

Unlocking Scholarly Potential: The STARS Fellows Program After Ten Years*

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Abstract

The Structural Transformation of Agricultural and Rural Spaces Fellows research mentoring program for early career economics scholars from the Global South is in its tenth year. This paper offers quantitative estimates of the program's impacts on the scholars competitively selected to participate, compared with statistically comparable finalists who were quasi-randomly not matched with faculty mentors. We find large effects on a number of research productivity indicators - publications, citations, g- and h-index - with suggestive evidence of increasing effects over time elapsed since the Fellowship. We flesh out those results with several Fellows' stories that illustrate multiple mechanisms through which the program has significantly boosted Fellows' research productivity and impact. Our findings show the program's potential to unlock considerable scholarly potential available within institutions in low- and middle-income countries.

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1. Introduction

Development economics – the subdiscipline that explores processes of economic transformation and stagnation in low- and middle-income countries (LMICs) – is, like most academic fields, dominated by scholars from high-income countries (HICs). Several luminaries from the LMICs of the Global South notwithstanding – e.g., Nobel Laureates W. Arthur Lewis, Amartya Sen, Abhijit Banerjee – the vast majority of the published scholarship, especially in leading journals, originates from elite global universities in HICs. Much of that research is assisted by collaborators based at LMIC institutions. But the organization of research generally follows the global hierarchy; scholars at privileged institutions define the research agenda and design, exercise intellectual leadership, acquire core research competence rewarded by the profession, and accrue most of the associated rewards from those collaborations (Angus et al. 2021; Greenspon and Rodrik 2021; Amarante et al. 2022; Amarante and Zurbrigg 2022, 2024; Aigner, Greenspon, and Rodrik 2025; Kenter et al. 2025). Most development economists have engaged in such projects, some of which generate important findings with demonstrably favorable impacts for LMIC communities. But there remains an undeniable colonial tinge to this mode of doing development economics research. Indeed, a vibrant literature on the importance of decolonizing knowledge production, including in economics, has emerged in response (Apffel-Marglin and Marglin 1996; Ronconi and Kassouf 2023; Madra, Akbulut, and Adaman 2025; Adong et al. 2026).

The Structural Transformation of Agriculture and Rural Spaces (STARS) Fellows program was created to flip the script, at very modest scale.¹ STARS competitively selects early career researchers from LMICs who design and propose their own scholarly projects, then matches them with senior scholar mentors from Cornell University and other elite institutions who can support the Fellow and their intellectual agenda, rather than the other way around. The Fellow is expected to generate a high-quality, publishable paper by the end of the Fellowship period. Because these scholars, especially (but not only) those trained in and working in LMICs, face serious structural disadvantages, STARS also actively works to fill gaps in prior training and to leverage the considerable resources Cornell-based scholars enjoy. These trainings focus just as much (if not more) on often-untaught curriculum that is learned peer-to-peer rather than through typical classroom instruction,

¹Originally the Structural Transformation of African Agriculture and Rural Spaces (STAAARS) program when begun with African Development Bank support as a follow up to the World Bank-led Agriculture in Africa: Telling Myths and Facts project. The initial focus therefore naturally was on agricultural and rural development issues, although other topics were considered and topical coverage has expanded over time. From 2020 to 2024, the program expanded to also include a team-based program, the Structural Transformation of African and Asian Agriculture and Rural Spaces (STAAARS+), sponsored by the USAID Feed the Future Innovation Lab for Policy Research, Capacity and Influence. STAAARS+ replaced individual scholars with teams of two or three persons and extended eligibility to scholars from South and Southeast Asia. The program now supports individual scholars from all LMICs and thus has dropped both 'African' and 'Asian' from its title.

textbooks, or journal articles (Bellemare 2022). In this vein, STARS also appoints a peer mentor – typically a Cornell post-doc or advanced Ph.D. student – who can provide more hands-on assistance with technical details, such as data management, visualization, and advice for navigating the academic environment. The mentors and/or peer mentors are encouraged to participate actively enough to merit becoming minor co-authors, if doing so is in line with their personal career objectives and the Fellow as lead author concurs. The STARS team adapted the trainings and nature of support over time, learning from Fellows in the initial cohorts what gaps in their prior training needed more structured attention and what components of the STARS program they found most (and least) valuable.

STARS is one of several such initiatives that aim to support early career researchers from the Global South and facilitate more equitable collaboration between those in LMIC institutions and others in elite HIC universities.² Little evidence exists on the impacts of such efforts, especially quantitative and plausibly causal assessments. This is understandable, as most programs operate at a small scale, have only operated for a few years, and depend on highly variable short-term donor funding. Further, the measurable impacts on scholars’ productivity or influence necessarily take time to materialize. The lessons learned from the STARS program are perhaps suggestive of the returns to the broader class of efforts to promote more inclusive development economics research. Findings from this evaluation may also shed some light on weaknesses in the model.

Previous analysis of the program found suggestive, preliminary and mostly qualitative evidence that the STARS model works (Schreiber et al. 2022). When compared with otherwise-identical STARS applicants for whom the program management could not find a suitable mentor (Finalists), the data from the first few cohorts of STARS Fellows suggested that Fellows had stronger publication and citations records post-STARS. Such impacts take time to observe, however. Collaborations take time to cultivate, paper publishing timelines are unpredictable and often slow, and citations after publishing accumulate with time. Moreover, it is unclear what accounts for such impacts. But grasping the mechanism(s) is central to replicating any program’s apparent successes.

With a larger population of STARS Fellows a decade after our inaugural cohort launched, in this paper we revisit the impact of STARS using staggered difference-in-difference and event study estimation methods. Specifically, we compare changes in research productivity, measured by publication counts, citations per year, and g-index and h-index impact metrics (on which, more below) between Fellows and Finalists matched based on common characteristics. We find STARS Fellows statistically significantly outpace their counterparts in all metrics.

While the quantitative evidence is encouraging, the greatest gains are perhaps difficult to capture, much less explain, in narrow bibliometric indicators. Such

²Such initiatives have proliferated in recent years, to include programs run by the Abdul Latif Jameel Poverty Action Lab, the African Economic Research Consortium, the Center for Effective Global Action, the International Centre for Evaluation and Development, Centre for the Study of African Economies, and the Partnership for Economic Policy, among others.

impacts arise from empowering talented early career scholars, helping unlock the scholarly potential otherwise constrained by the well-known structural deprivations of higher education in LMICs while expanding access to specialized training and international research networks. We therefore supplement the quantitative analysis with more textured narratives from four past fellows. Their stories shed light on the mechanisms by which a program like STARS can have transformative impacts. In their own words, Kibrom Abay (STARS 2016), Khadijat Amolegbe (STARS 2018), Nneka Osadolor (STARS 2021), and Bezawit Bahru (STARS 2024) reflect on how STARS enabled them to overcome barriers to pursuing their research ambitions. STARS provided supplementary training on the hidden curriculum of scholarly publishing, personalized mentorship that informed, inspired, and accelerated their research, and facilitated incorporation into global research networks that were difficult to access otherwise, especially for women based in LMIC institutions. These are just a few Fellows' somewhat-unique experiences, but they offer a window into what is possible if we put the privileges enjoyed by scholars at elite HIC institutions to use in support of the scholarly agendas of those who have comparable talent and ambition but must overcome great structural disadvantages.

