

Post-9/11 GI Bill Benefits

How Do Veterans' Outcomes Differ Based on the Type of Education They Received? And How Are Veterans Who Have Not Used Their Education Benefits Faring?

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Snapshot of Veterans' Outcomes by Type of Post-9/11 GI Bill Use

Veterans **Not Using PGIB**



PARTICIPATION

Just over half (51%) of veterans⁸⁷ who had been separated for at least a year had not yet personally used their PGIB benefits (i.e., were Nonparticipants).



Veterans from rural and micropolitan areas and those who left the military at the two lowest enlisted ranks and the three highest enlisted ranks were more likely to be Nonparticipants, whereas female, American Indian/Alaska Native, Black, and Hispanic veterans were less likely to be Nonparticipants (meaning they were more likely to use their PGIB).



EARNINGS

On average, veterans who had not yet personally used PGIB (i.e., were Nonparticipants) were earning \$44,800, but female Nonparticipants were earning more than \$12,600 less, American Indian/Alaska Native and Black Nonparticipants were earning more than \$5,000 less, and Nonparticipants in the three lowest ranks were earning between \$13,400 and \$17,600 less than the average Nonparticipant.

Veterans **Using PGIB for Nondegree Programs**



PARTICIPATION

About 5% of veterans (or 10% of PGIB Users⁸⁸) used PGIB at some point during their PGIB use to pursue a nondegree program at an education provider not eligible for Title IV federal student aid program funds (i.e., a non-IPEDS provider) and 6% of veterans (or 12% of PGIB Users) did so at a provider that was eligible for Title IV (i.e., an IPEDS provider).



Veterans who pursued nondegree programs were most likely to do so at a for-profit non-IPEDS provider; 4% of all veterans (or 8% of PGIB Users) did so.



EARNINGS

Across both non-IPEDS and IPEDS providers, veterans who enrolled at some point during their PGIB use in a nondegree program at a for-profit provider consistently had lower earnings than those who enrolled at a public provider, and for-profit providers cost the federal government significantly more per veteran than public providers (in tuition and fees charged to the U.S. Department of Veterans Affairs).

⁸⁷ For brevity, this report and snapshot uses “veterans” to refer to PGIB-Eligible Enlisted Veterans. See Exhibit 1 for full definition.

⁸⁸ For brevity, this report and snapshot uses the term “PGIB Users” to refer to PGIB-Eligible Enlisted Veterans who personally used PGIB benefits. See Exhibit 1 for full definitions.

Veterans Using PGIB for Degree Programs



PARTICIPATION

About 43% of veterans (or 87% of PGIB Users) used PGIB benefits at some point during their PGIB use for a degree program at an IPEDS provider, whereas 6% of veterans (or 11% of PGIB Users) did so at a non-IPEDS provider.



Compared to the average veteran, female, Black, and Hispanic veterans were more likely to have pursued a degree program at an IPEDS institution, whereas veterans who settled in rural and micropolitan areas were less likely to do so.

As for the types of providers where veterans pursued degree programs, enrollment was most common at two-year public IPEDS colleges (18% of veterans, or 37% of PGIB Users) followed by four-year public (14% of veterans, or 28% of PGIB Users), four-year for-profit (11% of veterans, or 22% of PGIB Users), and four-year nonprofit (9% of veterans, or 18% of PGIB Users) IPEDS colleges. American Indian/Alaska Native and Hispanic veterans were more likely than veterans in general to enroll at two-year public institutions. Female and Black veterans were more likely to enroll in four-year for-profit institutions, compared to the average for this sector.



EARNINGS

Veterans who pursued degrees at IPEDS institutions were earning more than those who did so at non-IPEDS providers, for every veteran group examined.



Across both non-IPEDS and IPEDS providers, **earnings at for-profit providers were lower than at public providers.** A regression analysis of just IPEDS providers found that this remained true at the two-year level, even after accounting for other veteran characteristics. Two-year for-profit colleges also cost the PGIB program more than twice as much as two-year public colleges, in terms of average payment per veteran.

