

From science to policy: A multilevel framework for measuring institutional policy influence through Overton

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Abstract: *This study presents a multilevel framework to assess the policy influence of academic institutions using Overton as a primary data source. Focusing on the University of Granada, we applied a mixed-method approach that integrates Overton policy mentions, OpenAlex topic modelling, and bibliometric analysis. Results show a significant increase in policy engagement since 2010, particularly in health, physical, and social sciences, with mentions from key governmental and intergovernmental organisations such as WHO, OECD, and the European Union. The study quantifies the university's visibility in policy documents, classifies citations by scientific domain and issuer type, maps 1,145 policy-relevant research topics to Sustainable Development Goals (SDGs), and identifies seven researchers whose work aligns with Spain's Urban Agenda. The findings demonstrate the value of Overton for both descriptive and strategic evaluation of institutional impact, offering a replicable methodology to trace science-policy linkages and inform research governance practices in alignment with societal needs.*

Keywords: policy mentions; Overton; research impact; institutional evaluation; topic modelling; Sustainable Development Goals; science-policy interface; altmetrics; University of Granada; Spanish Urban Agenda



1. Introduction

1.1. The emergence of policy mentions

Over the past several decades, interest has steadily increased in understanding the ways science drives societal transformation. Within this broader concern, the influence of research on policymaking has become a priority for funding agencies, evaluation bodies, and academic institutions (Bornmann, 2014a; Warner & Tam, 2012). This interest is not merely theoretical but reflects a structural shift in research assessment systems. Initiatives such as DORA and CoARA (Torres-Salinas et al., 2025) advocate moving beyond the limitations of traditional bibliometric indicators by promoting the recognition of a wider range of scholarly contributions and metrics. In this context, measuring the connection between science and policy gains strategic importance. However, these connections are often complex, opaque, and difficult to trace (Newson et al., 2018).

Bibliometrics often fail to capture research influence beyond academia, prompting the emergence of alternative metrics. These draw on data from social media, digital platforms, and non-academic sources such as news outlets or library catalogs, broadening the ways in which scholarly attention is measured (Haustein, 2016; Robinson-García et al., 2014; Torres-Salinas et al., 2024). While initially welcomed for their potential to extend visibility, altmetrics soon raised concerns regarding their interpretation and standardization (Torres-Salinas et al., 2013). Rather than replacing traditional indicators, they are now more appropriately regarded as a complementary layer of evidence, particularly when applied in specific, contextualised settings (Haunschild & Bornmann, 2016; Robinson-Garcia et al., 2019).

Among them, policy document mentions stand out for their connection to decision-making and higher perceived value, due to the formal and enduring nature of such texts. These mentions offer greater institutional relevance than other altmetrics, making them useful for examining how science informs policy (Yu et al., 2023). Unlike other altmetric sources where mentions are often ephemeral, fragmented, and difficult to trace, citations in policy documents tend to be more stable, formal, and institutionally attributed (Bornmann et al., 2016). This traceability and documentary stability make policy documents a valuable source for examining how scientific research is incorporated into policy design (Newson et al., 2018).

1.2. From Altmetric.com to Overton

Early studies on policy-related mentions of research relied heavily on Altmetric.com, one of the first data aggregators to track such activity. However, several limitations regarding its coverage, reliability, and accuracy were quickly identified. For instance, Tattersall and Carroll (2018), in an institutional case study, reported issues such as incorrect attributions, duplicate records, and low traceability. Yu et al. (2020) further classified the errors into two categories: type A (citation inaccuracies) and type B (mismatched policy-document links), which together affected approximately 70% of sampled entries. Additionally, Altmetric.com exhibits a clear bias toward English-language and Anglo-centric policy sources as well as it shows limited consistency in indexing non-English institutional literature (Maleki & Holmberg, 2022). However, as noted by Haunschild and Bornmann (2017), policy document mentions occur in less than 0.5% of all Web of Science-indexed publications, reflecting their relative scarcity.

The Overton database was created specifically to address the limitations identified in Altmetric.com¹. Since its inception, Overton has become one of the most promising infrastructures for studying the political impact of science (Szomszor & Adie, 2022). In contrast to Altmetric.com, which relies on third-party aggregators to identify mentions of research in policy, Overton collects documents directly from primary sources, including policy reports, technical briefs, guidelines, and parliamentary records. This direct capture ensures greater transparency and traceability of the data. Recent analyses have corroborated Overton's broader scope. Murat et al. (2023) report that Overton tracks approximately 1,476 policy sources, compared to just 471 in Altmetric.com, with only 109 sources overlapping between the two platforms—underscoring the distinctive coverage of each.

As a result of this expanded coverage, Overton indexes at the moment more than two million documents issued by national governments, intergovernmental organisations, and prominent think tanks, with significant representation from countries such as the United States, the United Kingdom, Germany, and Japan (Pinheiro et al., 2021). Its temporal span extends from the early 2000s to the present, allowing for historical as well as current analysis. Moreover, Overton substantially outperforms Altmetric.com in terms of volume, institutional diversity, and alignment with scholarly output. A comparative study of Finnish institutions (Maleki & Holmberg, 2022) found that Overton identified policy mentions in 39.1% of articles indexed in Scopus, compared to only 9.2% in Altmetric.com, thus demonstrating its superior sensitivity in detecting science-policy interactions.

Despite these strengths, Overton's validity as a policy impact indicator has also been critically assessed. Szomszor and Adie (2022) conducted a cross-validation comparing Overton-captured mentions with self-reported policy outcomes listed in the United Kingdom's Gateway to Research (GTR) database. The study found significant correlations between both sources, especially in domains such as health, social welfare, and environmental policy. This alignment supports the use of Overton as a proxy for tracking the policy uptake of scientific outputs. Atapour et al. (2024), focusing on scientometric research, reported that 16.7% of their sample had been cited in Overton—indexed policy documents—an unexpectedly high figure for a theoretically oriented field. Similarly, studies in Library and Information Science have demonstrated that international co-authorship increases the likelihood of policy citation, again using Overton as the primary data source (Huang et al., 2022). Together, these findings consolidate Overton's credibility as a robust tool for producing auditable, large-scale indicators of science's political influence.

1.3. Behind policy mentions

A central question in the study of the political impact of science is how to interpret the meaning of a mention in a policy document. Unlike academic citations, which tend to follow standardised norms regarding when and why something is cited, policy documents display substantial variability in the elements cited, the form of citation, and the intention behind it. Yu et al. (2023) , in an extensive content analysis of 885 policy documents, identified five types of cited elements, with summarised content (26.9%) and article conclusions (15.9%) being the most frequent. They also distinguished five citation formats, with formal references accounting for 72.3%, and twelve typical locations, most commonly within the main body or in review and recommendation sections. Notably,

¹ <https://help.overton.io/article/what-is-overtons-coverage-and-how-does-it-compare-to-other-systems/>

over 40% of mentions function as "persuasive references", reinforcing decisions already made. This finding aligns with Newson et al. (Newson et al., 2018), who argue that such mentions often serve symbolic or legitimizing purposes rather than substantive engagement.

By contrast, Beard et al. (2024), in their study on tobacco-related policies, identified more substantive uses of scientific research in institutional documents from organisations such as the WHO and the CDC. These divergences underscore the need to interpret policy mentions in relation to their political, sectoral, and documentary context. Other studies also reinforce the diversity of interpretative frames. For instance, Hermann et al. (2015) show that neo-corporatist patterns still predominate in Austrian climate policy advice, shaping the way science informs governance. Tahir et al. (2025) explore the reverse dynamic, analysing how research on electric vehicles (EVs) actively shapes policymaking in this rapidly evolving sector. Similarly, a recent analysis of articles published in *Clinical Toxicology* suggests that this journal may play a central role in guiding public health policy, given the number and quality of policy mentions it receives, although a significant time lag between publication and uptake was also noted (Scholin & Eddleston, 2024).

Beyond the format and context of policy citations, several studies have examined the factors that increase the likelihood of a scientific publication being cited in a policy document. One of the most consistent findings is the positive influence of interdisciplinarity. Pinheiro et al. (2021), analysing 4,284 EU-funded publications under FP7 and H2020, found that greater disciplinary diversity among co-authors (DDA) significantly increased policy citation likelihood. Diversity in bibliographic references (DDR) also had a moderating effect, particularly in smaller teams. Similar trends were reported (Hu et al., 2024) in the context of COVID-19 research. International collaboration—measured by the number of countries represented in the author list—was also shown to be a strong predictor of policy uptake, especially in fields like Library and Information Science (Huang et al., 2022). Open access, publication in high-impact journals, and cross-national teams enhance the probability of research being cited in public policy documents (De Filippo & Sastron-Toledo, 2023).

