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Toward Ensuring the Equitable Allocation of Federal Funding: An Analysis of Hispanic-Serving Institutions' Pursuit and Receipt of Title V Grants

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Abstract: Despite Hispanic-serving institutions' (HSIs) growing number and ongoing institutional diversification, appropriations to Title V, capacity-building grants, has plateaued. Considering these trends, we constructed a unique dataset of Title V non-applicants, applicants, and recipients from 2009–2017 to examine how equitably these federal funds were allocated across HSIs. Through our analytic modeling, we examined HSIs' pursuit and receipt of these grants, finding that HSIs with large, Latinx enrollments are much more likely to secure funding. Although the distribution of these grants is more uniform across institutional characteristics than suggested in previous studies, we identify several opportunities to improve the equitable allocation of this public resource.
Keywords: Hispanic-serving institutions; HSI; Title V; Higher Education Act; grants; higher education policy; educational equity

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Para garantizar la asignación equitativa de fondos federales: Un análisis de la búsqueda y adquisición de subvenciones del Título V por parte de las instituciones que sirven a los hispanos
Resumen: A pesar de que el número de instituciones al servicio de los hispanos (HSIs, acuerdo de sus siglas en inglés) está creciendo y que esta población de escuelas está diversificándose institucionalmente, las asignaciones para Título V, subvenciones para el desarrollo de HSIs, se están estancado. Teniendo en cuenta estos patrones, construimos un conjunto de datos de no-solicitantes, solicitantes, y beneficiarios de las subvenciones del Título V desde el 2009 hasta el 2017 para examinar qué tan equitativamente estos fondos federales han sido asignados entre todos los HSIs. A través de nuestro modelo analítico, examinamos la búsqueda y la adquisición de estas subvenciones y descubrimos que HSIs con mayor matricula de estudiantes latinx tienen mucha más probabilidad de obtener estos fondos. Aunque la distribución de estas subvenciones es más uniforme por las características institucionales de HSIs comparado con lo que estudios previos han sugerido, identificamos varias oportunidades para mejorar la equidad de la asignación de este recurso público.
Palabras-clave: instituciones al servicio de los hispanos; HSI; Título V; Ley de Educación Superior; subsidios; política de educación superior; equidad educativa

Para garantir a atribuição equitativa de fundos federais: Uma análise da busca e aquisição de subvenções do Título V por parte das instituições que que atendem hispânicos
Resumo: Apesar de que o número de instituições que atendem hispânicos (HSIs, acuerdo de sus siglas en inglés) está crescendo e que esta população de escolas está diversificandose institucionalmente, as atribuições para Título V, subvenciones para el desarrollo de HSIs, estão estancado. Tendo em conta esses patronos, construímos um conjunto de dados de não solicitantes, solicitantes e beneficiários das subvenções do Título V desde 2009 até 2017 para examinar que tan equitativamente esses fundos federais foram atribuídos entre todos os HSIs. Através de nosso modelo analítico, examinamos a busca e a aquisição dessas subvenções e descobrimos que HSIs com a maioria das matrículas de estudantes latinos têm muito mais probabilidade de obter esses fundos. Embora a distribuição dessas subvenções seja mais uniforme pelas características institucionais de HSIs em comparação com o que estudos anteriores sugeriram, identificamos várias oportunidades para melhorar a equidade da atribuição deste recurso público.
Palavras-chave: instituições que atendem hispânicos; HSIs; Título V; Lei do Ensino Superior; subsídios; política de educação superior; equidade educacional

Toward Ensuring the Equitable Allocation of Federal Funding: An Analysis of Hispanic-Serving Institutions' Pursuit and Receipt of Title V Grants

At the urging of educational advocates, namely the Hispanic Higher Education Coalition and the Hispanic Association of Colleges and Universities (HACU), Congress legally recognized Hispanic-serving institutions (HSIs) with the 1992 reauthorization of the Higher Education Act (Valdez, 2015). Broadly defined, HSIs refer to historically underfunded 2- and 4-year, not-for-profit U.S. colleges and universities in which at least (a) a quarter of full-time equivalent (FTE) undergraduates identify as Latinx/Hispanic and (b) half are Pell-eligible (Higher Education Opportunity Act [HEOA], 2008). HSIs must also operate with low core expenses (HEAO, 2008). Importantly, these institutions educate a large share of racially/ethnically minoritized students, including about two-thirds of all Latinx undergraduates (Santiago et al., 2016, 2020).

In response to HSIs' chronic underfunding, in 1998, Congress enacted Title V of the Higher Education Act—competitive, multi-year capacity-building grants for HSIs (Hegji, 2017). Specifically, this program aims to support HSIs in expanding their educational opportunities and increasing Latinx students' degree attainment by, for example, funding the purchase of educational materials, facility upgrades, and faculty development (HEOA, 2008; Santiago et al., 2016). Despite HSIs' enduring need for this federal support, though, congressional appropriations for this program have stagnated over time, effectively shrinking relative to the growing number of HSIs (Aguilar-Smith, 2021b; Nellum & Valle, 2015). Tellingly, in 2010, Congress allocated approximately $117 million to this program. However, almost a decade later (i.e., in 2019), it only allocated $124 million, although the number of HSIs grew from 293 to 539 during this period (Santiago et al., 2020). Since Congress enacted Title V because HSIs' inequitable public funding jeopardized Latinx college students' educational opportunities and achievement, the fact that the number of HSIs increasingly outpaces federal investment in this program is problematic, presenting potentially severe consequences for educational justice.

Further complicating this issue is HSIs' ongoing institutional diversification. Twenty years ago, most HSIs were public community colleges; now more than half of all HSIs are 4-year institutions (Santiago et al., 2020), a growing number of which are research-intensive universities (Martinez & Garcia, 2020). Indeed, HSIs represent a diverse group of institutions whose differences span sector, selectivity, geography, student racial/ethnic demographics, etc. (Núñez et al., 2016). Thus, now an increasingly diverse set of institutions may compete for Title V grants, despite their disparate characteristics (e.g., distinct missions, constituents, and resources)—a situation adding another layer of potential issues for educational equity.

However, the dearth of published studies examining Title V leaves this problem largely unexamined. For instance, existing reports do not specify which HSIs or how many institutions apply[1] for these grants each year, leaving intact the prevailing assumption that most, if not all, HSIs apply for this funding. Moreover, the only other published study on this topic concentrated on the explanatory power of HSIs' student racial/ethnic demographics on grant receipt, with Vargas (2018) indicating that Whiter HSIs seemed to have better odds of receiving Title V funding. While a compelling first step, Vargas did not account for whether an institution *applied* for this funding. In the end, the existing scholarship leaves unclear if (and the extent to which) various institutional characteristics predict higher odds of pursuing and/or receiving Title V grants—information that has implications for equity and access to this funding. Thus, the purpose of this study is first to do the foundational work of identifying institutional characteristics of non-applicants, applicants, and recipients of Title V grants and then examine the relationship between these characteristics on the pursuit and receipt of this funding. Considering the changing HSI landscape, these analyses are needed to help clarify the implications of the federal government's waning investment in Title V on HSIs and, in turn, on Latinx college students who overwhelmingly attend these institutions.

Learning about non-applicants is crucial to understanding if Title V differentially serves parts of the HSI population. Additionally, analyzing grant recipients may illuminate if specific institutional characteristics seem to explain, at least in part, success in this competition. Our analysis also establishes a needed baseline for future studies by suggesting how changes in the institutional profile of the HSI population may discourage some institutions from participating in this grant competition. Finally, given HSIs' growing diversity, uncovering if specific institutional characteristics

[1] Throughout the manuscript we refer to "institutions applying" or "institutions deciding" to apply for Title V grants. We recognize that individuals within institutions make these decisions and are influenced by forces inside and outside of the institution. However, this study focuses on the ultimate decisions made on behalf of the institution (to apply or not apply for a Title V grant), not the decision-making process.

predict HSIs' pursuit and/or receipt of Title V funding is imperative to understanding whether this competition directs money to already privileged institutions or distributes money more equitably across the diverse spectrum of HSIs.

In service of these aims, we leaned on Núñez et al.'s (2016) conceptual model of institutional diversity among HSIs to construct a unique dataset. Specifically, we merged the U.S. Department of Education's (ED) list of eligible HSIs and Title V applicants and recipients, as well as data from the Integrated Postsecondary Educational Database System (IPEDS) to descriptively and analytically examine non-applicants, applicants, and recipients of Title V grants[2] from 2009–2017. Guiding these analyses are the following research questions: What institutional characteristics describe Title V non-applicants, applicants,[3] and recipients? What institutional characteristics predict an HSI's odds of *applying* for a Title V grant? What institutional characteristics predict an HSI's odds of *receiving* a Title V grant? To what degree do these characteristics contribute to differences among HSIs in their pursuit and receipt of Title V grants, and do these differences contribute to an inequitable distribution of these federal funds?

In pursuing these questions, it is important to note that many reasons other than institutional characteristics may influence an institution's participation in a grant competition like Title V, including the institution's senior leadership (Aguilar-Smith, 2021b, 2022), state context (Dowd & Grant, 2007; Kolbe & Baker, 2019), and broader political environment. Hence, we do not intend with this analysis to capture the totality of decision-making factors implicated with grant seeking. Instead, we set the groundwork for such a broader research agenda by establishing a baseline understanding of the institutions applying for and securing this funding.

To help set up this study, we briefly contextualize the HSI designation and HSI-related funding. We then outline the general application and review/selection process for this funding. Next, we discuss relevant literature on Title V.

