the WB providing funding based on the agreed plan. Introduced in 2004, programme-for-results lending emphasises borrower needs, local contexts, and aid coordination (Cormier, 2015; Mosley et al., 1995).

The lending project cycle consists of three overarching phases: preparation, implementation, and evaluation.⁴ Throughout this cycle, the WB and recipient governments collaborate closely but have distinct roles and responsibilities. During the preparation phase, the recipient government works with the WB operational team on the project design; the agreed project is then submitted to the WB's Board for approval. Upon approval, the implementation phase begins, led by recipient governments and implementing agencies, with the WB providing support to enhance results and manage risks. Regular project progress reviews, usually every two years, are conducted by the WB, and upon project completion (or termination), evaluations are carried out by the WB operational team and validated by the IEG.

While the roles and contributions of local and international project team members are significant in shaping project outcomes, the research interest in this article is on examining the WB's organisational learning process by specifically focusing on *documented knowledge* rather than tacit knowledge held by WB staff or their Albanian counterparts. This limitation, however, presents an opportunity for future research to explore the interplay between documented and tacit knowledge in WB lending projects, offering a deeper understanding of organisational learning dynamics.

Documentation plays a crucial role in each stage of the WB's project management, serving as a resource for learning and accountability. Various reports are produced at different stages, including Staff Appraisal reports and Program Documents during preparation, Implementation Status Results reports and Restructuring reports during implementation, and Implementation Completion and Results reports, Implementation Completion Report Reviews, and Project Performance Assessment reports during evaluation.

The logic of the WB project cycle (preparation, implementation, and evaluation) and the respective line of documentation, Staff Appraisal reports and Program Documents (preparation), Implementation Status Results reports and Restructuring reports (implementation), and Implementation Completion and Results reports, Implementation Completion Report Reviews and Project Performance Assessment reports (evaluation) for the four WB health projects in Albania, comprise the first set of criteria for the document collection and data analysis. Next, following the *Learning in Lending framework*, the second set of criteria consists of documents that contain knowledge (and learning) either from other WB lending activities with some components in the healthcare reforms or from analytical work, known as Economic and Sector Work (ESW) (see Bazbauers, 2018, pp. 175–6) produced for the Albanian healthcare reforms during the period under investigation.

To collect relevant documents for analysis, a two-step approach was employed. The initial step involved gathering health project-related documents using the WB's projects and operations database,⁵ which provides public access to project documents across world regions and sectors. They were filtered by country ("Albania") and sector ("health") for the period from 1994, marking the

⁴ For detailed information on the project cycle framework used by the WB, see <https://projects.worldbank.org/en/projects-operations/products-and-services/brief/projectcycle>

⁵ <https://projects.worldbank.org/en/projects-operations/projects-home> , accessed on March 21st, 2023

