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# From Research to Policy: A Study of IES-Funded RCTs in Education Policy Documents

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## Abstract

Education research aims to inform policy and practice, a goal central to the Institution of Education sciences; however, there has been limited empirical evidence on whether this goal has been achieved. This study examines this question through investigating the reach of IES-funded efficacy, replication, scale-up, and effectiveness studies to government policy documents. To answer this, this study combined 528 IES funded grants between 2002 and 2022 with their publications and then with meta-analysis and policy documents that cited those publications. Results find that 70% of all IES grants will eventually reach government policy, and those that do reach government policy, will reach on average 6 government policy documents. On average, it takes the grants 8.2 years from time of funding to first government policy document citation (for those that will ultimately reach a government policy document). Overall, these findings offer empirical evidence on the reach of IES funded grants on policy.

# I. Introduction

The Institute of Education Sciences (IES) was created by the Education Sciences Reform Act of 2002 to provide "scientific evidence on which to ground education practice and policy" (Institute of Education Sciences, 2026). Two decades later, there is broad consensus that IES raised the rigor of education research and built a workforce able to produce credible causal evidence (Gamoran and Dibner, 2022; Northern and Opp, 2026). Whether that evidence changed practice or policy, however, is contested and, since February of 2025, has been consequential: following the cancellation of roughly $881 million in IES contracts, the agency's redesign has proceeded on the premise that it did not (Quinn and Knott, 2025; U.S. Department of Education, 2025). Criticism has centered on two claims: that IES funded the wrong questions and that its evidence, whatever its merits, failed to travel. Mark Schneider, IES director from 2018 to 2024, described the latter as a "last mile" problem, in which research fails to reach the people it was written for (Schneider, 2018).

In this paper, we take up the second of these claims, leveraging a unique, large-scale dataset of policy documents worldwide to examine connections between the scientific literature funded by IES and downstream policy documents. We focus on the full corpus of efficacy, replication, scale-up, and effectiveness grants awarded by NCER and NCSER since 2002, using this corpus as a means to test the overall reach of research funded from these centers. We do so since these grants are intended to be the end of a broader pipeline of studies (which explore and then develop interventions) and because these studies are designed to produce strong causal evidence of "what works, for whom, and under what conditions," making them the strongest candidates for inclusion in policy discussions.

This paper contributes to a broader literature on research use in education. To date, research of this type has focused almost entirely at the level of districts and schools, where the social processes of uptake can be observed directly: knowledge brokers in central offices (Coburn et al., 2009), research–practice partnerships as sites of two-way translation (Coburn and Penuel, 2016), and the transmission of research through intermediaries – books, practice guides, professional networks – rather than peer-reviewed articles (Penuel et al., 2018; Farley-Ripple et al., 2018). This

concentration reflects where evidence of use could be gathered. Uptake in districts and schools is accessible through survey, interview, and case study; uptake in policy leaves traces scattered across statutes, agency reports, and guidance documents that until recently could not be linked to their sources at scale.

One recent study comes close to the question we ask. Taylor et al. (2026) tracked 376 IES impact-focused awards through an evidence pipeline, finding that while 94% produced at least one publication, 39% produced a publication reviewed by the WWC, and 21% yielded a study assigned an ESSA evidence tier. The mean lag from grant start to WWC review was 8.1 years. Their analysis establishes both that portfolio-level tracing is feasible and that attrition across the pipeline is substantial, though their analysis terminates at the clearinghouse. Inclusion in the WWC or the assignment of an ESSA tier alone does not guarantee that decision-makers encountered or used it. In this paper, we extend the pipeline one segment further, asking whether evidence from these same grant types appears in the broader policy discussions.

While our focus is on research use, the method and benchmarks we employ in this paper are instead bibliometric, an approach found in the science-of-science field (Fortunato et al., 2018; Wang and Barabási, 2021). This literature shows that roughly 3.9% of scientific publications are cited in policy documents, averaging 2.32 policy documents per cited publication, with social sciences and humanities showing the highest relative presence and reviews the most likely document type to be cited (Fang et al., 2024; Murat et al., 2026). This literature also examines the lag-time between publication and later policy document citation, showing that lags are often substantial; for example, Bornmann et al. (2022) found an average of 5.8 years from publication to climate policy citation. Comparable lags are documented in medicine, where a frequently cited estimate holds that roughly 17 years elapse between clinical research and its adoption in practice (Balas and Boren, 2000); however, more recent research on the subject finds that it takes about 9.1 years on average (controlling for other factors) for clinical research to reach the market (Brown et al., 2022).

To study connections between IES grants, publication, and later policy document uptake, we

turn to the Overton database (Szomszor and Adie, 2022); this database links published paper DOIs to downstream policy documents at the state, federal, and international levels, spanning government, think tank, and intragovernmental (IGO) publications. Our focus is the pathway from grant to government policy document, including several mediating steps along the way. We ask:

**RQ1**: What types of **policy documents** do IES grants reach, and do these differ from the general corpus of policy documents in Overton?

**RQ2**: **How many** publications, meta-analysis citations, and policy citations do grants produce on average over time?

**RQ3**: What share of IES-funded grants ever **reaches government policy** documents, and how quickly?

**RQ4**: What share reaches government policy **through intermediaries** (meta-analyses, non-government policy documents), and how quickly?

**RQ5**: Do rates of direct and mediated policy reach differ by **grant characteristics** (institution type, topic area, funder, and institutions holding multiple grants)?

# II. Methods

## A. Data

Studying connections between NCER and NCSER funded grants and downstream policy document citations required four sources of data to relate to one another. In this section, we describe these data sources and our processes of building our database. More information can be found in the Appendix.

## 1. Grants

We began by identifying the 528 efficacy, effectiveness, replication, and scale-up grants funded by NCER and NCSER between 2002–2022 based upon data available from the IES website (National Center for Education Research, 2023). Most of these grants were for efficacy trials (88%), with the remainder including center grants (8%; these housed multiple studies instead of a single trial), and effectiveness, replication, or scale-up (4%; this category changed names and foci over time). These grants were held by 159 unique institutions, the majority of which were universities (74%); the remainder were to non-university research organizations (19%; e.g., AIR, MDRC, RAND, WestEd) or to other types of organizations (8%; e.g., state education agencies, children's hospitals, museums).

IES labels each grant using one of 39 topic areas, such as "Cognition and Student Learning," "Early Learning Programs and Policies," or "Postsecondary and Adult Education." Because these topics are numerous and reflect changes over time, we consolidated them into seven subject areas: Reading/Writing/Literacy, STEM, Social and Behavioral, Policy, Early Childhood Education, Postsecondary, and Other. Further details on this process, including edge cases, are provided in the Appendix. The resulting distribution ranges from Postsecondary (52 grants) to Social and Behavioral (116), with Policy (89), Reading/Writing/Literacy (82), Early Childhood Education (81), STEM (54), and Other (54) in between. We use this subject-area classification later to examine whether policy reach differs across research subjects.

## 2. Papers and DOIs

For each grant, we identified the set of DOIs produced under the grant. We accomplished this by downloading paper citations from the IES website and through identifying papers that cited IES grant award numbers in ERIC and Crossref. DOIs could include publications, white papers, and book chapters. Further details are in the Appendix.

We then classified DOIs into two types of publications: Primary and Secondary. Primary refers to empirical findings from the study, which could include the main findings (e.g., ATE) as

well as later papers that analyzed the study data (e.g., subgroup, mediation). We labeled a paper as 'Primary' if its abstract reported a sample or participants, random assignment, or reported results, or was tagged as a RCT or clinical trial. Secondary refers to other papers associated with the grant, including research syntheses, meta-analyses reviews, study protocols, commentaries, and editorials. See Appendix for details.

In total, we identified 2,776 individual DOIs over 528 grants; of these, 2,682 were classified as 'Primary' DOIs across 457 grants. On average, of those with at least one DOI, grants produced 6.64 DOIs with a median of 3. In some cases, there were products that did not have DOIs, mostly technical and evaluation reports, and because of the nature of the Overton data, we had to exclude these. We do have a record of them: ERIC lists 1,422 such products without a DOI across 270 grants, so the reach of grants whose main products are reports may be underestimated.

### 3. Meta-analyses

We then sought to determine if there were any meta-analyses that included results from the 'Primary' papers, since these could provide an indirect path through which research could reach policy. We matched these DOIs to meta-analyses using OpenAlex citation data (Priem et al., 2022). Further details are in the Appendix.

### 4. Policy documents

Finally, we linked all DOIs to policy documents using the Overton database (Szomszor and Adie, 2022). The Overton database includes government, think tank, and intergovernmental organization (IGO) documents, connecting them to DOIs published, to each other, and to researchers specifically discussed in the documents. The database also includes metadata on the policy documents, including by policy category, where the policy document is from (country and region), language of the policy document, and year of publication (Szomszor and Adie, 2022). Recently, the use of the Overton database has exploded in scientometric studies to understand the reach of research and publications to policy (Dorta-González et al., 2024; Fang et al., 2024; Mahfouz et al., 2025;

Murat et al., 2026; Furnas et al., 2025; Furnas and Wang, 2026). Although Overton provides a way to track DOIs in policy documents, there is no way to track reports and papers that do not have identifiers, making understanding their reach difficult. It also is only able to track research across published, written policy documents, and not informal policy discussions that may occur in the policy decision making process.

Overton tags documents by category, including Education and 17 other categories, and these tags are not mutually exclusive. After discovering that only 77 % of the IES associated documents were found in Education, we defined four mutually exclusive categories: Education (77 % of IES); Economy, Business and Finance (13 %); Health (4.5 %) ; and Other (5.3 %). These are defined as nested (e.g., Economy, Business, and Finance include only DOIs that were not tagged as Education). Table 1 provides an overview of the comparison of these categories in our corpus ("IES Docs") versus the Overton data.

Work by Murat et al. (2026) has shown that only 7.7% of all Overton documents cite scholarly publications but that these rates also vary greatly across the types of policy documents (i.e., government vs. nongovernment, language, subject area, and source country). Because of this, we decided to compare the government policies that IES grants reach to the general education government policies as a more direct comparison to mitigate this variation. Across Overton, the majority of policy documents (93%) do not cite any DOIs, and the percent that do differs across these categories. Here the highest levels of DOI citation are found in Health (13 %) and Education (12 %), followed by Economy, Business, and Finance (9 %), and with the lowest in Other (3 %). Notice that within the corpus of Overton Education policy documents that cite DOIs, policy documents that IES cites make up almost 10 % of these documents.