Degree Completion

About 47% of veterans who attended institutions reporting to the National Student Clearinghouse completed a degree within six years, but completion gaps varied widely by sector (24 percentage points).

- Veterans who pursued a degree at four-year for-profit colleges had a completion rate 15 percentage points lower than those at four-year public colleges, even after controlling for other factors.

Instructional Spending

Only 1% of veterans pursued a degree program at an IPEDS institution in the highest quintile for instructional spending, where earnings and completion rates were highest.

- Overall, and across sex, race, rurality, and military rank, veterans' earnings were higher when their institution's instructional spending quintile was higher.

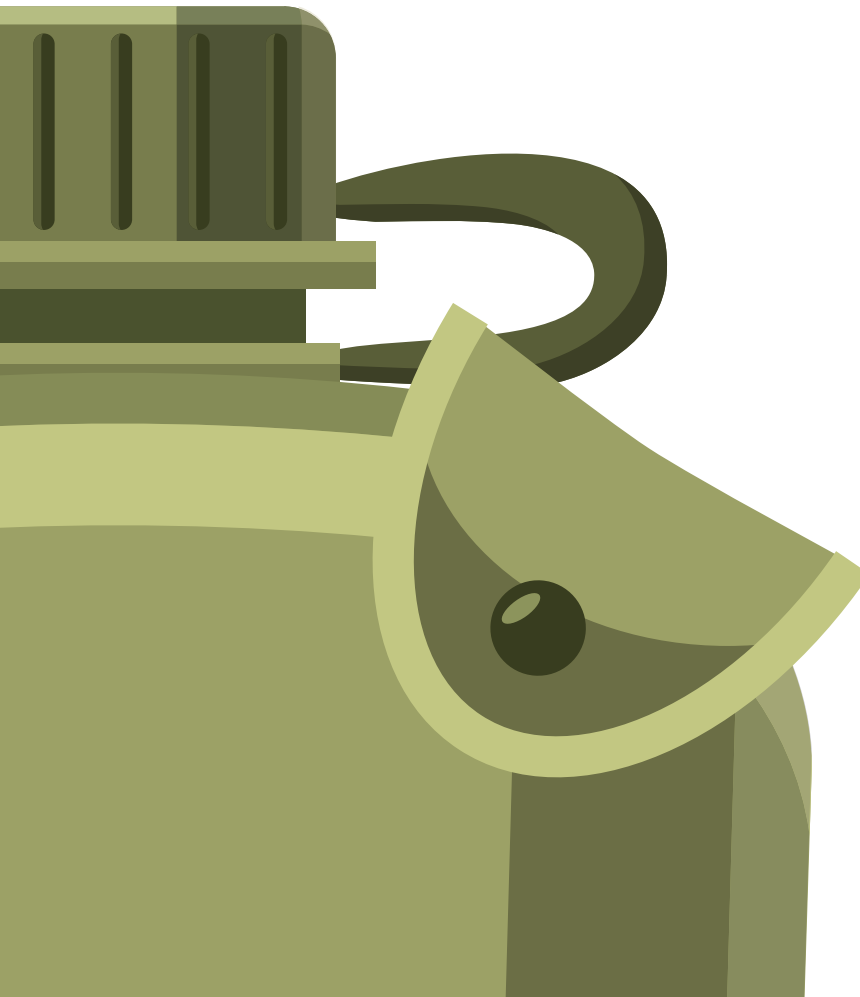
Distance Education

About 13% of veterans pursued a degree program at an IPEDS institution that was in the highest quintile in terms of distance education prevalence (measured as the proportion of degree-seeking undergraduate and graduate students enrolled exclusively in distance education).

- Female and Black veterans were more likely than veterans at large to be in this highest quintile.
- Gaps in earnings and completion by distance education quintile were smaller than the gaps observed by sector and instructional spending quintile.



