Integrated Analysis of Sixty Democracy Governance and Policy Reform Topics using Ngram Tool for Google Platform (1990-2019)

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Abstract:
Background: Within the theory of democracy governance, recent literature and debates have focused on emphasizing policy agenda, policy reform and policy management, diverting research focus on organization, resources, development, participation or leadership. **Objectives:** The objectives of the current research investigates (*1*) the co-research for more than sixty democracy governance and policy reform topics aimed to stimulate a distributed analysis on policies, governance and sustainability levels and (*2*) the dialogue enabled by multi-level governance reflecting pluralistic needs for the policy reform: administration, economy, health, business, development, innovation, infrastructure, education etc. **Methods:** The research uses the Google Books Ngram Viewer tool (Google Ngram) aimed to examine the topics frequencies for the Google platform corpus of books and scientific studies displayed till 2019. Therefore, the quantitative and qualitative analysis explores the comparison between n-gram data for more than sixty topics in the field of democracy governance and policy reform drawn from the Google Books Ngram Viewer website for the English framework retrieved from the period 1990-2019. **Results and findings:** The results of the research individualize the periods with the highest and lowest frequencies of the selected *n*-grams here including other associated topics. The findings point the correlations between the hierarchy governance, sustainability governance and policy reforms. **Conclusions:** With a cases study framing more than sixty topics, the study illustrates the relationship between the governance domain and policy across a multi-dimensional assessment of administration and public management.

Keywords: *democracy, governance, policy, reform, sustainability.*

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Introduction

The conceptualization of democracy governance and policy reform make identifies a design framework across comparative social, economic and cultural contexts. In the last two decades, most of the literature is based on theoretical framework and few studies explore analytical components, methodological developments and social applications. Therefore, the current analytical approach categorizes the inner topics required for the identification of the evolving democracy governance and policy reform. In this context, we demonstrate de relevance and adaptability of more than sixty topics selected to draw comparisons on three directions: multi-level governance, public management, development governance and data governance.

Methods and methodology

The first focus of the methodology of research points our scientific interest engaging six research panels aimed to categorize the institutional, structural and functional topics of the democracy reforms and policy reform. Each panel allows the distribution of ten items based on the research panels are geared toward various levels of the institutional settlements of the democracy governance (See Figure 1. The six panels of the research methodology: key topics):

(*1*) Panel 1: the multi-level governance standing as constructions of acting topics namely: multi-level governance, administration and governance, hierarchy governance, collaborative governance, top-down governance, economic history; centrally planned economy, socialist economy, post-communist democracy/democracies, post-communist economies;

(*2*) Panel 2: the features of sustainable governance and its associated topics: public management; risk management; health compliance, health governance; development and innovation; organizational governance; business governance; business ethics; entrepreneurial management; data governance;

(*3*) Panel 3: the core findings of corporate governance and related findings (e.g. global corporate governance, global economy, good governance, economic governance, economic resilience, circular economy, market economy, infrastructure services, financial administration);

(*4*) Panel 4: the concrete benefits of responsibility governance and other significant theoretical and practical topics: accountability governance, transparency governance, governance reform, governance integrity, participatory governance, inclusive governance, democracy governance, development governance;

(*5*) Panel 5: the emerging practices in the field of green transition and related trends: digital transformation, knowledge transfer, sustainable growth, urban governance, social cohesion, artificial intelligence, digital technology, big data, cloud data, machine learning;