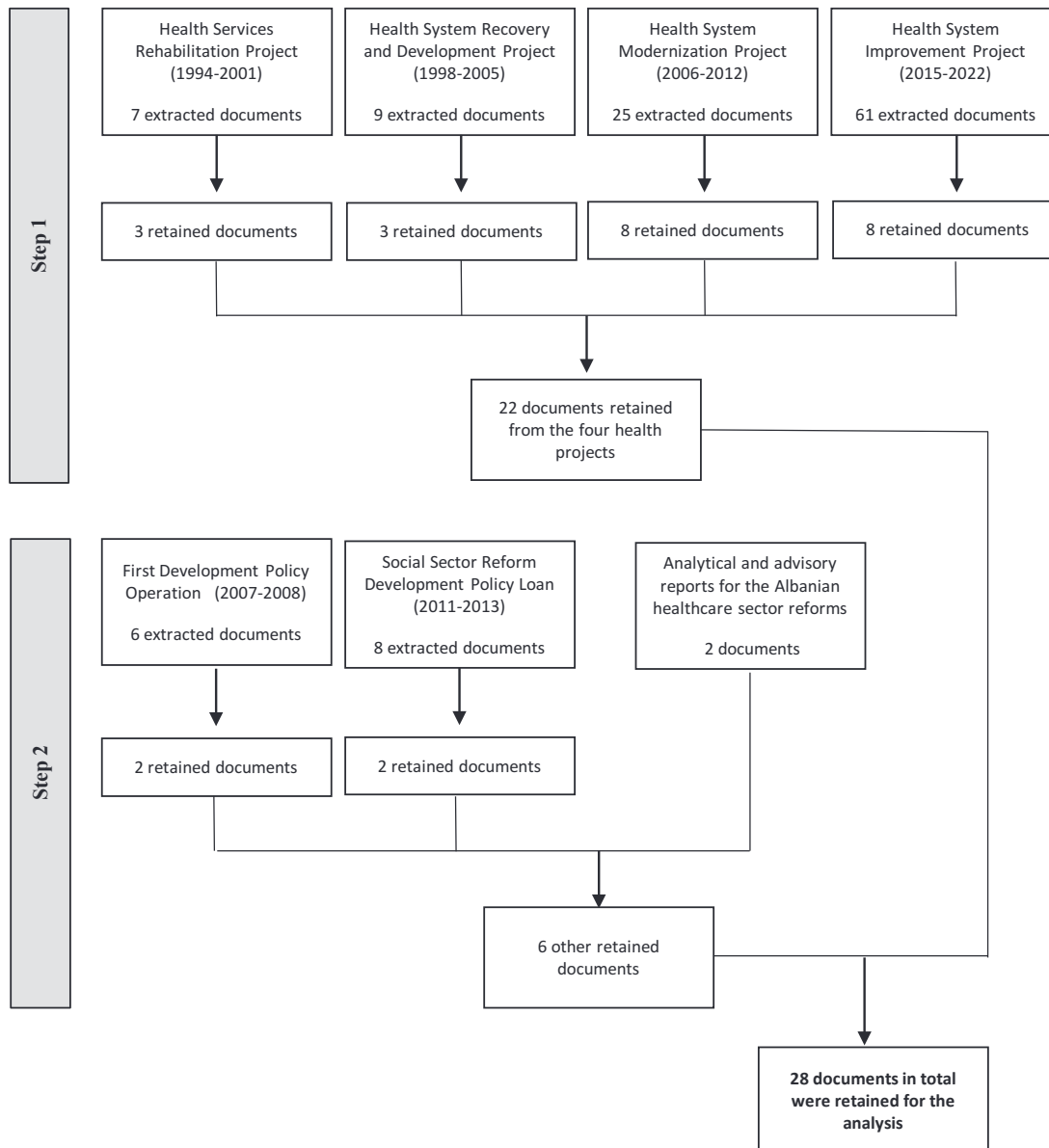
Tab. 1: The World Bank's health lending projects in Albania (1994–2022).

Case	Timeline	Projects	Mid-Term Review/ Restructuring	Changes during project implementation		Extension of the closing date
<i>I</i>	1994–2001	<i>Health Services Rehabilitation</i>	May 1998	The objective did not change	Revision of components: - Reallocation of un-disbursed funds to new studies: one was on Health Financing	One year
<i>II</i>	1998–2005	<i>Health System Recovery and Development</i>	August 2000	Objectives did not change	New activities to align with the new government strategy	One year
			May 2002	The project scope was revised	Additional technical assistance: - Establishing a monitoring and evaluation system to support policy and planning in the Ministry of Health - Implementing a financial and health management information system for the Health Insurance Institute	One year
<i>III</i>	2006–2012	<i>Health System Modernization</i>	December 2008	No changes	No changes	No changes
			April/May 2010	Objectives did not change	Changes in Results Framework and Monitoring: - Two indicators related to the financial sustainability of the Health Insurance Institute and hospital governance were removed	18 months (until March 2012)
			September/October 2011	-	Changes in activities: - Cancellation of funds for procurement and installation of software for implementing the information system at the Health Insurance Institute	-
			February 2012	-	-	Until June 2012
<i>IV</i>	2015–2022	<i>Health System Improvement</i>	May 2018	Project objectives were revised to reflect the simplification of the Project Design	- Revision of results framework - Revision of project activities, timelines, and cost activities - The project component "Improving the Health Financing System" was dropped	-
			October 2020	-	Reallocation of funds to prioritise civil works in response to an earthquake and the COVID-19 outbreak	22 months (beyond December 2022)
			November 2021	-	Additional financing (effective from April 2022)	Until December 2024