Introduction



This report examines two questions important to policymakers: How do the outcomes of veterans who used the Post-9/11 Veterans Educational Assistance Act of 2008 (also known as the Post-9/11 GI Bill, or PGIB) vary by the type of education they obtained? And how are PGIB-eligible veterans who have not used PGIB faring? This is an interagency research team’s second in a series of reports on the Post-9/11 GI Bill and its outcomes for veterans.¹

These reports were made possible thanks to unprecedented federal interagency cooperation. For the first time ever, an interagency research team combined and analyzed previously siloed federal data to examine PGIB outcomes as part of the evidence-building decision-making work of the U.S. Census Bureau. There has never before been any definitive assessment across military branches of the outcomes associated with the Post-9/11 GI Bill. The need for federal agencies to share data about veterans and this critical federal investment emerged over the past decade and was singled out by the bipartisan U.S. Commission on Evidence-Based Policymaking; the U.S. Senate Committee on Health, Education, Labor & Pensions; and a White House Executive Order.²

The U.S. Congress has shown substantial interest in veterans, appropriating more than **\$303 billion to the U.S. Department of Veterans Affairs (VA) in fiscal year (FY) 2023.**

Post-9/11 GI Bill (PGIB) is **VA’s largest education program.**

Data on the outcomes of PGIB veterans are potentially relevant to broader policy discussions regarding college access, tuition-free college, and the earnings outcomes of nondegree and degree programs at different types of institutions.

¹ See Radford et al. (2024) for the first report.

² For more information, see Abraham et al. (2017); U.S. Senate Committee on Health, Education, Labor & Pensions (2014); and Exec. Order No. 13607, 77 F.R. 25861 (2012).

The Post-9/11 GI Bill substantially increased the education benefit available to military service members who served after September 10, 2001. It was enacted on June 30, 2008 (PL 110-252) and became effective on August 1, 2009. PGIB-eligible veterans³ can receive benefits that fully cover their tuition and fees at any public college or university (or a capped amount⁴ that can be spent at a private college), as well as a monthly housing allowance calculated on the basis of local cost of living, and a stipend for books and supplies (U.S. Congressional Research Service, 2021a).⁵

It is important to understand PGIB outcomes for multiple reasons. First, the U.S. Congress has made a substantial investment in veterans, appropriating, in fiscal year (FY) 2023, \$303 billion to the U.S. Department of Veterans Affairs (VA) overall and \$8.91 billion specifically for readjustment benefits, which include education benefits (U.S. Congressional Research Service, 2023). Second, although military service members are eligible for various education benefits both during and after their service,⁶ PGIB is VA's largest education program. Specifically, PGIB has represented more than 70% of total GI Bill participation and more than 80% of GI Bill spending each year since FY 2013 (U.S. Congressional Research Service (2021a)).⁷ A Congressional Research Service (2021a) report estimated that, in FY 2022 alone, PGIB would benefit more than 600,000 individuals. Third, because of the large number of PGIB participants and the comprehensive financial support that PGIB provides, data on the outcomes of PGIB veterans are potentially relevant not only to policymakers' assessment of how veterans are faring, but also to broader policy discussions regarding college access, tuition-free college, and how outcomes can differ for students who attended nondegree and degree programs at different types of education program providers. However, despite PGIB's size and significance, little research has been conducted on the program and its recent beneficiaries, and no other PGIB study has included veterans across all branches of the military.⁸

³ Generally, veterans and servicemembers who serve an aggregate minimum of 90 days on active duty after September 10, 2001, and continue to serve or are discharged honorably are considered eligible. In addition, individuals awarded the Purple Heart for service after September 10, 2001, and individuals who have been discharged or released for a service-connected disability after serving a minimum of 30 continuous days on active duty after September 10, 2001, can be eligible. For current eligibility details, consult this U.S. Department of Veterans Affairs (VA) website: <https://www.va.gov/education/about-gi-bill-benefits/post-9-11/>. PGIB benefits also may be transferred to a spouse or dependent. For current details, refer to this VA website: <https://www.va.gov/education/transfer-post-9-11-gi-bill-benefits/>.