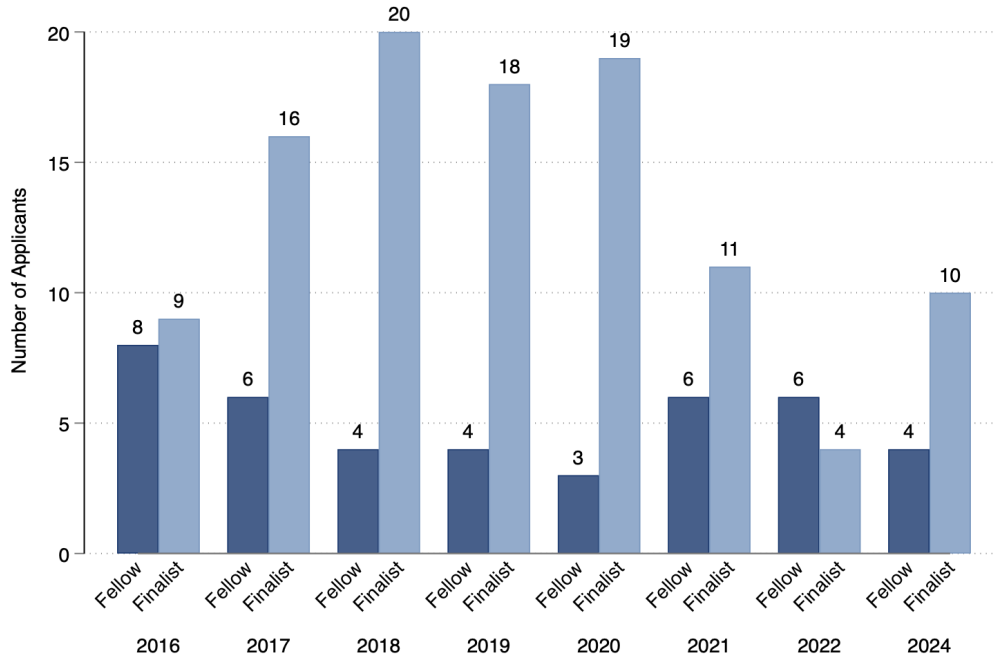
2. Program Structure and Data

STARS Fellows are competitively selected. While the process has evolved somewhat over time, the structure has operated more-or-less as follows for the whole period. A request for proposals circulates broadly 45 days prior to the submission deadline, which typically falls in January. Applicants propose a research paper topic that uses available data - STARS does not support new data collection - and can be completed in roughly one year. The STARS program management conducts initial triage for compliance with eligibility criteria - Fellows must be in their final year of Ph.D. studies or have received their Ph.D. no more than six years earlier, and must have earned a degree from a LMIC-based college or university - then sends all eligible applications for reading and scoring by two peer reviewers. The top-scoring applicants are given an R/Stata coding competency assessment and, contingent on completing it adequately, are then shared with the set of prospective faculty mentors and peer mentors³. This is the pool of 'finalists', all of whom are high quality, eligible applicants for the STARS Fellowship.

Selection of STARS Fellows from the Finalist pool depends primarily on available program funding, which determines how many Fellows the program can support in a given year, and secondarily on matching Finalists with mentors who have declared themselves available for that year's cohort. Individual mentors' availability varies year-to-year due to prior commitments - e.g., to mentoring a Fellow from the prior STARS cohort, sabbatical - or shocks - e.g., health or parental leave. The identity of available mentors is not known to applicants and mentors' areas of expertise and interest vary. Some years, the seemingly most talented Finalists have no well-matched mentor available. Mentors identify Fellows they would be willing to work

³Peer mentors are post-docs or advanced graduate students who work closely with Fellows on more time-consuming, technical tasks (e.g., data cleaning, assembly of replication packages, debugging code) than faculty mentors typically do.

Figure 1: Number of Fellows by Year and Selection Category



Notes: This figure displays the number of STARS Fellows and unselected Finalists by application year across the 2016 through 2024 cohorts. There was no 2023 cohort.

with, based on the applicants' proposed topic of study, application materials, and reviewer scores. Purposeful matches are made, typically in March, at which time the roughly 16-month Fellowship period begins. Since all Finalists are deemed reasonably comparably qualified and quasi-random variation in mentor availability in any given year drives a good share of matches in a cohort, non-selected Finalists provide a good quasi-control group. Indeed, multiple Fellows were non-selected Finalists in previous cohorts, underscoring that mentor availability, not quality, commonly separates Fellows from non-selected Finalists. We exploit this quasi-random variation to identify the causal effects of STARS Fellowship selection on Fellows' subsequent research productivity and impact.

Figure 1 displays a bar chart of Finalists (but not selected for a STARS Fellowship) and Fellows (selected) by year and selection category across the 2016-2024 cohorts. Applications increased steadily, now routinely numbering 150-250 per year. The screening that narrows the applicant pool to a group of finalists is intense, making the finalists reasonably comparable on observable characteristics, as we show below. Time-varying funding availability drives the number of Fellows each year; this funding constraint explains why the program selected no Fellows in 2023, for example. In all but one year, Finalists outnumber Fellows, consistent with the program's competitive 4% unconditional selection rate.

Once selected, STARS Fellows begin an intensive three-month program of online professional development trainings and regular, typically weekly, meetings with their mentors to advance their project. Roughly six months into the project, all Fellows travel to Cornell to work in person for 2-3 weeks with their mentors, to receive intensive feedback on their draft papers in a workshop, present their work to a seminar audience at Cornell, and convene with the other Fellows and mentors to build their network. The final push to complete a first draft of the Fellow’s paper follows over the subsequent two months. Peer reviewers then provide two sets of detailed comments on that draft. The Fellow and mentors revise the draft into a final manuscript, ready for journal submission 16 months after first matching on the project.

We draw from two main sources of hand-collected data to evaluate the impact of the STARS program: Fellowship application materials and scholarly publication records. The unit of observation is the individual applicant. Throughout the paper, we use “Fellow” to refer to applicants selected into the program and “Finalist” to refer to applicants who reached the finalist stage but were not selected as Fellows.

The application materials provide biographical information for all the applicants reviewed from the 2016 to 2024 selection cohorts, inclusive. These records include the applicant’s name, gender, nationality, and country of residence at the time of application. For applicants who advance to the finalist stage or become Fellows, the data provide additional academic and professional details, including the Ph.D. institution, Ph.D. completion year, and job title.