Source: Author's compilation based on the analysis of documents listed in the annex.

commencement of the first WB project in health in the country, up to 2022, the most recent data available for analysis. Subsequently, a snowballing approach was used to discover new documents from existing ones. This included documents related to two lending projects in the social sector with components in the health financing reform, First Development Policy Operation (2007–2008) and Social Sector Reform Development Policy Loan (2011–2013), and two analytical reports produced for the Albanian healthcare reforms during the period under investigation, the Health Sector Note (2006) and Policy Briefs (2013). Following the criteria described above, 28 documents were retained for analysis out of a total of 118 collected documents (see Figure 2).

Fig. 2: Flow chart of the document collection process.



Data analysis was undertaken manually. The process began with screening all documents and excerpting the relevant text passages about *lesson learning* and *lesson drawing*, which were usually distinct sections or paragraphs in the WB reports. For instance, Staff Appraisal Reports, as documents drafted before starting a lending operation, contain data on what previous knowledge is used in designing these operations and contextual – political, economic, and social – data and information enclosed in a subsection entitled “Lessons learned and reflected in the project design” (for instance, see WB, 2006b). These data were later analysed to explore *learning into lending*. The other documents, such as Restructuring Reports and Implementation Status and Results Reports, produced during the revision of project implementation depict knowledge and learning gained during this project stage, that is, *learning while lending*. Finally, documents such as Implementation Completion and Results Reports, Implementation Completion Report Reviews, and other evaluation reports issued after the project’s completion or termination portray *learning from lending*. The last group of documents also contributes to corroborating data. Finally, an additional analysis of forthcoming projects was conducted to check whether they would

implement the knowledge and learning gained. This step provided evidence for *learning into lending*. Additionally, Implementation Completion Report Reviews were the document source for performance ratings after project completion.

THE WORLD BANK LEARNING PROCESSES IN ALBANIAN HEALTH PROJECTS

The WB's learning process showed progression over time. The initial project in 1994 relied on limited knowledge. Between 1998 and 2005, a notable shift towards a "learning by doing" approach led to more experience and lessons. This growth trend continued with further enhancements in the WB's learning from 2006 to 2012 and 2015 to 2022. In addition, as presented in Table 1, the four projects underwent various changes during implementation. These processes are analysed in the following subsections.

Starting from square one: 1994–1998

Learning into lending in **the first case**, the Health Services Rehabilitation (HSR) project, faced challenges regarding prior local knowledge due to Albania's isolation during the communist period. Nevertheless, the WB's initial project in Albania relied on its early missions (Druga, 2022) and an analytical report on the government healthcare system strategy (WB, 1992) to inform its design (WB, 1994, p. 11). Lessons learned from ongoing projects in different areas, such as the Labor Market Development Project (LMDP), the Social Safety Net Development Project (SSNDP), and the Rural Poverty Alleviation Project (RPAP), were also considered, emphasising "the need to keep project design simple, relying, to the maximum extent possible, on the local capacity for implementation and technical support – to improve implementation performance and strengthen ownership of the project" (p. 12).

Learning while lending primarily involved adjusting activities in response to delays caused by the 1997–1998 civil crisis, regional conflicts (Yugoslav wars),⁶ and the need to avoid duplication of technical assistance with other donors (such as USAID and the UK Know-How Fund). For example, to compensate for not delivering the planned studies, the project included new technical assistance activities, such as a Health Service Financing Study (WB, 2001, pp. 3–4, 7).