Literature Review

Brief History of HSI-Related Federal Funding

In justifying the need for this federal designation and ultimately creating this formal designation in 1992, Congress explicitly acknowledged HSIs' chronic underfunding, subsequently granting them eligibility for Title III Part A funding (Hegji, 2017). Shortly after that, in 1998, they enacted Title V or the Developing Hispanic-Serving Institutions (DHSI) Program (Hegji, 2017). A decade later, with the passage of the Higher Education Opportunity Act of 2008, Congress expanded Title V, enacting Part B—the Promoting Postbaccalaureate Opportunities for Hispanic Americans (PPOHA) Program (Aguilar-Smith & Doran, 2023). At the same time, they also established Title III Part F or the HSI STEM Articulation Program, which focuses on improving Latinx students' access to and persistence in STEM fields and careers (Calderón Galdeano et al., 2012). Other federal agencies, such as the National Science Foundation and the U.S. Department of Agriculture, likewise recognized many HSIs' financial precarity and instituted funding initiatives for

[2] Title V is a two-part program including Part A, the Developing Hispanic Serving Institutions Program (DHSI), and Part B, the Promoting Postbaccalaureate Opportunities for Hispanic Americans Program. In this paper, we analyzed the allocation of DHSI grants—the most prevalent type of Title V funding.

[3] Based on data from the ED, non-applicants in this study are *eligible* HSIs, meaning they were eligible to compete for Title V funding during the designated period but did not; this also means that non-applicants were not necessarily *officially designated* HSIs during the timeframe of this analysis. At current, available records do not indicate which institutions submit documentation to be formally designated as an HSI.

these institutions (Calderón Galdeano et al., 2012). Nevertheless, among the various federal funding opportunities available to HSIs, Title V has historically been and remains the primary source of external funding for most HSIs (Vargas, 2018).

General Application and Review/Selection Process for Title V Grants

Generally, the ED releases a call for proposals each year, requesting new applications for Title V funding.[4] As part of this notice, the ED outlines competitive preference priorities—particular areas of interest for which an applicant may earn additional points. For example, during the 2017 Title V DHSI grant competition, the ED prioritized projects that "establish[ed] or enhance[d] a program of teacher education designed to qualify teacher candidates to teach in public elementary schools and secondary schools" (Notice inviting applications for new awards: DHSI, 2017, p. 11442). Importantly, given the highly competitive nature of these grants, applicants often note how crucial it is to address these priorities (Aguilar-Smith, 2021b, 2022). In short, proposed projects should not only comply with the authorized list of activities but ideally align with the ED's preferences for that given year.

Regarding the review/selection process, a panel of experts anonymously reviews applications, scoring proposals according to a rubric (HEOA, 2008). Based on this peer-review process, the ED, specifically the HSI Division, rank-orders applicants and recommends funding to those with the highest scores (U.S. Government Accountability Office, 2009). Based on these recommendations, the U.S. Secretary of Education issues awards (HEOA, 2008).

Figure 1 outlines the basic process. For clarity, in this study, we focus on Step 3 and Step 6 while recognizing that research on the other parts of this process is needed, particularly work examining HSIs' decision-making concerning grant-seeking. To further contextualize this study, we situate this work within the limited but growing research on Title V.

Strands of Scholarship on Title V

The current research on Title V pursues three main foci. One strand considers Title V's effectiveness, namely the outcomes of grant receipt on students. These studies yield mixed results. For example, in her dissertation, Piñeda (2010) compared the outcomes of Latinx students at Title V recipient institutions against unsuccessful applicants from 2000 to 2007. Using a difference-in-difference analysis, she found that Title V grants had no detectable effect on recipients' Latinx enrollment or degree attainment. Meanwhile, Perez (2018) tested if Title V grants and expenditures on instruction, academic support, and student services were positively associated with Latinx students' educational attainment from 1999 to 2012. Based on her sample of 4-year HSIs (n = 76), Perez—in contrast to Piñeda—found that Title V grants were a significant predictor of Latinx degree completion, with awardees likely to confer higher shares of bachelor's degrees to Latinx students than non-recipients.

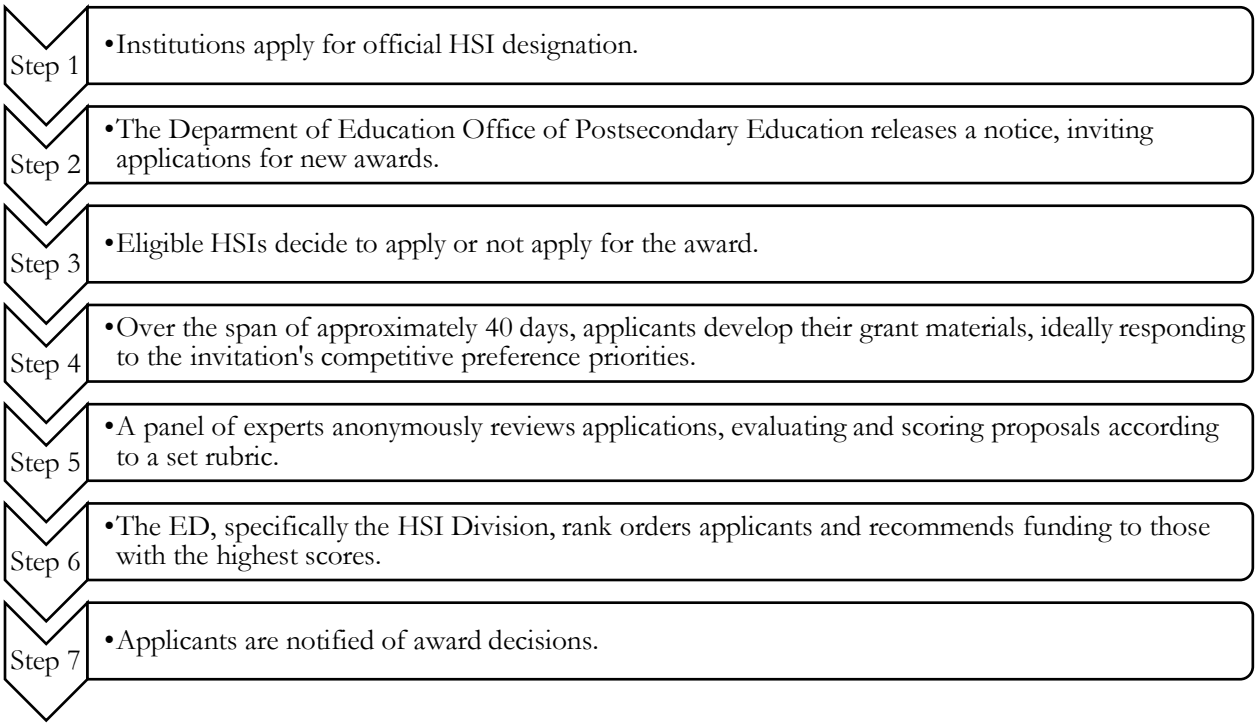
Even more recently, a few studies have provided evidence of the effectiveness of Title V funding. For example, Espinoza and Genna (2021) examined the effectiveness of a Title V-funded project, specifically a workshop on academic success skills at a large public HSI. Promisingly, they found that students who participated in this grant-funded intervention had higher retention rates than their peers (in the control group) and that this workshop was especially beneficial for students with lower GPAs. Meanwhile, Garcia and Dwyer (2018) noted that Title V was one mechanism by which at least some students (a) learned about their institution's HSI designation, (b) secured

[4] The cycle for Title V grants is inconsistent, with the ED publishing the official notice inviting applications for new awards sometime between January and May (Aguilar-Smith, 2021b). Moreover, depending on congressional appropriation levels, some years, the ED does not invite new applications for this funding.

employment, and (c) gained access to additional programmatic opportunities. In short, their study suggests that Title V grants may effectively spread awareness about HSIs and expand HSIs' capacity to serve students.

Figure 1

The General Application and Review/Selection Process for Title V Grants



Another strand explores the nature of Title V-funded projects. For example, Santiago et al. (2016) conducted a content analysis of DHSI awardees' proposal abstracts and final reports from 1995 to 2014, concluding that most "invested in capacity building efforts consistent with the intent of the program" (p. 4). Likewise, through their content analysis of DHSI awardees' proposal abstracts, Vargas and Villa-Palamino (2019) discovered that most recipients deficiently described Latinx students and overlooked "arrangements of marginalization" (p. 7). Altogether, the pair provided a race-conscious analysis of "the programmatic efforts that the state legitimizes as adequate to serve Latinx students" (Vargas & Villa-Palamino, 2019, p. 5).

Within this strand, other studies document how individual HSIs have used Title V funding. For example, Roberts and Lucas (2022) described how a dually designated HSI/Asian American Pacific Islander-Serving Institution in California used Title V funds to establish a counterspace "offering[ing] academic and non-academic support to minoritized students" (p. 199). Separately, Petrov and Garcia (2021) described Dominican University's use of Title V funds to change the institution's organizational identity as a prime example of how to leverage HSI-related grant funding to advance racial justice.