Case studies across specific sectors offer a valuable lens through which to observe how scientific knowledge is mobilised, directly or indirectly, in policy processes. In the field of tobacco control, a systematic review (Beard et al., 2024) identified 38 governmental policies referencing academic studies on tobacco and social media, often published in journals like *Nicotine and Tobacco Research*. A longitudinal view is provided by Warner and Tam (2012), who traced the influence of research on public strategies addressing smoke-free legislation, taxation, and cessation support. In climate policy, Bornmann et al. (2022) analysed over 10,000 policy documents indexed in Overton, detecting consistent references to environmental science, particularly from institutions such as the University of East Anglia. These examples collectively highlight that the translation of science into policy is highly context-dependent, shaped by sectoral priorities, institutional cultures, and document types.

1.4. Objectives: towards multilevel analysis at institutional level

While case studies have provided valuable insights into how research informs specific policy domains, there is a growing need for more integrative analytical models to detect overarching patterns, identify key actors, and explore the structures mediating science–policy interactions. In this context, Overton is increasingly used not only as a database of mentions but also as a source for structural and network analyses. For instance, Cabral

and Salles-Filho (2024) mapped the global evolution of artificial intelligence policy, using Overton to identify cited documents, producing institutions, and influential thematic areas—highlighting the central role of United States universities and multilateral bodies like UNESCO. Similarly, Ba et al. (2023) proposed a citation network approach based on main path analysis to empirically trace the diffusion of normative ideas. Yu et al. (2024) studied how policy mentions accumulate over time, revealing citation advantages for highly cited articles and field-specific temporal patterns. Such approaches require combining large-scale quantitative analysis with situated qualitative and institutional perspectives (Pinheiro et al., 2021).

The study by Tattersall and Carroll (2018) illustrates how Overton-like platforms can support institutional-level analyses by highlighting which research outputs from a given university, such as the University of Sheffield, are cited in policy documents. This demonstrates the value of these databases for assessing institutional visibility in the policy sphere. However, moving beyond basic mention counts requires a deeper understanding of what topics are being cited, how they are influencing policy, and which types of public policies they are shaping. In particular, there is a need to trace not only which research areas receive attention, but also how these mentions relate to specific policy frameworks and decision-making processes. This step is essential to capture the political relevance of academic knowledge. Therefore, the focus should shift toward mapping concrete policy connections and influence pathways.

Given the significant social impact of scientific activity and the role of policy reports as evidence of this influence, this study develops a methodological framework for analysing the presence and policy influence of academic research at the institutional level. The framework links policy mentions to research topics, Sustainable Development Goals (SDGs) and contributing researchers, enabling a structured analysis of how academic outputs connect with policy agendas. We present this framework through a case study of the University of Granada (UGR), offering a scalable model for other institutions seeking to assess their policy engagement. This paper is innovative, as no previous study has applied a systematic approach to analysing this type of data for a European university. The main objectives and sub-objectives of this study are as follows:

A-Descriptive level: Characterization of policy citations based on policy reports

- (OA1) Quantify the number of mentions of UGR publications in policy reports: Measure the presence of UGR research in policy documents as an indicator of its visibility and relevance in the policy sphere.
- (OA2) Classify the cited publications and policy reports by knowledge domain and issuing organisation: Map UGR's influence across different policy sectors by categorizing mentions by subject area (e.g., public health, education, environment) and identifying the types of institutions referencing its research (e.g., governments, intergovernmental organisations), with attention to their geographic and institutional diversity.

B-Policy level: Linking topics and actors to policy frameworks

- (OB1) Identify the main research topics cited and their connection to specific public policies: Analyse the most frequently referenced topics in UGR

publications and assess their relevance to major policy frameworks, such as the Sustainable Development Goals (SDGs)².

- (OB2) Determine the UGR researchers with the most mentions, their main research topics mentioned in policy reports, and how these are linked to local policy frameworks—particularly Spanish Urban Agendas³⁴: This objective aims to trace connections between academic expertise and decision-making in areas such as sustainability, health, and urban development.

Ultimately, this study provides a structured approach for understanding the influence of academic research on public policies and is based on an institutional report (Torres-Salinas, 2024). By applying this framework to the University of Granada, it offers a detailed case study that not only highlights the university's policy impact but also serves as a replicable model for analysing the role of scientific research in shaping public policies at a broader level.

2. Material and methods

2.1. A Brief Overview of the Overton Database

Overton, the world's most comprehensive database of policy-related documents (Murat et al., 2023), served as the primary data source for this study. The platform covers a broad range of materials, including policy reports, government guidelines, parliamentary records, and outputs from think tanks. Overton not only systematically categorises these documents and extracts thematic content but also maps their connections to academic publications and media mentions. In addition to direct references, Overton also identifies indirect (second-order) policy citations that occur via intermediary documents. It prioritizes open-access policy-relevant content and excludes academic journal articles and most media unless directly linked to policy discourse. Approximately 70% of its records originate from organisations with structured document typologies (e.g., IGOs such as the WHO), while the remaining 30% are sourced from institutions that classify outputs thematically (e.g., think tanks). Through this structured framework, Overton enables both quantitative and qualitative analyses of how academic research is incorporated into policy, offering a robust foundation for assessing societal impact.⁵

As of September 2024, when the data were collected, Overton contained 13,658,571 documents from 43,533 organisations, distributed across 2,274 official websites. Of these, 9,985,650 originated from OECD countries, while 3,672,909 came from non-OECD nations. Europe contributed 3,914,659 documents, making it a significant source of policy materials. The United States, the United Kingdom, and Japan were the largest contributors, with Spain ranking fourth. Regarding language distribution, English is the

² The Sustainable Development Goals (SDGs) are a set of 17 interlinked global goals adopted by the United Nations in 2015 as part of the 2030 Agenda for Sustainable Development. They provide a shared blueprint for peace and prosperity for people and the planet. See: <https://sdgs.un.org/goals>

³ The Urban Agenda for the EU is an intergovernmental initiative launched in 2016 under the Pact of Amsterdam. It aims to improve the quality of life in urban areas by promoting better regulation, funding, and knowledge exchange across 14 priority themes, such as housing, mobility, and climate adaptation. See: <https://ec.europa.eu/futurium/en/urban-agenda>

⁴ The Spanish Urban Agenda (Agenda Urbana Española, AUE) is a strategic framework promoted by the Ministry of Transport, Mobility and Urban Agenda. Aligned with both the 2030 Agenda and the Urban Agenda for the EU, it provides guidelines for sustainable urban development in Spanish cities and municipalities. See: <https://www.mivau.gob.es/portal-web/agenda-urbana>

⁵ The Overton database provides a detailed description of its contents, sources, and methodologies in its Overton Knowledge Base: <https://help.overton.io/>

predominant language, followed by Spanish, which accounts for 1,103,176 documents. Other frequently represented languages include French (887,818 documents), Japanese (527,031), and German (387,759). While Overton archives documents from the past century, most records—12,971,434 (96%)—date from the year 2000 onwards, with 65% of the collection (8,866,664 documents) published in the last decade. A detailed breakdown of these figures is provided in the Supplementary Material 1⁶ (SM1 Table 1).

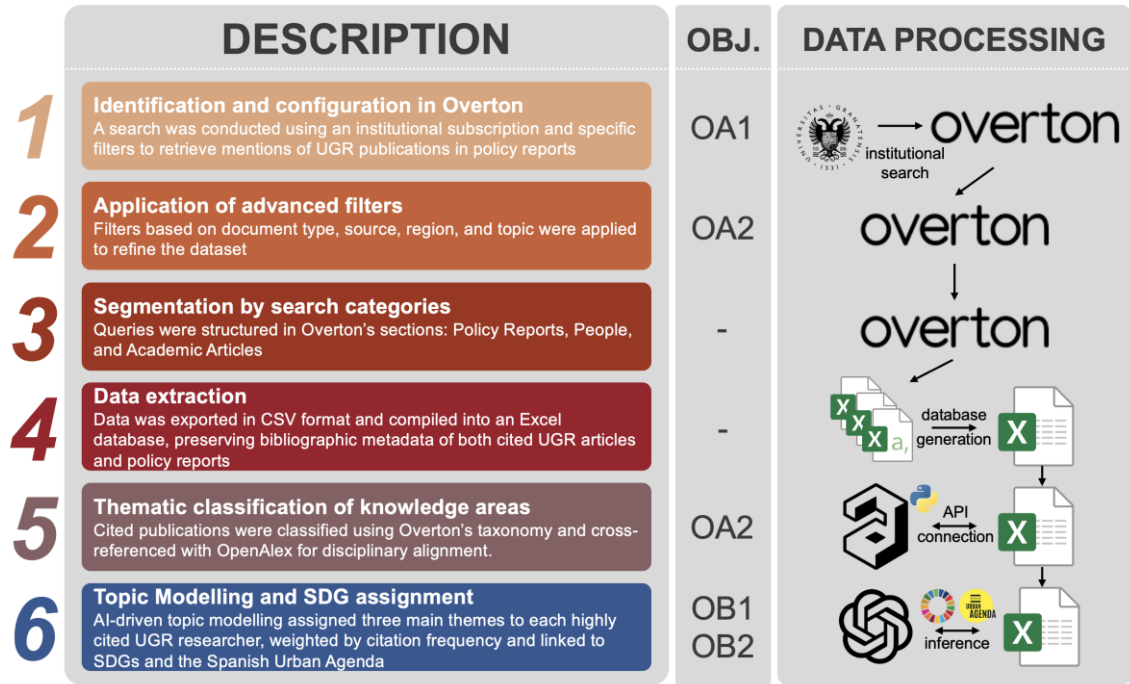
2.2. Data Collection and Classification

Data collection began with access to the Overton database through an institutional subscription. To identify research outputs from the University of Granada (UGR), a specific filter provided by Overton was applied, enabling direct access to all relevant data on UGR mentions within the database. Using Overton's main categories (*Policy Documents*, *People*, and *Academic Articles*), relevant records were systematically retrieved. Additionally, advanced filters were applied, including document type, source, region of origin, and thematic classification, allowing for a more refined data analysis. The resulting dataset included 8,268 mentions from 7,545 distinct policy reports, citing a total of 4,284 UGR scientific publications. Data were exported in CSV format, preserving bibliographic metadata for both academic publications and policy reports, and enabling detailed statistical analysis.