⁴ For August 1, 2023, through July 31, 2024, the capped amount that may be used to attend a private institution was \$27,120.05 per year (<https://www.va.gov/education/benefit-rates/post-9-11-gi-bill->).

⁵ The dollar amount of the benefits that PGIB recipients can receive is updated regularly here: <https://www.va.gov/education/benefit-rates/post-9-11-gi-bill-rates/>

⁶ See U.S. Congressional Research Service (2021b) for descriptions of these VA programs.

⁷ Among veterans who are PGIB eligible, use of the 1984 Montgomery GI Bill (MGIB) over PGIB benefits is very low. Our previous report (Radford et al., 2024) noted that, among PGIB-Eligible Enlisted Veterans who had separated as of June 30, 2018, fewer than 1% (.3%) used MGIB but not PGIB benefits. This percentage was even lower (less than .1%) for those who first enlisted between 2009 and 2018, when PGIB was in effect.

⁸ One National Bureau of Economic Research working paper released on PGIB had access only to Army data and looked only at cohorts who had left between 2002 and 2010 (Barr et al., 2021). Our study, in contrast, follows veterans who separated as late as 2017 and examined their earnings as of 2018, providing a look at the outcomes for those separating after the recovery of the Great Recession but before COVID-19 disruptions. Kofoed (2020) was able to look at a slightly more recent range of cohorts (2008 to 2016) but again had only Army data.

To address this gap in our understanding of PGIB outcomes, the U.S. Census Bureau agreed, as one of its first evidence-building pilot projects, to host an interagency data-sharing effort to combine previously siloed data from multiple agencies. In so doing, this project is able to provide the first-ever look at combined federal administrative data regarding veterans' PGIB outcomes across all branches of the U.S. military.⁹ This project represents an historic interagency effort to examine the PGIB program and how America's most recent generation of military servicemembers is faring as they return to civilian life. Support from Arnold Ventures enabled a team of researchers from the American Institutes for Research® (AIR®), a nonpartisan, nonprofit research organization, to join the Census Bureau as Special-Sworn-Status employees for the purposes of this project. This support also enabled the critical purchase of student records from the National Student Clearinghouse (Clearinghouse), a nonprofit organization that provides data on enrollment and degree completion for college students nationwide.¹⁰ The nonprofit organization Veterans Education Success® helped to conceptualize the project and provide assistance.

This work would not have been possible without the cooperation of multiple agencies. The project combines individual-level data from VA, the Veterans Benefits Administration (VBA) at VA, Defense Manpower Data Center (DMDC) at the U.S. Department of Defense (DoD), Internal Revenue Service (IRS), and U.S. Census Bureau, as well as postsecondary institution-level data from the U.S. Department of Education. Over seven years, representatives of these agencies worked to establish the data-sharing processes and agreements needed to merge these disparate data. The benefits of combining these data are numerous, enabling the project, for example, to identify PGIB-eligible veterans from all military branches (using VA data) and examine their PGIB benefit use (using VBA data), degree completed (using Clearinghouse data), and earnings (using IRS data) while simultaneously accounting for factors like veterans' military rank, military occupation, service in hostile war zones, and academic preparation at enlistment (using DMDC data). Both VA's demographic data and DMDC's data on academic preparation and military service served as important controls, enabling the research team to hold constant such factors in order to isolate variables of interest.

⁹ As stated here, <https://www.census.gov/about/what/evidence-act/working-papers.html>, "The Census Bureau seeks to be the federal leader in the collection and secure provisioning of data for evidence building and evaluation. This research is consistent with the vision and mission of the Census Bureau, the provisions of the Foundations of Evidence-Based Policymaking Act of 2018, and in support of the Presidential Memorandum on Restoring Trust in Government Through Scientific Integrity and Evidence-Based Policymaking."