Learning from lending encompassed the impact of domestic factors, such as social and political instability, and external factors, like the war in Kosovo, on project implementation and outcomes. One lesson learned was related to delays in finalising technical reports and studies, which left limited time for dissemination and discussion of findings and recommendations with the government, Ministry of Health, and stakeholders, hindering their influence. Another important aspect was the assessment of the technical capacities in project implementation among the Ministry of Health and Project Coordination Unit staff (WB, 2001, p. 9). A final lesson learned was the need for more technical support in collecting and analysing project indicators due to weak national monitoring and evaluation systems (WB, 2002, p. x).

Learning by doing: 1998–2005

Learning into lending in **the second case**, the Health System Recovery and Development (HSRD) project, incorporated a key lesson from the previous project: the importance of maintaining a modest project design and realistic expectations given the challenges faced by the Albanian economy and its history of political and social conflicts (WB, 1998, p. iv). Consequently, the project design considered critical risks, including political and social instability, weak national implementation capacity, and fiscal instability. Measures were proposed to mitigate these risks, such as enhancing community involvement, specifying implementation responsibilities, and utilising comprehensive external technical assistance.

Once again, learning while lending involved adjusting project activities on the basis of analytical work outside the health sector, such as the Growth and Poverty Reduction Strategy (WB, 2005a, p. 4). The project's scope was revised, several activities were restructured, and additional technical assistance needs were identified. Furthermore, the government was granted a one-year extension for project completion.

⁶ The war in Kosovo in 1999 had an impact on Albania, which welcomed more than half a million war refugees.

Learning from lending highlighted two issues that could have been anticipated earlier according to the WB. First is the Albanian government's reluctance to allocate funds for technical assistance activities. Second is the insufficient attention given by the WB to "the severe capacity limitations" based on the available knowledge of the situation in Albania at the time (WB, 2005a, pp. 4–5). A key learning point was identifying the varying commitment levels of the government to different project activities, which resulted in lower-priority actions negatively impacting higher-priority ones. Additionally, the WB acknowledged that including large infrastructure investments in social sector lending projects (including health) was risky because they could divert attention from the significant sectoral reforms. Implementation problems were also attributed to internal factors, such as frequent changes in Ministers of Health and key staff (p. 9). Lastly, the sole reliance on WB financing to support technical assistance activities was recognised as a lesson learned. Project implementation revealed that commitments from other donors did not materialise, and the WB's financing designated for physical work could not be redirected to cover the technical assistance activities (p. 12).

Enhanced learning: 2006–2012

Learning into lending in **the third case**, the Health System Modernization (HSM) project, was primarily driven by lessons learned from the WB's previous projects (WB, 2006b, p. 4). One lesson identified was the potential diversion of attention from reforms due to infrastructure investments. As a result, the WB shifted its focus towards implementing structural reforms rather than focusing on infrastructure reconstruction. Additionally, the design of the HSM project incorporated an extensive analytical work on Albania's healthcare system. This included referencing the Health Sector Policy Note published in 2006, which addressed crucial health financing reform issues. Recommendations from this policy note included separating financing from service provision, changing the provider payment arrangements, and implementing pooling reforms to eliminate fragmentation in healthcare financing. The WB also suggested using general taxation as the primary funding source for healthcare, considering the low level of labour force participation among those covered by the social health insurance scheme (WB, 2006a, pp. 96–7).

Another noteworthy aspect of *learning into* the HSM project, distinct from the previous two projects, was the inclusion of pro-forma conditions, meaning that the WB started to conduct yearly reviews on project implementation and draft yearly reports on project performance (WB, 2006b, p. 13). Five supervising and reporting activities were conducted: September 2010, December 2010, June 2011, July 2011, and January 2012. Furthermore, a key lesson learned was regarding the (limited) role of the Ministry of Health in health financing policy reforms. Recognising that the Ministry alone could not enact the desired (policy) change, the WB planned to introduce Development Policy Operations (DPOs), which aimed to endorse policy actions requiring government-wide commitment (WB, 2007, p. 59).