The classification of knowledge areas was carried out in two distinct phases to ensure both thematic consistency and analytical depth. In the first phase, policy reports that cited UGR publications were classified according to Overton's internal taxonomy, which assigns each document to a predefined knowledge area based on its thematic content. In the second phase, attention was focused on the UGR research outputs themselves. The bibliographic metadata of the cited UGR publications were cross-referenced with the OpenAlex database via its API, enabling each publication to be assigned to relevant scientific fields and topics. Through OpenAlex's "topic" field, a total of 1,145 distinct research topics were identified. From this set, the most cited and policy-relevant topics were selected and mapped to the corresponding Sustainable Development Goals (SDGs), thus bridging research output and potential policy impact. Additionally, to further analyse the alignment between UGR research and specific policy priorities, AI-assisted topic modelling was performed using ChatGPT. Thematic clusters were generated for the most frequently cited UGR researchers based on the titles of their publications. These thematic profiles were then cross-referenced with the 292 policy items listed in the Spanish Urban Agenda (Supplementary Material 2, Sheet 4) to identify areas of direct relevance to current urban policy agendas. The full process is illustrated in Figure 1.

⁶ Two supplementary materials accompany this paper: Supplementary Material 1, which includes descriptive materials and is provided as an appendix to the document, and Supplementary Material 2, which contains the raw data and is available on Zenodo (see DOI: <https://doi.org/10.5281/zenodo.15470808>)

Figure 1. Methodological workflow for identifying, filtering, and analysing mentions of University of Granada publications in policy documents via Overton, including thematic classification and SDG mapping by research objectives.



2.3. Metrics

To assess the policy relevance of UGR research, three indicators were used. The number of mentions captures the total citations of UGR research in policy documents, while the number of mentioned publications refers to the total unique UGR publications cited. Additionally, the Policy Relevance Index (PRI) was calculated for each organisation as the average number of citations per policy report, according to the formula:

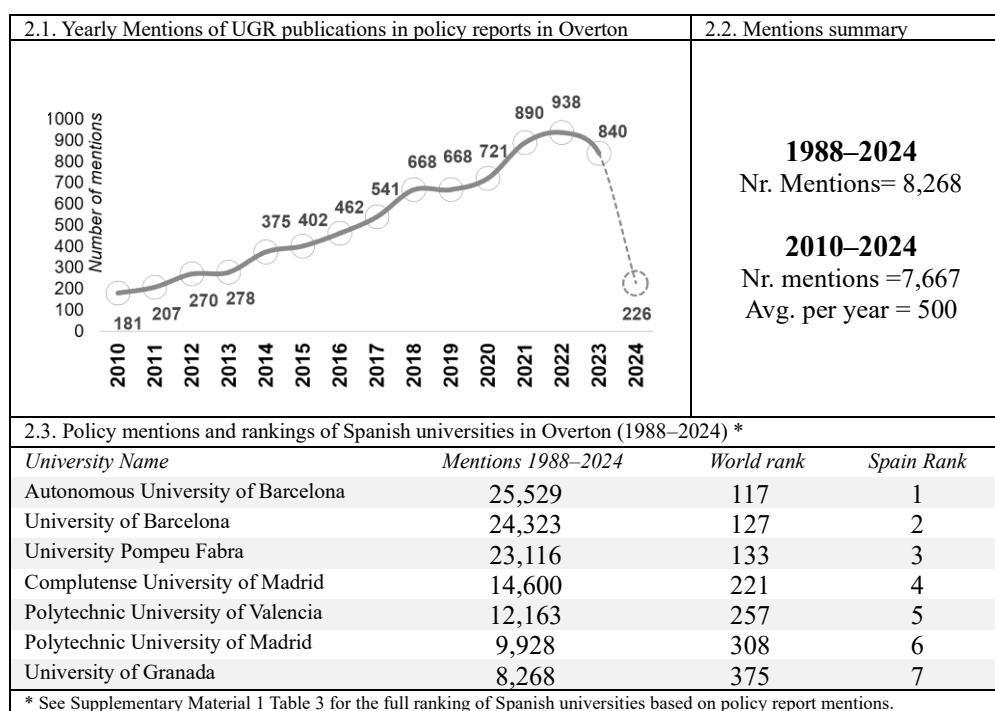
$$PRI = \frac{\text{Number of citations received}}{\text{Number of policy reports published}}$$

3. Results

3.1. Contextualization: evolution, linguistic and geographical origin of mentions

The analysis of policy report mentions related to the University of Granada (UGR) spans from 1988 to 2024, with a total of 8,268 mentions, showing a clear upward trend. In the initial period (1988–2007), mentions remained relatively low, fluctuating between 1 and 81 per year. A notable increase occurred in 2008, reaching 125 mentions, marking the beginning of sustained growth. From 2010 onwards, the annual average rose to approximately 500 mentions, peaking in 2022 with 938, reflecting a growing political interest in UGR's research. Over the past decade, mentions have accounted for 90% of the total (Figure 2). To assess the significance of this figure, UGR was compared internationally and nationally. Institutions such as Harvard, Stanford, and Berkeley—each with over 100,000 mentions—occupy the top three positions globally (SM1 Table 2). In this context, UGR ranks 375th worldwide. Within Spain, the university with the most mentions is the Autonomous University of Barcelona (25,529), while UGR holds the 7th position nationally.

Figure 2. Summary and evolution of policy mentions of UGR publications, with contextualization within the Spanish university system (1988–2024)



The linguistic diversity of policy documents citing the University of Granada (UGR) was also examined (SM1 Table 1). A total of 41 languages are represented in the dataset, based on Overton’s document-level metadata. English is the most prevalent language, accounting for 61.5% of documents (5,089), followed by Spanish with 21.2% (1,753). In addition to language, Overton provides aggregated classification of policy documents based on geographic, economic, and developmental criteria. These system-level variables allow for contextual analysis of where and how UGR research is mentioned globally. SM1 Table 4 presents the distribution of policy mentions by world region, economic grouping, and Human Development Index (HDI). Europe leads with 4,540 mentions, followed by North America (1,331) and the Asia-Pacific region (451). At the country level, Spain accounts for the largest number of mentions (1,673), followed by the United States (1,068) and the United Kingdom (392). From an economic perspective, most mentions come from OECD member countries (6,245), while non-OECD countries account for 2,023. In terms of development level, countries with a very high HDI account for most citations (5,528).

3.2. Classification of policy-issuing organisation

These analytical layers underscore Overton’s potential for generating contextualised insights into the visibility of academic research across linguistic, geographic, and socioeconomic dimensions. To deepen this analysis, and in line with Objective A2 (OA2), we examine the types of institutions citing UGR research. Governmental organisations represent most mentions (61%, or 5,077), followed by intergovernmental organisations (20%, 1,629 mentions), think tanks (14%, 1,133), and other entities (6%, 429). Mentions from governmental and intergovernmental bodies have increased notably over time, peaking in 2022. In total, more than 1,000 different institutions have cited UGR publications. Complementing this, Figure 3 presents a boxplot illustrating the distribution

of policy mentions by organisation type, revealing that intergovernmental organisations show a higher median and wider dispersion in the number of citations.