We retrieve publication data for individual authors using the Publish or Perish software (Harzing 2007). These data capture the year of first publication, absolute number of published articles and citations per year, the h-index, and the g-index. We collect publication data for each Finalist and Fellow – not the full applicant pool, for the years 2015 through 2024. We compute citations per year as total citations divided by the number of years since the article’s publication. We classify each publication as pre- or post-Fellowship based on its year of publication, not the timing of its citations; we attribute a pre-Fellowship paper’s citations-per-year value in full to the pre-Fellowship period, even though the underlying citations continue to accrue and may include citations received well after the applicant’s STARS selection year. We analyze citations per year for each article to normalize for a paper’s age. The h-index identifies the maximum number of papers h an individual publishes that receive at least h citations. The g-index identifies the largest number g such that the scholar’s g most-cited articles collectively receive at least g^2 citations, which rewards high-impact publications more than the h-index does. We run spot checks on Google Scholar to resolve searches that return zero results due to spelling differences or naming variations between online databases and application materials. We draw data from OpenAlex (Priem, Piwowar, and Orr 2022), a free and open bibliometric database, to construct a measure of each individual’s co-authorship network.

We combine application records with publication data to construct an annual panel that tracks research productivity and quality. To estimate productivity relative to the Fellowship selection event, we define the temporal ordering of the data by

constructing an integer-valued event-time variable, measured in years. This variable takes on a value zero for the year an individual applies for the STARS program, negative values for years prior to application, and positive values in subsequent years. For Finalists, we tie this event time to the specific year they applied and advanced to the finalist stage, providing a chronologically comparable group that shares the exact event-time as the Fellows. For applicants who advanced to the finalist stage in multiple years, we tie event time to the most recent year they applied and advanced to the finalist stage.

Table 1 presents summary statistics for our analytical sample, dividing the data into Fellows (treatment) and Finalists (control). We report baseline characteristics and key covariates, including gender, region of the Ph.D. institution, and number of years since receiving their Ph.D. at $t = 0$, the year they were a STARS Finalist. These data link each applicant’s demographic, academic, and professional information with their annual research output. Fellows and Finalists show statistically comparable observable characteristics across most of these pre-treatment characteristics, except for some marginal differences in publication record, years since Ph.D. completion, and the world region in which they earned the Ph.D.

Table 1: Summary Statistics of Matched Sample at Time of Selection

	Finalists	Fellows	Difference	t-stat
Male (=1)	0.711	0.634	0.076	(0.72)
<i>Region of Ph.D. institution</i>				
Africa	0.579	0.415	0.164	(1.46)
Asia	0.026	0.049	-0.022	(-0.52)
HIC	0.395	0.537	-0.142	(-1.26)
Years since Ph.D. completion	1.211	1.878	-0.668	(-1.52)
<i>Publication Records</i>				
Pre fellowship articles	7.711	10.098	-2.387	(-1.11)
Pre fellowship citations/year	15.836	22.172	-6.337	(-0.75)
Pre fellowship authors/paper	2.394	2.640	-0.246	(-1.18)
Unique coauthors	2.263	4.732	-2.469	(-1.55)
<i>Matched applicants</i>	79			

Notes: Ph.D. Region indicates the location of the applicant’s Ph.D.-granting institution, not their home country or nationality.

3. Empirical Specification

We seek to answer the question: starting with the year of selection into the program, do early career scholars selected into the STARS program subsequently publish more frequently and generate higher quality research, as reflected in citations-based measures, than similar Finalists who are not selected, controlling for individual

characteristics, pre-application publication records and trends common across years? To estimate the STARS Fellowship’s impacts on research productivity, and to ensure our findings are not an artifact of a specific estimation method, we implement three different empirical strategies.

First, to address potential selection bias we use propensity score matching (PSM) to construct an appropriate control group based on applicants’ observable characteristics. We estimate the propensity score using a probit regression on the binary dependent variable - coded as 1 for Fellows and zero for Finalists - on pre-application characteristics, including gender, Ph.D. completion status, world region of Ph.D.-granting university, years since Ph.D., and the number of publications and citations before the Fellowship selection decision. Following this estimation, we construct matches and generate matching weights. This procedure initially matches 41 Fellows with a Finalist, totaling 82 individuals. To ensure the Fellows and Finalists are equivalent at baseline, we restrict the sample to observations with positive weights, yielding a final panel of 730 person-year observations. The resulting matches reasonably, albeit imperfectly, balance on the propensity for selection as a Fellow, based on observables (Figure 2).

We then supplement the PSM estimation with a staggered difference-in-differences estimator to identify the impact of STARS Fellowship selection by comparing how outcomes change over time between treated Fellows and control Finalists. This method provides the average treatment effect on the treated (ATT), the differential change in research productivity between Fellows and Finalists following that cohort’s selection.

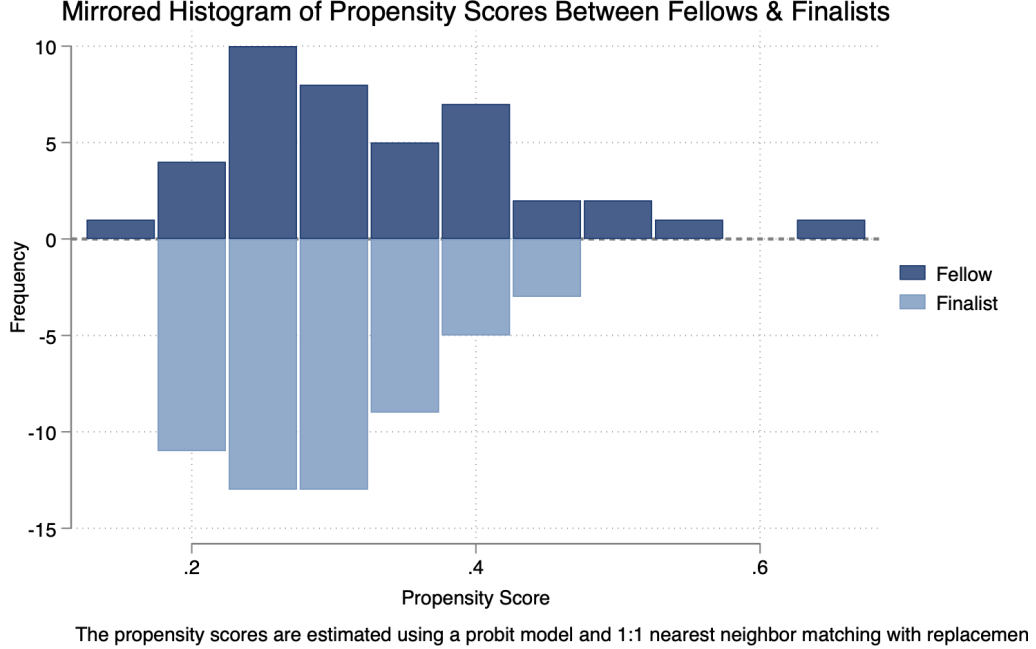
Specifically, we estimate the effects of STARS Fellowship selection using Gardner et al. (2024)’s two-stage difference-in-differences estimator. This approach recovers the average difference in outcomes between treated and untreated units after removing individual and period fixed effects. This approach also accounts for biases induced by including covariates when treatment effects vary (Caetano et al. 2022) and, by controlling for individual fixed effects, addresses unobservables that the PSM estimation cannot capture.