(*6*) Panel 6: the prominent role of the education governance and other comparison conceptual inputs: training governance, skills, leadership, innovation, intercultural skills, education governance, private equity governance, efficient governance, comprehensive governance.
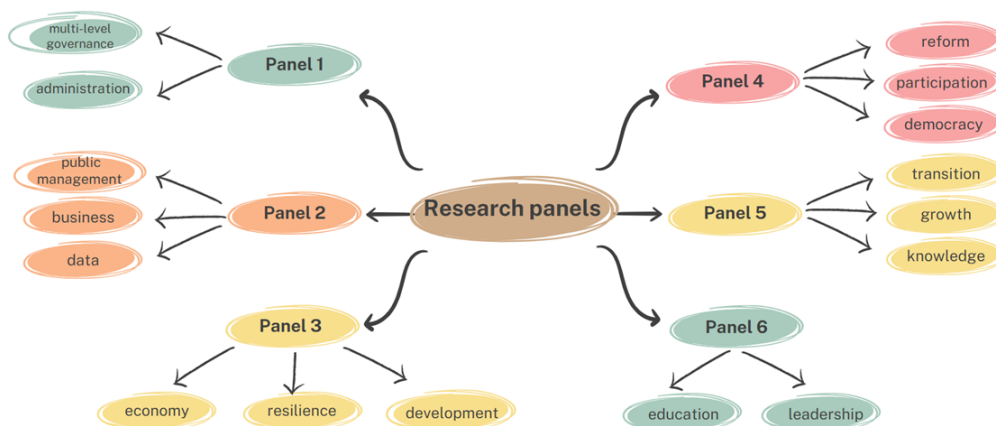
Figure 1. The six panels of the research methodology: key topics
Source: Authors' own compilation

The second focus of the methodology incorporates the analysis of the selected topics within the corpus of texts and studies displayed by the Google platform using the Google Books Ngram Viewer tool (Google Ngram) (Grant, Walsh, 2015: 195-197; Violos, Tserpes, Varlamis, Varvarigou, 2018; Younes, Reips, 2019). The analytical design approaches two types of the N-gram as sequence of *1*-ngram (e.g. "skills", "leadership", "innovation") or *2*-gram also called "bigram" (e.g. topics included in Panel 3 and Panel 5).

Moreover, the research methodology will provide individual, but also collective evidences in the six interdisciplinary panels (from Panel 1 to Panel 6). By integrating the findings for more than sixty topics (each panel includes ten topics), we map both perspectives, the theoretical inputs, but also the practical and applied outcomes. However, the research methodology will also determine the appropriate contexts for the democracy governance and policy reform seeking to synthesize the guidance periods and relevant domains needed to assess the pluralistic views of the scientific literature in the period 1990-2019.

Recent approaches to literature review on "democracy governance" and "policy reform"

The literature reviews on the topics "democracy governance" and "policy reform" provides useful insights for the research agenda aiming to discuss the evolving contributions of the recent scientific literature by assessing: (*i*) the historical institutionalism, legal usage and the Europeanization concepts and theories (Georgescu, 2014: 135-146; Olimid, 2014: 53-64) and (ii) civic participation (Olimid, Georgescu, 2017: 42-56), regional development (Chirodea, Toca, Șoproni, 02021: 7-17) educational patterns (Nechita, Rățulea, Borcoman, Sorea, Leluțiu, 2023) and evolution of communication (Sorea, Csesznek, Rățulea, 2022); (iii) governance systems (Tufiș, 2020a; Tufiș, 2020b;   Mewhirter, Coleman, Berardo, 2019: 1002-1025); (v) collaborative governance and causal process relates to public decisions, economic and environmental outputs (Newig, Challies, Jager, Kochskaemper, Adzersen, 2018: 269-297; Șoproni, Horga, 2015).

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A potential contribution is recently provided by the areas of communication and media monitoring by synthesizing the research discipline and the theoretical framework of information, communication and documentation (Mitu, 2021: 134-145; Seceleanu, Papari, 2012: 169-188; Georgescu, Olimid, Olimid, Georgescu, Gherghe, 2017; Seceleanu, 2019: 155-163). Closely related to this context is the contribution of Jochim and May that enables new standards for examining the literature and the advancement of knowledge in the area of policy regimes and policy processes here including "boundary-spanning policy regime" and "limitations of governing" (Jochim, May, 2010: 303-327).

Other integrative approaches particularly generate strong contributions for exploring the various types of processes, institutions and decisions in the area of democratic governance and policy reform providing detailed descriptions of the outcomes and effects of the political hierarchy and political organization (Whitehead, 2003:6-14).

In this context, Rausser and Swinnen investigate and statee the review of the principles of the governance structures, political economic and political institution (Rausser, Swinnen, 2011: 310-316). The criteria used are considered in terms of the conceptualization of the democratic governance and policy reform by framing the idea of "schematic representation" and constitutional provisions (Rausser, Swinnen, 2011: 310-316). Importantly, other authors standardize the research perspectives in accordance with a selection of themes enabling historical and social timelines (Olimid, Georgescu, Gherghe, 2022: 38-51; Olimid, Olimid, 2022: 182-190). Depending on the period and interest of research, different analyses evaluate the effects of the transition policies, structural transformations and public-private governance (Fiorini, Hoekman, Malgouyres, 2018: 2320-2348; Ewalt, Jennings, 2004: 449-462).