Figure 3. Policy documents mentions of University of Granada research by organisation type: distribution and temporal trends

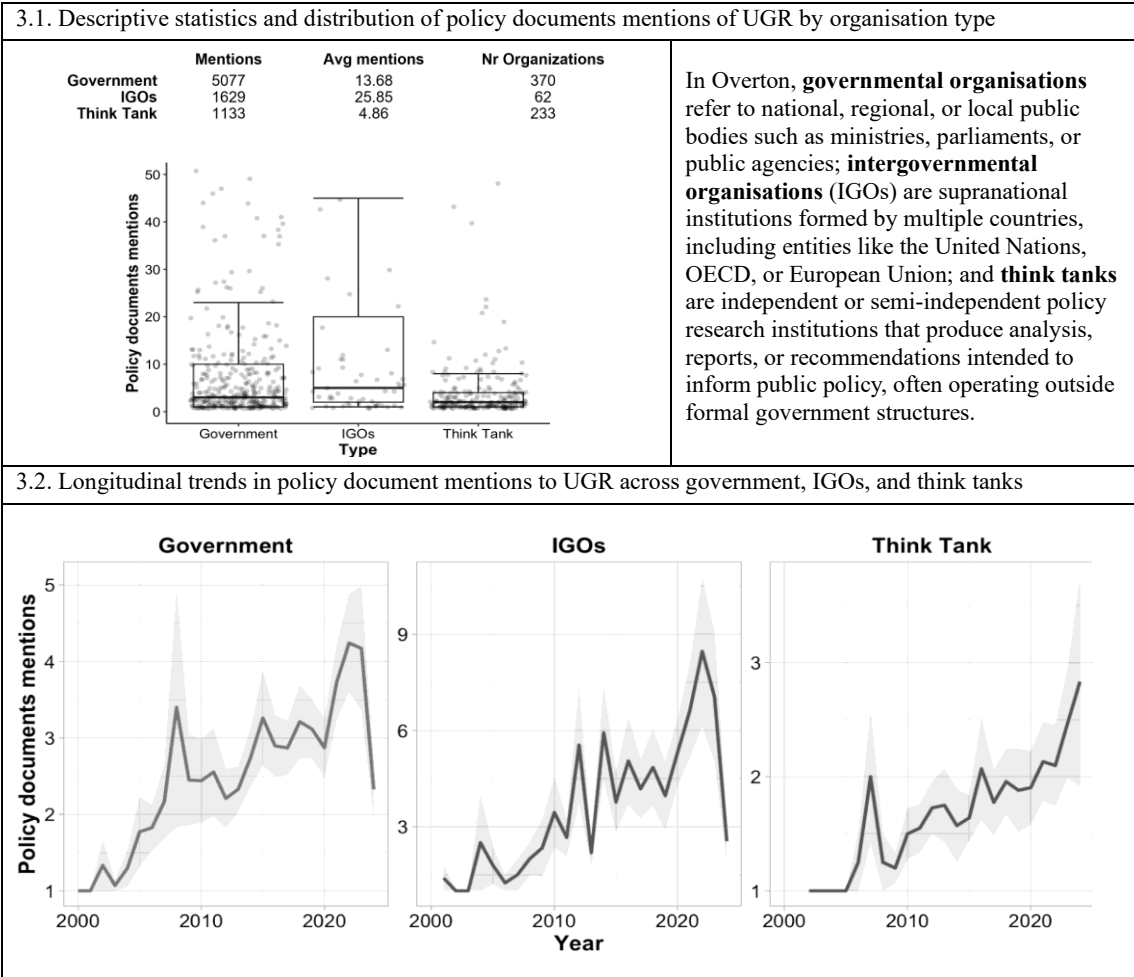


Table 1 presents the main organisations that mention the University of Granada in policy documents, both nationally and internationally. In addition, the table includes the Policy Relevance Index (PRI), which captures the visibility and prominence of each organisation within the Overton dataset. Notable institutions include the World Health Organisation (PRI=2.65), the OECD (4.04), and the European Union Publications Office (0.73). At national level, the Government of Spain, Junta de Andalucía, and Generalitat de Catalunya are among the most frequent sources, reflecting strong domestic engagement with UGR research. International contributors include the IZA Institute and IFO Institute (Germany), the Government Publishing Office and CDC (USA), and NICE (UK), with a particularly high PRI (3.45). Mentions also originate from Brazil (Fundação Getulio Vargas) illustrating the global reach of UGR’s policy impact.

Table 1. Main organisations citing UGR in policy documents by type, number of mentions, and policy relevance index

<i>Country/Region</i>	<i>Organisation</i>	<i>PRI</i>	<i>Mentions</i>
Government			
Spain	Gobierno de España	0.05	443
European Union	European Union - Publications Office	0.73	363
Spain	Junta de Andalucía	0.13	336
Spain	Generalitat de Catalunya	0.09	235
Spain	Euskal Autonomia Erkidegoa	0.06	141
European Union	European Union - European Food Safety Authority	1.3	139
United Kingdom	NICE – National Institute for Health and Care	3.45	120
Spain	Boletín Oficial del Estado	0.00	118
United States	Government Publishing Office (GPO)	0.00	109
United Kingdom	European Union - Joint Research Centre	0.79	98
Germany	Arbeitsgemeinschaft der (AWMF)	0.15	95
United Kingdom	The UK Government	0.27	66
United States	United States Geological Survey	0.04	64
Canada	Government of Canada	0.01	63
IGOs			
World	World Health Organization	2.65	254
World	OECD	4.04	158
World	United Nations - FAO	1.78	143
World	United Nations – Not Assigned	0.92	117
America	Inter-American Development Bank	0.44	115
World	United Nations - Environment Programme	0.71	113
World	United Nations – Comisión Econ. Amer. Latin y Caribe	0.33	94
World	World Bank	2.14	94
America	Pan American Health Organization (PAHO)	1.48	82
Think Tank			
Germany	IZA Institute of Labor Economics	0.02	142
Brazil	Fundação Getulio Vargas	0.01	68
Germany	IFO Institute - Institut für Wirtschaftsforschung	0.02	66
Others			
International	Guidelines in PubMed Central	0.82	334
Australia	Analysis & Policy Observatory	0.01	90

To provide a broader view of institutional engagement, SM2 Sheet 1 includes a list of organisations that have cited UGR research in policy documents, limited to those with more than five mentions. This dataset reveals a wide variety of citing institutions. The diversity of these organisations underscores the international reach of UGR's policy impact and shows that its research informs several domains, including health, environment, economics, and science governance. An examination of the dataset allows us to identify five distinct clusters based on their institutional profiles:

1. European Union organisations: UGR is frequently cited by core EU institutions. The Publications Office of the European Union leads with 363 mentions, followed by EFSA (139) and the JRC (98). Additional references come from the European Central Bank, the Parliamentary Research Service, and the ECDC.
2. United Nations system: Several UN agencies cite UGR, notably the WHO (254), FAO (143), and UNEP (113). Mentions are also found from UNESCO, ECLAC, and UNICEF.
3. Specialised intergovernmental organisations: UGR is cited by PAHO (82) and the International Agency for Research on Cancer (18). In environmental science, its

research appears in IPCC (28) and IPBES (45) reports, reflecting contributions to global health and climate frameworks.

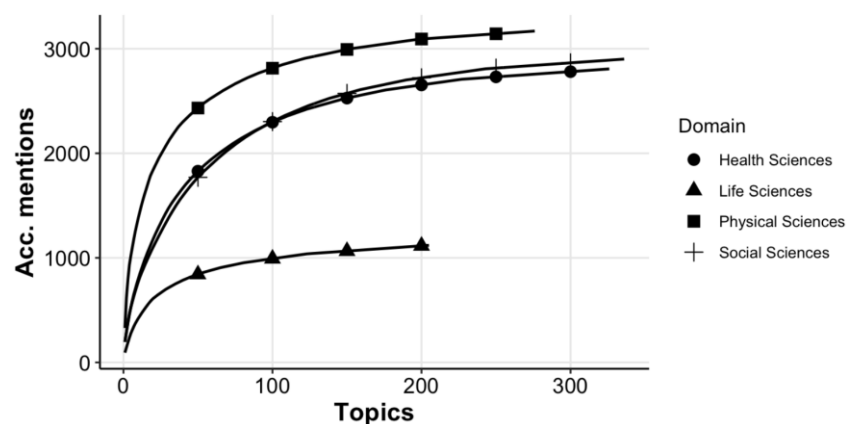
4. Economic and development institutions: UGR is mentioned in policy documents from the OECD (158), World Bank (94), and IMF (25), confirming its influence in economic policy, particularly on inequality and innovation.

5. Environmental and regional cooperation bodies: UGR is also cited by the Arctic Council and IWC on topics such as biodiversity and marine sustainability. Its presence in regional cooperation contexts underscores its cross-disciplinary and international reach.