Keenly relevant to our study, the last strand of this literature investigates the allocation of Title V funds, specifically DHSI awards. As noted earlier, Vargas (2018) tested the relationship between an HSI's student racial/ethnic demographics and Title V grant receipt, finding that HSIs with higher White and lower Black enrollment shares garnered more Title V grants. Vargas also reported that HSIs' Latinx enrollment shares did not affect grant receipt. Given such results, Vargas

concluded that Title V "represents an otherwise veiled contribution to racial inequality wherein a federal program created to alleviate ethnoracial inequities mirrors racially unequal patterns of resource distribution" (2018, p. 9). By examining HSIs' pursuit and receipt of DHSI grants, we situate this study within this third strand of work and expand on Vargas's (2018) study in several ways. First, we use the ED's official list of eligible HSIs. Second, we include cooperative DHSI grants and HSIs in Puerto Rico in our analyses—pieces Vargas excluded. Lastly, using the ED's data on Title V applicants and recipients, we account for whether an institution *applied* for a DHSI grant in addition to who received them.

Guiding Theoretical Framework

Given our research questions, we drew from Núñez et al.'s (2016) conceptual model of institutional diversity among HSIs to help frame key institutional variables that may predict an HSIs' pursuit and receipt of Title V grants. Informed by Harris's (2013) dimensions of institutional diversity, Núñez et al.'s model includes five dimensions: systemic, programmatic, constitutional, resource, and environmental diversity. Here, we describe these dimensions and then explain the relevance of this framework for this study.

Most considered across studies, systemic diversity refers to key institutional characteristics, such as institutional type, size, and control (e.g., public or private), used to differentiate colleges and universities (Harris, 2013). Often connected to institutions' systemic qualities, programmatic diversity describes differences in institutions' programs and degree offerings (Harris, 2013).

Next, constitutional diversity characterizes institutions based on the composition of their students, faculty, and personnel (Harris, 2013). Núñez et al. (2016) explained that this dimension is keenly relevant when describing the diversity of HSIs, given the variation in student racial/ethnic demographics within this population (with Latinx enrollment ranging from 25% to 100%; *Excelencia* in Education [*Excelencia*], 2022). They also pointed out that HSIs' large enrollment of Pell-eligible students demographically distinguishes HSIs from other U.S. colleges and universities. Accordingly, a few specific measures for constitutional diversity in their model include the share of Latinx undergraduates and Pell Grant recipients. To further differentiate HSIs, they also included measures for selectivity and 6-year graduation rates.

In addition, Núñez et al. (2016) expanded on Harris's (2013) work, proposing two other forms of diversity to describe the heterogeneity among HSIs: resource and environmental diversity. The former reflects differences among HSIs in terms of their institutional resources. Núñez et al. added this specific dimension given research on HSIs' resource constraints, citing, for example, mounting evidence about the association between these limitations and HSIs' lower student outcomes compared to non-HSIs (e.g., Flores & Park, 2015; Rodríguez & Calderón Galdeano, 2015). In terms of specific measures of resource diversity, they included: the total dollar amount spent on instruction, academic support, and student services per FTE student; the total dollar amount received from the state government; and tuition/fees per FTE student. The final dimension of Núñez et al.'s model is environmental diversity; this differentiates HSIs by their distinct geographic/contextual characteristics. A few key measures of such diversity in their model include an HSI's region and level of urbanity.

Using this model, Núñez et al. (2016) examined how these variables were clustered across the HSI population. In doing so, this typology helps tease apart differences among HSIs, thereby enabling more accurate institutional comparisons and facilitating government agencies, funders, and other organizations in "target[ing] specific types of HSIs for funding, professional development, or other support" (Núñez et al., 2016, pp. 76–77). Hence, we leaned on this framework as it recognizes

HSIs' evolving institutional profile and accounts for the diversity among HSIs along multiple dimensions. Although Núñez et al. did not design this framework to explicitly differentiate HSIs by their grant-seeking pursuits or success, it is useful in identifying key institutional characteristics (and the specific variables) that distinguish HSIs. As such, we used this framework alongside other literature to guide our variable selection.

Methods

Data

We pulled from three datasets to construct the universe of data for DHSI applicants and recipients from 2009 to 2017. First, through a Freedom of Information Act (FOIA) request, we received a list of all DHSI grant applicants and recipients from 2009 to 2017. Second, we obtained the ED's list of eligible HSIs during this period. Third, we downloaded institutional characteristics from IPEDS for each institution for three years within this period (i.e., 2010, 2014, and 2017). We constrained our data collection in this way for a couple of reasons. First, the selected variables are relatively stable over time (see Table 1). Indeed, through our robustness checks, we found no differences using data from individual years or the average across all years, supporting this stability assumption. Moreover, we were not primarily concerned with institutions' year-to-year changes but aimed to create general institutional descriptions. Ultimately, merging the three datasets, we formed one dataset, capturing HSIs' key institutional characteristics and their (non)participation and success in the Title V Program.

Inclusion Criteria

Institutions had to be nonprofits throughout the entirety of 2009–2017. Similarly, we omitted institutions classified as less than 2-year institutions at one point and then associate-awarding colleges at another point. Also, we omitted institutions ($n \approx 10$) with fewer than 15% Latinx undergraduate enrollment at any point in the dataset. Altogether, we included data from 459 institutions. We constrained our analysis to this timeframe for three main reasons. First, 2009 captures an entire decade after the enactment of Title V, and thus, we reasoned enough time had passed so that institutions would be aware of the program and would have applied if interested. Second, currently, the earliest publicly available information on Title V awardees is from 2009. Third, because the duration of a Title V grant is five years, this timeframe allowed ineligible institutions (e.g., 2008 DHSI grant awardees) to become eligible to apply for a new grant at one point during this period. Finally, we ended our data collection in 2017 because this was the latest data available via our FOIA request, and more recent data would have been susceptible to the effects of the COVID-19 pandemic.

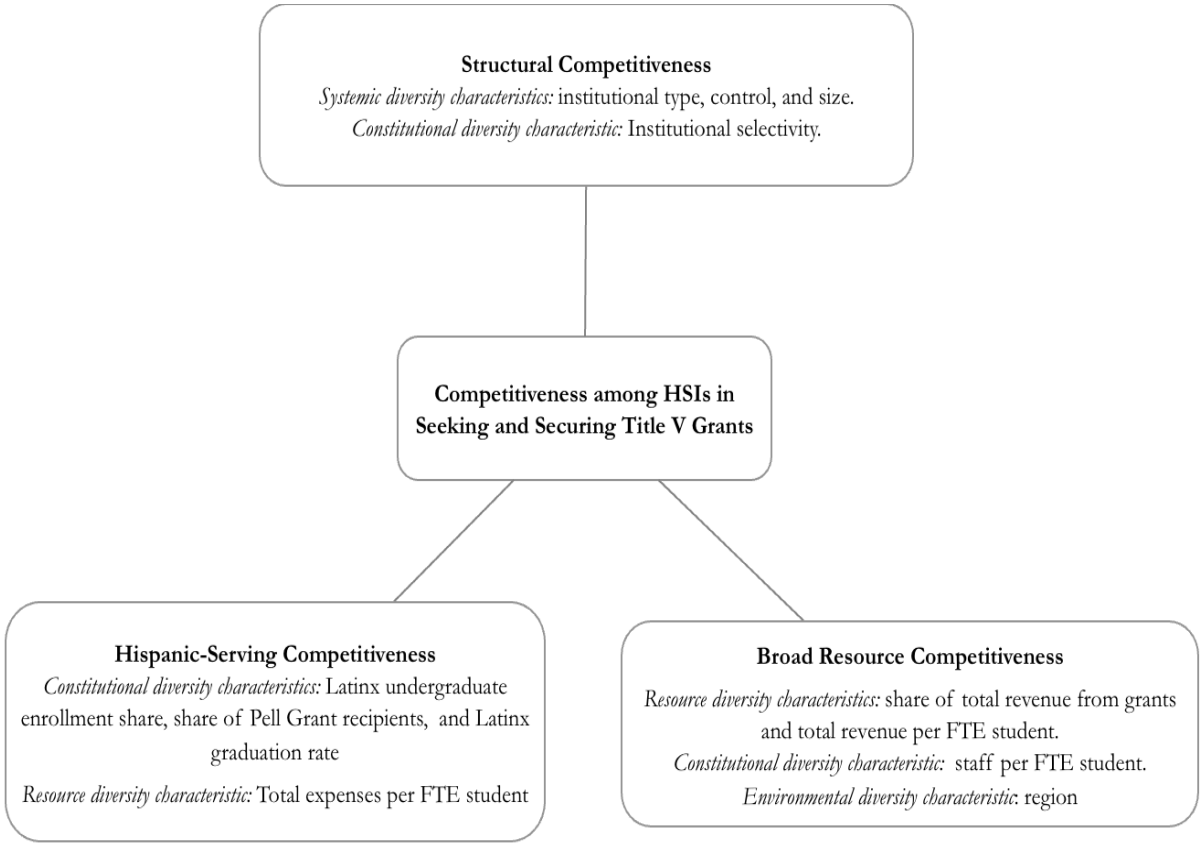
Conceptual Model and Variable Selection

As discussed earlier, Núñez et al.'s (2016) framework for the institutional diversity among HSIs informed our variable identification and organization of the blocks. Specifically, we used their framework to create a parsimonious model containing four blocks. That is, because of the close relationship between dimensions—a point Harris (2013) and Núñez et al. (2016) both acknowledged—and our study's unique purpose, we combined characteristics from distinct diversity dimensions into four blocks rather than using all five of Núñez et al.'s proposed dimensions. As part of this process, we also excluded some of their proposed measures, only retaining those that previous research suggests may be salient to grant seeking and acquisition (e.g., Dowd & Grant, 2007; Fligstein & McAdams, 2011; Keener et al., 2002; Kelly & James, 2015; McCambly & Colyvas,

2022; McGarity, 1994; Mulnix et al., 2002; Taylor & Cantwell, 2019). Ultimately, these blocks represent institutional characteristics that, on average, may be associated with applying for and receiving Title V funding (see Figure 2). Consequently, they are suggestive of HSIs' competitiveness for this funding. Below, we provide a rationale for the characteristics within each block.