Learning while lending led to several lessons and substantial changes. First, in 2007, the WB decided to suspend the implementation of Development Policy Operations (DPOs) due to the failure to meet a specific indicator. This indicator specifically required the government to draft the Health Financing Law, which was one of the key requirements associated with DPOs (WB, 2014, pp. xvii–xviii). Second and surprisingly, despite recognising the government's limited capacity in project implementation, the WB continued to fund government-wide interventions. One example is the Development Policy Loan (DPL) for Social Sector Reform, initiated in 2011, which aimed to extend health insurance coverage to social assistance programme beneficiaries without increasing health insurance contribution rates and to amend health insurance legislation to define a clear benefit package (WB, 2011a, p. 32, Wb 2011c).

In this third case, *learning from lending* encompassed lessons drawn from various projects, some fully dedicated to health and some with health components. These lessons underscored that despite the intensification of interventions in the health sector and the strengthening of the WB's analytical work and technical assistance, they were insufficient for ensuring project effectiveness. For instance, the implementation of insurance coverage for all social assistance programme beneficiaries was not realised during the implementation of the DPL for Social Sector Reform (WB, 2014, p. xiv). In addition, addressing the political economy of health financing reforms was recognised as a critical factor that needed to be considered in the project design to facilitate successful project implementation. Finally, sequencing reforms and establishing pilot programmes were identified as strategies to mitigate implementation setbacks and gain political support for enacting policy change (pp. xvii–xviii).

Necessary but not sufficient: 2015–2022

Similar to the previous case, *learning into lending* in **the fourth case**, the Health System Improvement (HIS) project, incorporated lessons from previous health projects and sector analytical work. Inputs from the Health Sector Note (WB, 2006a) and the Policy Brief (WB, 2013a) were integrated into the design of the new health project. The project design took an integrated approach to reforms, including strengthening hospital governance and performance, expanding insurance coverage for poor individuals, reducing the high costs of medicines and unofficial hospital payments, and increasing incentives for service provision and quality through payment and financing reforms. One project component focused on supporting the transition to output-based and performance-based financing for hospitals and primary care services (WB, 2015, p. 10). Pilot programmes were included in the design to test and refine the proposed reforms. Technical assistance and capacity-building activities were provided with a dedicated team working on the HIS project. Furthermore, other lessons from previous experience informed the project design, particularly concerning the principal risks. For instance, the complexity of the proposed health sector reforms was recognised as a potential risk to government commitment and political stability, which could impact the implementation process (pp. 16–7).

Learning while lending resulted from an increased number of monitoring activities. Nine supervising and reporting activities were conducted up to December 2018 – namely in May 2015, October 2015, March 2016, August 2016, February 2017, July 2017, January 2018, June 2018, and December 2018. They reported not only on Overall Implementation Progress, a new indicator related to supervising and reporting procedures conducted during the implementation of the third project, but also on substantial and high risks in the areas of Political and Governance, Sector Strategies and Policies, Institutional Capacity for Implementation and Sustainability, and Stakeholders (WB, 2018a, p. 5). For instance, political and governance risks in one such report were depicted as follows:

Due to changes that followed the national elections in June 2017, including: (i) the change in the institutional setup of the implementing agency (under the new Government structure, the Ministry of Health merged with the Social Protection departments of previous Ministry of Labor and Social Welfare, becoming Ministry of Health and Social Protection, MHSP) and (ii) the revision of the internal structure of the MHSP, project implementation has continued to suffer delays (WB, 2018a, p. 2).

Monitoring activities resulted in several changes. In December 2018, the project components and result framework were revised, leading to the removal of the component related to improving the health financing system with the argument of “the excessive complexity of reforms included under that component” (WB, 2021, p. 6). Furthermore, there were subsequent restructuring efforts. In October 2020, funds were reallocated to address urgent reconstruction needs following the November 2019 earthquake in northern Albania. Additionally, in 2021, additional financing was provided in response to the COVID-19 outbreak (WB, 2021). The implementation of this additional financing commenced in April 2022, resulting in a revised project closing date of December 31st, 2024 (WB, 2022, p. 5). As the project is still being implemented,⁷ the stage of *learning from lending* is not applicable here.