3.3. Key policy topics influenced by UGR research topic modelling with OpenAlex

To analyse the thematic influence of UGR research in policy documents, we cross-referenced the 4,284 UGR publications mentioned (SM2 Sheet 2) in policy reports with OpenAlex topics. This process yielded 1,145 distinct research topics, which were then aggregated and examined to assess their visibility in the policy sphere. A global summary of topic-level mentions is presented in SM1 Table 6 and detailed topic data can be found in SM2 Sheet 3. Figure 4 visualises the cumulative distribution of mentions across major scientific domains. Results reveal that Physical Sciences and Health Sciences accumulate the highest number of mentions (3,169 and 2,807, respectively), followed closely by Social Sciences (2,901), while Life Sciences lag with 1,120. These differences are also reflected in the number of distinct topics and their average prominence. Physical Sciences show the highest concentration (2.59 average mentions per topic), suggesting a strong policy focus in a few highly cited areas. In contrast, Social Sciences exhibit a more balanced distribution across a wider thematic spectrum. These findings highlight how scientific attention in policy is unevenly distributed, with certain disciplines showing clearer alignment with policy needs.

Figure 4. Cumulative mentions of UGR research topics by scientific domain (OpenAlex)



1 Table 6. Key policy topics from UGR publications cited, modelled using OpenAlex
2 classification and aligned with specific Sustainable Development Goals (SDGs)

OpenAlex	Key policy topics	Total mentions	Total publications	Average mentions	SDG **
	PHYSICAL SCIENCES – 276 OpenAlex Topics →	3,169	1,222	2.59	
	<i>Endocrine Disruption by Chemical Exposure</i>	329	102	3.23	3
	<i>Impact of Climate Change on Forest Wildfires</i>	285	23	12.39	13
	<i>Species Distribution Modeling and Climate Change Impacts</i>	179	31	5.77	15
	<i>Biodiversity Conservation and Ecosystem Management</i>	140	37	3.78	15
	<i>Impact of Persistent Organic Pollutants on Environment and Health</i>	88	29	3.03	3
	SOCIAL SCIENCES & HUMANITIES – 336 OpenAlex Topics →	2,901	1,249	2.32	
	<i>Banking and Finance in Economic Systems</i>	195	24	8.13	8
	<i>Social Preferences and Economic Behavior</i>	97	29	3.34	10
	<i>Bibliometric Analysis and Research Evaluation</i>	96	31	3.10	9
	<i>Influence of the Built Environment on Active Travel</i>	78	23	3.39	11
	<i>Evolution of Cooperation and Altruism in Social Systems</i>	60	2	30.0	16
	HEALTH SCIENCES – 326 OpenAlex Topics →	2,807	1,259	2.22	
	<i>Global Trends in Obesity and Overweight Research</i>	197	85	2.32	3
	<i>Role of Mediterranean Diet in Health Outcomes</i>	90	43	2.09	3
	<i>Diagnosis and Management of Fibromyalgia Syndrome</i>	87	35	2.49	3
	<i>Allergic Rhinitis and its Impact on Asthma</i>	81	21	3.86	3
	<i>Role of Omega-3 Fatty Acids in Health</i>	74	31	2.39	3
	LIFE SCIENCES – 207 OpenAlex Topics →	1,120	543	2.06	
	<i>Impact of Pesticides Use in Agriculture</i>	93	20	4.65	15
	<i>Soil Carbon Dynamics and Nutrient Cycling in Ecosystems</i>	49	11	4.45	15
	<i>Expansion of Geographic Range in Processionary Moth</i>	47	12	3.92	15
	<i>Vascular Flora of Mediterranean Europe and North Africa</i>	47	16	2.94	15
	<i>Diversity and Function of Gut Microbiome</i>	42	16	2.63	3
* Complete List of OpenAlex Topics is available at SM2 Sheet 3					
** 3. Good Health and Well-being, 8. Decent Work and Economic Growth, 9. Industry, Innovation and Infrastructure, 10. Reduced Inequalities, 11. Sustainable Cities and Communities, 13. Climate Action, 15. Life on Land, 16. Peace, Justice and Strong Institutions					

3

4 Table 6 offers an illustrative snapshot of the most policy-relevant research topics,
5 organised by major scientific domains. For each domain (Physical Sciences, Social
6 Sciences & Humanities, Health Sciences, and Life Sciences), it lists the top five topics
7 with the highest number of mentions in science-policy documents, along with the
8 corresponding number of publications, average mentions per publication, and alignment
9 with Sustainable Development Goals (SDGs). This selection highlights the university's
10 influence in diverse areas such as endocrine disruption, climate change impacts,
11 economic behaviour, obesity research, and agricultural sustainability. Notably, some
12 topics like Evolution of Cooperation and Altruism in Social Systems (30 average
13 mentions) or Impact of Climate Change on Forest Wildfires (12.39) show particularly
14 high visibility in policy discourse relative to their publication volume. It is important to
15 note that this table is not exhaustive. It presents only the top five policy-linked topics per
16 domain as a concise example. A more comprehensive list, including additional topics and
17 indicators, is available in the supplementary dataset (SM2 Sheet 3), which enables further
18 exploration of the university's contributions to global policy agendas.

19 3.4. Linking researchers to the Spanish Urban Agenda

20 Finally, in line with our last objective, we demonstrate how it is possible to link individual
21 researchers with urban agendas. Table 7 presents an excerpt from the full list included in
22 SM1, where we identified the top 50 researchers from the University of Granada based
23 on the number of policy mentions. Subsequently, for each of these authors, we applied an

Artificial Intelligence (AI) topic modelling approach based on the titles of their publications. These thematic profiles were then crossed using artificial intelligence with Level 3 priorities of the Spanish Urban Agenda. Out of the 50 researchers analysed, the AI system identified seven whose research topics showed direct alignment with specific urban policy priorities. For each of these researchers, an alignment level was established, and a corresponding Level 2 priority area was assigned (Table 8). All matches were reviewed and validated by the authors, who confirmed the accuracy and relevance of the assignments.

Table 7. Ranking of the top 5 UGR researchers by number of policy mentions

Researcher	Total mentions	Publications mentioned	National mentions	Government mentions	IGO mentions	Think tank mentions
Jorge Castro	336	42	17%	62%	28%	6%
Regino Zamora	206	61	38%	74%	14%	10%
Nicolás Olea	203	86	6%	78%	15%	8%
Santiago Carbó	190	24	9%	72%	34%	16%
Mariana F Fernández	171	68	7%	73%	18%	8%
...

Table 8. Topic-based alignment of UGR researchers with the Spanish Urban Agenda based on AI-assisted modelling.

Researcher	Alignment with the Urban Agenda	AI-based topic modelling using publication titles	AI-based assignment to Level 2 Urban Agenda
		Topic modelling (Titles)	Level 2 Agenda Urbana
Jorge Castro 336 Mentions	↑ Very High	Mitigation of climate risks in forest ecosystems (55% titles) Post-fire management and forest biodiversity (35%)	→ 1.2. Conserve and enhance natural heritage and ecosystems
Regino Zamora 206 Mentions	High	Pest management and restoration in ecosystems (45%) Post-fire conservation (35%)	→ 1.2. Conserve and enhance natural heritage and ecosystems
José M. Gómez 87 Mentions	↑ Very High	Forest restoration using nurse plants (55%) Ecological interactions and climate change (30%)	→ 3.1. Adapt the territorial and urban model to the effects of climate change
José A. Hódar 83 Mentions	High	Forest pests and climate change (40%) Facilitation by nurse plants (40%)	→ 3.1. Adapt the territorial and urban model to the effects of climate change
Paloma Cariñanos 104 Mentions	Medium-High	Urban green space design (50%) Climate mitigation through urban forests (30%)	→ 2.4. Improve the urban environment and reduce pollution
Rosa Fernández 52 Mentions	High	Mountain biodiversity in the face of climate change (95%)	→ 3.1. Adapt the territorial and urban model to the effects of climate change
Manuel Casares 76 Mentions	Medium-High	Design of green spaces with low allergenic impact (60%) Mitigation of allergen emissions in urban areas (30%)	→ 2.4. Improve the urban environment and reduce pollution
Artificial Intelligence intervention			
* A complete table with the three levels of Spanish Urban Agenda can be accessed at SM2 Sheet 4			

Regino Zamora presents a clear example of strong thematic alignment between academic research and urban policy priorities. Through AI-based topic modelling of his publication titles, three dominant research areas were identified: post-fire restoration, biodiversity, and climate change. These topics are particularly relevant in Mediterranean forest ecosystems, where fire regimes and biodiversity conservation are pressing concerns. Zamora's profile shows a high level of alignment with the Spanish Urban Agenda Level 2 objective 1.2: "Conserve and enhance natural heritage and ecosystems". His work contributes directly to strategies aimed at ecological resilience and sustainable land use, reinforcing the role of scientific expertise in policy-making processes related to environmental protection and territorial planning. This case illustrates how topic-based policy linkage can uncover valuable intersections between research and urban

sustainability agendas, particularly in the context of climate adaptation and biodiversity management.