For the main specification, we implement the two stages as follows. Letting D_{it} equal 1 if individual i has been a Fellow in year t and 0 otherwise, in the first stage, we regress the measure of research productivity on individual and year fixed effects, using only the sample of untreated observations (i.e., for all $D_{it} = 0$):

$$Y_{it} = \lambda_i + \alpha_i + X'_{it}\gamma + \varepsilon_{it} \quad (1)$$

where Y_{it} measures research productivity (annual articles, annual citations, h-index, or g-index) for individual i in year t . λ_i and α_i are individual and year fixed effects, respectively. The individual fixed effects absorb the (necessarily time-invariant) characteristics of each Finalist at the time of Fellowship selection. The error term ε_{it} is mean zero, i.i.d. Estimating this model on the untreated group - both Fellows pre-selection and Finalists - isolates the baseline and time effects without confounding them with the impact of the Fellowship. We generate residualized outcomes by

Figure 2: Distributional balance of propensity scores for Fellows (1) and Finalists (0), estimated using a probit model and 1:1 nearest neighbor matching with replacement



removing these estimated individual, year, and baseline effects from the observed outcomes: $\tilde{Y}_{it} = Y_{it} - \hat{\lambda}_i - \hat{\alpha}_i - X'_{it}\hat{\gamma}$.

In the second stage, we regress these residualized outcomes on the treatment indicator to identify the main parameter of interest, β :

$$\tilde{Y}_{it} = \beta D_{it} + \nu_{it} \quad (2)$$

where ν_{it} is the second stage, mean zero, i.i.d regression residual. The parameter β identifies the overall ATT across all cohorts and periods. It reflects the average increase in a selected scholar's annual research productivity caused by the Fellowship: the difference between what the Fellows published and what we expect they would have published had they not been Fellows, after removing baseline trends, time-invariant individual-specific unobservables, and common year-to-year variation. We apply the propensity scores as analytical weights in both stages and cluster standard errors at the individual applicant level to account for within-applicant correlation in publications over time. We evaluate the asymptotic distribution of the second-stage estimates by interpreting the two-stage procedure as a joint generalized method of moments (GMM) estimator, following Gardner et al. (2024). This framework applies the appropriate standard error corrections for the dependent variable generated in the first stage.

Finally, we supplement the PSM and ATT estimates with an event study to

decompose the ATT estimates over time and test the parallel trends assumption on which the prior ATT estimates depend. To implement the event study, we replicate the first stage above, but in the second stage, we regress the residualized outcomes on a series of indicators for the time since treatment rather than on a single treatment dummy. Specifically, we estimate the following second-stage model:

$$\tilde{Y}_{it} = \sum_{r=-5}^6 \eta_{rit} W_{rit} + \nu_{it} \quad (3)$$

where $W_{rit} = 1[t - t^*(i) = r]$ is an indicator variable equaling 1 if individual i in year t is r years relative to the year they received the Fellowship. t^* represents the year of Fellowship. We omit the year immediately preceding the Fellowship application ($r = -1$) as the reference period. To limit noise from sparse tails in the data, we bin the event times at five years before and 6 years after the event of selection (or non-selection) as a Fellow. The parameters of interest are the elements of the coefficient vector η_r . For positive values ($r > 0$), η_r identifies the dynamic average treatment effect, allowing us to evaluate how the impact of the Fellowship on research productivity evolves year by year after selection. For negative values ($r < 0$), η_r captures average deviations from the control group's trend before treatment. We assess whether the parallel trends assumption holds by evaluating whether the coefficients over the ($r < 0$) range are statistically indistinguishable from zero.

The event study design enables us to capture variation over time in impacts, allowing for the possibility that STARS' impacts might grow over time. The downside of the event study approach, however, is that it is seriously underpowered, given the small number of Finalists.

4. Impact Estimates

To evaluate the impact of the Fellowship, we first restrict the sample to comparable scholars using propensity matching, based on 1:1 nearest-neighbor matching with replacement. This matching procedure pairs 41 selected Fellows with similar unselected Finalists based on pre-treatment characteristics, creating an analytical sample of 82 individuals. As shown in Figure 2, the resulting matches are reasonably well-balanced on the propensity to be selected as a Fellow based on observable characteristics. The two distributions overlap substantially, confirming that the matched groups are comparable on observables, consistent with the evidence in Table 1. Appendix Table A1 reports the first-stage model used to estimate propensity scores. No one baseline attribute is especially predictive of selection, but the set of explanatory variables is jointly significant.

Table 2: PSM estimates of the impact of receiving STARS Fellowship

	Publication Metric			
	Articles	Citations/year	h-index	g-index
Fellow	8.073** (3.001)	25.482*** (7.597)	2.439*** (0.516)	4.585*** (1.172)
Fellows mean	17.146	39.611	4.829	9.512
Finalists mean	4.884	7.795	1.829	2.900

Notes: These are propensity-score-matched estimates of the average treatment effect on the treated (ATET) of Fellowship selection on articles published, citations per year, h-index, and g-index. Means of each outcome are given for Fellows and Finalists. Total number of matches is 82, from a total of 127 applicants. Standard errors are given in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 2 reports the estimated average difference in outcomes (articles, citations per year, h-index and g-index) between the STARS Fellows and their matched Finalists after the Fellowship begins. The STARS Fellowship significantly increases both the volume and quality of research output across all four measures. Specifically, the program increases the total number of a Fellow’s published articles by 8.1 ($p = 0.007$). Given that the matched Finalists published an average of 4.9 articles, the effect represents a 165 percent increase in publication volume.

The Fellowship also nearly quadruples citations of the Fellows’ published research, increasing the number of citations per year by 25.5 ($p = 0.001$), versus a control group mean of 7.8 citations per year, a 327 percent increase in annual citations for Fellows. Finally, the program significantly increases citations indices, driving a 2.4 increase in the h-index ($p = 0.000$) and a 4.6 increase in the g-index ($p = 0.000$), gains of roughly 133 and 158 percent, respectively, relative to the respective matched finalist means. Means are computed within the matched analytical sample. Because the treatment effect is estimated using weighted matched pairs, with some Finalists serving as the nearest neighbor for multiple Fellows, the reported effect may differ modestly from the simple difference between these means.