¹⁰ According to the Clearinghouse website, its student records include more than 3,500 colleges, which enroll 98% of students enrolled in public and private colleges and universities in the United States. For more, see: <https://www.studentclearinghouse.org/solutions/ed-insights/studenttracker/>.

A research team from AIR, the Census Bureau, and VA's National Center for Veterans Analysis and Statistics is using these newly linked data to produce multiple reports that provide critical insights into PGIB. This report presents data on the education and earnings outcomes at various types of programs attended by PGIB-eligible enlisted veterans as well as the characteristics of veterans who were eligible for PGIB but did not use it. Note that our analysis focuses on the PGIB outcomes of veterans who were enlisted (rather than commissioned officers).¹¹ Enlisted personnel represent the vast majority of military servicemembers. They also predominantly enter the military without a postsecondary degree¹² and are thus most likely to benefit from PGIB.¹³ The data compiled for this project allow us to study PGIB-eligible enlisted veterans' use of PGIB and earnings through 2018, before the COVID-19 pandemic's disruptions to education and the economy.¹⁴

Each chapter of this report examines how veteran characteristics (specifically, sex, race/ethnicity, rurality, and military rank) are associated with benefit use and earnings. Chapter 2 focuses on veterans who did not use PGIB. Chapters 3 and 4 concentrate on veterans who did use PGIB, examining more specifically their use of PGIB for both nondegree and degree programs. Chapters 3 and 4 include enrollment and earnings information by type (i.e., control) of provider (i.e., public, nonprofit, and for-profit status) and level of provider (i.e., two- or four-year status) when available.¹⁵ Chapter 4 also examines the enrollment, completion, and earnings of veterans who attended institutions with different levels of distance education enrollment and per-student instructional spending. A Snapshot of Veterans' Outcomes by Type of Post-9/11 GI Bill Use highlighting key findings across the chapters can be found at the beginning of this report on page 3.

A word of caution: As the research community understands well, there is a difference between association (which we present in this report) and causation (which we do not address here). Simply put, evidence that something has caused an outcome requires an experimental design such as a randomized controlled trial or a quasi-experimental design. Neither methodology was undertaken in this project. We cannot conclude with certainty, for example, that the characteristics of the education providers veterans attended shaped veterans' earnings. Exhibit 1 elaborates on the samples and groups analyzed as well as limitations to the interpretation of our results. Additional information on our methods can be found in Appendices B and C.

¹¹ More specifically, we examine those who were enlisted and on active duty as of their last recorded pay plan.

¹² On the basis of our calculations using Clearinghouse data, we indicate in our prior report (Radford et al., 2024) that about 5% of PGIB-Eligible enlisted veterans had an associate degree, 6% had a bachelor's degree, and 1% had a graduate degree before activation.

¹³ Officers, on the other hand, generally must have a bachelor's degree and thus face different considerations in thinking about their PGIB benefits.

¹⁴ For more on COVID-19 and increased unemployment rates, see, for example, Kochhar (2020): <https://www.pewresearch.org/fact-tank/2020/06/11/unemployment-rose-higher-in-three-months-of-covid-19-than-it-did-in-two-years-of-the-great-recession/>. For more on postsecondary enrollment and retention declines, see <https://research.collegeboard.org/media/pdf/enrollment-retention-covid2020.pdf>.

¹⁵ As discussed later at greater length, level information is available only for veterans using PGIB at providers that report to the Integrated Postsecondary Education Data System (IPEDS).

Exhibit 1

Sample and Analysis Groups

To answer our research questions, we define seven analysis groups from the overall population of “PGIB-Eligible Enlisted Veterans” (veterans under 65 years of age as of December 31, 2018, who are eligible for PGIB and left the service as enlisted personnel). For brevity, PGIB-Eligible Enlisted Veterans are often referred to in the remainder of this report simply as “veterans.” We capitalize PGIB-Eligible Enlisted Veterans and the names of our seven analysis groups throughout the remainder of the text to emphasize that these groups are based on the specific definitions that follow. The seven analysis groups are bolded in this exhibit for ease of reference.