4. Discussion

This study demonstrates the analytical potential of the Overton database for measuring the policy influence of academic research. However, it also presents certain limitations which must be highlighted upfront. First, the approach adopted is primarily descriptive, focusing on counts, classifications, and institutional mappings, which—while valuable—do not allow for direct causal inference regarding actual policy influence. Nonetheless, the analysis highlights the richness and granularity of Overton data, which includes extensive metadata on document provenance, institutional authorship, and thematic classification. Crucially, the ability to extract raw data in structured formats enables researchers to integrate Overton records with external sources, such as the OpenAlex database, thereby facilitating enriched and multi-layered analyses. Overton’s potential extends beyond simple mention tracking: its data can be operationalised to support decision-making by identifying emerging topics, high-impact researchers, and alignment with strategic policy frameworks.

Furthermore, we must note several limitations related to the Overton database. First, Overton’s coverage remains uneven across geographic regions, languages, and institutional types. For instance the platform does not have access to all government archives (Bornmann et al., 2022), which may result in the underrepresentation of certain national sources. Moreover, some document types or issuing bodies may be systematically excluded, limiting comprehensiveness (Szomszor & Adie, 2022). A structural bias toward OECD countries and English-language documents is evident, which may lead to the underestimation of policy activity in the Global South and in non-Anglophone contexts—an issue long observed in the altmetrics literature (Haustein, 2016). Additionally, while Overton employs sophisticated citation-matching techniques, problems related to incomplete indexing, incorrect attribution, and missed links persist, particularly when references are informal or poorly standardised (Yu & Yao, 2024). As such, any analysis based on Overton data should be approached critically, and citation data should be carefully reviewed and validated before drawing conclusions regarding policy impact.

Methodologically, this study adopts a primarily descriptive approach focused on aggregating and classifying mentions, without engaging in content-level qualitative analysis. As a result, it does not differentiate between symbolic, rhetorical, or substantive uses of research in policy documents—an important distinction when assessing real-world influence. It is important to recall that the mere mention of a publication in a policy document does not necessarily indicate that the research has influenced the policy process (Newson et al., 2018). However quantitative indicators such as those provided by Overton can serve as useful proxies, capturing an increased likelihood of interaction between scientists and policymakers (Pinheiro et al., 2021). This study adopts that perspective: rather than claiming direct influence, it interprets policy mentions as signals of potential impact or, at the very least, awareness of academic research by policy actors within a given institutional context. For academic institutions, this visibility is significant in itself, particularly when certain research topics generate sustained interest among organisations responsible for policy development.

Findings related to the presence of the UGR in policy documents (objective OA1) underscore the value of Overton as a platform for conducting structured, descriptive

analyses of academic visibility in the policy sphere. By examining the evolution of policy mentions over time, as well as their linguistic and geographical distribution, this study highlights the increasing recognition of UGR research among public institutions worldwide. Notably, the sharp growth in mentions since 2010 and their dominance in English and Spanish policy literature reflect both the expanding international reach of UGR and the linguistic channels through which its research circulates. The inclusion of global development and economic classifications further enhances interpretive granularity, revealing that UGR's work is predominantly cited in policy contexts associated with high-income and high-HDI countries, but with notable presence also in Latin America and emerging regions. These descriptive layers, though superficially accessible, provide meaningful insights into the dynamics of science-policy interactions at multiple levels.

We observe that the UGR's research outputs is mentioned by a wide array of sectors, highlighting the breadth of its policy engagement (objective OA2). The diversity of organisations referencing UGR publications—including national governments, intergovernmental bodies such as the WHO, OECD, and FAO, and a range of think tanks—demonstrates the university's embeddedness in global policy discourse. The prominence of European Union institutions (e.g., Publications Office, EFSA, JRC) confirms UGR's strategic relevance in EU policymaking, particularly in health, economic governance, and environmental regulation. At the same time, citations by United Nations agencies and global development institutions (e.g., UNESCO, UNEP, World Bank) reinforce UGR's visibility in transnational debates on sustainability, equity, and scientific advisory frameworks. These findings suggest that the university not only contributes to academic knowledge but also acts as a reference point in international policy analysis and decision-making processes.

We then look into the main research topics mentioned (objective OB1), identifying 1,145 distinct topics—spanning physical, health, social, and life sciences. Research topics are captured through OpenAlex topic modelling and its linkage with Overton policy mentions. The UGR is mentioned in a wide spectrum of domains within the policy sphere. The most frequently cited topics show clear alignment with pressing global challenges, such as endocrine disruption, wildfire management, biodiversity conservation, obesity, and sustainable finance. This suggests that policy actors are not only engaging with UGR research in abstract terms but are doing so in relation to actionable issues reflected in the Sustainable Development Goals (SDGs). Moreover, the analysis of average mentions per topic points to varying degrees of policy uptake and thematic focus, indicating that some areas (e.g., climate impacts on wildfires, cooperation and altruism) exhibit particularly high levels of resonance in policy discourse relative to their academic output.

We then move a step further by linking individual researchers with concrete public policy priorities, specifically those outlined in Spain's Urban Agenda (objective OB2). Using AI-assisted topic modelling based on publication titles, we identify seven UGR researchers whose work aligns directly with Level 3 priorities of the Urban Agenda. These include themes such as post-fire restoration, urban green space design, mitigation of allergen emissions, and ecological adaptation to climate change—areas that are not only scientifically robust but also highly relevant to urban and territorial planning. The classification of researchers according to their level of alignment and the assignment to specific Level 2 priorities (as shown in Table 8) demonstrate that it is possible to establish systematic, evidence-based connections between academic expertise and local or national

policy frameworks. The process of manual validation by the authors further reinforces the reliability of this approach and exemplifies a replicable model for identifying expert-policy matches at the institutional level.

This study provides a replicable multilevel framework for assessing institutional policy influence by integrating Overton data with topic-level and author-level classifications. Through a combination of descriptive analysis, thematic mapping, and strategic linkage with policy agendas, the University of Granada emerges not only as a source of academic production but also as a relevant actor in evidence-informed policymaking. While limitations regarding data coverage, attribution, and interpretative depth must be acknowledged, the ability to trace where, how, and by whom research is cited in policy documents marks an important step forward in understanding science-policy interfaces. Future efforts should focus on deepening qualitative interpretations of policy uptake, enhancing real-time monitoring capacities, and fostering structured engagement mechanisms between academic institutions and decision-makers—ensuring that research does not merely circulate in policy environments, but meaningfully informs them.

5. References

- Atapour, H., Maddahi, R., & Zavaraki, R. (2024). Policy citations of scientometric articles: An altmetric study. *Scientometrics*, 129(7), 4423-4436. <https://doi.org/10.1007/s11192-024-05091-3>
- Ba, Z., Tang, Y., Liu, X., & Xia, Y. (2023). Tracing policy diffusion: Identifying main paths in policy citation networks. *Journal of Information Science*, 01655515231189660. <https://doi.org/10.1177/01655515231189660>
- Beard, T. A., Donaldson, S. I., Unger, J. B., & Allem, J.-P. (2024). Examining Tobacco-Related Social Media Research in Government Policy Documents: Systematic Review. *Nicotine and Tobacco Research*, 26(4), 421-426. <https://doi.org/10.1093/ntr/ntad172>
- Bornmann, L. (2014). Do altmetrics point to the broader impact of research? An overview of benefits and disadvantages of altmetrics. *Journal of Informetrics*, 8(4), 895-903. <https://doi.org/10.1016/j.joi.2014.09.005>
- Bornmann, L., Haunschild, R., Boyack, K., Marx, W., & Minx, J. C. (2022). How relevant is climate change research for climate change policy? An empirical analysis based on Overton data. *PLoS ONE*, 17(9), e0274693. <https://doi.org/10.1371/journal.pone.0274693>
- Bornmann, L., Haunschild, R., & Marx, W. (2016). Policy documents as sources for measuring societal impact: How often is climate change research mentioned in policy-related documents? *Scientometrics*, 109(3), 1477-1495. <https://doi.org/10.1007/s11192-016-2115-y>
- Cabral, B., & Salles-Filho, S. (2024). Mapping science in artificial intelligence policy development: Formulation, trends, and influences. *Science and Public Policy*. <https://doi.org/10.1093/scipol/scae052>
- De Filippo, D., & Sastron-Toledo, P. (2023). Influence of research on open science in the public policy sphere. *Scientometrics*, 128(3), 1995-2017. <https://doi.org/10.1007/s11192-023-04645-1>
- Haunschild, R., & Bornmann, L. (2016). Normalization of Mendeley reader counts for impact assessment. *Journal of Informetrics*, 10(1), 62-73. <https://doi.org/10.1016/j.joi.2015.11.003>