HOW DID THE WORLD BANK LEARN?

The study investigated the WB’s learning processes in lending in the context of health financing reforms in Albania from 1994 to 2022. Through a multiple case study approach, the analysis examined the unfolding of these processes within four specific health projects. The findings revealed the applicability of the *Learning in Lending* framework developed by the IEG and identified a consistent pattern of three types of learning that occurred during lending operations: *learning into lending*, *learning while lending*, and *learning from lending*.

The findings demonstrate the type *learning into lending*, in which previous knowledge and lessons were incorporated into the design of subsequent projects. For instance, the second project incorporated lessons from the first one by adopting a modest design and considering the challenges of the Albanian context in setting expectations. The third project focused on implementing structural

⁷ At the time of writing.

reforms based on insights from previous projects and sector analysis, prioritising them over infrastructure investments. The fourth project integrated inputs from previous projects, including pilot programmes, improved monitoring and evaluation systems, and comprehensive technical assistance activities.

The findings also show that not all sorts of learning gained from previous projects were considered during the design of the subsequent project. For instance, a key piece of *learning from lending* in the third case was the importance of the political economy analysis of the Albanian health financing reform. Despite recognising its significance, this valuable lesson was overlooked, resulting in a lack of planned analytical and advisory technical work to address it in the design of the fourth project. Consequently, the failure to incorporate this indispensable lesson into the project design ultimately resulted in extensive changes during implementation and the complete exclusion of the project component associated with the health financing reform in 2018.

The type *learning while lending* consisted of adjustments in project scope, activities, and timelines to address challenges and ensure progress in implementation. Examples include adapting activities in the first project to avoid duplication of technical assistance and revising the project scope and activity structure in the second project based on analytical work outside the health sector. The third project underwent significant changes during implementation to address weaknesses within the Ministry of Health and enact reforms. The fourth ongoing project has experienced more modifications, even dropping key project components.

The final type, *learning from lending*, highlighted lessons related to the importance of understanding contextual factors, effective project management, and the influence of political and governance factors on implementation progress. Other additional lessons included the significance of timely information dissemination, accurate assessments of domestic capacity, and the need for robust monitoring and evaluation systems.

Across cases, the findings highlight a striking pattern in the WB's organisational behaviour – increased supervisory and reporting activities – indicating that adjusting activities during project implementation was a prevalent practice. In the first and second cases, these activities included mid-term reviews, with one in the former and two in the latter. In the third case, five supervisory and reporting activities took place in addition to mid-term reviews. Finally, nine such activities have been conducted for the ongoing fourth case up to 2018.

These results indicate an adaptive behaviour of the WB during project implementation (Fiol & Lyles, 1985, p. 811) and highlight the WB's attention towards project oversight and reporting activities. As a result, short- and medium-term modifications to project implementation plans followed. Nonetheless, while identifying and correcting errors, the findings show that various planned activities changed significantly (in scope and financing) and were even dropped. In line with Argyris and Schön (1978), in each case (project), the WB's learning processes followed a *single-loop* approach characterised by the tendency to identify and correct errors by adjusting activities and aiming for immediate outcomes and quick fixes. Across cases, however, repeating-the-same-error patterns were observed, such as concerning the need for technical assistance activities or (inaccurate) estimations of domestic capacities in policy implementation and policy change.

These arguments lead to the conclusion that even though the most frequently manifested behaviour in the WB's organisational learning was in the form of *adaptive learning* (Siebenhüner, 2008, p. 96), the adoption of new lessons in future activities failed in some instances. Furthermore, a “*no learning form*” (ibid.) due to not addressing new challenges (one was the political economy analysis of the health financing reform) demonstrates another pattern in the WB's organisational behaviour.