Results and findings

The conceptual study lays out a series of correlations among key terms in governance literature. The first figure depicts the comparative usage of "multi-level governance" (obtaining the highest value in 2019 of 0.0000100389%), "administration and governance", "hierarchy governance", "collaborative governance" (also the highest value at the end of the research period 0.0000081481%), and "top-down governance".
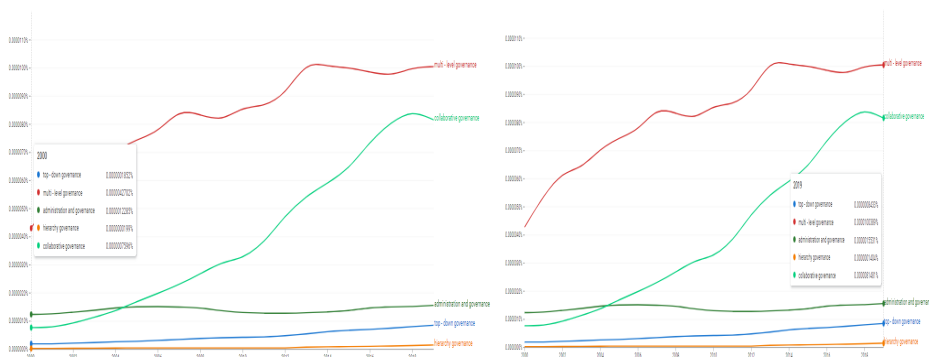

Figure 2. Comparative conceptual usage of terms depicting governance categories
Source: Authors' own compilation

We were further interested in identifying the associations between the term "governance" and other concepts in the literature. Consequently, we found "corporate governance" (reaching as high as 0.0002691796% in 2005), "local governance", "global governance", "democratic governance", and "sustainable governance".
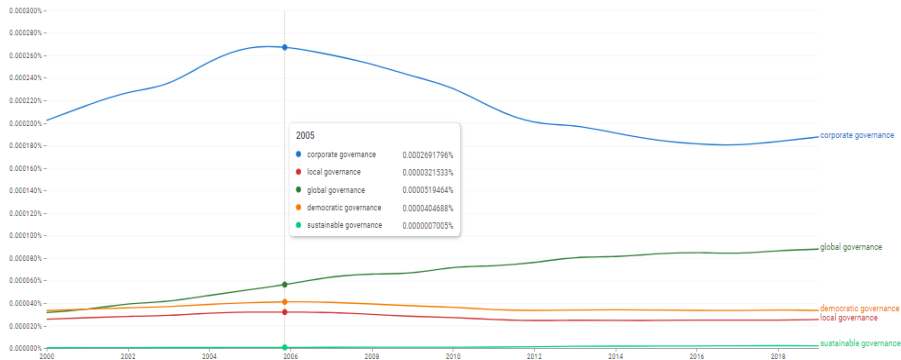

Figure 3. Comparative conceptual usage of frequent governance associations
Source: Authors' own compilation

This panel highlights the usage of the following concepts: economic history, centrally planned economy, socialist economy, post-communist democracy/democracies, post-communist economies. We have to notice the obvious decrease in the usage of "social history" during the analyzed period (from 0.0000748697% in 1990 to 0.0000484548% in 2019).
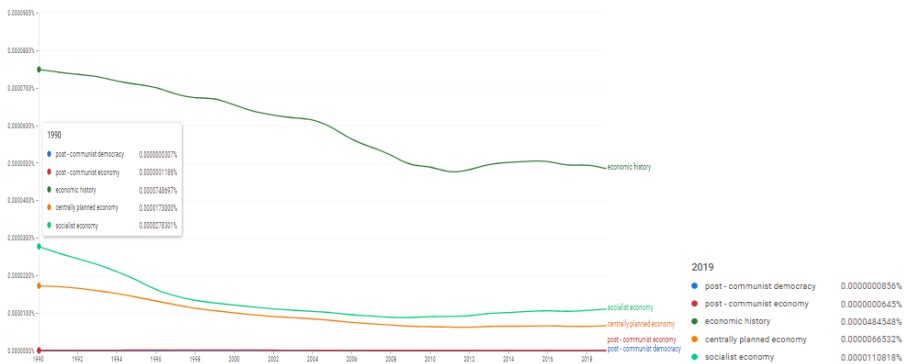
Figure 4. Comparative conceptual usage of governance and economy associations
Source: Authors' own compilation