Figure 2

Conceptual Model for the Competitiveness among HSIs in Title V Grant Pursuit and Receipt



Mirroring Núñez et al.'s (2016) approach, in Block 1, we accounted for HSIs' *systemic diversity*, including measures for institutional type, control, and size. When considering grant seeking and acquisition, research points to the importance of an institution's size (i.e., student enrollment), suggesting that it may create economies of scale (Koshal & Koshal, 1999), which, in turn, may affect both the resources institutions have to develop strong proposals and the potential exposure or benefit of such grants on students. In this block, we also accounted for one constitutional characteristic, including a measure for institutional selectivity, because this is a key structural marker of postsecondary institutions, which likewise is generally indicative of a campus's level of resources. We also included a measure of institutional selectivity considering research pointing to the importance of an institution's prestige/reputation on grant obtainment (Kelly & James, 2015; McCambly & Colyvas, 2022; McGarity, 1994).

Again, attempting to differentiate non-applicants, applicants, and recipients, Block 2 reflects the main legal criteria for HSI designation and, thus, eligibility to compete for this funding. In line with the legislation, this block includes measures for constitutional and resource diversity characteristics, specifically institutions' share of Latinx undergraduate and Pell Grant recipients and their expenses per FTE student. Additionally, although an imperfect measure of "Hispanic

servingness" or effectiveness, we also considered an additional constitutional characteristic—institutions' Latinx graduation rates. Block 2 is core to this analysis since it captures the key criteria used to legally designate an institution as an HSI. Ultimately, understanding the degree to which the official criteria for this designation predict the pursuit and receipt of Title V grants is highly relevant.

Block 3 is an extension of Blocks 1 and 2, combining a key variable from both to form an interaction variable. Specifically, it includes the interaction between the institution's fall full-time enrollment and Latinx enrollment share. This variable can be considered a measure of "Latinx Impact," or the relative number of Latinx students potentially served by the institution.

Finally, after reflecting on Núñez et al.'s (2016) argument about HSIs' resource diversity; HSI scholarship relevant to institutional resources, advancement activities, and grant seeking (e.g., Mulnix et al., 2002; Ortega et al., 2015; Perdomo, 2019); and research related to grant seeking and acquisition, we constructed a fourth and final block. This block includes measures that identify differences in HSIs' resources relevant to their competitiveness in grant acquisition. For instance, mindful of literature underscoring the positive relationship between incumbency and future success (Fligstein & McAdams, 2011; Taylor & Cantwell, 2019), we included a measure for institutions' share of total revenue from grants, reasoning that this variable would be indicative of the extent of an institution's incumbency within the grant landscape. Additionally, given the well-documented importance of human capital to organizations and specifically to an institution's fundraising and grant-seeking efforts (Dowd & Grant, 2007; Keener et al., 2002; Mulnix et al., 2002), we accounted for staff size. Finally, existing empirical research provides reason to suspect that HSIs' environmental diversity may be a salient resource in seeking and securing Title V grants (e.g., Aguilar-Smith, 2021b; Vargas, 2018). Basically, institutions' geographic location is strongly correlated with their tenure as an HSI, and this matters because the longer a college or university has been an HSI, the more institutional knowledge and experience it likely has about Title V and, thus, the better its odds of pursuing and securing this funding. Ultimately, the specific measures included in Block 4 (broad resource competitiveness) were: (a) share of total revenue from grants, (b) revenue per FTE student, (c) staff per FTE student, and (d) region.[5]

Table 1 presents the variables organized based on our adaptation of Núñez et al.'s (2016) framework. This approach of specifying and rationalizing each variable in our model is less susceptible to "fishing for results" since it limits hypothesis testing to those variables chosen before running the analysis versus keeping only variables that show significant findings and rationalizing those findings post-hoc. Furthermore, by specifying our hypotheses clearly in our methods section before fitting our models, we further limit the possibility of adapting our explanations to our findings rather than testing hypotheses using our given dataset.

Table 1

Variable Description and Sources

Variable	Description	Source
Outcome Variables		
Applicant Recipient	Indicator variables with a value of "1" if the institution was an applicant or a recipient and a "0" if otherwise.	ED

[5] Initially, we included a dummy variable (multi-campus), which indicated if an institution had two or more campuses, reasoning that more infrastructurally complex HSIs may have an advantage in grant seeking, but we dropped this variable as it did not contribute to model fit or the interpretation of our findings.

Variable	Description	Source
Predictor/Control Variables		
Block 1: Structural Competitiveness/Diversity		
FTE Fall Enrollment	A continuous variable of an institution's part- and full-time enrollment, which factors in its control, level, and students.	IPEDS
Selectivity[a]	Indicator variables that take on the value of "1" if the institution was more selective, selective, or non-selective and a "0" if otherwise.	IPEDS
Level of Control	An indicator variable that takes on the value of "1" if the institution was a private nonprofit and a "0" if a public nonprofit.	IPEDS
Institution Type	An indicator variable that takes on the value of "1" if the institution was a 4-year institution and a "0" if a 2-year college.	IPEDS
Block 2: "Hispanic-Serving" Competitiveness/Diversity		
% Latinx Undergraduates	A continuous variable of the percent of Latinx undergraduates enrolled in the fall based on the institution's graduate enrollment.	IPEDS
Expenses per FTE student	A continuous variable, which aggregates the institution's FTE student in student services, instruction, public service, research, academic support, institutional support, and all other core expenses.	IPEDS
% Pell Recipient	A continuous variable of the percent of full-time, first-time degree or certificate-seeking undergraduates awarded Pell Grants at the institution.	IPEDS
Latinx Graduation Rate[b]	A continuous variable of the graduation rate of first-time, full-time degree or certificate-seeking Latinx students within 150% of expected time to degree.	IPEDS
Block 3: Interaction "Latinx Impact"		
% Latinx x Enroll	A continuous variable of combined impact of fall enrollment and Latinx enrollment share. This variable represents the number of Latinx students contacted by the institution.	
Block 4: Broad Resource Competitiveness/Diversity		
Staff per FTE student	A continuous variable of the number of staff members per FTE student.	IPEDS
Rev. per FTE student	A continuous variable, which aggregates the revenue per FTE student from federal, state, and local governments, tuition and fees, gifts, etc.	IPEDS
% of Rev. from Grants	A continuous variable of the share of total revenue derived from grants.	IPEDS
Region[c]	Indicator variables that take on the variables with a value of "1" if the institution was located in the West, South, Midwest, Northeast, or Puerto Rico and a "0" if otherwise.	IPEDS

Note: Continuous variables averaged across the data for institutions in 2010, 2014, and 2017. [a] Following IPEDS definitions, we classified 4-year institutions with acceptance rates 80% or higher as more selective and those with rates between 56–79% as selective. All other institutions coded as non-selective. [b] Expected completion is 6-years for 4-year institutions and 3-years for 2-year institutions. [c] Using state data, we determined institutions' region using the Census's regional classification schema.

Analytic Strategy

To answer our first research question, we conducted a descriptive analysis—a useful strategy when identifying new patterns (Loeb et al., 2017). These descriptive analyses may offer insight into if characteristically different institutions fall within these respective pools (i.e., non-applicants, applicants, and recipients) and how different these pools might be. Specifically, we generated various descriptive statistics on our key predictor variables, disaggregating them into four non-exclusive categories: eligible HSIs, non-applicants, applicants, and recipients. Using these tabulations, we created institutional profiles for these groups.

Since descriptive analyses are seldom enough to explain phenomena, we also used logistic regression to examine if the selected institutional characteristics help explain two key outcomes—if an institution *applied for* or *received* at least one DHSI grant anytime between 2009–2017. This modeling approach is indicated since both of our outcomes (whether an HSI was an applicant and/or recipient) are dichotomous (Menard, 2001). The first model (Model A) identifies institutional characteristics predictive of an HSI's participation in the application process. In contrast, Model B suggests whether the selected institutional characteristics seem to predict grant receipt. Additionally, we examined the association between each block and these two outcomes. We focused primarily on the impact of each block of variables on model fit and cautiously interpreted the estimates of specific variables, which may have importance for subsequent analyses. By approaching our analysis in this way, we mitigate the impact of potential correlations among the variables in any one block and provide evidence of the impact of the block as a whole, connecting along the way the framing of those blocks as different dimensions of competitiveness as adapted from Núñez et al.'s (2016) framework. Additionally, we mean-centered all variables for ease of interpretation.