The first six analysis groups described in the bulleted list that follows had separated (i.e., left military service) by September 30, 2017. We used administrative data from the VBA’s payment records for PGIB payments through September 30, 2018, excluding housing benefits, to establish membership in these analysis groups.¹⁶ Note that those who do not fall into the first group below (Nonparticipants) may fall into one or more of the next four analysis groups, as veterans may change their education path and/or education provider during their PGIB usage. Veterans are counted in every analysis group in which they fall.

- **Chapter 2 focuses on Nonparticipants. Nonparticipants** (our first analysis group) were PGIB-Eligible Enlisted Veterans who had not yet personally used their PGIB benefits. Studying Nonparticipants is important to policymakers who are seeking to understand whether veterans who are not personally using their education benefits are worse off (in terms of their earnings) than their peers who did use PGIB.¹⁷ We identified Nonparticipants by looking for PGIB-Eligible Enlisted Veterans who had no record, in VBA’s PGIB payment file, of a PGIB payment being made to an education provider with the veteran as the beneficiary.

¹⁶ Using this cutoff gives veterans at least one year to use PGIB benefits after separating from active duty.

¹⁷ PGIB-Eligible Enlisted Veterans who did not use benefits personally but transferred benefits to a spouse or dependent are still considered Nonparticipants in this report because veterans’ transfer of benefits should have little influence on veterans’ personal earnings. A subsequent report from our research team analyzes veterans who neither personally used nor transferred their PGIB benefits to a spouse or dependent. See Chapter 3 for more on this upcoming report.

- **Chapter 3 focuses on Nondegree Seekers.** Nondegree Seekers were PGIB-Eligible Enlisted Veterans who had used PGIB for an education program that does not lead to a degree for at least part of their PGIB usage.¹⁸ Policymakers focused on both veterans and education are increasingly interested in student outcomes at nondegree programs. We identified Nondegree Seekers by finding veterans in VBA’s PGIB payment file who were listed as attending a program noted as “noncollege degree.” Nondegree Seekers were further categorized by whether they pursued a nondegree program at a provider that reports to the Integrated Postsecondary Education Data System (IPEDS) at the U.S. Department of Education, which is required for education providers that receive funds from Title IV federal student aid programs.¹⁹ We refer to veterans who used PGIB for a nondegree program at a provider that does not report to IPEDS for at least part of their PGIB usage as **Non-IPEDS Nondegree Seekers**,²⁰ (our second analysis group). We refer to veterans who used PGIB for a nondegree program at a provider that does report to IPEDS for at least part of their PGIB usage as **IPEDS Nondegree Seekers**,²¹ (our third analysis group). We determined IPEDS status based on whether the record in VBA’s PGIB payment file contained an IPEDS Unit ID.

We distinguish between non-IPEDS and IPEDS providers for several reasons. First, it is useful to look at these groups separately because we can incorporate much more information about the characteristics of IPEDS providers than non-IPEDS providers. That said, the fact that we have information on non-IPEDS providers at all (in addition to whether they are public, nonprofit, or for-profit entities), is a unique contribution of this study. The U.S. Department of Education’s College Scorecard and Gainful Employment data on students’ outcomes are limited to Title IV institutions, but, in this study, we are able to report student outcomes on other types of education providers that also receive federal dollars—in this case, through PGIB. Furthermore, by analyzing non-IPEDS and IPEDS groups separately, we can better understand the extent to which they differ. We use the term “provider” when comparing IPEDS and non-IPEDS providers and also when discussing non-IPEDS providers, alone, because non-IPEDS providers may not always be colleges or institutions. We use “colleges” and “institutions” only for IPEDS providers.