One might naturally worry that the PSM estimates are biased by selection on unobservables. To account for that possibility and how treatment effects vary across groups and time, Table 3 presents the estimates from the two-stage difference-in-differences model specified in Equation 2. The magnitudes of these point estimates are consistently smaller than the PSM estimates, consistent with the potential for bias in the PSM estimates due to positive selection on unobservables. But these results confirm the qualitative findings from the propensity score matching: the STARS Fellowship boosts the research productivity and impact of the selected scholars. Specifically, the Fellowship increases the number of articles published per year by 4.0 ($p = 0.036$). The matched finalists in the control group publish an average of 0.85 articles. This treatment effect represents a 473 percent increase in the volume of articles published. Since this estimator controls more effectively for potential bias

Table 3: Two-stage Difference-in-Differences estimates of the treatment effects of being a STARS Fellow on four outcome variables of interest

	Publication Metrics			
	Articles	Citations/year	h-index	g-index
Fellow	4.018** (1.912)	21.597* (12.564)	1.550* (0.831)	3.017* (1.543)
Control mean	0.849	2.834	0.547	0.729
Individual & Year FE	✓	✓	✓	✓
First-stage R^2	0.530	0.358	0.474	0.528
Second-stage R^2	0.226	0.117	0.209	0.206
<i>Observations</i>	730	730	730	730

Notes: These are two-stage propensity-score-matched DiD estimates of the effect of Fellowship selection on articles published, citations per year, h-index, and g-index. The first-stage specification includes individual and year fixed effects. Total number of initial matches is 82. Control means are for never-treated and not-yet-treated Fellows. Standard errors, clustered at the applicant level, are given in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

due to selection-on-unobservables, as compared to the PSM estimates in Table 2, we favor these estimates.

The Fellowship also increases citations per year by 21.6 ($p = 0.086$). In comparison to the control group mean of 2.8, this effect yields a 733 percent increase in annual citations for Fellows. The Fellowship also drives the h-index up by 1.6 ($p = 0.062$) and g-index up by 3.0 ($p = 0.051$) - increases of 187 percent and 414 percent relative to baseline means, respectively.

As an explicit heterogeneity test, we interact the treatment indicator with an indicator for a Ph.D. from a university based in a high-income country (HIC). Table 4 reports the results. The estimated effect is clearly positive for Fellows with HIC-based Ph.D.s, significant for articles and g-index, perhaps for citations. For Fellows who earned their Ph.D.s from institutions in Africa or Asia, the picture is more mixed, and even internally inconsistent: a significant positive effect on h-index alongside a significant negative effect on citations per year. Given the small subgroup sizes, we treat this heterogeneity test as suggestive rather than conclusive. Several factors might explain this heterogeneity, although we are unable to test these mechanisms explicitly. First, Ph.D. programs in the Global South might not (yet) provide doctoral training of comparable quality to the programs in HIC countries. Second, those Fellows who completed their Ph.D. from a university based in a high-income country might have pre-existing networks in HICs that can help them leverage the STARS fellowship better. Third, these Fellows might be more likely to work in institutions that more explicitly reward publications (perhaps especially in highly-ranked journals) and citations, even in their home countries. Whatever the mechanism(s) involved, it is telling that the impacts of the STARS

fellowship appear concentrated among this subpopulation.

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Table 4: Heterogeneous treatment effects of being a STARS Fellow, by Ph.D. institution region

	Publication Metrics			
	(1) Articles	(2) Citations/year	(3) h index	(4) g index
Fellow	0.083 (0.595)	-1.555*** (0.415)	0.436*** (0.100)	-0.172 (0.652)
Fellow $\times$ HIC-Ph.D.	4.142** (1.975)	24.367* (12.506)	1.173 (0.708)	3.357** (1.613)
Control mean	0.860	2.872	0.554	0.739
Controls	✓	✓	✓	✓
R ²	0.238	0.125	0.215	0.218
Observations	730	730	730	730

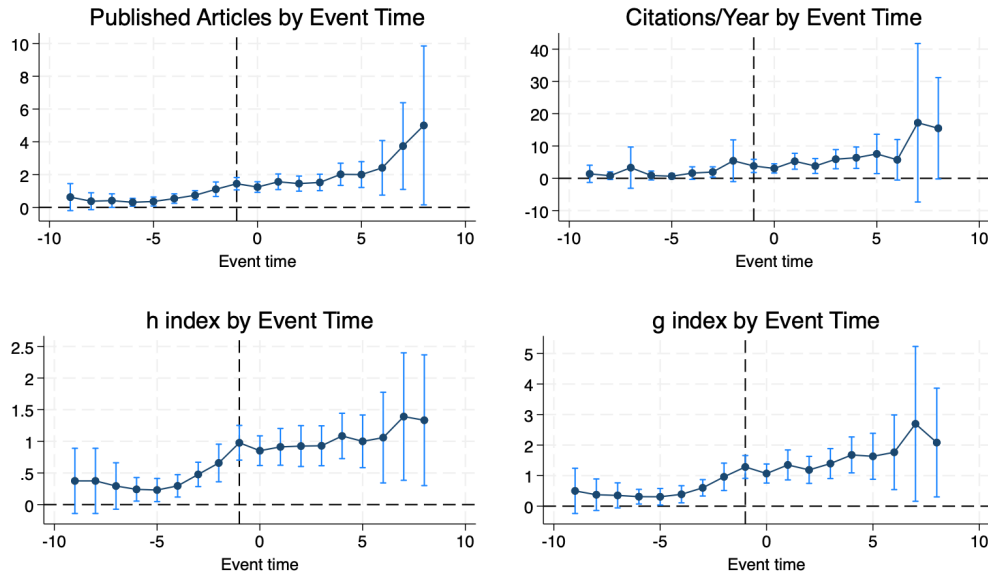
Notes: These are two-stage propensity-score-matched DiD estimates of the effect of Fellowship selection on articles published, citations per year, h-index, and g-index. The first-stage specification includes individual and year fixed effects. Control means are for never-treated and not-yet-treated Fellows. HIC is high income country. Standard errors, clustered at the applicant level, are given in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

The event study estimates support the parallel trends assumption on which the difference-in-differences estimates rely and confirm the main results, albeit with less precision in year-specific estimates. Figure 3 plots the difference in raw means between Fellows and their matched Finalists for the four outcomes. Note that Figure 3 just plots raw data, with no correction for baseline characteristics. In the periods prior to the Fellowship the estimated differences between Fellows and Finalists fluctuate near zero, but Fellows commonly have somewhat stronger measures. Following the Fellowship (event time 0), Fellows exhibit consistently far stronger research productivity, with the point estimates weakly increasing over time post-selection. Because the academic process introduces delays in publishing, the measurable benefits of the program take time to materialize after Fellows complete their STARS projects, publish their research, and apply and hone their acquired skills.

Figure 4 presents the event study estimates from the two-stage difference-in-differences specification in Equation 3. These point estimates follow a trajectory similar to the plot of the raw means of the event study (Figure 3). They show little divergence before Fellows' selection and grow steadily after selection into the

⁴Note that Table 2's outcomes reflect cumulative totals over the full post-Fellowship period, while Table 3 and 4's outcomes are measured annually; this difference in aggregation accounts for the difference in control means across the two tables.