Did the WB's organisational learning processes in Albanian health projects imply a “learning to learn” (Meyer, 2002, p. 464) approach? Not at all. On the contrary, in some cases, the organisation even failed to learn. Did the WB's learning enhance the project's implementation? The present analysis, although not delving deeply into this aspect, is able to provide a modest answer. Effectiveness, that is, the fulfilment of the project's purposes and objectives, was achieved, sometimes with changes in the activities' scopes and funding with deadline extensions, and sometimes with terminating activities and even entire project components. This organisational behaviour aligns with Meyer's statement that “effectiveness ... is a good criterion for single-loop learning” (2002, p. 465). Further studies are needed to investigate and quantitatively assess the effectiveness of the WB's health projects in Albania, as this was beyond the scope of this article. Future studies could also explore the potential for the WB to engage in double-loop learning processes that lead to *critical reflection* and challenge fundamental assumptions underlying the WB's current practices (Argyris & Schön, 1978; Siebenhüner, 2008).

This study has provided valuable insights into the WB's learning processes in an operational context. However, it is essential to acknowledge its limitations. By focusing on *documented knowledge*, the analysis has overlooked, first, bureaucracies' adeptness at

reporting (change) despite the tangible results on the ground, and second, the tacit knowledge, the unspoken knowledge held by individuals that cannot be formally documented. In these regards, interviews with WB personnel involved in the project design, implementation, and evaluation and their Albanian counterparts involved in project implementation would have provided a more profound insight into learning dynamics. Future research is encouraged to employ diverse data sources and approaches to enhance the analysis of organisational learning processes in the WB and other IOs.

FINAL REMARKS

The importance of learning in aid and development organisations has long been recognised as a critical concern (Cassen Report, 1986). In line with this recognition, the WB has emphasised the role of learning in enhancing the effectiveness of its lending operations. However, one issue that warrants attention in these remarks is the relationship between accountability and learning. For instance, an evaluation report on the WB's lending projects (IEG, 2014) sheds light on weaknesses in the organisation's operational culture concerning the role of learning in achieving projected results, as it criticises the tendency of using accountability mechanisms, such as supervising, monitoring, and evaluating activities, which are critical tools for organisational management, to improve project ratings rather than as valuable sources for learning.

In other words, although effective learning requires robust feedback loops that allow the organisation to gather input from all stakeholders involved in a lending project, evaluate the project results, and adjust project activities accordingly, accountability mechanisms focused on compliance with predefined targets may, however, not prioritise the proper collection and analysis of feedback from beneficiaries and partners. As the IEG report reveals, lessons learned from previous projects are not consistently integrated into subsequent project designs, and preparing appraisal documents for new projects is sometimes a mere copy–paste process, disregarding the lessons drawn (IEG, 2014).

Balancing accountability and learning within aid and development organisations is paramount, especially amid ongoing debates on aid effectiveness. While accountability often revolves around meeting predetermined objectives and demonstrating results, learning involves a deeper understanding of effectively promoting development. Kogen's analysis sheds light on the prevailing tendency to conflate these two concepts, where accountability is sometimes prioritised at the expense of fostering learning. She emphasises that learning should not be seen as a byproduct of accountability practices but as the primary objective of evaluation. Rather than viewing success solely through achieving predetermined targets, Kogen advocates prioritising learning to understand how best to promote development effectively. According to her, the focus should shift from whether aid works to the more critical questions of why and how aid works, particularly when it works (Kogen, 2018, pp. 101–2; p. 105).

This is a noteworthy conclusion when discussing the distinction between evaluation practices and accountability mechanisms in relation to aid organisations, particularly the WB or organisations in general. While both types of organisations strive for efficiency and effectiveness in achieving their goals, aid and development organisations, such as the WB (also UN agencies), have a unique mandate for “the betterment of the world at large as their task” (Forss et al., 1998, p. 52). Learning is, therefore, vital for such IOs to effectively address complex development challenges and fulfil their mandate.

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ANNEX: THE LIST OF THE ANALYSED DOCUMENTS

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6. WB. (2005b). Health Recovery. *Implementation Completion Report Review*.
7. WB. (2006a). Albania - Health Sector Note.
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