¹⁸ Nondegree programs include certificates and diplomas. Apprenticeships also can be considered nondegree programs, but to facilitate this report’s later comparisons to those in degree programs, we focus on those in nondegree education programs (described as “nondegree programs” for brevity) and exclude those listed in VBA PBIG payment files as using PGIB for VA training types listed as “apprenticeships,” “on-the-job training,” “correspondence,” “flight,” “LAC exam” (meaning licensure and certification exams), or “national exam.” Coursework in pursuing nondegree programs can result in credit or no credit. For more on nondegree programs, see <https://www.newamerica.org/education-policy/edcentral/an-explainer-non-degree-vs-non-credit-programs/>.

¹⁹ “The completion of all IPEDS surveys is mandatory for institutions that participate in or are applicants for participation in any federal student financial aid program (such as Pell Grants and federal student loans) authorized by Title IV of the Higher Education Act of 1965, as amended (20 USC 1094, Section 487(a)(17) and 34 CFR 668.14(b)(19)).” For more information, see <https://nces.ed.gov/ipeds/about-ipeds>

²⁰ Veterans who used their PGIB benefits for non-IPEDS nondegree programs may also have used their benefits for IPEDS nondegree programs; the two groups are not mutually exclusive. In fact, 16% of veterans who were Non-IPEDS Nondegree Seekers were also IPEDS Nondegree Seekers. Some Non-IPEDS Nondegree Seekers also pursued degree programs under PGIB; specifically, 12% of Non-IPEDS Nondegree Seekers also used their benefits for a degree program at a non-IPEDS provider and 54% also used their benefits for a degree program at an IPEDS provider. Veterans are counted in every analysis group in which they fall.

²¹ Similarly, veterans who used their PGIB benefits for IPEDS nondegree programs may also have used their benefits for non-IPEDS nondegree programs; the two groups are not mutually exclusive. In fact, 13% of veterans who were IPEDS Nondegree Seekers were also Non-IPEDS Nondegree Seekers. Some IPEDS Nondegree Seekers also pursued degree programs under PGIB; specifically, 9% of IPEDS Nondegree Seekers also used their benefit for a degree program at a non-IPEDS provider and 66% used their benefit for a degree program at an IPEDS provider. Veterans are counted in every analysis group in which they fall.

- **Chapter 4 focuses on Degree Seekers.** Degree Seekers were PGIB-Eligible Enlisted Veterans who used PGIB for undergraduate or graduate college degree programs for at least part of their PGIB usage. These are students who were in VBA’s PGIB payment file as attending “graduate” or “undergraduate” programs. For the same reasons described for Nondegree Seekers, we divided Degree Seekers into **Non-IPEDS Degree Seekers**²² (our fourth analysis group) and **IPEDS Degree Seekers**²³ (our fifth analysis group). We determined IPEDS status based on whether VBA’s PGIB payment file identified the provider as an IPEDS institution.
 - Chapters 3 and 4 provide two points of comparison: veterans using their benefits at various types of programs (a) as a percentage of veterans who were eligible for PGIB (whether or not they used it), and (b) as a percentage of only those who used their benefits (PGIB Users for brevity). **PGIB Users** are the sixth analysis group.

- The last analysis group is slightly different. Chapter 4’s deeper dive into the association between institutional characteristics and veterans’ outcomes goes beyond other chapters’ examination of earnings by also investigating completion. Exploring degree completion required data from the Clearinghouse. Therefore, **Clearinghouse Veterans** are this report’s seventh analysis group. As is true for the six preceding analysis groups, Clearinghouse Veterans were veterans who were under 65 years of age as of December 31, 2018, eligible for PGIB, and left the service as enlisted personnel. But Clearinghouse Veterans also had a Clearinghouse record that indicated they attended an institution reporting to the Clearinghouse in an institutional sector with high Clearinghouse coverage.²⁴ In addition, so that we could examine these Clearinghouse Veterans’ six-year degree completion rates, degree completion analyses are based on Clearinghouse Veterans who had at least six years between first enrolling in a Clearinghouse institution²⁵ after first separating from the military and June 30, 2019.²⁶

For additional detail on our sample and analysis groups, see Appendices A and B.