**Table 1**

*General Overton Data Categories Compared to Overton Data That Cite IES Grants*

| Category | Overton Docs | Overton % | Overton (Citing DOIs) Docs | Overton (Citing DOIs) % | IES Docs | IES % |
|---|---|---|---|---|---|---|
| All data | 21,620,712 | 100.0% | 1,559,732 | 100.0% | 37,152 | 100.0% |
| Education + | 2,633,488 | 12.2% | 320,391 | 20.5% | 28,629 | 77.1% |
| (Non-Education) Economy, Business, and Finance + | 7,465,976 | 34.5% | 650,382 | 41.7% | 4,889 | 13.2% |
| (Non-Educ, Non-Economy) Health + | 2,091,708 | 9.7% | 264,339 | 16.9% | 1,676 | 4.5% |
| (Non-Educ, Non-Econ, Non-Health) Other | 9,429,540 | 43.6% | 324,620 | 20.8% | 1,958 | 5.3% |

*Note.* Each IES-cited document is assigned to a single bucket in priority order (Education → Economy → Health → Other), so that they sum to 100%.

Finally, we classify the Overton documents into two types: Government and Non-government. Government documents include documents produced by national, state, and local governments, as well as those produced by intragovernmental organizations (e.g., OECD). Non-government documents include those produced by non-profits and think tanks (e.g., NBER). Overall, 3,762 (56.7%) of the policy documents citing the included DOIs are government documents, while 2,873 (43.3%) are non-government documents. By classifying this way, we are also able to examine how government documents cite other non-government policy documents as an additional pathway.

## 5. Linking the Data Sources

We linked the DOIs, meta-analyses, and policy documents in two steps. The first was the direct route where we joined the 2,776 grant-publication DOIs to the full Overton data, identifying every policy document that cited at least one publication from an IES funded grant. This yielded 6,387 first-order policy documents linked to 314 of the 528 grants (59.5% of all grants; 68.3% of the

DOI-bearing grants). The second was to include a meta-analysis as a pathway for grant DOIs to reach policy documents. For this, we joined 313 meta-analysis DOIs to the same Overton policy-to-DOI data, identifying the meta-analyses that are cited in the policy documents. This route reaches 88 grants, of which 2 are reached only through a meta-analysis and would otherwise have appeared unreached. It contributes an additional 248 first-order policy documents that cite a meta-analysis but not the grant publication directly, bringing the combined total to 6,635 first-order policy documents across 316 grants (59.8% of total grants).

## B. Analysis

The questions this paper focuses on are fundamentally influenced by time: Grants funded in 2002 are more likely than those funded in 2022 to have both an associated DOI and for that DOI to have reached a policy document simply because more time has passed. To account for this censoring, we use a series of different right-censored models – including survival and cure models – and methods for accounting for censored data in count regression models. In what follows, each of these methods and models are reviewed.

### 1. Cure Models

For RQs 2 and 3, we assume that the grant to policy data is right censored. Here we use the Cure Model, which is widely used in cancer research. In this model, grants might not reach a policy document either because there has not been enough time (e.g., the 2022 DOI) or because, even with enough time, they never would. The resulting Mixture Cure Model thus estimates the probability of making it to a policy document over time (i.e., being susceptible) and the overall proportion of grants that will ever make it to a policy document (i.e., the cure fraction). We consider the following cure model:

$$S(t) = S^*(t)(\pi + (1 - \pi)S_u(t))$$

In this model, a proportion of the grants ($\pi$) will not make it to a document (in our case, a meta-analysis, nongovernment policy document, or government policy document), while the remainder ($1 - \pi$) reach those documents. ($S_u$) is the grant-specific survival function for those who will eventually reach a government policy document, and it is estimated along with the "cure" proportion. To estimate the probabilities and function, we used a flexible semiparametric model (Amico and Van Keilegom, 2018). In all the models estimated, we control for the number of DOIs that a grant produces, since producing more publications from one grant may increase the likelihood of reaching policy just by volume. For the purpose of interpretation, we flipped all the Cure Model estimates (1-probability) so that we report estimates of reaching a document as opposed to never reaching a document.

For RQ3, which specifically investigates intermediaries through which the grants may reach government policy documents, we estimate a Multistate Cure Model (Beesley and Taylor, 2019). Figure 1 depicts each state from the Multistate CM. For each transition from one state to the other, the transition-specific Multistate CMs were fit with the start time as the publication date of the starting state and the time as the number of years post that publication date to the publication date of the ending state. Because grants may have possible publications at each state, we used a grant-cluster bootstrap for the confidence intervals on the susceptible fraction.

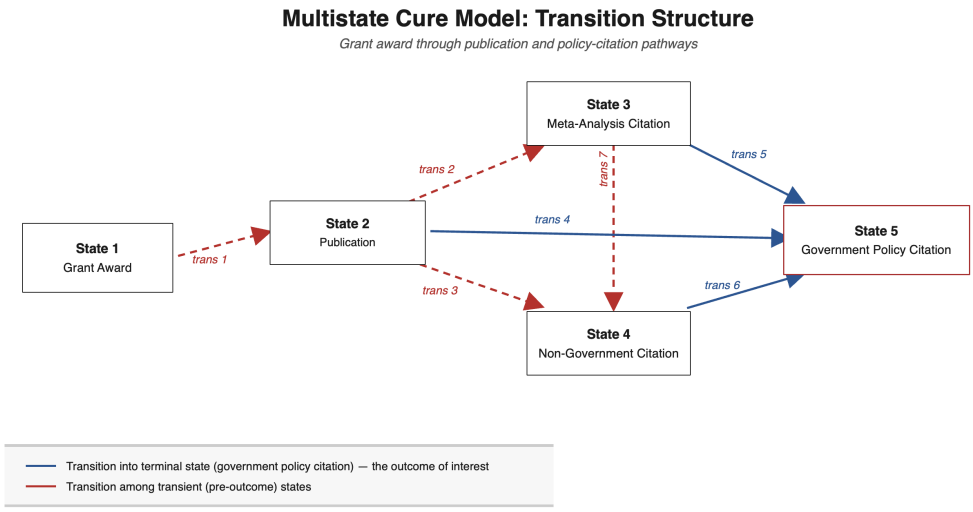


Figure 1: Multistate Cure Model: Transition Structure

To answer how quickly a grant reaches publication, government policy documents, and each transition state, we estimated the conditional mean and median years to transition. For grants, DOIs, meta-analyses, and nongovernment policy documents, if those documents are going to ever make the transition, this estimates the mean and median of their survival function (failure time distribution).

## 2. Wei-Lin-Weissfeld Marginal Cox Model

For one last part of RQ2, we are interested in understanding the prevalence of each pathway to reaching government policy documents (i.e., directly from DOI to government policy, indirectly from DOI to nongovernment policy document to government policy document, indirectly from DOI to meta-analysis to government policy document, and indirectly from DOI to meta-analysis to nongovernment policy document to government policy document). For this, we consider every grant to be exposed to every pathway. Theoretically, a grant could take any pathway to reach a government policy document. Therefore, we used a Wei-Lin-Weissfeld Marginal Cox Model (Wei et al., 1989) to estimate the time to final event (government policy document) through each possible pathway. Here each state is considered an event, and we can estimate the following hazard function

for each combination of states (in our case the four different possible pathways):

$$h_{ik}(t|x_i) = h_{0k}(t)e^{\beta_{\mathbf{k}}\mathbf{x_i}}$$

In this model, each event has its own baseline hazard function ($h_{0k}$) and $\mathbf{x_i}$ are the controls, where once again we control for the grant-level number of publications. Event times are assumed to be correlated as they come from the same grants; the WLWMCM uses a robust standard error to account for this.

### 3. Hurdle Negative Binomial Regression

For RQ5 on the average grant level publication and policy documents over time, for each type of document (publication, meta-analyses, non-government policy, and government policy) the model was estimated using a Hurdle Negative Binomial Distribution (Hilbe, 2011). The HNBD splits the regression into the hurdle distribution for the probability of being zero or being greater than zero. Once past the hurdle, the data are assumed to follow a zero-truncated negative binomial distribution which is estimated using the subsample of observations that pass the hurdle. The negative binomial distribution was chosen over other count distributions to account for over-dispersion in the data. This allowed us to estimate the number at each document (publications, meta-analyses, non-government documents, and government documents) for each grant via any pathways as well as probability of not having any of that document type.

$$Y_{ik} = \beta_{0k} + \beta_{1k}\text{Funder} + \beta_{\mathbf{2k}}\text{Institution type} + \beta_{\mathbf{3k}}\text{Subject area} + \beta_{\mathbf{jk}}\mathbf{X_i} + ln(\text{follow up years}) + \epsilon_{ik}$$

Where $Y_{ik}$ is either the transition outcome (publications, meta-analysis citations, nongovernment policy document) or the final outcome (government policy document) for each grant where $Y_{ik}$ is the probability of reach in the hurdle and $Y_{ik}$ is the number of the outcome documents in which the grant is cited under the negative binomial distribution. $\beta_{1k}$ is the difference between

NCSER and NCER, $\beta_{\mathbf{2k}}$ are the differences between institution types with university as the reference group, and $\beta_{\mathbf{3k}}$ are the differences between grant subject area with ECE being the reference group. $\mathbf{X_i}$ are the controls, which include award year and the log of the number of publications produced by each grant. $ln$(follow up years) is included as an offset in the count component of the model with a fixed coefficient of 1, allowing for the modeling of rate per follow-up year.

Note that when estimating the number of publications from each grant, the log of the number of papers is not controlled for, as this is the outcome of focus. Additionally, for the meta-analysis, non-government policy, and government policy, we restricted the dataset to grants that have at least one publication as not having a publication immediately leads to zero counts in these documents.

Once we estimated the hurdle binomial regression, we used the estimates to predict the mean conditional expected value of counts (the number of publications given that a grant passes the hurdle). For comparing across different grant characteristics (i.e., institution type and funder), we also used estimates to predict the mean conditional expected value of counts, averaged across the other categories that are being controlled for and bootstrapped confidence intervals from the estimated model.

*Sensitivity Analysis.* In order to understand how multi-grant publications impact the estimation of the cure models, these models were estimated after having removed any publication that referenced more than one IES grant. The results of the sensitivity analysis can be found in the supplement. Across results, the cure fraction is relatively similar to the original results, indicating that the results are robust to double counting from these publications.

# III. Results

In this section, we provide results in relation to each of our five questions.