The analysis was undergone to pinpoint the following conceptual usage: public management; risk management; development and innovation; organizational governance. Within its category, "risk management" registered the highest value in 2008 (0.0004360149%).
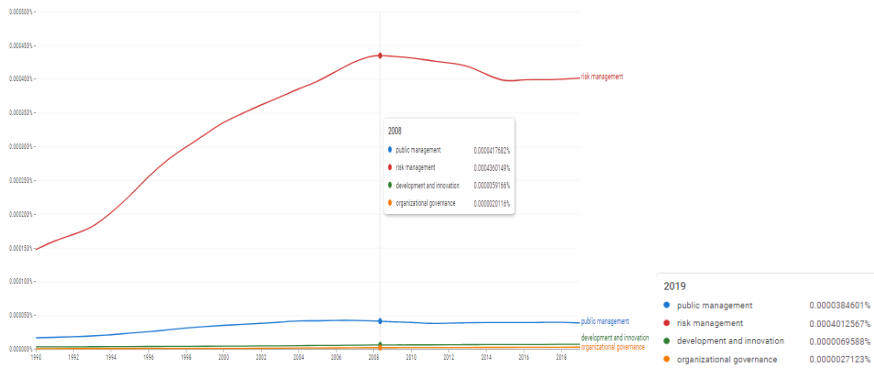
Figure 5. Comparative conceptual usage of sustainable governance associations
Source: Authors' own compilation

The research was oriented towards identifying the presence within the scientific literature of the following phrases: health compliance, health governance, business governance, business ethics, entrepreneurial management, data governance. We noticed the values reached by "business ethics" in 2018 (0.0000464890%).
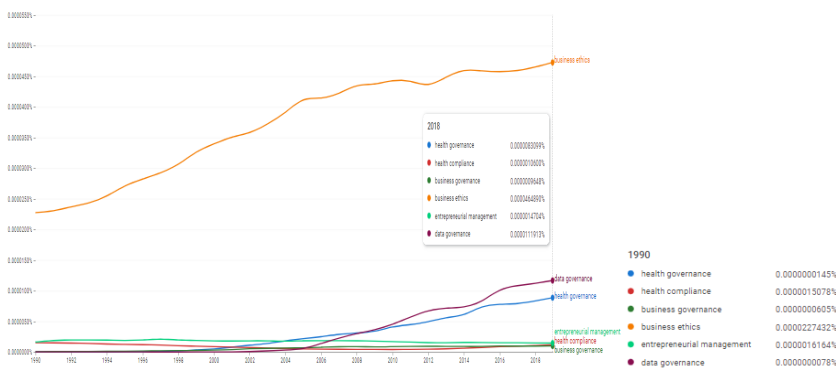

Figure 6. Comparative conceptual usage of health and business governance associations
Source: Authors' own compilation

Next, the following concepts were searched for also using Google Ngram Viewer platform: global corporate governance, global economy, economic governance, economic resilience, circular economy. In this category, the term "global economy" showed the highest usage (0.0002616733% in 2001).
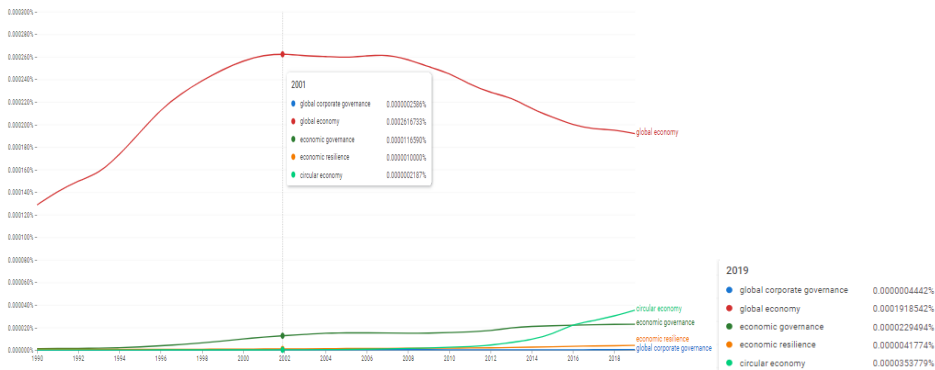
Figure 7. Comparative conceptual usage of corporate governance and global economy associations
Source: Authors' own compilation