Addressing our second research question, the following equations show how our predictor variables relate to the odds of an institution *applying* for a DHSI grant. In this equation, we capitalized the block names of the predictor variables listed in Table 1, and Greek letters represent the population parameter estimates for each corresponding variable. Accordingly, $\boldsymbol{\beta_i}$, $\boldsymbol{\gamma_j}$, $\boldsymbol{\theta_k}$, and $\boldsymbol{\pi_l}$ represent vectors of coefficients on the key variables within each variable block. Thus, β_1 represents the relationship between the first variable in the structural competitiveness/diversity block (total fall enrollment; see Table 1) and the outcome—whether an institution applied for a Title V grant during the designated period. Likewise, γ_1 represents the relationship between the first variable in the "Hispanic serving" block (percent Latinx enrollment) and the outcome, and so on for the remaining vectors in our model.

$$\text{prob}[\text{APPLIED} = 1] = 1/(1+\exp[-(\beta_0 + \boldsymbol{\beta_i}\,\text{STRUCTURAL} + \boldsymbol{\gamma_j}\,\text{HISP\_SERVING} + \boldsymbol{\theta_k}\,\text{LAT\_IMPACT} + \boldsymbol{\pi_l}\,\text{RESOURCE}])$$

Each of these relationships allows us to determine which institutional characteristics are important for predicting an institution's participation in the Title V grant competition.

To address our third research question, we employed a model with identical predictors as Model A but with a different outcome variable. Specifically, this model estimates how our predictor variables relate to an applicant's odds of grant receipt:

$$\text{prob}[\text{RECEIVED} = 1] = 1/(1+\exp[-(\beta_0 + \boldsymbol{\beta_i}\,\text{STRUCTURAL} + \boldsymbol{\gamma_j}\,\text{HISP\_SERVING} + \boldsymbol{\theta_k}\,\text{LAT\_IMPACT} + \boldsymbol{\pi_l}\,\text{RESOURCE}])$$

Across both models, the predictor variables enable us to test interactions between variables. Specifically, θ_1 represents the interaction between percent Latinx undergraduate enrollment and total

FTE enrollment, meaning θ_1 represents the effect of percent Latinx undergraduate enrollment depending on institutions' total enrollment. If this interaction effect is significant and positive, it suggests that larger HSIs enrolling higher shares of Latinx students have better odds of applying for and/or receiving Title V grants—in Model A and B, respectively. Such an interaction effect aligns with the idea that the more Latinx students potentially served by a Title V grant, the more likely an HSI pursues and receives one.

Robustness Checks

We designed several robustness checks for our models. First, we tested whether missing and imputed data changed our estimates of our key variables in several ways. For instance, we used average values for institutional characteristics. Where there was no data, we imputed values based on data from previous years for each institution or using multiple imputation. We then fit the models in several ways, first omitting institutions with missing data, then including imputed means, and finally including values obtained through multiple imputation. Across each iteration, the results remained consistent, with no changes in significance or direction of effect. Separately, we fit the models with and without Puerto Rican HSIs to ensure that their exceptionally high Latinx enrollment share (averaging 97%; *Excelencia*, 2022) did not skew our analyses concerning total enrollment and Latinx enrollment share. The exclusion of Puerto Rican HSIs did not significantly change the overall fit of our models. There were minor changes in the parameter estimates of a few variables, and the significance of the private institution variable increased in a few models. However, the overall story described by our analysis did not change, and our reported results are the more conservative model. In addition, we concluded that since these HSIs are equally eligible to apply for and receive these funds, our final models (and indeed all models of this type) should include institutions in Puerto Rico as long as they do not substantively alter the results of the analysis.

Limitations

As with all research, this study has its limitations. As other scholars have explained (e.g., Núñez et al., 2016), one difficulty in studying HSIs is their dependence on Latinx enrollment since an institution's HSI status can vary between years. Thus, we may have included institutions that may have been ineligible one year but eligible a subsequent year. We attempted to address this limitation by dropping institutions classified as for-profits or less than 2-year colleges, as well as those with less than 15% Latinx enrollment share at any point in our dataset. Second, we could not account for proposal quality, including the extent to which applicants responded to that year's competitive preference priorities, rendering it impossible to distinguish whether the relationship between institutional characteristics and grant receipt is direct or mediated by the quality of the proposal. Nor could we account for the incentives HSIs may offer faculty or other campus stakeholders to work on these grants. However, in using this approach, we posit that some institutional characteristics likely relate to the competitiveness of a proposal an applicant produces. Third, without historical data, we could not determine when each institution first gained its HSI designation. When an institution earned this status affects the number of times it could have applied for these grants and may relate to its knowledge of this application process. Lastly, we did not account for PPOHA grants during this period, which may have disqualified some institutions from applying for DHSI grants at some point during this window. However, since (a) PPOHA grants are only open to HSIs with graduate programs and (b) the ED only invited new proposals for this funding twice during this timeframe, we do not expect that this notably affected our results.

Results

Descriptive Profile

The ED received a total of 1,108 Title V grant applications from 339 unique institutions and awarded 335 grants to 214 unique institutions from 2009 to 2017. Regarding RQ1, these results indicate that most HSIs (70%) applied for Title V funds at least once during this period, suggesting that most HSIs are aware of and actively participate in this grant competition. Furthermore, the average acceptance rate was 30%, meaning most applications went unfunded. Despite this high average rejection rate, most HSIs applied multiple times. In fact, only about a fifth of all applicants (21%, $n = 71$) submitted only one proposal, whereas 23% applied twice, 38% 3–4 times, and 18% more than five times. Impressively, one institution submitted 17 proposals, and another submitted 27 during this 8-year period.

When comparing these groups, there appear to be few notable differences in the mean values of applicants and recipients on our key variables (see Table 2). However, substantial average differences emerge when comparing non-applicants to applicants and recipients. The largest among these differences is FTE enrollment. When compared with applicants and recipients, non-applicants have, on average, less than half the enrollment. Also, non-applicants appear to include more private colleges than applicants and recipients. The final area of notable difference between these groups appears within institutions' broad resource competitiveness characteristics. For instance, non-applicants appear to have more staff and revenue per FTE student but less revenue from grants. In sum, these descriptive statistics do not clearly distinguish applicants from recipients, but they suggest that non-applicants may be somewhat unlike applicants and recipients. The degree to which the identified characteristics predict HSIs' pursuit and receipt of Title V funds is the subject of our analytic models.

Table 2

Descriptive Statistics of DHSI Non-Applicants, Applicants, and Recipients, 2009–2017

	Eligible HSIs	Non-Applicants	Applicants	Recipients
FTE Undergrad. Enroll.	6,707	3,627	7,789	7,810
% Latinx Undergrad.	49	42	52	54
% 4-Year	54	58	52	49
% 2-Year	46	42	48	51
% Public	72	54	77	80
% Private	28	46	23	20
% More Selective	4	3	4	3
% Selective	12	9	12	11
% Non-Selective	84	88	83	86
% Region-West	48	46	49	51
% Region-Midwest	6	4	6	4
% Region-Northeast	11	11	11	10
% Region-South	23	24	22	23
% Region-Puerto Rico	12	15	12	12
$ Expenses per FTE student	9,609	10,014	9,466	9,448
% Pell Recipient	37	38	37	36
% Latinx Grad. Rate	32	36	31	30
Student FTE per staff	846	581	940	882

	Eligible HSIs	Non-Applicants	Applicants	Recipients
$ Rev. per FTE student	17,401	17,846	17,244	17,365
% Rev. from grants	25	25	25	26
N	458	119	339	214

Note. Categories are non-exclusive. Numbers represent the mean values of each variable across institutions within each category during this period. Statistics include HSIs in Puerto Rico.

Analytical Model Results

We estimated two key analytic models. Model A addresses the question of which characteristics may influence whether institutions participate in the Title V grant competition (i.e., RQ 2), and Model B suggests the degree to which these characteristics predict an institution's receipt of at least one grant during the designated period (i.e., RQ 3). The final research question (i.e., RQ4) identifies individual characteristics that may influence the pursuit and receipt of a Title V grant, and these are determined by examining individual parameter estimates in Models A and B.[6]

Model A: Predicting Grant Application

Overall, Model A, which responds to RQ2, appears to be a relatively robust model, predicting the probability of an HSI applying for a Title V grant during this period with a McFadden's pseudo R^2 value in our final model (Model 4A) of 0.34.[7] In Table 3, note that Blocks 1–3 in Model A (Models 1A–3A) improved the model fit significantly ($p < 0.001$), and Block 4 (broad resource competitiveness) marginally improved the fit ($p < 0.1$), using the likelihood ratio test to estimate the improvement of model fit across successive models (Long & Freeze, 2014). Also, the model fit improved most by adding the interaction between fall enrollment and percent Latinx enrollment (Block 3), again referring to differences in McFadden's pseudo R^2 values.[8] This suggests that the variables in each of the four blocks matter for model fit and contribute to predicting which institutions apply for a Title V grant, with the greatest improvement in model fit with the inclusion of Block 3: "Latinx Impact" and the most modest improvement in model fit with the addition of Block 4 (broad resource competitiveness). Overall, in terms of RQ2, this finding suggests that the four dimensions of competitiveness (i.e., the structural, "Hispanic Serving," "Latinx Impact," and broad resource competitiveness blocks) may contribute to institutions' pursuit of Title V grants.

We see a few patterns across models when examining the estimates of individual variables within each block. First, the most consistent findings are that fall enrollment matters, as does an institution's Latinx enrollment share, Latinx graduation rate, and location in Puerto Rico. All parameter estimates on these variables are significant across all the models, with the magnitude of the effects remaining relatively consistent.[9] Holding all other variables constant, institutions with larger fall enrollments and higher Latinx enrollment percentages are associated with *greater odds* of applying for a Title V grant. Specifically, in Model 2A—without the interaction—the odds of an institution applying are 12% higher for each additional 1,000 students and are 3% higher for each additional percentage point of Latinx enrollment.

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[6] We assessed parameter estimates for statistical significance using a Wald chi-square test. Only statistically significant parameters are considered.