**RQ1: What types of government policy documents do IES grants reach, and do these differ from the general corpus of policy documents in Overton?**

*What types of documents do government policy documents include?*

In order to better understand the corpus of documents in the Overton database, we began by examining a random sample of the policy documents that cite IES-funded DOIs (Figure 2 shows the composition of the full Overton policy corpus, and the subset citing IES-funded research, by source type and origin). As this is a subset of the Overton policy documents that cite IES-funded research, they may not be representative of the policy documents more broadly. These policy documents came from all three source types in Overton (national and subnational governments, think tanks, and IGOs) and from a range of countries, including U.S. federal, state, and city agencies, national education ministries across Europe and Latin America, and IGOs such as the OECD, World Bank, and UNESCO. Roughly one in five (18%) were written in languages other than English (most often Spanish, French, Swedish, or German). The documents that cite IES-funded research span a wide range of genres, and these differ between Government (including IGO) sources and Non-Government sources.

Government and IGO documents (57% of the corpus) tended to take forms tied to the policy process. They included legislation and legislative hearings, such as a U.S. House of Representatives committee hearing and national laws like Sweden's school-desegregation act; government strategy and monitoring reports, such as the Czech Ministry of Education's edition of Education at a Glance and South Africa's benchmarking of early-grade reading skills; curriculum, standards, and implementation guidance, such as Ireland's guidance on oral language in early childhood; agency evidence reviews, such as the Agency for Healthcare Research and Quality's review of interventions for children with autism; and testimony and public-meeting records, including informal email exchanges among decision-makers, such as one submitted to the Hawaii Board of Education concerning a proposed hard-to-staff pay differential for teachers that cited an IES-funded study on school capital investment. From IGOs specifically, documents included international assessments and sector analyses, such as the OECD's assessment frameworks for the PIAAC adult-skills survey and World Bank reports on education and human capital.

Non-government documents (43% of the corpus) tended to take more analytic forms. They included think-tank policy briefs and reports, such as those from RAND and the Public Policy

Institute of California; academic and technical working papers, such as those from NBER and IZA; program and impact evaluations by research organizations, such as Mathematica and WestEd; and foundation reports, such as those from the Wallace Foundation. Additional examples of each type appear in the supplement.

*How do the policy documents that IES grants reach differ from the general corpus of policy documents?*

We began by examining the government policy documents, dividing these into national government versus intragovernmental agency (IGO) documents. Then, for the national government documents, we divided these by region (US, Europe, Asia, Africa, Australia, North America (excl. US), and South America). These results are found in Figure 2. Additional tables are found in the supplement and provide a more extensive comparison across policy document type and location by all government docs, government docs by education, and government documents that cite IES funded DOIs.

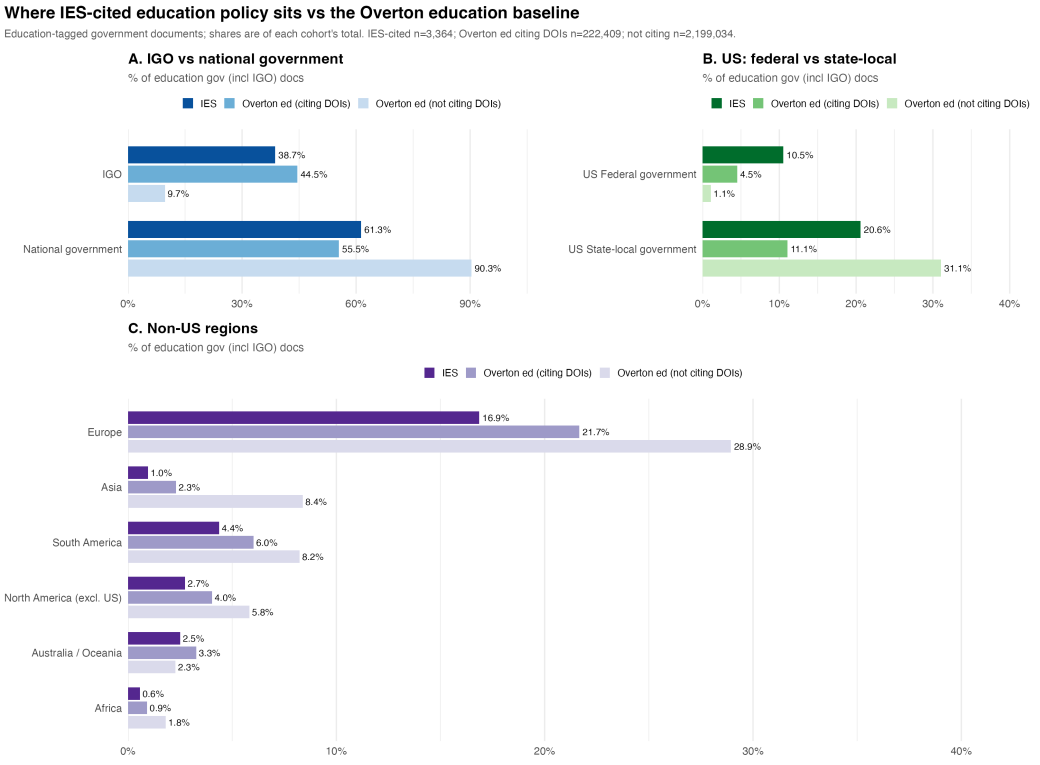


Figure 2: IES-cited education government policy documents versus Overton education government policy documents

First, notice that a substantial percent (36.7 %) of the government document citations are to documents produced by intragovernmental agencies (IGOs). Examples here include the OECD's PIAAC assessment frameworks, UNESCO's Education: the science of learning, and the Inter-American Development Bank's work on the impact of monetary incentives on teachers' decisions.

Second, of the nationally focused government education documents citing IES research, about 31% are from US government entities. Interestingly, this is nearly twice as large as the comparable share of all DOI citing education government documents that are cited in the US (16 %), suggesting greater US uptake than expected. Within the US, the minority of citations (39%) are to US federal or national government documents, with the majority in state or local government documents (61%). This is more comparable to what is found in the Overton education government documents that cite research (4.5% for federal government and 11.1% to state and local government documents).

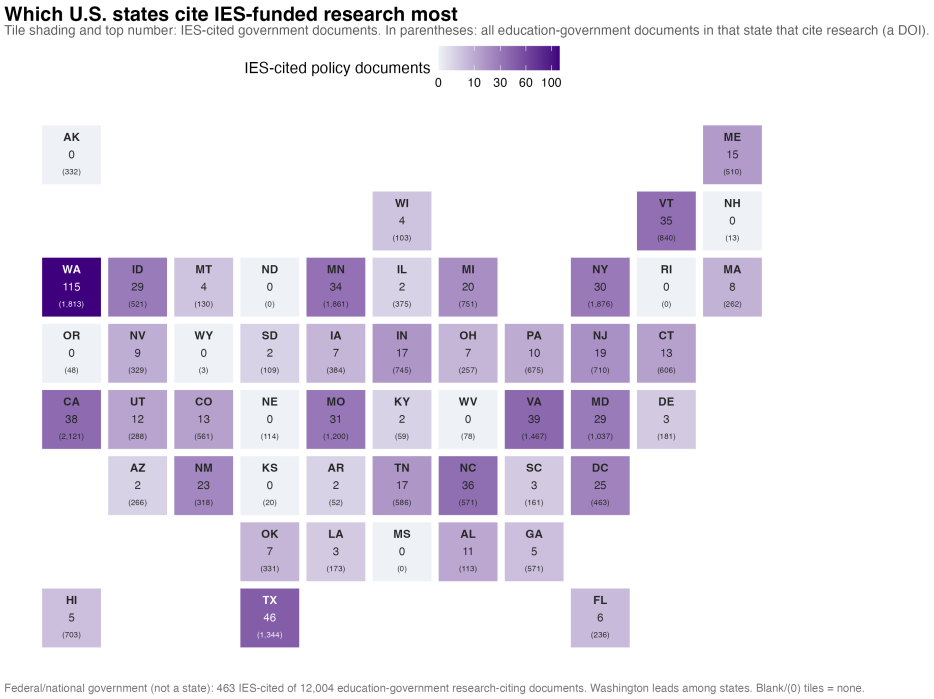


Figure 3: US government policy documents citing IES funded research

Figure 3 reports the number of IES-cited policy documents in each state as well as the number of education policy documents from each of those states. Washington is a clear outlier in terms

of states who cite IES documents with Washington having 115 government documents that cite IES research. There are several states that cite no IES research (Oregon, North Dakota, Wyoming, Nebraska, Kansas, Mississippi, West Virginia, Rhode Island, and New Hampshire), but these states also have few education government policy documents that cite research. More generally, there is a lot of variation by state with regard to how many government policy documents cite IES research with no real patterns by region, population size, or political leaning.

The remaining majority (68 %) of nationally focused citations from IES funded publications are to government documents in countries other than the US. The largest share here include countries in Europe (16.9 %), with citations found in every inhabited continent. Within Europe, IES-funded research reaches government documents most often in the United Kingdom, Sweden, Spain, and the Netherlands.

**RQ2: How many publications, meta-analysis citations, and policy citations do grants produce on average over time?**

To estimate the average number of DOIs, meta-analyses, and policy documents for each subgroup of studies, we used the Hurdle Negative Binomial model. This allowed us to estimate both the odds of (not) reaching that document and then the counts of those documents, which we used to estimate the associated means. Importantly, these are averages across the corpus included in the data; here the average number of follow-up years is around 13, where follow-up is defined as 2026 minus the grant start date. At the publication level, grants, if they reach publication, on average produce 4.6 publications after about 13 years post grant start date. For grants who are cited in a meta-analysis, they are cited on average 1.72 times. For grants that are cited in nongovernment and government policy documents, on average, they are cited 5.27 and 6.04 times respectively. Outside of meta-analysis citations, the average grant is not just producing one publication or reaching only one non-government and government policy document and instead reach several, indicating a reach that is more than just chance or a one-off.

**RQ3: What share of IES-funded grants ever reaches government policy documents, and how quickly?**

To answer this question, we used the Cure Model. This model estimates that at 5 years, more than 17% of grants will have at least one government policy document citation; at 10 years, around 50%; and by 20 years, around 70%, with 71% being the susceptible rate or the percentage of IES funded grants that will ever reach a government policy given an infinite amount of time (although this plateaus at around 22 years).