Moreover, the analysis targeted the following concepts: market economy, infrastructure services, financial administration, good governance. We observed that while "good governance", "infrastructure services" and "financial administration" remained linear, "market economy" showed a visible decrease in usage (0.0001910412% in 2019 from 0.0004651853% in 1990).
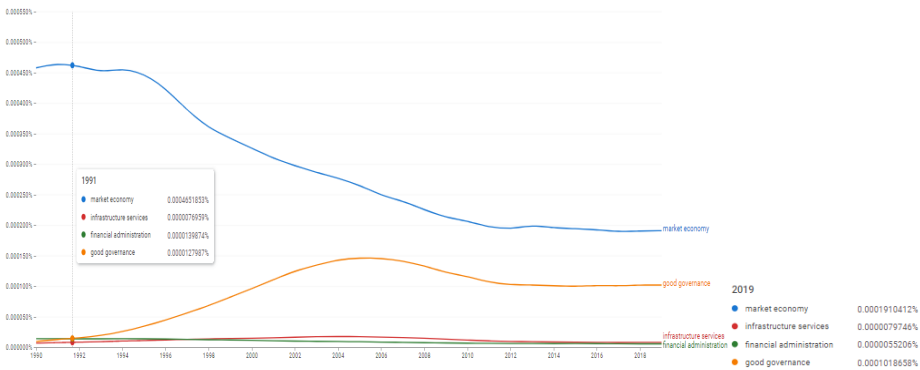

Figure 8. Comparative conceptual usage of market economy and good governance associations
Source: Authors' own compilation

Furthermore, as regards responsibility and accountability governance associations, the study searched for the following phrases presence and usage in the scientific literature: responsibility governance, accountability governance, transparency governance, and governance integrity (the latter also showed the most visible increase throughout the period, reaching 0.0000001608% in 2019).
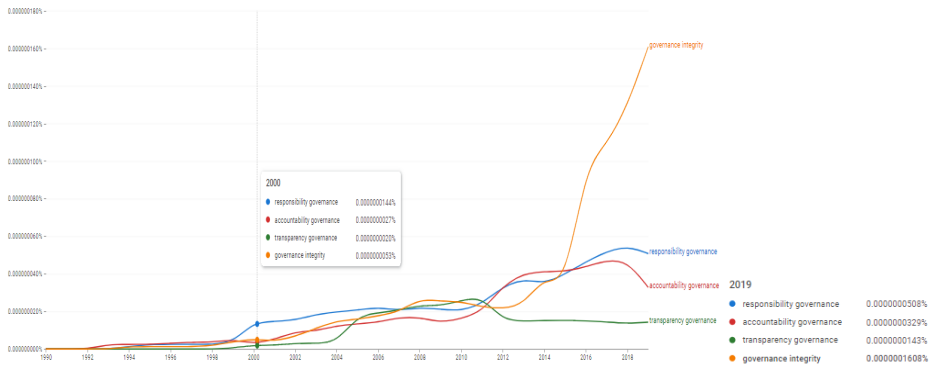
Figure 9. Comparative conceptual usage of responsibility and accountability governance associations
Source: Authors' own compilation