[7] We use McFadden's pseudo R^2 measure largely out of familiarity for readers in describing improvement in model fit. Since our models are nested, increases in McFadden's pseudo R^2 measures can be appropriately interpreted as increases in model fit (Long & Freese, 2014).

[8] We tested the findings using seven other formulations of pseudo R^2, obtaining basically equivalent results.

[9] The estimates for fall enrollment and Latinx enrollment share jump in Model 4, but this is expected since Model 4A includes the interaction of these two variables.

Table 3

Model A: Characteristics Predicting Participation in the DHSI Grant Application Process, 2009–2017

Variable	Description	Model 1A	Model 2A	Model 3A	Model 4A
Block 1: Structural Competitiveness/Diversity					
Enroll	FTE Undergrad. Enrollment	1.10***	1.12***	2.33***	1.90***
		(0.03)	(0.03)	(0.22)	(0.21)
select_more	More Selective	1.06	2.80	4.14~	4.60~
		(0.67)	(2.03)	(3.30)	(3.69)
Select	Selective	0.88	1.85	1.92	1.68
		(0.36)	(0.83)	(0.98)	(0.88)
Private	Private	0.53*	0.721	0.76	0.65
		(0.17)	(0.26)	(0.30)	(0.28)
four_yr	Four-year	1.09	0.91	1.02	1.13
		(0.33)	(0.30)	(0.37)	(0.43)
Block 2: Hispanic Serving Competitiveness/Diversity					
pct_lat_enrol	% Latinx Enrolled		1.03***	1.20***	1.21***
			(0.01)	(0.03)	(0.03)
total_exp_fte	Expenses per FTE Student		1.012	1.02	1.01
			(0.02)	(0.02)	(0.02)
pct_pell_enrl	% Pell Recipients Enrolled		1.00	1.01	1.01
			(0.01)	(0.01)	(0.01)
lat_gradrt	Latinx Graduate Rate		0.97***	0.98***	0.98~
			(0.01)	(0.01)	(0.01)
Block 3: Latinx Impact					
i_pct_lat_enrl	Interaction %Latinx x Enroll			1.03***	1.03***
				(0.01)	(0.01)
Block 4: Broad Resource Competitiveness/Diversity					
staff_fte	Staff per FTE student				1.05
					(0.21)
pct_rev_grants	% Revenue from Grants				1.00
					(0.01)
region_pr	Region Puerto Rico				0.09***
					(0.08)
region_ne	Region Northeast				1.44
					(0.63)
region_south	Region South				0.78
					(0.27)
region_mid	Region Midwest				1.88
constant		3.93***	3.85***	74.4***	79.57***
		(0.69)	(0.78)	(46.16)	(50.67)
N		458	458	458	458
pseudo R^2		0.08	0.16	0.31	0.34
Log likelihood		-241.9	-221.0	-199.5	-173.2
LR Test (Difference with previous model)		40.9***	41.8***	83.9***	11.8~

Note. Standard errors in parentheses. Coefficients are reported as odds ratios. Total expenses and total revenue scaled per $1,000. Enrollment and the interaction variables scaled per 1,000 students. These estimates include institutions in Puerto Rico. ~ $p < 0.01$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

By contrast, higher Latinx graduation rates and an institution's location in Puerto Rico are associated with *lower odds* of applying for a Title V grant, with Latinx graduation rate having a significant ($p < 0.001$) or marginally significant ($p < 0.1$) effect across Models 1A–4A, and an institution's location in Puerto Rico having a significant effect ($p < 0.001$) in Model 4A. The magnitude of these two effects is very different. For Latinx graduation rate, an increase of one percentage point predicts 2%–3% lower odds of an institution applying for a Title V grant during this period. This effect is marginal but statistically significant. Furthermore, in line with Title V's aims and purpose, this finding may indicate that HSIs with lower Latinx graduation rates apply for Title V grants attempting to improve their Latinx students' educational outcomes. Meanwhile, for institutions in Puerto Rico, the odds of applying are about 90% lower than their mainland peers. The sheer magnitude of this effect may reflect the dire conditions of Puerto Rico's higher education system as it grapples with the deleterious effects of recurrent natural disasters and funding cuts (Arroyo et al., 2022; Brusi & Godreau, 2021; Labandera et al., 2021; Nelson et al., 2020).

Finally, in Models 3A and 4A, the interaction between fall enrollment and percent Latinx is significant ($p < 0.01$) and positively associated with applying for a Title V grant. Furthermore, the main effects for both individual variables increased compared to previous models. These changes indicate that the odds of applying for Title V grants are much stronger for larger institutions with larger Latinx enrollment shares. That is, the more Latinx students enrolled at an HSI, the greater its odds of applying for Title V funding. Notably, this outcome likewise strongly aligns with Title V's purpose—to improve HSIs' institutional capacity and Latinx student outcomes (HEAO, 2008).

The picture is mixed for other statistically significant variables in the analysis, with more selective institutions ($p < 0.1$) and private institutions ($p < 0.05$) emerging as statistically significant predictors in various models. However, in our final and best-fitting model (Model 4A), only more selective institutions show up as marginally statistically significant ($p < 0.10$), with a very large coefficient of 4.6, suggesting that more selective institutions have 4.6 times greater odds of applying for a Title V grant than their non-selective counterparts. It is important to note that the large standard error on that term, as well as the marginal significance and relatively small share of more selective institutions in our dataset (3%–4% in Table 2), suggest that a small number of institutions drives this very large effect. Nevertheless, this result is notable as it speaks to the widely held perception that more selective or "high-status" institutions could come to dominate HSI-related funding opportunities (Aguilar-Smith, 2021b; Cortez, 2015).

Overall, as proposed by our adapted model, these results strongly suggest that the characteristics associated with HSI status ("Hispanic Serving" Competitiveness/Diversity) matter the most to institutions' pursuit of Title V grants. Indeed, that these characteristics seem to influence institutions' pursuit of these grants is a desirable outcome since this policy seeks to bolster educational opportunities for Latinx students. The results also suggest that structural competitiveness matters to institutions' pursuit of this funding, with more selective HSIs being far more likely to pursue these grants.

Model B: Predicting Grant Receipt

At first glance, our model predicting grant receipt (which again responds to RQ3) appears to provide much less information than Model A (see Table 4). For example, there are fewer statistically significant predictors; the overall model fit is more modest, and the magnitude of the coefficients is much closer to 1 (which represents no effect). However, the results still provide a window into the degree to which the selected variables predict success in this competition among Title V applicants. Specifically, note that the likelihood ratio tests in Table 4 show that the only blocks that significantly add to model fit are the addition of the "Hispanic Serving" Competitiveness/Diversity block (Model

2B) and the interaction between fall enrollment and percent Latinx ("Latinx Impact," Model 3B). Accordingly, unlike the previous model, where all the blocks appear to help predict an institution's participation in this competition, only the block related to how "Hispanic Serving" the institution is appears to matter for grant receipt. In addition, across the iterations of Model B, the magnitudes of the associations are much lower compared to Model A. For example, the odds of receiving a grant (conditional on applying) in Model 4B are only 6% higher for every 1,000 students enrolled (and marginally significant, $p < 0.10$; see Table 4) compared to about a 90% difference in odds per 1,000 students for participation in this competition demonstrated in Model 4A (see Table 3). Also, for each additional percentage point of Latinx enrollment, the odds of receiving a Title V grant are about 3% higher, again compared to a 21% difference in odds of participating in the program. Finally, the interaction between fall enrollment and Latinx enrollment percent is significant, but only one-tenth the effect shown in Model A. Cumulatively, these results suggest that the selected competitiveness variables help explain an institution's participation in this competition but say less about institutions' receipt of this federal funding.

Also of note is the inverse effect of selectivity in our final model, with the odds of a more selective institution receiving a Title V grant compared to a less selective institution being 70% lower (and marginally significant, $p < 0.10$). In short, less selective HSIs are much more likely to receive Title V grants than their more selective peers. Importantly, this result strongly contrasts our estimates in Model 4A, which estimated that more selective institutions had 4.6 times greater odds of applying for Title V grants than their non-selective peers. Separately, institutions in Puerto Rico are only at a slight (7%) and non-significant disadvantage in acquiring Title V grants, despite their 90% lower odds of applying relative to their mainland peers. In fact, the only region where there appears to be differences in grant receipt is the Midwest, with the odds of an HSI in the Midwest receiving a Title V grant being about 62% lower than HSIs in the western region of the continental United States—where most HSIs are concentrated (*Excelencia*, 2022).

Overall, our models suggest that while specific characteristics of grant-seeking competitiveness affect an institution's odds of pursuing Title V funds, these variables are less effective at predicting grant receipt. As such, our results imply that proposal reviewers (or some other factor) may mitigate the impact of these characteristics in the review/selection process. While the complete picture remains unclear, a few institutional characteristics help tell the story of which kinds of institutions are more likely to pursue and, ultimately, secure these grants.