**RQ4: What share reaches government policy through intermediaries (meta-analyses, non-government policy documents), and how quickly?**

**1. Grant level analyses** *Descriptives.* Before fitting models, we began by descriptively mapping the possible pathways to policy documents. Figure 4 shows how grants reach government policy documents through these various pathways. At each stage of the pathway, it is possible for grants to not continue on (i.e., fall off) to reach policy. In Figure 4, this is indicated with 'No DOI', 'No policy', and 'Non-gov only.' Note that because a grant does not have to go through a meta-analysis to reach policy, there is not a 'No meta' fall-off indicated. Overall, by 2026, Figure 4 shows that as of 2026 for all grants funded between 2002–2022, 269 grants have made it to at least one government policy document (51% of grants).

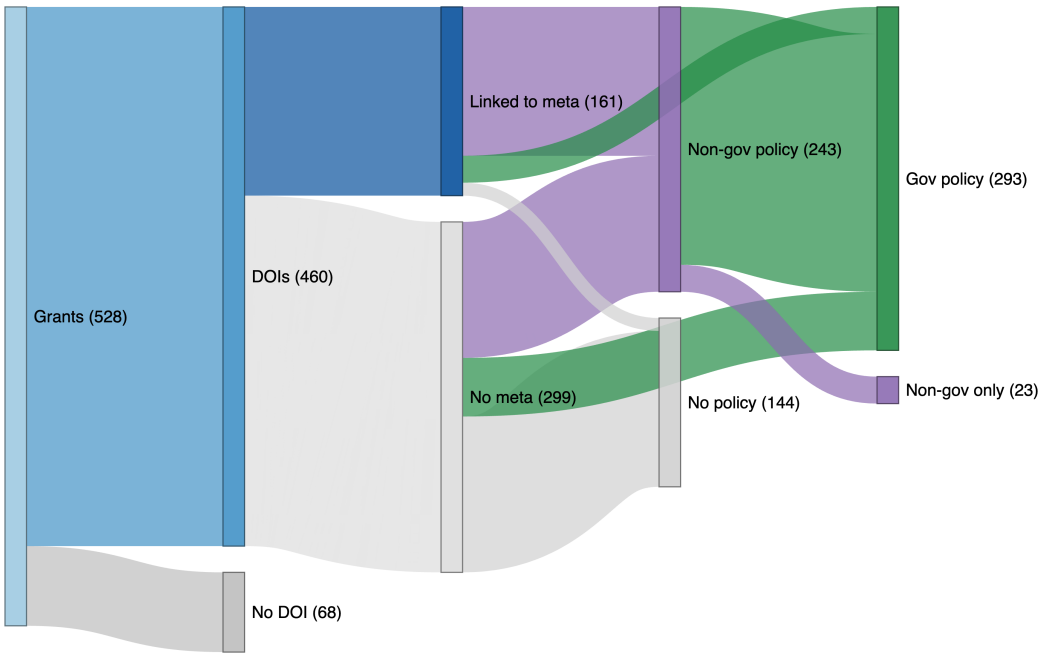


Figure 4: Sankey diagram of grants to government policy

**Model-adjusted analyses**

As Figure 4 indicates, there are multiple pathways through which the research produced in funded grants can be later cited in government policy documents. Moving forward, we identify these as follows. Pathway 1 is the direct path; for these, the government document cites the DOI directly. The remainder of the pathways are indirect. For those in Pathway 2, the DOI is first cited by a non-governmental document, which the government document then cites. In Pathway 3, the government document cites a meta-analysis that itself includes data from (and cites) the DOI. For Pathway 4, the original DOI is cited by a meta-analysis, which is then cited by a non-governmental document, which is finally cited by a government document. Here it is important to keep in mind that our analyses are at the grant level, with grants typically including multiple DOIs. See the supplement for full crosstab of the pathways.

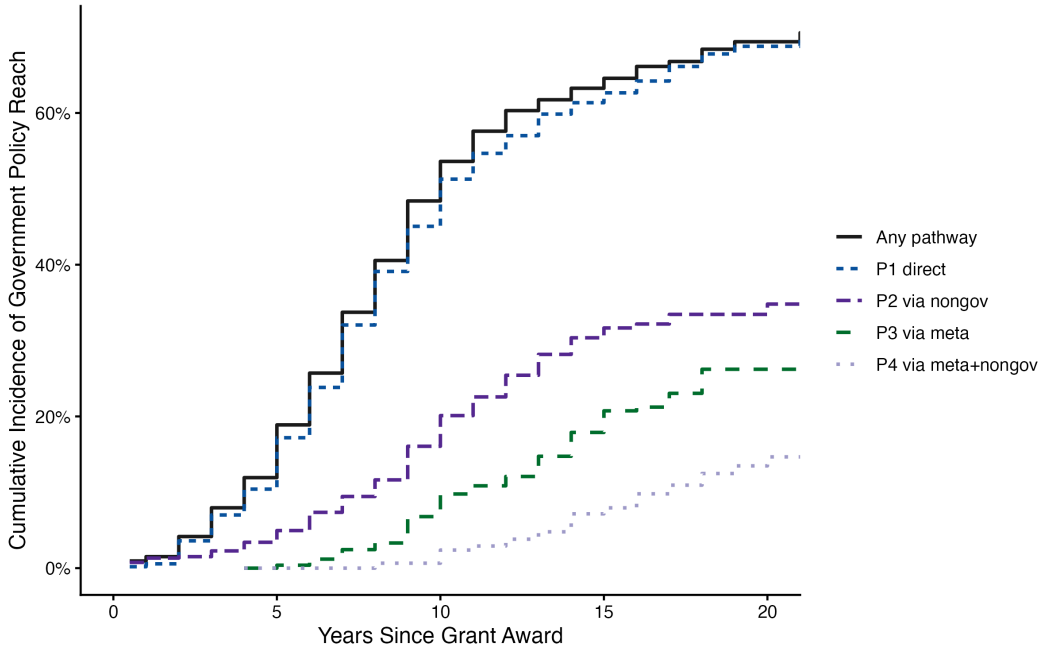


Figure 5: Cumulative incidence of government policy reach via each pathway

In general, across the pathways, Pathway 1 (direct) is the most prominent and the fastest pathway. This is fastest since it takes more time to go through intermediaries. The analyses also indicate that most grants that make it to policy make it directly (Pathway 1) in addition to making it through other intermediaries (Pathways 2–4). Interestingly, pathways that include a meta-analysis (P3, P4) intermediary are slower and less prominent compared to the others.

### 2. Transition-state analyses

In order to examine each of these transitions separately, we examine six possible transitions illustrated: DOI to meta-analysis (Pub $\rightarrow$ Meta); DOI to non-governmental policy document (Pub $\rightarrow$ NonGov); DOI to government policy document (Pub $\rightarrow$ Gov); meta-analysis to non-governmental policy document (Meta $\rightarrow$ NonGov); meta-analysis to governmental policy document (Meta $\rightarrow$ Gov); and finally non-governmental policy document to government policy document (NonGov $\rightarrow$ Gov). At each transition, the unit of analysis changes to the first stage of the transition (i.e., publication for pub to nongov, but then meta-analysis for the meta to nongov transition). Here it is important to keep in mind that some grants included many DOIs, meta-analyses, and non-

government policy documents while others included just a few. Figure 6 displays the cumulative incidence (of the first incidence) of each transition.

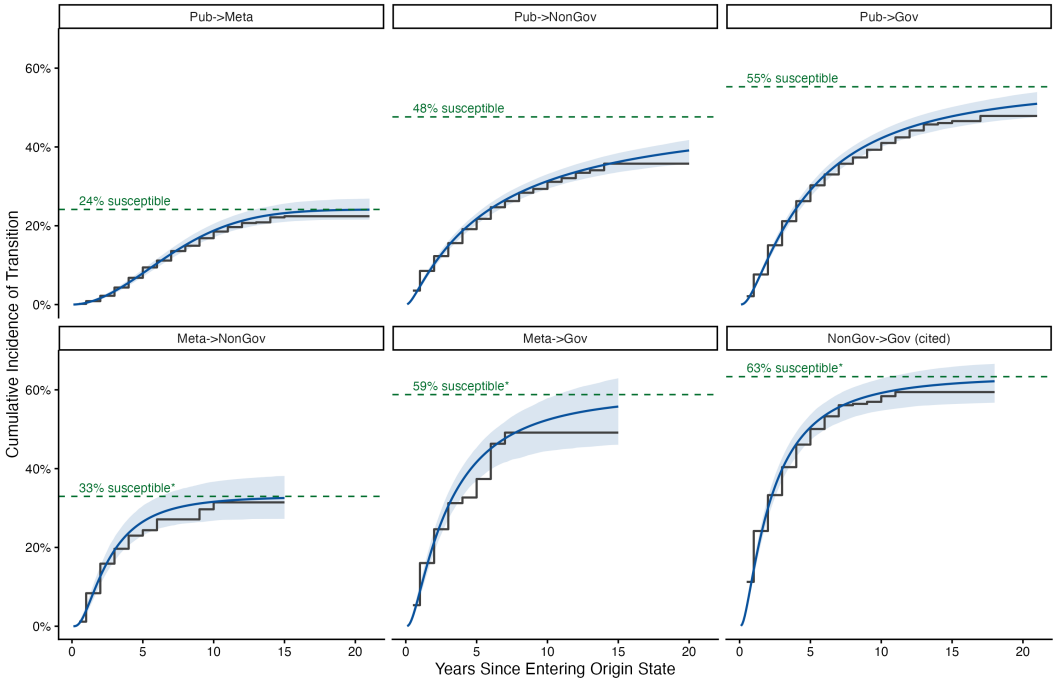


Figure 6: Multistate cure curves for each transition state

In Figure 6, green dashed lines indicate the 20-year probability of completing the given transition (% susceptible). These results indicate a few trends. First, it is estimated that 55% of all DOIs published by IES funded grants will eventually directly reach at least one government policy document. Second, the most common transition is from nongovernment to government policy documents, with about 63% of nongovernment policy documents cited by at least one government policy document. Third, while there are not many meta-analyses included in this analysis, the results indicate that 59% of the included meta-analyses (citing DOIs) ultimately would be later cited by at least one policy document.

Notably, the probability of reaching a government document is smaller for individual DOIs than for grants. This is because most grants (64%) have more than one associated DOI.

### 3. Time it takes for each stage transition

We not only wanted to understand the pathways which grants took to reach government policy documents, but also how quickly each transition occurs. Table 2 reports the estimated percent that each stage will make it to the next stage along with their estimated conditional median and mean years (conditional on making the transition) from the Cure Model.