Figure 3: Raw Means Event Study Plots

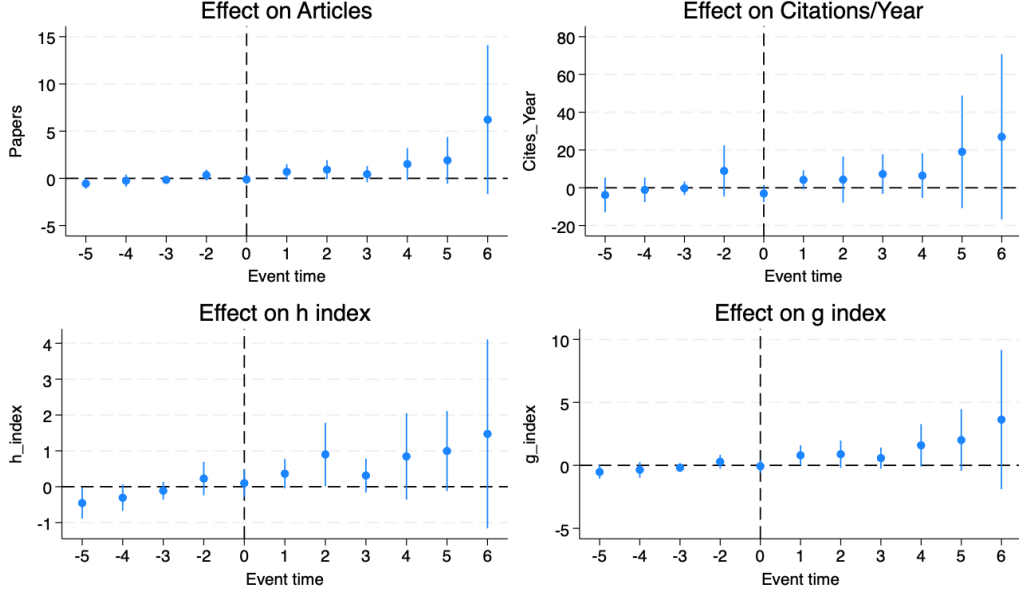


Notes: The plotted coefficients represent the difference in raw means outcomes between Fellows and Finalists in the propensity score matched sample. Event times are binned at 5 or more years before the Fellowship began for the Fellow(-5). Bars represent 95% confidence intervals.

program. This underpowered estimation necessarily yields wide confidence intervals, particularly in the later years, where the sample size is smallest. The wider confidence intervals in the right tail of the event study plot reflect the shrinking subsample, not necessarily instability in the estimated treatment effect. As a robustness check, we also estimate the event study using a narrower window (-3 to +4 years), which limits the influence of the smallest, most cohort-selective bins. The resulting estimates follow a similar pattern to those reported in Figure 4, with confidence intervals that remain wider in the terminal periods even under this tighter window. The pre-selection coefficient estimates are close to, and generally not significantly different from, zero, supporting the parallel trends assumption underpinning the difference-in-differences estimation strategy.

As a possible mechanism behind these productivity gains, we test whether the Fellowship expands the Fellows' research co-authorship network. We draw information on authors per article from Publish or Perish and unique co-authors from OpenAlex (Priem, Piwowar, and Orr 2022), a free bibliometric database that lets us identify each Fellow's full publication record and count the number of individuals they have co-authored with in a given year. Appendix Table A2 reports the estimates of the Fellowship's effect on these two outcomes in columns 2 and 3. We

Figure 4: Two-Stage Difference-in-Difference Event Study Plots



Notes: The omitted reference period is event time -1 (the year immediately preceding the Fellowship application). Event times are binned at 5 or more years before (-5) and 6 or more years after (6) selection. Bars represent 95% confidence intervals.

find no significant effect on team size per article. The estimated increase in unique collaborators is quite large (6.43 co-authors) compared to the control mean (1.72 co-authors) but not significant at conventional significance levels. The point estimate is consistent with the hypothesis that selection into the STARS program expands a Fellow's co-authorship network, which could be a mechanism contributing to the research productivity and citations gains; but this is very imprecisely estimated, thus a null result statistically.⁵

Across both the propensity score matching and two-stage staggered difference-in-differences specifications, STARS Fellows significantly outperform matched finalists on all four research productivity and quality outcomes. These gains appear concentrated mainly in Fellows who had received their Ph.D. from a university based in a HIC. The event study offers suggestive support for these results, although the small sample size leaves the event study estimates underpowered. Because publications accumulate slowly, the full benefits of the Fellowship likely take time to appear in measures, and with our small sample size we are underpowered to identify lagged effects precisely. Our estimates may therefore understate the program's longer-run

⁵We also examined whether the Fellowship shifts Fellows towards higher-quality journals, using journal-level citation impact measures and the field weighted citation impact of individual papers from OpenAlex. Because we were unable to obtain information for most Fellows, this substantially reduced the sample size. No statistically significant effect on either indicator appears in the resulting smaller sample.

impact.

5. Qualitative Insights into Mechanisms

The quantitative results just presented do not explain how these impacts arise. Stories from individual STARS Fellows' experiences can shed important light on the relevant mechanisms. The individual reflections that follow underscore the multiple obstacles that impede research productivity among talented early career scholars from LMICs. In many cases, albeit not all, selection into the program helped the STARS Fellow navigate those obstacles, unlocking their considerable scholarly potential. The specifics vary among Fellows, but four of their cases nicely reflect several key themes we have heard repeatedly from Fellows over the past decade.

5.1. Expanding access to resources and mentorship

It is often said that to be born in Africa is to start out one step behind your peers in other parts of the world. To pursue higher education in Africa can be a trap, leaving one structurally unable to compete effectively with holders of similar foreign degrees. This situation resonates deeply with many early-career African scholars, who face systemic failures and entrenched bureaucracy throughout their academic careers. These challenges are compounded for African women, who face additional gendered discrimination and family pressures that often make them more likely to be trapped in these weaker institutions while their male peers leave to seek advanced degrees abroad.

Khadijat felt this disadvantage, and its impact on her potential, acutely as she pursued an academic career in Nigeria. She graduated among the top 1% of her class in an upper-tier undergraduate program and then landed an opportunity to intern at the Central Bank of Nigeria. There, she met and interacted with experts and consultants with degrees from top universities around the world. Through those interactions she garnered skills and knowledge that set her buzzing with ideas she expected would flourish with a graduate degree.

Throughout her M.S. and Ph.D. training in Nigeria, however, she felt that her ideas stagnated, in large part due to a lack of access to basic academic resources such as textbooks, journals, and software. The same constraints also contributed to a lack of strong mentorship and collaboration; her instructors unsurprisingly could not inspire and lead her in developing research ideas, given their own inability to access new teaching or research methods and materials. The bulk of her education was effectively self-taught. She identified various online resources, such as lecture materials and seminars, that some top global universities share publicly. She used these to build an impressive toolkit in applied econometrics and development economics. But she lacked close interaction with experts and classmates to ask questions, clarify thoughts, or test out new ideas.