Table 4

Model B: Characteristics Predicting DHSI Grant Recipients, 2009–2017

Variable	Description	Model 1B	Model 2B	Model 3B	Model 4B
Block 1: Structural Competitiveness/Diversity					
Enroll	FTE Undergrad. Enrollment	1.00	1.01	1.06	1.06~
		(0.02)	(0.02)	(0.03)	(0.04)
select_more	More Selective	0.36~	0.29~	0.29~	0.29~
		(0.20)	(0.19)	(0.20)	(0.20)
Select	Selective	0.65	0.64	0.66	0.73
		(0.24)	(0.28)	(0.30)	(0.34)
Private	Private	0.66	0.77	0.74	0.94
		(0.228)	(0.31)	(0.30)	(0.44)
four_yr	Four-year	1.019	0.827	0.84	0.797
		(0.309)	(0.276)	(0.29)	(0.284)

Variable	Description	Model 1B	Model 2B	Model 3B	Model 4B
Block 2: "Hispanic Serving" Competitiveness/Diversity					
pct_lat_enrol	% Latinx Enrolled		1.03***	1.03***	1.03***
			(0.01)	(0.01)	(0.01)
total_exp_fte	Expenses per FTE Student		1.02	1.02	1.02
			(0.02)	(0.02)	(0.02)
pct_pell_enrl	% Pell Recipients Enrolled		0.97*	0.98	0.98
			(0.01)	(0.01)	(0.01)
lat_gradrt	Latinx Graduate Rate		1.00	1.01	1.01
			(0.01)	(0.01)	(0.01)
Block 3: Interaction "Latinx Impact"					
i_pct_lat_enrl	Interaction %Latinx x Enroll			1.004***	1.004***
				(0.0001)	(0.0001)
Block 4: Broad Resource Competitiveness/Diversity					
staff_fte	Staff per FTE Student				0.91
					(0.22)
pct_rev_grants	% Revenue from Grants				1.01
					(0.01)
region_pr	Region Puerto Rico				0.93
					(0.68)
region_ne	Region Northeast				1.12
					(0.47)
region_south	Region South				1.11
					(0.37)
region_mid	Region Midwest				0.38*
					(0.20)
constant		2.08***	2.32***	2.80***	2.79***
		(0.35)	(0.48)	(0.62)	(0.70)
N		339	339	339	339
pseudo R^2		0.02	0.05	0.07	0.10
Log likelihood		-219.2	-211.11	-204.5	-201.6
LR Test (Difference with previous model)		7.8	16.3*	13.1***	5.9

Note. Standard errors in parentheses. Estimates are reported in odds ratios. Total expenses and total revenue scaled per $1,000. Enrollment and the interaction variables scaled per 1,000 students. These estimates include institutions in Puerto Rico.
~ $p < 0.01$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Discussion and Implications

Altogether, our analyses shed light on the pursuit and receipt of Title V grants. Our first research question offers a preliminary description of institutions that pursue and secure this federal funding. With our other questions, we begin to tell the story about which institutional characteristics may help explain Title V pursuit and receipt and the degree to which these characteristics may lead to a possible inequitable distribution of this funding. Specifically, Model A examines HSIs' self-selection in or out of this competition, and Model B examines whether specific institutional characteristics may contribute to an applicant's success. The results of Model A suggest real differences exist in applicants' institutional characteristics, which warrant initiatives to improve the

recruitment and support of potential Title V applicants, with a special focus on institutions in Puerto Rico. In contrast, the results of Model B suggest only a few slight differences exist between applicants and recipients. To follow, we discuss three key points regarding Title V pursuit and receipt based on our analyses and weave implications for policy and future research.

Latinx Impact: The Role of Size and Latinx Enrollment

Our results expand on and, in some ways, contradict existing research on the allocation of Title V funds. Specifically, Vargas (2018) found that institutions' Latinx enrollment had no discernable effect on Title V grant receipt. More troubling, his results suggested that the ED seems to award Whiter HSIs a greater share of this money. However, we promisingly found that larger HSIs with larger Latinx enrollment shares had much higher odds of pursuing and somewhat higher odds of receiving Title V grants compared to other eligible applicants.

At least two possible interpretations of this finding are clear. On the one hand, this finding may imply that reviewers favor applications from large institutions with large Latinx student enrollment. On the other hand, possibly *no* preferential treatment occurs in the review/selection process based on Latinx enrollment; rather, large institutions enrolling more Latinx students may systematically submit stronger proposals. If the former is true, reviewers may recommend funding to such institutions, reasoning that this form of allocation maximizes the benefits of these grants and best realizes the purposes of this program. Moreover, given the chronic underinvestment in HSIs (HACU, 2021; Ortega et al., 2015), privileging such institutions may align with public policy's efficiency and effectiveness values and policy actors' penchant for utilitarianism. However, if the latter is true, reviewers simply recommend funding the strongest applications, irrespective of institutions' Latinx enrollment numbers.

In considering these possibilities, it bears noting that there is some reason to suspect that large institutions with large Latinx enrollments may be advantageously positioned in this specific grant competition. Such institutions likely became HSIs in the late 1990s or early 2000s, and as we theorized and research supports (e.g., Aguilar-Smith, 2021b, 2022; Vargas, 2018), institutions with longer legacies as an HSI are likely more competitive for this funding than newly minted peers because of their comparably deeper institutional knowledge and experience with this program. Indeed, serial recipients of Title V funding often attribute their exceptional success in this competition to their campus's unmatched knowledge of the program, particularly the application process (Aguilar-Smith, 2021b; 2022). Regardless of the underlying process, our results suggest that the more an HSI serves Latinx students, at least insofar as providing them access to higher education, the better positioned and more successful the institution is in this competition.

Despite this promising finding, the results still reveal opportunities to improve the equitable allocation of Title V funds. Note, for example, the whopping 25% of institutions in our dataset that had not applied for a Title V grant in almost a decade—although presumably eligible. This specific finding highlights how inequities embedded within the U.S. higher education system, including enduring inequalities in public support across institutional types, may constrain some HSIs, particularly those in Puerto Rico, from pursuing and, thus, potentially receiving a Title V grant. Furthermore, it presents implications for policy and future research.

Implications for Policy and Future Research

Regarding policy, if all HSIs competed for this funding—as is often assumed—the solution is rather simple: at a minimum, increase the level of federal support for this program proportional to HSIs' annual growth rate. However, as our results demonstrate, this is not the case. The relatively large share of non-applicants strongly suggests that the ED should re-envision its marketing and

promotional efforts, communication strategies, and the kinds of support it offers prospective Title V applicants to improve the equitable allocation of this federal funding. As a start, the ED ought to identify and reach out to non-applicants, especially institutions that have been eligible for this funding for several years, as well as ones with high Latinx enrollment, to see if they need additional resources or support to develop the necessary materials for this grant. Furthermore, as discussed extensively in the next section, HSIs in Puerto Rico represent a sizeable of non-applicants; this stresses the need for the ED to do targeted outreach to these institutions. Finally, like Aguilar-Smith's (2021b) recommendations, we encourage the ED to offer (a)synchronous grant writing workshops, share exemplar proposals, and recruit reviewers across the HSI population, but especially among non-applicants.

Our finding regarding the role of "Latinx Impact" on Title V pursuit and receipt also underlines the need for additional research. Among research directions, policy actors and scholars could examine if Title V grants are more consequential at smaller HSIs with large Latinx enrollment shares since the per-student value of the grant would be higher and thus potentially especially impactful. Specifically, by employing a program evaluation approach, researchers could examine target outcomes among awardees and compare the overall relative benefit of these grants by, for example, awardees' total enrollment, Latinx enrollment share, and/or percent of Pell Grant recipients. Ultimately, considering the many ways the ED could distribute this money and HSIs' ongoing diversification, researchers should explore the consequences of different allocation preferences using various methods.

Underrealized Opportunity: The Limited Participation of Puerto Rican HSIs

Our descriptive statistics revealed that about a quarter of HSIs did not participate in the Title V grant competition from 2009 to 2017 (see Table 2), and our analytic models affirmed this picture. Additionally, we found that Puerto Rican HSIs have over 90% lower odds ($p < 0.001$, Model 4A) of pursuing these grants than institutions in the western region of the mainland United States, even though Puerto Rican applicants fared just as well as their western region peers in this competition (Model 4B). Importantly, this finding bucks the general assumption that *all* HSIs compete for this funding, highlighting how this program represents an underrealized opportunity among a substantial segment of the HSI population. Moreover, this finding illustrates how the HSI literature's focus on mainland HSIs, particularly institutions in the West and Southwest United States, proves problematic, leaving potential inequities among HSIs unacknowledged and unaddressed. For example, had we constrained our analysis to only mainland HSIs like most HSI studies (Marin & Aguilar-Smith, 2022), we would not have uncovered these institutions' comparably limited participation in this program. Although our quantitative approach leaves unclear *why* this may occur, our results suggest that some inequity may inform this process—a situation that demands further attention. Furthermore, the pervasive erasure of the 61 HSIs in Puerto Rico, including the approximate 110,000 students they serve (almost all of whom identify as Latinx; *Excelencia,* 2022), is an epistemic inequity and glaring oversight within the HSI scholarship and within research on U.S. higher education, more broadly—a point others have noted as well (e.g., Marin & Aguilar-Smith, 2022; Núñez et al., 2016; Sansone & Hernandez, 2022).