**Table 2**

*Estimated Percent Completing Each Stage Transition, With Conditional Median and Mean Years (Cure Model)*

| Stage | Percent will make it to transition | Conditional median years | Conditional mean years |
|---|---|---|---|
| Award → first publication | 88.6 | 3.9 | 4.3 |
| All publications → first meta-analysis | 24.1 | 6.7 | 7.2 |
| All publications → first non-gov policy | 47.6 | 5.8 | 14.3 |
| All publications → first gov policy | 55.3 | 4.7 | 8.2 |
| All meta → first non-gov policy | 33.0 | 2.5 | 3.5 |
| All meta → first gov policy | 58.8 | 2.9 | 4.8 |
| All non-gov → first gov | 63.3 | 2.1 | 3.6 |
| Award → first gov policy citation | 71.4 | 7.8 | 8.2 |

*Note.* The last row provides the average, across all grants, of the fastest path to a government document (for grants with multiple DOIs, the minimum of the DOI-to-first-government-document times). All other rows are DOI- or document-level analyses.

The last row provides the average, across all grants, of the fastest path to a government document. For grants with multiple DOIs, this is calculated by measuring the time between each DOI and its first government document citation and then taking the minimum of these values. On average, it takes a grant 8.2 years from time of funding to reach its first government policy citation (if

it is going to reach such a document). For other rows, analyses are at the DOI or document level. The first row indicates that, on average, it takes a grant 4.3 years from award start date until the publication of its first DOI. In both analyses, it is important to keep in mind that grants conclude 3–5 years after award start date.

There are some interesting trends here. First, the mean time for all DOIs to first government policy document citation (8.2 years) is equal to the mean time from award to first government policy document citation (8.2 years). This is because these are conditional means and the mean time from DOI to first government document is highly skewed (median 4.7 vs. mean 8.2), indicating that there are many publications that get picked up quickly but quite a few outliers (publications that take a long time to reach government policy). Second, for DOIs that are cited by meta-analyses, it takes on average 7.2 years from DOI to meta-analysis, but only 4.8 years for that meta-analysis to be cited in a government policy document. Third, non-government documents travel the fastest, with only a mean of 3.6 years between publication and later government document citation.

**RQ5: Do rates of direct and mediated policy reach differ by grant characteristics (institution type, topic area, funder, and institutions holding multiple grants)?**

Table 3 provides estimates of the reach rates (probability of reaching at least one document at 12 years follow-up) and the average number of publications (DOIs, meta-analyses, nongovernment, and government at 12 years follow-up) for those that reach at least one by institution type holding the grant, grant subject area, and funder (NCER vs. NCSER). These are marginal probabilities and expected values given that the grant has passed the hurdle from the hurdle negative binomial regression where all variables are included in the same model with separate models for each outcome (publications, meta-analyses, nongovernment policy documents, and policy documents). Combined, the results from the hurdle negative binomial regression with their marginal probabilities and expected means allow for an investigation regarding systematic differences in whether a grant reaches a government policy and how many documents they reach.

**Table 3**

*Hurdle Negative Binomial Effect Sizes for Institution Type, Funder, and Subject Area on*

*Grant-Level Publication and Citation Outcomes*

| Level | P(reach) [95% CI] | E[Y \| Y>0] [95% CI] at 12 years |
|---|---|---|
| *C1. Publications (all 528 grants)* | | |
| Institution type | | |
| University (ref) | 0.930 [0.889, 0.948]$^{r}$ | 6.693 [4.841, 9.779]$^{r}$ |
| Research Organization | 0.854 [0.766, 0.899]* | 5.210 [3.588, 8.298] |
| Other | 0.781 [0.606, 0.877]* | 1.966 [1.390, 3.417]* |
| Funder | | |
| NCER (ref) | 0.772 [0.697, 0.822]$^{r}$ | 4.773 [3.586, 6.954]$^{r}$ |
| NCSER | 0.938 [0.812, 0.980]* | 4.750 [3.325, 7.501] |
| Subject area | | |
| ECE (ref) | 0.820 [0.680, 0.901]$^{r}$ | 3.313 [2.338, 5.086]$^{r}$ |
| Other | 0.774 [0.627, 0.867]* | 5.322 [3.322, 9.220]* |
| Policy | 0.851 [0.742, 0.912] | 6.179 [4.033, 9.989]* |
| Postsecondary | 0.821 [0.666, 0.904] | 2.993 [2.051, 4.913] |
| Reading/Writing/Literacy | 0.915 [0.815, 0.962] | 5.744 [3.885, 9.208]* |
| Soc./Beh. | 0.917 [0.818, 0.960] | 4.610 [3.210, 7.002]* |
| STEM | 0.884 [0.750, 0.949] | 5.022 [3.263, 8.236] |
| *C2. Meta-analysis citations (publishing grants)* | | |
| Institution type | | |
| University (ref) | 0.295 [0.227, 0.376]$^{r}$ | 1.553 [1.352, 1.940]$^{r}$ |
| Research Organization | 0.252 [0.148, 0.393] | 1.259 [1.113, 1.658] |
| Other | 0.362 [0.165, 0.604] | 2.396 [1.501, 5.705] |
| Funder | | |

*continued on next page*

| Level | P(reach) [95% CI] | E[Y \| Y>0] [95% CI] at 12 years |
|---|---|---|
| NCER (ref) | 0.218 [0.151, 0.323][r] | 1.773 [1.362, 3.291][r] |
| NCSER | 0.389 [0.258, 0.545]* | 1.827 [1.402, 3.496] |
| Subject area | | |
| ECE (ref) | 0.279 [0.154, 0.443][r] | 2.274 [1.517, 4.703][r] |
| Other | 0.415 [0.231, 0.605] | 1.303 [1.097, 2.101]* |
| Policy | 0.174 [0.082, 0.321] | 1.669 [1.226, 3.350] |
| Postsecondary | 0.227 [0.094, 0.444] | 1.578 [1.152, 3.683] |
| Reading/Writing/Literacy | 0.400 [0.244, 0.567] | 1.940 [1.366, 3.909] |
| Soc./Beh. | 0.443 [0.299, 0.583] | 2.029 [1.468, 3.677] |
| STEM | 0.183 [0.082, 0.354] | 1.834 [1.257, 3.913] |
| *C3. Non-government policy documents (publishing grants)* | | |
| Institution type | | |
| University (ref) | 0.460 [0.392, 0.529][r] | 7.127 [5.262, 10.303][r] |
| Research Organization | 0.646 [0.530, 0.750]* | 7.411 [5.027, 11.891] |
| Other | 0.596 [0.361, 0.806] | 3.760 [1.969, 9.537] |
| Funder | | |
| NCER (ref) | 0.620 [0.523, 0.692][r] | 8.031 [5.896, 12.649][r] |
| NCSER | 0.514 [0.382, 0.641] | 3.674 [2.498, 6.772]* |
| Subject area | | |
| ECE (ref) | 0.519 [0.355, 0.661][r] | 5.205 [3.268, 9.864][r] |
| Other | 0.484 [0.299, 0.680] | 4.445 [2.706, 8.962] |
| Policy | 0.828 [0.679, 0.906]* | 7.691 [5.121, 12.649] |
| Postsecondary | 0.779 [0.609, 0.881]* | 11.010 [6.459, 20.955]* |
| Reading/Writing/Literacy | 0.533 [0.368, 0.682] | 2.345 [1.746, 3.591]* |

*continued on next page*

| Level | P(reach) [95% CI] | E[Y \| Y>0] [95% CI] at 12 years |
|---|---|---|
| Soc./Beh. | 0.412 [0.282, 0.556] | 3.941 [2.691, 6.478] |
| STEM | 0.417 [0.244, 0.603] | 3.312 [2.222, 5.915] |
| *C4. Government policy documents (publishing grants)* | | |
| Institution type | | |
| University (ref) | 0.643 [0.563, 0.709]$^r$ | 6.650 [5.474, 8.412]$^r$ |
| Research Organization | 0.735 [0.611, 0.822] | 8.311 [6.096, 12.053] |
| Other | 0.673 [0.408, 0.859] | 3.940 [2.315, 8.190] |
| Funder | | |
| NCER (ref) | 0.704 [0.606, 0.774]$^r$ | 8.635 [6.952, 12.104]$^r$ |
| NCSER | 0.663 [0.506, 0.774] | 3.932 [2.955, 5.722]* |
| Subject area | | |
| ECE (ref) | 0.772 [0.603, 0.868]$^r$ | 6.362 [4.408, 10.059]$^r$ |
| Other | 0.555 [0.345, 0.743] | 5.855 [3.695, 10.222] |
| Policy | 0.801 [0.624, 0.899] | 6.447 [4.655, 9.633] |
| Postsecondary | 0.770 [0.578, 0.887] | 9.244 [5.867, 16.100] |
| Reading/Writing/Literacy | 0.672 [0.494, 0.811] | 5.524 [3.943, 8.389] |
| Soc./Beh. | 0.773 [0.624, 0.862] | 5.936 [4.467, 8.645] |
| STEM | 0.441 [0.258, 0.643]* | 3.759 [2.549, 6.203]* |

*Note.* $^r$ indicates the reference group. * indicates the estimate is significantly different from the reference group at an $\alpha = .05$. "Other" institution type combines Museum/Nonprofit, Foundation/Nonprofit, State or Local Agency, Hospital/Medical Center, Private Firm, and unclassified Other. "Other" subject area combines teaching, teachers, and the education workforce; educators and school-based service providers; teacher quality; education technology; rural education; cognition and student learning; civics education and social studies; and special topics/unclassified

grants. Full coefficient-level detail (raw model coefficients, not marginal probabilities/expected values) is reported in the appendix.

*Do results differ by funder (NCER vs. NCSER)?*

Findings for the NCER and NCSER differ by outcome type. Overall, NCSER grants have a higher probability of reaching a publication (93.8% vs. 77.2%) and one of their publications being cited in a meta-analysis (38.9% vs. 21.8%). But NCSER is behind NCER on downstream policy reach: lower average counts of both non-government (3.67 vs. 8.03) and government (3.92 vs. 8.64) policy documents. Overall, although NCSER has higher rates of publication and being cited in a meta-analysis, this does not correspond to more non-government and government policy reach in terms of total citations.