When it comes to conceptual usage of participatory governance associations, the analysis employed the following terms: governance reform, participatory governance, inclusive governance, democracy governance, and development governance. We observe the peak pinpointed by "governance reform" in 2007 (0.0000088124%), as well as the highest value registered by "participatory governance" in 2019 (0.0000080123%).
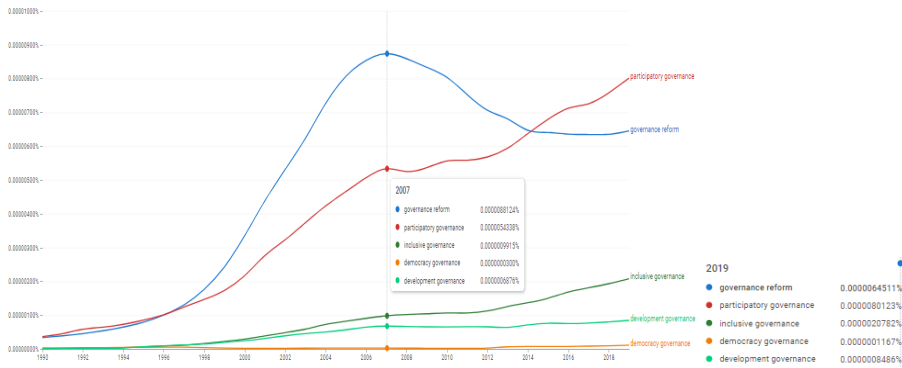

Figure 10. Comparative conceptual usage of participatory governance associations
Source: Authors' own compilation

In terms of sustainable growth and digital transformation associations the study developed a search around the following concepts: green transition, digital transformation, knowledge transfer, sustainable growth, urban governance, social cohesion. Throughout the end of the 1990s, "social cohesion" showed a tremendous growth (0.0001033234% in 2019), while for "knowledge transfer" the first years of the new millennium registered an increase (0.0000518203% in 2019) and as for "digital transformation", 2010 marked the start of the increase in usage (0.0000333522% in 2019).
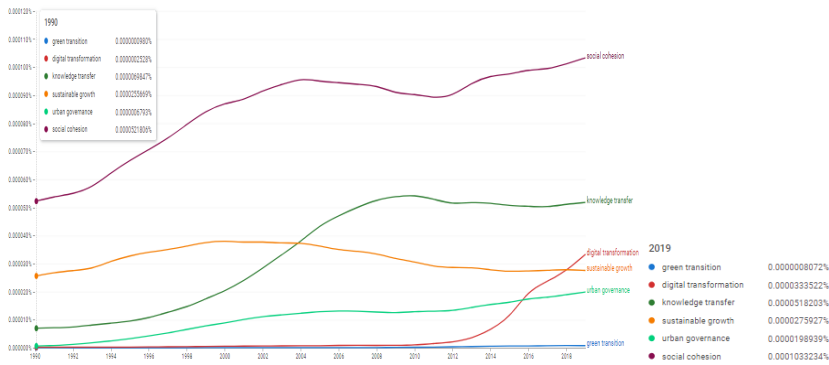
Figure 11. Comparative conceptual usage of sustainable growth and digital transformation associations
Source: Authors' own compilation

The next phase employed artificial intelligence, digital technology, big data, cloud data, machine learning as tags for the search of conceptual usage of digital technology associations. Among these concepts, "machine learning" and "big data" presented a steep increase in usage, especially beginning with 2009, reaching as high as 0.0003186018% and 0.0003006032%, respectively.
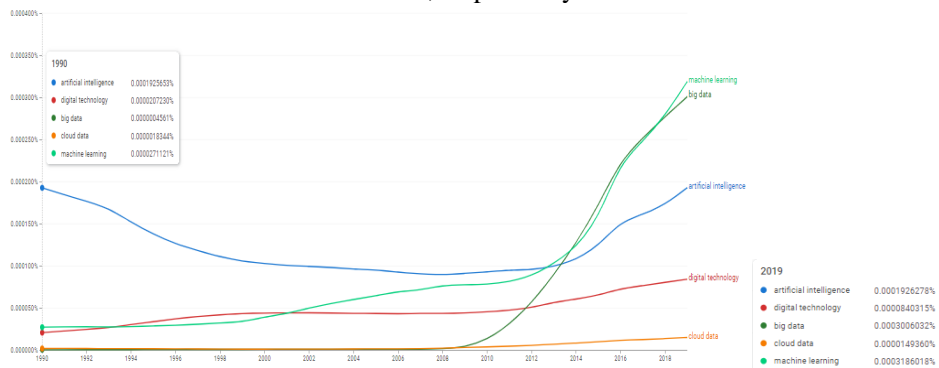

Figure 12. Comparative conceptual usage of digital technology associations
Source: Authors' own compilation