The STARS fellowship program struck her as an opportunity to “learn by doing.” The fact that most of the collaboration was remote – with just a brief visit to Cornell – also made full participation possible, even while she raised a family in Nigeria. Remote access to library materials and other resources (such as software

packages) was revolutionary for her, as was the opportunity to share and develop ideas with like-minded and interested scholars. She readily absorbed the skills and advice of her (all-female) mentor team, whose greater technical skills and ability to support her originated from the profound difference in the opportunities and peer groups that they had experienced in their North American education. She flourished with the opportunity to just reach out, whether for a bit of Stata code or advice on a potential collaboration opportunity. She led in the development and publication of a research article that was published in a top peer-reviewed field journal and has already garnered many citations.

While she has continued to engage with her STARS network and has forged many opportunities for herself, she continues to struggle within the structural limitations of academia in Nigeria, which renders it difficult to continue to grow as a scholar and to provide her students with more opportunities than she had herself. Post-STARS Fellowship, she has become a principal investigator on a major external research grant and actively engaged with multilateral institutions. Further, she has taken on an academic leadership position, from which she works to reduce some of the structural obstacles faced by current and future students at her university.

5.2. Promoting opportunities for research autonomy

Many African scholars wish to break from the constraints of African academic institutions by pursuing higher degrees in Europe or North America. Family-related customs limit this path to predominantly men, however. And with the supply of scholarships falling far short of demand, even those who succeed in securing a fellowship to study in Europe or North America often face significant limitations in where and what they study. Few are fortunate enough to work with supervising faculty who are experts in the early career scholar's chosen subfields. So the escape from the constraints imposed by African universities is often incomplete, as scholars talented and lucky enough to win a coveted foreign doctoral fellowship are unable to pursue their scholarly passions.

Kibrom's story exemplifies this experience. After graduating at the top of his undergraduate class from Bahir Dar University in Ethiopia, he secured a Danish Government Graduate Student Scholarship to pursue an MSc in economics at the University of Copenhagen. While he wanted to return to Africa to acquire field research experience after completing his MSc before pursuing a Ph.D., there was no assurance that he would be able to return to Denmark to continue his studies if he did so. He could, however, continue straight into the Ph.D. on funding faculty had already secured. So Kibrom set aside his longer-term career ambition to research and contribute to Africa's rural and agricultural development challenges and instead undertook a funded dissertation project focused on transportation and discrete choice modeling, with an application to road safety in Denmark. Although he was grateful for the training and mentorship received at Copenhagen, Kibrom still hoped to shift to work on issues relevant to African rural development and to pursue a career in development and agricultural economics.

Thankfully, Kibrom found and was accepted into the STARS program. Be-

cause STARS Fellows choose their preferred research topic relevant to African rural transformation, Kibrom developed his own project that fit his career research ambitions. The STARS program provided supplementary training and mentorship to rectify mismatches between the research skills he developed in a different subfield and those he needed to pursue his research passions. The wealth of African rural development research areas covered by STARS Fellows and mentors gave him the development economics collaborator network missing from his graduate training and the chance to work with and learn from leading researchers in his chosen subfield.

The opportunity to study in Denmark had liberated Kibrom from some of the local university constraints he would have faced had he remained in Ethiopia (as Khadijat did in Nigeria). But STARS gave him access to the research path he had always hoped to pursue. The networks and publication opportunities made available through STARS facilitated him publishing several papers in leading development and agricultural economics journals, including an award-winning paper, which in turn helped him pursue his chosen career path and return to Africa, both physically and topically. Long after completing his STARS fellowship, Kibrom has continued collaborating with those he met through the program. Indeed, he has routinely been the intellectual lead and lead author on those projects. In time, Kibrom made the transition from being a STARS mentee to a mentor, supporting projects defined and led by subsequent groups of STARS Fellows and upholding his commitment to support other young African researchers who face such familiar challenges. The STARS program ultimately aims to scale-up and replicate such mentee-to-mentor transitions.

5.3. Building networks and professional pathways

A top-performing scholar from Nigeria, Nneka had ambitions to pursue higher education and help contribute significantly to her country's economic growth and development, yet she faced the same structural challenges as Khadijat: limited access to research resources, advanced methodologies, mentorship, and juggling these professional aspirations with her family responsibilities. Despite excelling academically and landing a coveted graduate assistant position at her university, she was concerned about being unable to compete favourably with scholars with the same degrees from foreign institutions.

The STARS fellowship came at a time when she was seeking to improve her skills and find a way to engage with the broader international research community. The fellowship strengthened her research and quantitative skills, helping her gain experience applying these new methods and skills on large-scale household survey data. Equally important, the fellowship gave her visibility and access to a professional network of renowned scholars who allowed her to learn from their wealth of knowledge and experience through review of her research and learning opportunities.

The Cornell visit during her STARS Fellowship was especially consequential. She presented her paper to an international audience for the first time, received substantive comments from renowned economists she had previously encountered only in citations, and participated in seminars that reshaped how she understood the

frontier of her field. That exposure enabled her to develop her research into a working paper subsequently published through a prominent European research institute and currently under review at a top journal. The networks built during that visit have continued to yield benefits, including collaborations on research projects and grant applications, and connections that have led directly to several other significant career opportunities she has had since completing the fellowship. For instance, she had the opportunity of serving as one of the faculty leads for Cornell's SMART program, where she supervised a team of five undergraduate and Masters student researchers and led the production of a research report and policy brief on child brides and labor market outcomes in Nigeria. That worked sparked a new research collaboration with an advanced Cornell Ph.D. student, yielding another manuscript now in journal review. Additionally, she went on to earn a prestigious visiting fellowship opportunity at the Center for Effective Global Action (CEGA), University of California, Berkeley. STARS helped unlock opportunities, people and resources that boosted Nneka's aspirations and impact.

5.4. Connecting with community and reigniting intellectual curiosity

Beza applied to the STARS fellowship to join a community of agricultural economists. She was impressed by the academic achievements of the alumni, but what stood out even more were the attributes that the alumni possessed. They were collaborative, generous with their time, humble, hardworking, and genuinely interested in helping others succeed. To her, being a scientist is not only about being smart enough to solve problems. It is about solving problems while treating people with respect. It is about humility, integrity, discipline, and remembering that the ultimate purpose of much of research is to improve the lives of people who are often less privileged than oneself. The STARS community embodies those values, and she wanted to be a part of it.

One of the greatest challenges she faced before joining the fellowship was a lack of scientific communication skills. She had research ideas she wanted to brainstorm, but felt she lacked the skill to communicate them using the language (often quite mathematical) of the field. She had questions she wanted to answer and stories she wanted to tell through research, but often lacked the language to effectively communicate them. Through collaboration and encouragement from her mentors, she was able to build up her fluency (and the confidence to use it) throughout the program.