- 1 Haunschild, R., & Bornmann, L. (2017). How many scientific papers are mentioned in
2 policy-related documents? An empirical investigation using Web of Science and
3 Altmetric data. *Scientometrics*, 110(3), 1209-1216.
4 <https://doi.org/10.1007/s11192-016-2237-2>
- 5 Haustein, S. (2016). Grand challenges in altmetrics: Heterogeneity, data quality and
6 dependencies. *Scientometrics*, 108(1), 413-423. [https://doi.org/10.1007/s11192-](https://doi.org/10.1007/s11192-016-1910-9)
7 [016-1910-9](https://doi.org/10.1007/s11192-016-1910-9)
- 8 Hermann, A. T., Pregernig, M., Hogl, K., & Bauer, A. (2015). Cultural Imprints on
9 Scientific Policy Advice: Climate science–policy interactions within Austrian
10 neo-corporatism. *Environmental Policy and Governance*, 25(5), 343-355.
11 <https://doi.org/10.1002/eet.1674>
- 12 Hu, L., Huang, W., & Bu, Y. (2024). Interdisciplinary research attracts greater attention
13 from policy documents: Evidence from COVID-19. *Humanities and Social*
14 *Sciences Communications*, 11(1), 383. [https://doi.org/10.1057/s41599-024-](https://doi.org/10.1057/s41599-024-02915-8)
15 [02915-8](https://doi.org/10.1057/s41599-024-02915-8)
- 16 Huang, Z., Zong, Q., & Ji, X. (2022). The associations between scientific collaborations
17 of LIS research and its policy impact. *Scientometrics*, 127(11), 6453-6470.
18 <https://doi.org/10.1007/s11192-022-04532-1>
- 19 Maleki, A., & Holmberg, K. (2022). Comparing coverage of policy citations to scientific
20 publications in Overton and Altmetric.com: Case study of Finnish research
21 organizations in Social Science. *Informaatiotutkimus*, 41(2–3).
22 <https://doi.org/10.23978/inf.122592>
- 23 Murat, B., Noyons, E., & Costas, R. (2023, mayo 19). Exploratory analysis of policy
24 document sources in Altmetric.com and Overton. *27th International Conference*
25 *on Science, Technology and Innovation Indicators (STI 2023)*. 27th International
26 Conference on Science, Technology and Innovation Indicators (STI 2023).
27 <https://doi.org/10.55835/6442b915bdab695b3f03d666>
- 28 Newson, R., Rychetnik, L., King, L., Milat, A., & Bauman, A. (2018). Does citation
29 matter? Research citation in policy documents as an indicator of research impact
30 – an Australian obesity policy case-study. *Health Research Policy and Systems*,
31 16(1), 55. <https://doi.org/10.1186/s12961-018-0326-9>
- 32 Pinheiro, H., Vignola-Gagne, E., & Campbell, D. (2021). A large-scale validation of the
33 relationship between cross-disciplinary research and its uptake in policy-related
34 documents, using the novel Overton altmetrics database. *Quantitative Science*
35 *Studies*, 2(2), 616-642. https://doi.org/10.1162/qss_a_00137
- 36 Robinson-Garcia, N., Arroyo-Machado, W., & Torres-Salinas, D. (2019). Mapping social
37 media attention in Microbiology: Identifying main topics and actors. *FEMS*
38 *Microbiology Letters*, 366(7), fnz075. <https://doi.org/10.1093/femsle/fnz075>
- 39 Robinson-García, N., Torres-Salinas, D., Zahedi, Z., & Costas, R. (2014). New data, new
40 possibilities: Exploring the insides of *Altmetric.com*. *El Profesional de la*
41 *Informacion*, 23(4), 359-366. <https://doi.org/10.3145/epi.2014.jul.03>
- 42 Scholin, L., & Eddleston, M. (2024). Towards policy impact—An exploration of Clinical
43 Toxicology research cited in policy documents and patents. *Clinical Toxicology*,
44 62(10), 636-642. <https://doi.org/10.1080/15563650.2024.2398136>
- 45 Szomszor, M., & Adie, E. (2022). Overton: A bibliometric database of policy document
46 citations. *Quantitative Science Studies*, 3(3), 624-650.
47 https://doi.org/10.1162/qss_a_00204
- 48 Tahir, H., El-Ferik, S., & Tayyab, M. (2025). From research to roadmaps: Electric vehicle
49 studies driving sustainable policy frameworks. *Transportation Research Part D:*

- 1 *Transport and Environment*, 140, 104645.
2 <https://doi.org/10.1016/j.trd.2025.104645>
- 3 Tattersall, A., & Carroll, C. (2018). oWhat Can Altmetric.com Tell Us About Policy
4 Citations of Research? An Analysis of Altmetric.com Data for Research Articles
5 from the University of Sheffield. *Frontiers in Research Metrics and Analytics*, 2,
6 9. <https://doi.org/10.3389/frma.2017.00009>
- 7 Torres-Salinas, D. (2024). *Influencia Política de la UGR: Un informe institucional sobre*
8 *la influencia de la investigación de la UGR en las políticas públicas medida a*
9 *través de las menciones recibidas en 'Policy Reports*. InluScience Ediciones.
- 10 Torres-Salinas, D., Arroyo-Machado, W., & Robinson-García, N. (2025). *Principles of*
11 *Evaluative Bibliometrics in a DORA/CoARA Context* (Versión First Edicion,
12 January 2025). InluScience Editions.
13 <https://doi.org/10.5281/ZENODO.14672066>
- 14 Torres-Salinas, D., Cabezas-Clavijo, Á., & Jiménez-Contreras, E. (2013). Altmetrics:
15 New indicators for scientific communication in Web 2.0. *Comunicar*, 21(41), 53-
16 60. <https://doi.org/10.3916/C41-2013-05>
- 17 Torres-Salinas, D., Docampo, D., Arroyo-Machado, W., & Robinson-Garcia, N. (2024).
18 The many publics of science: Using altmetrics to identify common
19 communication channels by scientific field. *Scientometrics*, 129(7), 3705-3723.
20 <https://doi.org/10.1007/s11192-024-05077-1>
- 21 Warner, K. E., & Tam, J. (2012). The impact of tobacco control research on policy: 20
22 years of progress. *Tobacco Control*, 21(2), 103-109.
23 <https://doi.org/10.1136/tobaccocontrol-2011-050396>
- 24 Yu, H., Cao, X., Xiao, T., & Yang, Z. (2020). How accurate are policy document
25 mentions? A first look at the role of altmetrics database. *Scientometrics*, 125(2),
26 1517-1540. <https://doi.org/10.1007/s11192-020-03558-7>
- 27 Yu, H., Murat, B., Li, J., & Li, L. (2023). How can policy document mentions to scholarly
28 papers be interpreted? An analysis of the underlying mentioning process.
29 *Scientometrics*, 128(11), 6247-6266. <https://doi.org/10.1007/s11192-023-04826-y>
- 30 Yu, H., & Yao, R. (2024). How Are Policy Document Mentions to Academic Papers
31 Accumulated? *Proceedings of the Association for Information Science and*
32 *Technology*, 728-732. <https://doi.org/10.1002/pra2.848>

Supplementary Material 1

Note: This article is based on the institutional report:

Torres-Salinas, D. (2024). *Influencia Política de la UGR: Un informe institucional sobre la influencia de la investigación de la UGR en las políticas públicas medida a través de las menciones recibidas en ‘Policy Reports’*. InluScience Ediciones.

doi: <https://zenodo.org/records/13999133>

Table 1. Summary of the number of policy documents indexed in Overton, grouped by country of origin, primary language, and year of publication (2015–2024).

Country	No. of Docs.	Language	No. of Docs.	Year	No. of Docs.
United States	4,338,295	English	8,377,871	2015	716,836
United Kingdom	743,672	Spanish	1,103,176	2016	786,031
Japan	663,269	French	887,818	2017	894,959
Spain	585,688	Japanese	527,031	2018	1,035,718
Canada	574,032	German	387,759	2019	1,102,102
Germany	319,562	Chinese	307,833	2020	1,114,640
Sweden	315,165	Swedish	270,203	2021	1,108,776
Australia	304,878	Russian	230,271	2022	985,664
France	282,174	Arabic	204,410	2023	878,674
Netherlands	149,501	Portuguese	175,514	2024	243,242

Table 2. Top five universities worldwide by total number of mentions in Overton-indexed policy documents, including their global ranking and country of origin.

University name	Policy Reports Mentions	World Rank Position	Country
Harvard University	167,148	1	United States
Stanford University	132,642	2	United States
University of California, Berkeley	132,573	3	United States
University of Oxford	131,439	4	United Kingdom
Columbia University	122,832	5	United States

Table 3. List of Spanish universities ranked by the number of mentions in Overton-indexed policy documents (1988–2024), including their global and national positions

University Name	Policy Documents Mentions	Global Rank	National Rank
<i>Autonomous University Barcelona</i>	25,529	117	1
<i>University of Barcelona</i>	24,323	127	2
<i>University of Pompeu Fabra</i>	23,116	133	3
<i>University Complutense Madrid</i>	14,600	221	4
<i>University of València</i>	12,163	257	5
<i>Autonomous University Madrid</i>	9,928	308	6
<i>University of Granada</i>	8,268	375	7
<i>University Carlos III de Madrid</i>	8,105	383	8
<i>University of País Vasco</i>	7,937	386	9
<i>University of Navarra</i>	6,689	444	11
<i>University of Santiago</i>	6,450	450	12
<i>University Polytechnical Madrid</i>	5,885	475	13
<i>University of Sevilla</i>	5,309	512	14
<i>University of Oviedo</i>	5,309	512	14
<i>University of Murcia</i>	5,047	537	15
<i>University of Alcalá</i>	5,000	544	16
<i>University of Alicante</i>	4,679	561	17
<i>University of Cantabria</i>	3,779	650	18
<i>University of Málaga</i>	3,610	666	19
<i>University of Córdoba</i>	3,506	679	20
<i>University of Salamanca</i>	3,476	685	21
<i>University Rovira i Virgili</i>	3,452	687	22
<i>University Rey Juan Carlos</i>	3,365	693	23
<i>University of de Las Palmas</i>	3,271	712	24
<i>University Pablo de Olavide</i>	2,152	906	25

1 Table 4. Breakdown of policy document mentions of the University of Granada based on
2 spatial, economic, and developmental classifications, including national, regional, and
3 global groupings as indexed in Overton.