Separately, since our results indicate that regional differences had no discernable effect on mainland HSIs' pursuit of this funding during the period, the limited involvement of Puerto Rican HSIs in this competition raises concern. This pronounced pattern could reflect a resource disparity—or inequity—between mainland and Puerto Rican HSIs, which disempowers colleges and universities in Puerto Rico from pursuing this funding and, thus, reaping the potential benefits of this opportunity. Indeed, research surfaces potential barriers to grant seeking and getting for

institutions in Puerto Rico, including the lack of a centralized educational database, the higher age of majority (21 versus 18), and these institutions' austere financial realities (Arroyo et al., 2022). Regarding the last point, reports document the sharp divestment in these institutions, resulting in deferred infrastructural maintenance; faculty and staff layoffs; and, overall, severely constrained institutional capacities (Arroyo et al., 2022; Brusi & Godreau, 2021; Nelson et al., 2020)—conditions that likely dampen their competitiveness for grants like Title V. This finding may also signal other problems, such as these institutions' inequitable access to specialized grant writers and/or information about Title V, including knowledge about cooperative arrangement development grants and the general benefits of such collaboration. In fact, such insight may be lacking, with a recent report indicating that institutions in Puerto Rico seem less inclined to engage in collaborative grant efforts (Arroyo et al., 2022).

Implications for Policy and Future Research

Whatever the reason, the underrepresentation of Puerto Rican applicants for Title V grants underlines the need for policy actors, namely ED officials, and organizations like HACU, *Excelencia* in Education, and The Education Trust to convene with these untapped beneficiaries to learn *why* they self-select out of this opportunity—a federal program, which research suggests is poised to benefit HSIs in varied ways (Flores & Leal, 2020; Flores & Park, 2015; Garcia, 2016; Perdomo, 2019). Moreover, since this subsect of HSIs almost exclusively serves Latinx students (*Excelencia*, 2022), they represent prime places where Title V dollars may be *intentionally* used to support Latinx students—a level of intentionality that recent research has found wanting among some mainland HSIs. Specifically, in her qualitative study of 12 HSIs across five regions of the mainland United States, Aguilar-Smith (2021a) showed that these institutions often pursued this racialized federal funding toward broad-based, race-evasive ends. In short, regarding policy, a necessary first step is targeted outreach to HSIs in Puerto Rico.

Such outreach is essential, particularly when considering how the funding structure for higher education in Puerto Rico has concerningly shifted in recent years (Sansone & Hernandez, 2022). Specifically, as underscored by a slew of student protests, the Financial Oversight and Management Board (or "La Junta") cut spending on higher education on the island following the passage of the Puerto Rico Oversight, Management, and Economic Stability Act (PROMESA). This divestment blunted these HSIs' institutional capacities (Arroyo et al., 2022; Brusi, 2021a, 2021b; Jackson, 2017). Importantly, these institutions' capacities were further thwarted in the aftermath of Hurricanes Irma and María given the limited federal aid for recovery efforts as well as more recently by the COVID-19 pandemic and Puerto Rico's ongoing debt crisis (Brusi & Godreau. 2021; Nelson et al., 2020; Sansone & Hernandez, 2022). Amid this thorny context, more concentrated attention on how to best support these institutions, especially from the ED, is paramount. Among efforts, it merits seeing if/how this public program does or can help HSIs in Puerto Rico build their capacity.

In terms of future research, the finding again stresses the need to study non-applicant institutions, especially those in Puerto Rico. Specifically, building off existing empirical research on non-applicants (i.e., Aguilar-Smith, 2021b, 2022), scholars should survey or interview institutional actors at non-applicant campuses to understand their overall approach to and readiness for grant seeking. Additionally, scholars should conduct in-depth qualitative case studies of institutions in Puerto Rico, including Title V non-applicants and applicants, to better understand their (non)involvement in this program. Ultimately, this research could help inform educational programming about Title V and other HSI-related grants, which addresses, for example, these grants' application processes and potential benefits.

Inclusiveness Incentive: The Role of Selectivity

The results of Model A versus Model B make clear that: while the odds of more selective HSIs applying for Title V grants are much larger than their more admission-inclusive peers, their odds of securing this funding are much poorer. In other words, the current process seems to allocate success to—or reward—HSIs with open/broad access admissions, suggesting that there may be an *inclusiveness incentive* at play, such that applicants with more inclusive admissions policies fare better in this competition. Inversely, as applicants become more exclusive or selective, the lower their odds of receiving Title V dollars.

This finding—promisingly—contradicts the general understanding that exclusive or "prestigious" institutions "win;" they attract and secure the "best" students and faculty and the most external dollars (Taylor & Cantwell, 2019). Specifically, by valuing and materially rewarding (via these grants) HSIs committed to providing access to higher education, particularly to marginalized populations, our results encouragingly suggest that the Title V Program may upend dominant ways of being in higher education. Furthermore, despite existing research calling into question the extent to which HSIs—as a whole— leverage Title V funds to intentionally serve Latinx students (Aguilar-Smith, 2021a), this finding provides preliminary evidence that the ED appears to allocate this money in line with the program's codified purpose.

Additionally, this finding about the potential inclusiveness incentive may mollify concerns about this competition due to HSIs' ongoing diversification, specifically the growing number of Hispanic-serving research universities. For instance, Cortez (2015) found that administrators at less selective and less well-resourced HSIs worried that recently designated and relatively better-resourced HSIs may funnel funds away from HSIs ostensibly serving the most Latinx students. More recently, Aguilar-Smith (2021b) similarly heard from institutional actors at both 2-year and 4-year HSIs across the United States that they were concerned about their campus's competitiveness for Title V funding, as large, wealthier (and presumably more selective) universities become eligible for this funding.

Implications for Policy and Future Research

Although this inclusiveness incentive may offer admissions-inclusive HSIs a slight edge in the competition for Title V funds, this *does not* suggest that they hold an advantageous position in the broader grant landscape or field of higher education. The deeply stratified and hierarchical architecture of U.S. higher education still makes it unlikely that open/broad-access HSIs are generally well-positioned to compete for valuable resources, including external grants from, for example, the National Science Foundation or the National Institute of Health. Furthermore, it is unclear whether this inclusiveness incentive will endure. Again, our data only included a few HSIs with highly selective admissions, but trends indicate that more of these kinds of institutions will become HSIs (Martinez & Garcia, 2020). Since highly selective institutions generally have robust infrastructures, including well-staffed grants offices (Thelin, 2019), we caution against assuming that this incentive will persist or exists in any arena beyond specialized programs like Title V. Ultimately, regarding policy and future research, we urge HSI scholars, the ED, and HSI advocates like HACU and *Excelencia* in Education, to vigilantly monitor the distribution of this funding to ensure the equitable allocation of this federal resource.

Conclusion and Future Directions

Considering the growing number of HSIs and Title V's flat funding levels, we identified institutional characteristics of non-applicants, applicants, and recipients and analyzed whether

particular institutional characteristics helped predict an institution's pursuit and/or receipt of Title V funding. Mindful of HSIs' increasing diversity, we also discussed implications for equity. In sum, among findings, we found the distribution of these grants is more equitable across institutional characteristics than suggested in earlier studies (e.g., Vargas, 2018), with large HSIs with large Latinx student bodies holding a slightly advantageous position in this competition. Despite this promising finding, we noted opportunities to advance the equitable allocation of this funding, particularly considering the under-realization of this opportunity among HSIs in Puerto Rico. Separately, potentially mitigating some of the inequity inherent in a competition among institutions with vastly different—and unequal—organizational conditions, our analysis revealed a welcomed change: this program appears to favor admission-inclusive HSIs in the review/selection process.

As with most work, this study also invites future research. Several generative areas include examining (a) the characteristics of repeat recipients, (b) how broad resource competitiveness characteristics may affect HSIs' pursuit and receipt of Title V grants, (c) the effect of proposal quality on grant obtainment, and (d), HSIs' decision-making process regarding grant seeking. Concerning our first suggestion, we initially ran descriptive statistics for multi-recipients (institutions that received more than one Title V grant from 2009–2017), finding limited differences between multi-recipients and the other pools (i.e., non-applicants, applicants, and one-time recipients). However, given these grants' 5-year duration, we suspect that these limited differences are partly a function of our 8-year dataset. Thus, we recommend researchers develop a more extensive longitudinal dataset to analyze these applicants and better understand what may explain such perennial success in this competition.

Additionally, although our analyses did not yield statistically significant results for broad resource competitiveness variables, our results and other literature still signal the potential that such characteristics may inform this process. In particular, there is ample reason to suspect that incumbency empowers and, thus, advantages institutions within the grant landscape. As Taylor and Cantwell (2019) explain, "The rich and powerful usually win. Partly, this is because successful organizations possess the resources necessary to redeploy and prevail in the next competition" (p. 46). Simply put, winners tend to win, as these applicants tend to possess advanced grantsmanship skills and the financial means to invest in grant acquisition (Aguilar-Smith, 2021b, 2022). If true, then this program may contribute to already resourceful and powerful, albeit not necessarily selective, institutions gaining more advantage.

Incumbency can be operationalized in numerous ways. For example, while recognizing it was an incomplete measure, we used the share of total revenue institutions derived from grants., However, future researchers should create additional measures for incumbency to better examine its effect on grant obtainment. Of course, incumbency represents only one measure of an institution's grant-seeking competitiveness. Other variables integral to this construct include whether an institution has an established grants office, the number of staff members in grant development and administration, and whether the institution hires specialized grant writing consultants (Aguilar-Smith, 2022). Towards refining this construct, data systems such as IPEDS should expand their current data collection parameters. In an era of ever-declining spending on higher education, institutions will increasingly need to diversify their revenue streams and seek grants, meaning it is prime time for these data systems to include such measures.

In the end, given HSIs' growing numbers and the current economic context, the competition for Title V funds may grow more intense each year. In response, our analysis makes visible which institutions pursue and receive Title V funding while foregrounding potential inequities of this federal program—ones likely to worsen if left unchecked given HSIs' ongoing diversification.

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