*Do results differ across the type of institution holding the grant?*

Universities have the highest publication reach at 12 years after grant start date (93%) versus Research Organizations (85.4%) and Other (78.1%). However, Research Organizations convert these publications into policy documents more effectively, with higher probabilities of reach for both non-government (64.6%) and government (73.5%) policy documents than Universities (46%; 64.3%). Those in Other institutions are the weakest on volume (fewest publications, fewest citations) but show wide CIs, so most differences aren't distinguishable from zero.

*Do results differ by subject area?*

Grants from the STEM subject area are an interesting distinction compared to other subject areas. These grants have higher output in terms of the number of publications they produce, averaging 5 publications for grants that produce at least 1 publication; however, these grants are less likely to reach government policy documents (44.1% compared to 77.2% for the ECE subject area) and those that do reach government documents, reach fewer government documents (an average of 3.76 compared to 6.36 in the ECE subject area).

On the other hand, grants with policy and postsecondary subject areas reach specifically non-government policy documents more often (82.8% and 77.9% respectively compared to 51.9% in ECE subject area) and postsecondary grants reach more non-government policy documents (11

compared to 5.21 from ECE grants). For the reach specifically, policy grants are investigating specific policy applications that policy documents can leverage.

# IV. Discussion

The results from these analyses give insight into the overall productivity and reach of IES grants to publications, meta-analyses, non-government policy documents, and government policy documents, as well as some insights into differences in productivity and reach. Overall, we found IES grants to be highly productive, with about 89% of grants reaching an empirical publication by 12 years. This estimate is similar to that found by Taylor et al. (2026) where 94% of IES efficacy grants in their analysis that focused only a more restricted set of IES grants. Furthermore, we estimate that for the IES grants with at least one publication, on average they produce 6.7 publications.

Importantly, we find that this productivity is not limited to the scientific literature – we estimate that about 70% of all IES grants eventually have at least one document cited by at least one government policy document. We also find that, after controlling for the number of DOIs a grant produces, over half (54%) of DOIs produced by IES funded grants are expected to reach at least one government policy document. This rate of uptake is significantly higher than that for typical scientific publications (3.9%) and for social science and humanities publications (12.34%; Fang et al., 2024).[1]

Interestingly, we find that the policy audience for IES funded research is much broader than anticipated, with over 68 % of government citations occurring outside the US. These numbers suggest that Europe (16.9 %) and Australia (2.5 %), as well as broad intragovernmental organizations (IGOs; 38.7 %), like the OECD, are also major audiences for the findings from this efficacy and effectiveness research. Furthermore, we find that in the US, the majority (67 %) of the government documents are at the state level, with only 33% at the national level. Findings across specific

[1] An important distinction here is that the publications in Fang et al. (2024) are unrestricted while our DOIs were restricted to empirical articles only. It may be that papers from empirical experimental studies more generally have high rates, but this yields an important argument that empirical work coming out of IES is reaching policy at high rates.

states varies considerably. Importantly, all of these differences hold even after accounting for the provenance of documents included in the Overton database.

Although it is expected that many IES grants will eventually reach government policy documents, it is not a fast process. On average, it takes an average of 8.2 years from time of funding to first government policy document citation (for those that ultimately have one). This is comparable but slightly shorter than times we see for drugs to go from clinical trials to market (Brown et al., 2022). Importantly, the direct path – in which a government policy document cites a DOI from a grant directly – is the fastest, indicating that timely and frequent publication of findings (DOIs) increases the likelihood of such a government citation.

Our analysis of different pathways to government documents sheds light on how the scientific research funded by IES reaches government. We show that while many (around 70 %) documents are directly cited in government policy documents, for others the path is indirect. These indirect pathways include via inclusion in a meta-analysis, and citation by a non-government policy document. These non-government documents include those from think tanks like NBER, suggesting an audience for IES funded research that is not often discussed.

Finally, although we see some differences in reach by grant type, it is very difficult to parse why these differences may exist. Perhaps the least surprising finding is that IES grants focused on policy research are more likely to be cited in non-government policy documents; results for post-secondary – often closely tied to policy – also generally have higher non-government citations. In comparison, the findings for other subject areas are less systematic and clear. Similarly, given that NCER includes these three subject areas and enjoys more funding and a broader portfolio, it is not surprising that we find that it has a slightly higher government document reach than NCSER. Our analyses indicate that grants from both centers are highly productive in the scientific literature. Altogether, this variation suggests that the uptake of the research in government documents is driven not only by the availability of research, but also by the questions and demands found in the specific policy environment.

### Limitations

The Overton data provides a rich database to understand, for the first time, the extent to which IES funded grants result in findings included in the broader government policy discourse. While the database enables us to examine these citations and various pathways, however, it does not enable us to clearly identify mechanisms that explain this behavior or any subgroup differences.

Additionally, although Overton includes over 21 million policy documents, it likely does not capture all possible policy documents; most likely not completely capturing the informal policy discussions that occur and are not documented, such as ones that are not conducted in official policy meetings or via methods such as email that are documented. This also yields a limitation in the coverage of Overton. Overton requires that these documents be documented online; therefore, government bodies that do not have the infrastructure or choose not to make these available publicly are not included in the database.

## V. Conclusion

Over the years, and particularly since January 2025, there has been considerable attention regarding the future of IES. Many of these discussions have focused on the perceived failures of IES funded research to impact policy and practice. This study provides an empirical analysis that indicates that many of these failures may be overstated. In looking back at the efficacy and effectiveness grants funded by IES, these results give evidence that the grants have been productive both in terms of publishing papers and in terms of reaching government policy citations. The research is being used in policy briefs, policy recommendations and in both formal and informal policy discussion (i.e., evidence from when these informal discussions are published as part of a policy document through email chains or other evidence).

Furthermore, these grants not only reach policy discussions in the US but also globally. This suggests that concerns that researchers are not able to write about and disseminate results effectively may be overblown. Analyses by subgroup suggest that while there are some differences, in

general, the reach from grant to government citation occurs in all parts of the research base, across center types (NCER, NCSER), institution type (University, Research Organizations; single and multi-grant institutions), and subject area. Building upon this history, this evidence encourages the continuation of funding and conducting of education research that will continue to reach policy.

An important question is what these findings suggest for how to maintain and increase these successes. First, our findings indicate clearly that grants that produce publications are more often then not being cited at least once in government policy documents, and that the quicker the time to publication, the quicker this downstream citation is able to occur. Second, these analyses suggest that intermediary processes – e.g., citation in meta-analyses and in non-government policy documents – provide an additional mechanism for later being included in the government policy discourse; however, these intermediaries are not the fastest way nor the most common method for research to reach policy. These findings are observational and not causal, however, suggesting that further research in this area is needed.

Overall, the analyses in this paper suggest that investments by IES in grant funded research in NCER and NCSER have resulted in findings that are highly relevant to government policy decisions. However, as frustrations over declining NAEP results have made clear, these connections to policy may not necessarily result in downstream uptake in districts, schools, and classrooms. Because the Overton data does not allow us to investigate this specific connection between the policy and actual practice in districts, schools, and classrooms, additional research is required to investigate this gap, including and starting with how we even collect measures of practices.

**Generative AI Use Disclosure**

During the preparation of this work, the authors used Claude for coding, including coding for analysis and visualization, classifying policy documents geography and grant subject areas, and filtering meta-anlyses. All of the code generated by Claude was rigorously reviewed by the authors prior to running the final data cleaning, analysis, and visualization. Although Claude aided in coding, all code was evaluated and run by the human authors.

# References


Amico, M. and Van Keilegom, I. (2018). Cure models in survival analysis. *Annual Review of Statistics and Its Application*, 5:311–342.

Balas, E. A. and Boren, S. A. (2000). Managing clinical knowledge for health care improvement. *Yearbook of medical informatics*, 9(01):65–70.

Beesley, L. J. and Taylor, J. M. (2019). *Biostatistics*, 20(3):416–432.

Bornmann, L., Haunschild, R., Boyack, K., Marx, W., and 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.

Brown, D. G., Wobst, H. J., Kapoor, A., Kenna, L. A., and Southall, N. (2022). Clinical development times for innovative drugs. *Nat Rev Drug Discov*, 21(11):793–794.

Coburn, C. E., Honig, M. I., and Stein, M. K. (2009). What's the evidence on districts' use of evidence. *The role of research in educational improvement*, pages 67–87.

Coburn, C. E. and Penuel, W. R. (2016). Research–practice partnerships in education: Outcomes, dynamics, and open questions. *Educational researcher*, 45(1):48–54.

Dorta-González, P., Rodríguez-Caro, A., and Dorta-González, M. I. (2024). Societal and scientific impact of policy research: A large-scale empirical study of some explanatory factors using altmetric and overton. *Journal of Informetrics*, 18(3):101530.

Fang, Z., Dudek, J., Noyons, E., and Costas, R. (2024). Science cited in policy documents: Evidence from the overton database. *arXiv preprint arXiv:2407.09854*.

Farley-Ripple, E., May, H., Karpyn, A., Tilley, K., and McDonough, K. (2018). Rethinking connections between research and practice in education: A conceptual framework. *Educational researcher*, 47(4):235–245.

Fortunato, S., Bergstrom, C. T., Börner, K., Evans, J. A., Helbing, D., Milojević, S., Petersen, A. M., Radicchi, F., Sinatra, R., Uzzi, B., et al. (2018). Science of science. *Science*, 359(6379):eaao0185.

Furnas, A. C., LaPira, T. M., and Wang, D. (2025). Partisan disparities in the use of science in policy. *Science*, 388(6745):362–367.

Furnas, A. C. and Wang, D. (2026). Bipartisan-cited science is rare, unevenly distributed, and disproportionately influential. *Proceedings of the National Academy of Sciences*, 123(17):e2523760123.

Gamoran, A. and Dibner, K. (2022). *The Future of Education Research at IES: Advancing an Equity-Oriented Science.* ERIC.

Hilbe, J. M. (2011). *Negative binomial regression*, volume 2. Cambridge University Press New York, NY, USA.

Institute of Education Sciences (2026). About IES. https://ies.ed.gov/about. Accessed: 2026-08-25.

Mahfouz, B., Capra, L., and Mulgan, G. (2025). Assessing the influence of research quality on policy citations: Quantitative analysis finds non-academic factors more likely to influence how papers get cited in sdg policy. *Sustainable Development*, 33(2):1848–1860.

Murat, B., Fang, Z., Noyons, E., and Costas, R. (2026). Evidence for studying interactions between science and policy: An exploration of scholarly and policy references in overton-indexed policy documents. *Journal of Data and Information Science*, 11(1):63–87.

National Center for Education Research (2023). Education Research Grants. https://ies.ed.gov/funding/research/education-research-grants. Accessed: 2026-08-25.