<p>Spain Regions ← Countries →</p>	<ul style="list-style-type: none"> • Andalusia: 342 • Catalonia: 235 • Basque Country: 141 • Madrid: 53 • Navarre: 49 • Asturias: 47 • Castilla-La Mancha: 39 • Canary Islands: 37 • Valencia: 26 • Aragón: 22 • Galicia: 18 • Extremadura: 13 • Murcia: 10 	<ul style="list-style-type: none"> • Spain: 1.068 • EEUU: 1.673 • Germany: 499 • UK: 392 • Canada: 242 • Australia: 240 • French: 212 • Sweden: 194 • Brazil: 135 • Netherlands: 199 • Belgium: 115 • Finland: 112
<p>World Geographical regions</p>	<ul style="list-style-type: none"> • Europe: 4,540 • North America: 1,331 • APAC (Asia-Pacific): 451 • Nordic Countries: 426 • Central and South America: 276 • South America: 267 • Oceania: 273 	
<p>Economic groupings</p>	<ul style="list-style-type: none"> • OECD Members: 6,245 • Non-OECD Members: 2,023 • G20: 3,780 • G7: 2,503 • EU27: 3,250 • BRICS: 163 	
<p>Human development INDEX⁷</p>	<ul style="list-style-type: none"> • Very High Human Development Index: 5,528 • High Human Development Index: 333 • Medium Human Development Index: 31 • Low Human Development Index: 8 • LIC (Low-Income Countries): 14 	

4

⁷ The term "human development" refers to the classification of countries based on the Human Development Index (HDI) established by the United Nations Development Programme (UNDP).

1 *Table 5. Evolution of policy mentions to UGR research in Overton by year and source*
2 *type (government, IGO, think tank, other)*

Year	Government	IGOs	Other	Think Tank	Total general
1988	1				1
1990				1	1
1991				1	1
1992		1			1
1997	1	1			2
1998	4				4
1999	6	1	2		9
2000	2		1		3
2001	7	7			14
2002	8	2	1	1	12
2003	15	2	2	2	21
2004	22	5			27
2005	39	9	1	1	50
2006	42	5	2	5	54
2007	52	9	6	14	81
2008	102	12	1	10	125
2009	98	14	6	12	130
2010	122	31	4	24	181
2011	143	32	1	31	207
2012	159	61	12	38	270
2013	184	35	10	49	278
2014	222	83	15	55	375
2015	251	64	28	59	402
2016	275	106	21	60	462
2017	327	92	51	71	541
2018	395	126	55	92	668
2019	411	119	59	79	668
2020	422	149	51	99	721
2021	519	192	66	113	890
2022	564	237	9	128	938
2023	513	176	20	131	840
2024	114	56	5	51	226
No data	57	2		6	65
Total	5077	1629	429	1133	8268

3

4 *Table 6. Domain-level distribution of policy mentions, topics, and cited publications from*
5 *UGR research using OpenAlex classification*

This classification has been carried out based on the publications from UGR mentioned in policy reports. These publications were then classified using the OpenAlex database classification system, with their DOI as a reference.	Nr of topics	Number of mentions	Percentage of mentions over the total	Number of mentioned publications	Percentage of mentioned publications	Average mentions per publication
Physical Sciences	276	3,169	32%	1,222	29%	2.59
Social and Humanities	336	2,901	29%	1,249	29%	2.32
Health Sciences	326	2,807	28%	1,259	29%	2.23
Life Sciences	207	1,120	11%	543	13%	2.06

1 *Table 7. Ranking of the top 50 University of Granada researchers by number of policy*
2 *mentions, including the origin of mentions by organisation type*

University of Granada's Researcher	Nr of Policy Mentions	Nr Publications Mentioned	Mentions from España	Mentions from Government	Mentions from IGOs	Mentions from Think Tank
Jorge Castro	336	42	17%	62%	28%	6%
Regino Zamora	206	61	38%	74%	14%	10%
Nicolás Olea	203	86	6%	78%	15%	8%
Santiago Carbó* ⁸	190	24	9%	72%	34%	16%
Mariana F Fernández	171	68	7%	73%	18%	8%
Francisco B Ortega	167	71	16%	41%	25%	15%
Cristina Campoy	163	57	7%	61%	10%	4%
Francisco Rodríguez Fernández	161	29	9%	71%	17%	13%
Antonio F Hernández	159	44	3%	77%	14%	6%
Jonatan R Ruiz	150	82	28%	54%	13%	9%
Paloma Cariñanos	104	23	14%	44%	48%	3%
Francisco Herrera	102	26	17%	48%	15%	33%
Miguel Moya	87	27	35%	40%	18%	32%
José M Gómez	87	28	55%	78%	13%	9%
José A Hódar	83	31	67%	94%	6%	0%
José Juan Jiménez-Moleón	78	36	30%	65%	21%	5%
Aurora Bueno Cavanillas	78	40	23%	72%	11%	3%
Manuel Casares-Porcel	76	8	31%	53%	39%	3%
Fernando Gil	76	33	14%	68%	26%	2%
Angel Gil	75	48	5%	52%	28%	3%
Ana I Moro-Egido	69	14	6%	25%	19%	53%
Javier Jordán	65	12	62%	63%	0%	37%
Palma Chillón	64	25	16%	60%	13%	7%
Manuel Arroyo-Morales	64	27	8%	51%	12%	2%
Jorge A Cervilla	64	25	44%	91%	3%	4%
Siham Tabik	61	7	10%	52%	16%	26%
Francisco González-Gómez	58	29	15%	28%	38%	34%
Emilio Delgado López-Cózar	58	23	31%	40%	13%	44%
Lucas Alados-Arboledas	56	44	15%	45%	42%	9%
Joaquín Molero Mesa	56	7	20%	41%	50%	3%
Antonio Pla	56	21	0%	74%	22%	2%
Ana Rivas	55	15	5%	76%	22%	2%
Salvador García	54	4	4%	47%	18%	30%
José-Manuel Molina-Molina	54	17	0%	82%	17%	1%
Juan P Arrebola	53	24	2%	61%	20%	19%
Dolores Jiménez-Rubio	53	13	11%	21%	48%	28%
David Epstein	53	18	14%	87%	2%	2%
Daniel Molina	53	3	6%	52%	16%	27%
Rosa Fernández Calzado	52	3	15%	37%	53%	3%
Hassan Lyamani	52	20	5%	25%	71%	4%
Manuel Bravo	50	17	8%	61%	8%	3%
Fátima Olea-Serrano	50	20	8%	83%	11%	6%
Víctor J García-Morales	49	11	15%	41%	29%	22%
Juan C Braga	49	25	6%	47%	32%	15%
Enrique Villanueva	49	14	21%	79%	16%	5%
Abderrahmane Merzouki	48	3	24%	60%	40%	0%
Javier Ordóñez	46	9	12%	37%	49%	7%
Gloria Titos	44	11	19%	40%	47%	9%
Juan M Pleguezuelos	43	20	31%	56%	27%	18%

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⁸ Ha sido Catedrático de Análisis Económico de la Universidad de Granada hasta noviembre de 2022

Supplementary Material 2

This supplementary material is provided as an Excel file composed of four separate sheets with the following contents:

- **Sheet 1:** Complete list of organisations mentioning UGR in Overton, grouped by type.
- **Sheet 2:** Complete list of the 4,284 UGR publications cited in policy documents, including basic bibliographic information.
- **Sheet 3:** Full list of policy-cited research topics, generated by cross-referencing Sheet 2 with the OpenAlex database (Topics).
- **Sheet 4:** List of key political priorities from Spain's Urban Agenda, published by the Ministry of Housing and Urban Agenda (<https://www.aue.gob.es>).

The dataset is available on Zenodo at:

Torres-Salinas, D., & Arroyo-Machado, W. (2025). *From science to policy: supplementary material* (Version 1) [Data set]. Zenodo.

doi: <https://doi.org/10.5281/zenodo.15470808>