The fellowship also fulfilled a long-standing desire for genuine collaboration. For much of her academic training, research was largely a solitary endeavor. She learned to work independently, with occasional feedback from a supervisor, in a system that often over-emphasizes independence. She published impactful papers but always felt the weight of having done things largely individually. She longed for collaborators who would brainstorm, code, and write together. STARS provided mentorship with more hands-on collaboration throughout the whole research process. It made research feel like a shared intellectual journey.

The fellowship was also personally transformative in ways that extended be-

yond research. As an African woman in economics, she had not always been conscious of her identity until she left her home country. Over time, however, she became increasingly aware that the way others perceived her often differed from how she saw herself. Anyone from anywhere can have capacity limits, not particularly Africans, but repeated experiences of exclusion, discrimination, facing double standards, or simply feeling out of place slowly eroded her confidence. Eventually, those external perceptions begin to shape internal narratives, making it easier to question oneself and whether one belongs. For many scholars from underrepresented backgrounds, these invisible burdens exist alongside the ordinary demands of academic life and can make life harder. The STARS program is intent on breaking these barriers, promoting the leadership and voices of our fellows, and supporting each individual as a fellow, a person, a spouse, a mother or father.

The people behind the STARS Fellowship make this possible. Beza's mentor, the late Carolina Castilla, was extraordinary. She combined intellectual brilliance with remarkable kindness and humility. She had an ability to make difficult problems seem approachable and to transform research from a source of anxiety into a source of excitement. Conversations extended far beyond academic topics, to careers, health, work-life balance, and the realities of navigating academia. A mentor who cared deeply not only about the project's success but about the Fellow's whole person was inspiring, perhaps especially from a mentor dying of cancer. She represented the very best of what academic mentorship can be.

When Carolina passed, the STARS program stepped in to ensure Beza's project continued, indeed improved further. Having mentors who paid attention to every detail, from data to the logic of an argument, the structure of a paper, grammar and punctuation, the mathematical language, and the rigor of an empirical strategy elevated the quality of the work tremendously. Despite their busy schedules, mentors met regularly, and the lessons learned from those meetings have proved applicable in Beza's other work. Similarly, Beza's peer mentor served as a great bridge between the academic language, calendars, data analysis and other issues between her and her mentors. She was generous with her time, her expertise, and her knowledge, helping translate comments, organize workflows, and ensure that ideas became actionable tasks. Her peer mentor's contributions often occurred behind the scenes and encompassed all parts of the research process, but they were essential to the success of the collaboration.

The STARS Fellows program staff also ensures that Fellows can focus on learning and research because they anticipate and preemptively solve myriad administrative and logistical challenges before they became problems burdening the Fellows. Their behind-the-scenes work takes care of the never-ending organizational tasks involved in bringing Fellows to Cornell and creating space for intensive feedback and collaboration. Staff ensure Fellows are welcomed, comfortable, and given as much time to focus on their research. For Beza, the STARS Fellows mentors and staff were not only a source of exceptional academic wisdom but also incredible social support.

For many scholars from the Global South, academic careers are not constrained

by a lack of talent or ambition. Rather, by barriers that are often invisible: limited networks, lack of mentorship, unfamiliar professional norms, isolation, and the absence of role models. Many LMIC scholars enter academia without access to the unwritten rules that others learn through informal networks. They find themselves navigating unfamiliar terrain without a map. STARS provides that map. It introduced Beza to a community of scholars who shared knowledge openly, collaborated generously, and genuinely cared about one another's success. It helped her acquire skills that she now uses across all her research. It was a source of academic wisdom and social support. It led to collaborations that continue beyond the fellowship itself. Most importantly, it restored her confidence in an academic career at a time when that ambition had nearly disappeared.

6. Conclusions

Progress in advancing the Sustainable Development Goals and other global objectives will require impactful scholarly contributions from scholars based in LMICs. Economists increasingly acknowledge the geographic imbalance in intellectual leadership and publishing around development issues (Angus et al. 2021; Greenspon and Rodrik 2021; Amarante et al. 2022; Amarante and Zurbrigg 2022, 2024; Aigner, Greenspon, and Rodrik 2025; Kenter et al. 2025). Several research mentoring and training initiatives have launched over the past decade to try to rectify this imbalance and unlock the potential of early career scholars from the Global South. Those scholars still face a host of obstacles, however, as they strive to translate their talents and ambitions into prominent peer-reviewed publications and international visibility.

The STARS Fellows program was developed to support early career scholars from the Global South as they conceptualize and produce rigorous, policy-relevant research and establish themselves in international research networks. Ten years after its launch, the quantitative and qualitative evidence presented in this paper suggests that STARS has had favorable impacts in boosting Fellows' research productivity and impact. Moreover, those impacts seem to grow steadily over time. At an average cost of just \$30,000 per Fellow, STARS appears a cost-effective investment in unlocking scholarly potential in the Global South.

The results also suggest, however, that the gains early career scholars from the Global South enjoy from a research mentoring program are concentrated mainly among those who were able to attend a HIC university for doctoral training. That underscores the importance of the substantial barriers such scholars face in accessing education abroad. Initiatives like that of the Graduation Applications International Network show real promise in relaxing some of those constraints (Adhar, Odhiambo, and Poensgen 2026).

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Appendix

Table A1: PSM First Stage Matching Estimates

	<i>Probit</i>
Female (=1)	0.204 (0.258)
PhD completed at application	−0.025 (0.053)
Years since PhD	0.055 (0.081)
<i>Ph.D. Region</i>	
Asia	1.107 (0.771)
HIC	0.192 (0.256)
Articles (pre-application)	−0.016 (0.018)
Citations, per 1000 (pre-application)	0.353 (0.455)
Pseudo R ²	0.037

Notes: This table reports probit estimates of the probability of being selected as a Fellow (versus remaining an unselected Finalist), as a function of baseline applicant characteristics. Articles and citations are measured as of the time of application to STARS. PhD region is a categorical variable with three levels – Africa, Asia, and high-income countries (HIC) – indicating the location of the applicant’s Ph.D.-granting institution, not their home country or nationality.. Total number of matches is 82, from a total of 127 applicants. Standard errors are given in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A2: Estimates of the treatment effects of being a STARS fellow on six outcome variables of interest

	(1) Articles	(2) Authors/article	(3) Unique coauthors	(4) Citations/year	(5) h index	(6) g index
Estimates	4.018** (1.912)	0.055 (0.382)	6.430 (4.149)	21.594* (12.564)	1.550* (0.831)	3.017* (1.543)
Control mean	0.860	0.960	1.723	2.872	0.554	0.739
Individual & Year FE	✓	✓	✓	✓	✓	✓
R^2	0.226	0.001	0.151	0.117	0.209	0.206

Notes: These are two-stage propensity-score-matched DiD estimates of the effect of Fellowship selection on articles published, authors per article, unique co-authors, citations per year, h-index, and g-index. Total number of matches is 82, creating a panel of sample size 730. Control means are for never-treated and not-yet-treated Fellows. Standard errors, clustered at the applicant level, are given in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.