In the same line, the study of comparative conceptual usage of education governance associations involved key terms such as training governance, skills, leadership, innovation, intercultural skills, and education governance, showing a rather linear trend throughout 1990-2019.
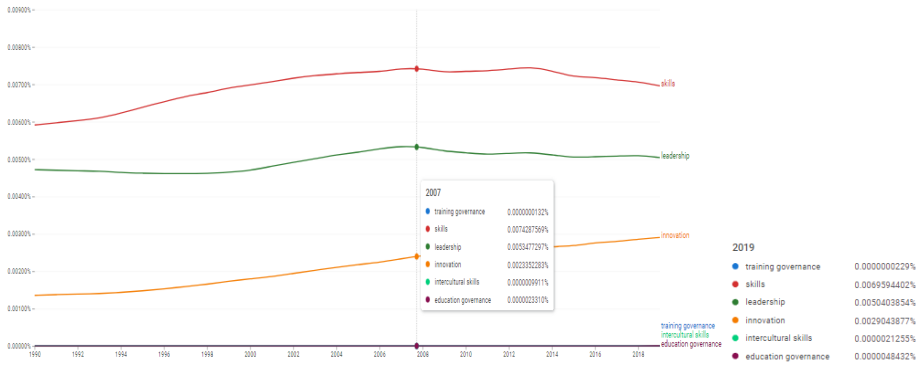
Figure 13. Comparative conceptual usage of education governance associations
Source: Authors' own compilation

Moreover, the search for conceptual usage of efficient governance associations employed the analysis of terms such as private equity governance, efficient governance, and comprehensive governance. The results show that "efficient governance" was highly used (reaching 0.0000015542% in 2005).
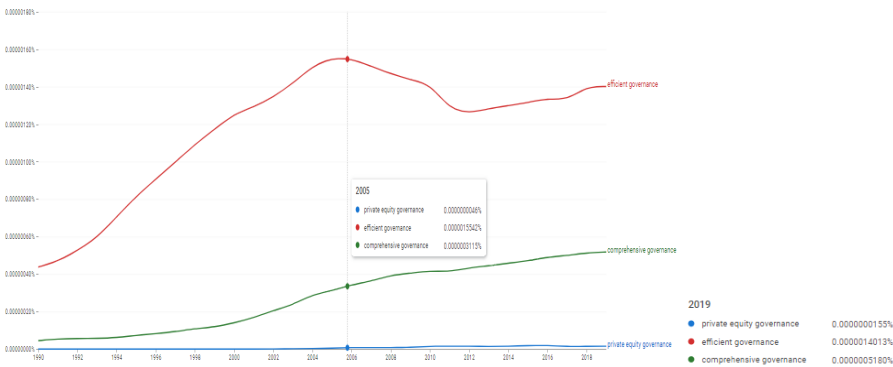

Figure 14. Comparative conceptual usage of efficient governance associations
Source: Authors' own compilation

Conclusions

In conclusion, the current article proposes an analytical and integrative gramework of "democracy governance" and "policy reform" which displays six dimensions to the traditional governance-reform research models. The model proposed explores and emphasizes the dynamic trajectory of the related conceptual interactions focusing on "economy history" (Figure 3), "risk management" (Figure 5), "business ethics" (Figure 6), "global economy" (Figure 7), "market economy" (Figure 8), "governance integrity" (Figure 9), "governance reform" (Figure 10), "social cohesion" (Figure 11), "machine learning" and "big data" (Figure 12), "skills" (Figure 13), "efficient governance" (Figure 14).

Furthermore, these findings evidence the need for "democracy governance" and "policy reform" showing that the institutional framework adheres to principles, norms and values [e.g. the relevance of the "business ethics" (Figure 6) and "governance

integrity" (Figure 9)] having an important consequence on the policy and social outcomes. Moreover, the results of the analysis show that the processes of "democracy governance" and "policy reform" are influences by the emergent factors ["machine learning" and "big data" (Figure 12)].

In addition to the scientific role of the analytic research, we need to emphasize the applicative approach by addressing the contextual framework of the democracy-governance framework [e.g. Figure 5, Figure 6, Figure 7, Figure 8].

Altogether, combining the institutional and functional framework for the integrative analysis we conclude that the democracy governance and policy reform evolution provides a complex and multi-level dimension highlighting institutional input, decision-making arrangements and policy outcomes.

Authors' Contributions:
The authors contributed equally to this work.

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