Northern, A. M. and Opp, A. (2026). Reimagining the institute of education sciences: A strategy for relevance and renewal.

Penuel, W. R., Farrell, C. C., Allen, A.-R., Toyama, Y., and Coburn, C. E. (2018). What research district leaders find useful. *Educational Policy*, 32(4):540–568.

Priem, J., Piwowar, H., and Orr, R. (2022). Openalex: A fully-open index of scholarly works, authors, venues, institutions, and concepts. *arXiv preprint arXiv:2205.01833*.

Quinn, R. and Knott, K. (2025). $900 Million in Institute of Education Sciences Contracts Axed. https://www.insidehighered.com/news/faculty/research/2025/02/12/900m-institute-education-sciences-contracts-axed. Accessed: 2026-08-25.

Schneider, M. (2018). How to Make Education Research Relevant to Teachers. https://ies.ed.gov/learn/blog/how-make-education-research-relevant-teachers. Accessed: 2026-08-25.

Szomszor, M. and Adie, E. (2022). Overton: A bibliometric database of policy document citations. *Quantitative science studies*, 3(3):624–650.

Taylor, J. A., Miller, D. I., Michaelson, L. E., and Watson, K. (2026). Mapping the pipeline of intervention evidence in education. *Educational Researcher*, 55(1):29–35.

U.S. Department of Education (2025). Request for Information: Feedback on Redesigning the Institute of Education Sciences (IES). https://fsapartners.ed.gov/knowledge-center/library/federal-registers/2025-09-25/request-information-feedback-redesigning-institute-education-sciences-ies. Accessed: 2026-08-25.

Wang, D. and Barabási, A.-L. (2021). *The science of science*. Cambridge University Press.

Wei, L.-J., Lin, D. Y., and Weissfeld, L. (1989). Regression analysis of multivariate incomplete failure time data by modeling marginal distributions. *Journal of the American statistical association*, 84(408):1065–1073.

# Appendix

## A. Grants

**Table A0**

*Grant type of the IES efficacy and effectiveness grants*

| Grant type | Grants |
|---|---|
| Efficacy | 465 |
| Other (typically center grants) | 44 |
| Scale-up | 15 |
| Effectiveness | 2 |
| Replication | 2 |
| **Total** | **528** |

IES labels each grant using one of 39 topic areas, such as "Cognition and Student Learning," "Early Learning Programs and Policies," or "Postsecondary and Adult Education." Because these topics are numerous and reflect changes over time, we consolidated them into seven subject areas: Reading/Writing/Literacy, STEM, Social and Behavioral, Policy, Early Childhood Education, Postsecondary, and Other. We did this using a keyword crosswalk, a lookup table that maps distinctive terms in each program-topic label to one of the seven areas. For example, "mathematic" or "STEM" maps to STEM; "reading," "writing," or "literacy" maps to Reading/Writing/ Literacy; "early learning" or "preschool" maps to Early Childhood Education; and "postsecondary" or "adult education" maps to Postsecondary. Topic areas were matched against these patterns in a fixed priority order, so each grant was assigned to the first subject area whose keywords appeared in its topic label. Each grant was assigned to a single subject area, based first on its IES topic area (438 grants) or, when the program was identified only by a funding mechanism, on the funding program name (30 grants). For 46 grants whose IES topic was too generic to map to a content area, we used the modal research topic of the grant's own publications as recorded in OpenAlex. Five grants with no usable publication data were placed in Other. A small number of grants (9) were then

reviewed by hand and reassigned based on the grant's stated purpose when the automated topic assignment was misleading, such as mathematics learning-science grants whose papers carried generic cognitive-process tags.

These grants were held by 159 unique institutions, the majority of which were universities (74%); the remainder were to non-university research organizations (e.g., AIR, MDRC, RAND, WestEd).

## B. Papers and DOIs

For each grant number, we identified the set of DOIs produced under the grant. We accomplished this by: pulling papers cited on the IES website and then pulling additional papers that cite IES grant award numbers from ERIC and Crossref. DOIs could include publications, white papers, and book chapters. In the case that the grant number did not correspond to any papers in the ERIC or Crossref search, a manual search of the principal investigators of the grant on Google Scholar was conducted with abstract screening to identify papers related to the grant. The manual search was only done on grants having no DOIs under the assumption that if a grant did cite the grant number in a paper, at least the paper with the most important (main) effects would cite the grant number. This may lead to some underestimation of the number of publications and reach of the grant.

We then classified DOIs into two types of publications: Primary and Secondary. Primary refers to empirical findings from the study, which could include the main findings as well as other papers analyzing the study data. We labeled a paper as Primary if its abstract reported a sample or participants, random assignment, or reported results, or was tagged as a RCT or clinical trial. Secondary studies included research syntheses, meta-analyses reviews, study protocols, commentaries, and editorials. To classify these, we screened based upon DOI abstracts (sourced from OpenAlex (Priem et al., 2022) first, and then from Europe PMC, Semantic Scholar, and Crossref for the DOIs not captured in OpenAlex), publication type records from OpenAlex, and the publication-type tags from Europe PMC and Semantic Scholar.

This resulted in a total of 2,776 individual DOIs over 528 grants; of these, 2,682 were primary

DOIs across 457 grants. On average, if they produced a DOI, grants produced 6.64 DOIs with a median of 3. In some cases, there were products that did not have DOIs, mostly technical and evaluation reports, and because of the nature of the Overton data, we had to exclude these. We do have a record of them: ERIC lists 1,422 such products without a DOI across 270 grants, so the reach of grants whose main products are reports may be underestimated.

## C. Meta-analyses

We then sought to determine if there were any meta-analyses that included results from the primary papers, since these could provide an indirect way through which research could reach policy. We matched grant papers to meta-analyses using OpenAlex citation data (Priem et al., 2022). We identified meta-analyses in three steps. First, for each primary publication DOI, we searched OpenAlex's database using their API with a filter that collects every review-type work that cites the DOI; this provided 1,112 distinct "review-type" results. Second, because "review-type" captures more than just meta-analyses, we kept only works whose title included "meta-analysis," "meta-analytic," or "meta-regression" (excluding "meta-cognition"), whose abstract identified itself as a meta-analysis, or that Europe PMC tagged with the "Meta-Analysis" publication type, narrowing the 1,112 works to 336 true meta-analyses. Third, because we are interested in meta-analyses that pool the grants' trial findings, we kept only those citing at least one of the grant's primary papers, leaving 313 meta-analyses across 161 grants. In total, 385 of the 2,682 empirical DOIs were cited by at least one meta-analysis.

## D. Table A1: Full Hurdle Negative Binomial Model Coefficients

**Table A1**

*Hurdle Negative Binomial Model Coefficients for Grant-Level Publication and Citation Outcomes (C1–C4).*

| Predictor | b | SE | exp(b)/OR | 95% CI | p |
|---|---|---|---|---|---|
| *C1. Publications (all 528 grants; hurdle NB)* | | | | | |
| Count component (offset: log follow-up years) | | | | | |
| Intercept | -2.042 | 0.322 | 0.130 | [0.069, 0.244] | <.001 |
| Award year (centered) | 0.014 | 0.019 | 1.014 | [0.978, 1.052] | .454 |
| Funder: NCSER (ref. NCER) | 0.050 | 0.198 | 1.051 | [0.713, 1.551] | .802 |
| Institution: Research Org. (ref. Univ.) | -0.349 | 0.219 | 0.705 | [0.459, 1.083] | .111 |
| Institution: Other (ref. Univ.) | -2.012 | 0.421 | 0.134 | [0.059, 0.305] | <.001 |
| Subject: Other (ref. ECE) | 0.698 | 0.348 | 2.010 | [1.015, 3.978] | .045 |
| Subject: Policy (ref. ECE) | 0.926 | 0.302 | 2.524 | [1.398, 4.560] | .002 |
| Subject: Postsecondary (ref. ECE) | -0.168 | 0.334 | 0.845 | [0.439, 1.626] | .615 |
| Subject: Reading/Writing/Literacy (ref. ECE) | 0.845 | 0.291 | 2.329 | [1.317, 4.118] | .004 |
| Subject: Soc./Beh. (ref. ECE) | 0.535 | 0.264 | 1.707 | [1.017, 2.865] | .043 |
| Subject: STEM (ref. ECE) | 0.648 | 0.327 | 1.911 | [1.007, 3.626] | .047 |
| Zero component (odds of no reach) | | | | | |
| Intercept | -1.773 | 0.371 | 0.170 | [0.082, 0.351] | <.001 |
| Award year (centered) | -0.143 | 0.110 | 0.867 | [0.699, 1.075] | .192 |
| Funder: NCSER (ref. NCER) | -1.577 | 0.626 | 0.207 | [0.061, 0.705] | .012 |
| Institution: Research Org. (ref. Univ.) | 0.875 | 0.314 | 2.399 | [1.296, 4.441] | .005 |
| Institution: Other (ref. Univ.) | 1.424 | 0.440 | 4.155 | [1.753, 9.847] | .001 |
| Subject: Other (ref. ECE) | 0.325 | 0.479 | 1.383 | [0.541, 3.536] | .498 |
| Subject: Policy (ref. ECE) | -0.255 | 0.467 | 0.775 | [0.310, 1.936] | .586 |
| Subject: Postsecondary (ref. ECE) | -0.009 | 0.533 | 0.991 | [0.348, 2.818] | .986 |
| Subject: Reading/Writing/Literacy (ref. ECE) | -0.942 | 0.558 | 0.390 | [0.131, 1.163] | .091 |
| Subject: Soc./Beh. (ref. ECE) | -0.968 | 0.558 | 0.380 | [0.127, 1.133] | .082 |
| Subject: STEM (ref. ECE) | -0.565 | 0.574 | 0.568 | [0.184, 1.752] | .325 |
| Log follow-up years (centered) | -1.527 | 1.301 | 0.217 | [0.017, 2.782] | .241 |
| *C2. Meta-analysis citations (publishing grants; hurdle NB)* | | | | | |
| Count component (offset: log follow-up years) | | | | | |
| Intercept | -2.760 | 0.370 | 0.063 | [0.031, 0.131] | <.001 |
| Award year (centered) | -0.098 | 0.035 | 0.907 | [0.847, 0.972] | .005 |
| Funder: NCSER (ref. NCER) | 0.094 | 0.253 | 1.099 | [0.670, 1.802] | .710 |
| Institution: Research Org. (ref. Univ.) | -0.760 | 0.395 | 0.468 | [0.216, 1.015] | .055 |
| Institution: Other (ref. Univ.) | 0.931 | 0.551 | 2.538 | [0.861, 7.480] | .091 |
| Subject: Other (ref. ECE) | -1.419 | 0.525 | 0.242 | [0.086, 0.677] | .007 |

| Predictor | b | SE | exp(b)/OR | 95% CI | p |
|---|---|---|---|---|---|
| Subject: Policy (ref. ECE) | -0.666 | 0.451 | 0.514 | [0.212, 1.243] | .140 |
| Subject: Postsecondary (ref. ECE) | -0.802 | 0.647 | 0.448 | [0.126, 1.593] | .215 |
| Subject: Reading/Writing/Literacy (ref. ECE) | -0.285 | 0.405 | 0.752 | [0.340, 1.662] | .481 |
| Subject: Soc./Beh. (ref. ECE) | -0.187 | 0.337 | 0.829 | [0.428, 1.606] | .579 |
| Subject: STEM (ref. ECE) | -0.442 | 0.522 | 0.643 | [0.231, 1.786] | .397 |
| Log N publications (centered) | 0.759 | 0.112 | 2.135 | [1.713, 2.662] | <.001 |
| Zero component (odds of no reach) | | | | | |
| Intercept | 1.520 | 0.363 | 4.572 | [2.246, 9.304] | <.001 |
| Award year (centered) | -0.274 | 0.170 | 0.761 | [0.545, 1.062] | .108 |
| Funder: NCSER (ref. NCER) | -0.885 | 0.306 | 0.413 | [0.227, 0.751] | .004 |
| Institution: Research Org. (ref. Univ.) | 0.241 | 0.363 | 1.273 | [0.625, 2.592] | .507 |
| Institution: Other (ref. Univ.) | -0.338 | 0.601 | 0.713 | [0.220, 2.315] | .574 |
| Subject: Other (ref. ECE) | -0.642 | 0.522 | 0.526 | [0.189, 1.465] | .219 |
| Subject: Policy (ref. ECE) | 0.633 | 0.471 | 1.883 | [0.748, 4.741] | .179 |
| Subject: Postsecondary (ref. ECE) | 0.289 | 0.562 | 1.335 | [0.444, 4.016] | .607 |
| Subject: Reading/Writing/Literacy (ref. ECE) | -0.575 | 0.442 | 0.562 | [0.236, 1.338] | .193 |
| Subject: Soc./Beh. (ref. ECE) | -0.762 | 0.400 | 0.467 | [0.213, 1.022] | .057 |
| Subject: STEM (ref. ECE) | 0.570 | 0.522 | 1.768 | [0.636, 4.913] | .275 |
| Log N publications (centered) | -1.054 | 0.141 | 0.349 | [0.264, 0.460] | <.001 |
| Log follow-up years (centered) | -6.647 | 2.416 | 0.001 | [0.000, 0.148] | .006 |
| *C3. Non-government policy documents (publishing grants; hurdle NB)* | | | | | |
| Count component (offset: log follow-up years) | | | | | |
| Intercept | -0.992 | 0.312 | 0.371 | [0.201, 0.684] | .001 |
| Award year (centered) | -0.088 | 0.027 | 0.916 | [0.869, 0.966] | .001 |
| Funder: NCSER (ref. NCER) | -1.106 | 0.304 | 0.331 | [0.182, 0.601] | <.001 |
| Institution: Research Org. (ref. Univ.) | 0.146 | 0.262 | 1.157 | [0.692, 1.935] | .577 |
| Institution: Other (ref. Univ.) | -0.804 | 0.570 | 0.447 | [0.146, 1.367] | .158 |
| Subject: Other (ref. ECE) | -0.224 | 0.466 | 0.799 | [0.321, 1.994] | .631 |
| Subject: Policy (ref. ECE) | 0.546 | 0.376 | 1.727 | [0.827, 3.606] | .146 |
| Subject: Postsecondary (ref. ECE) | 0.982 | 0.425 | 2.671 | [1.162, 6.141] | .021 |
| Subject: Reading/Writing/Literacy (ref. ECE) | -1.249 | 0.404 | 0.287 | [0.130, 0.634] | .002 |
| Subject: Soc./Beh. (ref. ECE) | -0.407 | 0.414 | 0.666 | [0.296, 1.498] | .325 |

| Predictor | b | SE | exp(b)/OR | 95% CI | p |
|---|---|---|---|---|---|
| Subject: STEM (ref. ECE) | -0.671 | 0.468 | 0.511 | [0.204, 1.278] | .151 |
| Log N publications (centered) | 0.562 | 0.098 | 1.754 | [1.447, 2.125] | <.001 |
| Zero component (odds of no reach) | | | | | |
| Intercept | 0.145 | 0.321 | 1.156 | [0.616, 2.170] | .651 |
| Award year (centered) | 0.175 | 0.114 | 1.191 | [0.954, 1.488] | .123 |
| Funder: NCSER (ref. NCER) | 0.497 | 0.293 | 1.644 | [0.927, 2.918] | .089 |
| Institution: Research Org. (ref. Univ.) | -0.862 | 0.309 | 0.422 | [0.231, 0.773] | .005 |
| Institution: Other (ref. Univ.) | -0.623 | 0.588 | 0.536 | [0.169, 1.699] | .290 |
| Subject: Other (ref. ECE) | 0.147 | 0.494 | 1.158 | [0.440, 3.047] | .767 |
| Subject: Policy (ref. ECE) | -1.557 | 0.456 | 0.211 | [0.086, 0.516] | .001 |
| Subject: Postsecondary (ref. ECE) | -1.237 | 0.476 | 0.290 | [0.114, 0.738] | .009 |
| Subject: Reading/Writing/Literacy (ref. ECE) | -0.060 | 0.418 | 0.942 | [0.415, 2.136] | .886 |
| Subject: Soc./Beh. (ref. ECE) | 0.451 | 0.378 | 1.570 | [0.748, 3.295] | .233 |
| Subject: STEM (ref. ECE) | 0.430 | 0.463 | 1.537 | [0.620, 3.811] | .353 |
| Log N publications (centered) | -0.961 | 0.139 | 0.383 | [0.291, 0.503] | <.001 |
| Log follow-up years (centered) | -0.377 | 1.417 | 0.686 | [0.043, 11.030] | .790 |
| *C4. Government policy documents (publishing grants; hurdle NB)* | | | | | |
| Count component (offset: log follow-up years) | | | | | |
| Intercept | -0.613 | 0.234 | 0.542 | [0.343, 0.857] | .009 |
| Award year (centered) | -0.109 | 0.020 | 0.897 | [0.862, 0.933] | <.001 |
| Funder: NCSER (ref. NCER) | -1.024 | 0.208 | 0.359 | [0.239, 0.540] | <.001 |
| Institution: Research Org. (ref. Univ.) | 0.287 | 0.222 | 1.333 | [0.863, 2.059] | .195 |
| Institution: Other (ref. Univ.) | -0.690 | 0.451 | 0.501 | [0.207, 1.213] | .126 |
| Subject: Other (ref. ECE) | -0.125 | 0.377 | 0.883 | [0.421, 1.849] | .741 |
| Subject: Policy (ref. ECE) | 0.019 | 0.296 | 1.019 | [0.571, 1.820] | .948 |
| Subject: Postsecondary (ref. ECE) | 0.456 | 0.358 | 1.578 | [0.783, 3.180] | .202 |
| Subject: Reading/Writing/Literacy (ref. ECE) | -0.189 | 0.304 | 0.827 | [0.456, 1.503] | .534 |
| Subject: Soc./Beh. (ref. ECE) | -0.088 | 0.273 | 0.916 | [0.536, 1.564] | .747 |
| Subject: STEM (ref. ECE) | -0.736 | 0.359 | 0.479 | [0.237, 0.967] | .040 |
| Log N publications (centered) | 0.558 | 0.073 | 1.747 | [1.513, 2.016] | <.001 |
| Zero component (odds of no reach) | | | | | |
| Intercept | -1.155 | 0.379 | 0.315 | [0.150, 0.662] | .002 |
| Award year (centered) | 0.136 | 0.133 | 1.145 | [0.883, 1.485] | .307 |
| Funder: NCSER (ref. NCER) | 0.210 | 0.323 | 1.234 | [0.655, 2.325] | .516 |

| Predictor | b | SE | exp(b)/OR | 95% CI | p |
|---|---|---|---|---|---|
| Institution: Research Org. (ref. Univ.) | -0.466 | 0.324 | 0.628 | [0.333, 1.184] | .150 |
| Institution: Other (ref. Univ.) | -0.147 | 0.613 | 0.863 | [0.260, 2.872] | .811 |
| Subject: Other (ref. ECE) | 1.008 | 0.549 | 2.741 | [0.935, 8.037] | .066 |
| Subject: Policy (ref. ECE) | -0.176 | 0.488 | 0.839 | [0.322, 2.184] | .719 |
| Subject: Postsecondary (ref. ECE) | 0.011 | 0.518 | 1.011 | [0.366, 2.793] | .983 |
| Subject: Reading/Writing/Literacy (ref. ECE) | 0.509 | 0.468 | 1.663 | [0.665, 4.159] | .277 |
| Subject: Soc./Beh. (ref. ECE) | -0.003 | 0.432 | 0.997 | [0.427, 2.324] | .994 |
| Subject: STEM (ref. ECE) | 1.474 | 0.524 | 4.366 | [1.562, 12.203] | .005 |
| Log N publications (centered) | -1.247 | 0.165 | 0.287 | [0.208, 0.397] | <.001 |
| Log follow-up years (centered) | -1.482 | 1.605 | 0.227 | [0.010, 5.274] | .356 |

*Note.* N = 528 grants (C1). N = 476 publishing grants (C2–C4 zero component, i.e., P(any reach) among all grants with $\geq$1 publication). Count-component N is smaller and outcome-specific: only publishing grants with a positive count for that particular outcome enter the truncated count part. Institution type reference level is University; funder reference is NCER; subject area reference is ECE. Count-component exp(b) is the ratio of the pre-truncation NB mean parameter $\mu$. "Other" institution type combines Museum/Nonprofit, Foundation/Nonprofit, State or Local Agency, Hospital/Medical Center, Private Firm, and unclassified Other. 'Other" subject area combines teaching, teachers, and the education workforce; educators and school-based service providers; teacher quality; education technology; rural education; cognition and student learning; civics education and social studies; and special topics/unclassified grants