²² Veterans who used their PGIB benefits for non-IPEDS degree programs also may have used their benefits for IPEDS degree programs; the two groups are not mutually exclusive. In fact, 63% of Non-IPEDS Degree Seekers were also IPEDS Degree Seekers. Some Non-IPEDS Degree Seekers were also Nondegree Seekers; specifically, 10% of Non-IPEDS Degree Seekers used their benefits for a nondegree program at a non-IPEDS provider and 9% used their benefits for a nondegree program at an IPEDS provider. Veterans are counted in every analysis group in which they fall.

²³ Similarly, veterans who used their PGIB benefits for IPEDS degree programs may have used their benefits for non-IPEDS degree programs; the two groups are not mutually exclusive. Specifically, about 8% of IPEDS Degree Seekers were also Non-IPEDS Degree Seekers. Some IPEDS Degree Seekers were also Nondegree Seekers; 6% used their benefits for a nondegree program at a non-IPEDS provider and 9% used their benefits for a nondegree program at an IPEDS provider. Veterans are counted in every analysis group in which they fall. It is worth highlighting for future research that 77% of IPEDS Degree Seekers used their benefits only for IPEDS degree programs. For the other three Nondegree and Degree Seeker analysis groups, 12% to 18% used benefits only in their own category, and 54% to 66% also used them for IPEDS degree programs.

²⁴ As noted, the National Student Clearinghouse’s website indicates that its student records include more than 3,500 colleges, which enroll 98% of students enrolled in public and private colleges and universities in the United States. See <https://www.studentclearinghouse.org/solutions/ed-insights/studenttracker/>. We examine institutional sectors for which the Clearinghouse had the most extensive coverage in fall 2018, the last academic year we included in our analysis of completion. Fall 2018 coverage rates for the sectors we included are as follows: two-year public (98.0%), four-year public (99.5%), four-year nonprofit (95.6%), and four-year for-profit (85.3%) colleges. We do not include two-year nonprofit and two-year for-profit colleges, which had much lower coverage by the Clearinghouse (29.0% and 14.4%, respectively, in fall 2018). For more information on the Clearinghouse’s coverage rates, see its “Data Coverage” section here: <https://nscresearchcenter.org/workingwithourdata/>.

²⁵ Although veterans can use PGIB benefits before they separate from the military, using PGIB after separating enables veterans to enroll without the pressure of active-duty military service and to receive the housing allowance portion of PGIB. Although it is possible to use PGIB benefits while on active duty, veterans have access to other military education programs while serving, such as the DoD Tuition Assistance Program and Credentialing Opportunities On-Line (COOL). PGIB-Eligible Enlisted Veterans therefore may take courses while serving by using other military education programs and save the full support provided under PGIB (in particular, the housing allowance) when not already receiving housing as part of their military service. Measuring degree completion for veterans who first enrolled while on active duty (when veterans would be less likely to attend full time) together with veterans who first enrolled after separating (when veterans would be more likely to attend full time) would make it difficult to understand completion rates for veterans who make full use of their PGIB benefits. Moreover, in our previous report (see Radford et al., 2024) we find that only 3% of the PGIB-Eligible Enlisted Veterans in Clearinghouse data examined had attained a degree between first activation and first separation. For all these reasons, we focus this examination of completion on enrollment after first separation.

²⁶ Because we have Clearinghouse information through June 30, 2019, our Clearinghouse Veterans group includes veterans who had separated by June 30, 2018 (rather than the September 30, 2017, separation date used for the other analysis groups described previously that do not use Clearinghouse data).

Limitations to the Interpretation of Our Results

This report presents bivariate descriptive statistics that examine veteran outcomes (e.g., earnings) by provider characteristics (e.g., sector). The study also sometimes incorporates regression analysis as a further set of descriptive statistics that could account for other variables, like academic preparation and military occupation. A relationship between a factor of interest (e.g., sector) and the outcome (e.g., earnings) that holds in bivariate descriptive statistics and regression results suggests that the other factors included in the regression do not explain the relationship—and that, therefore, the correlation is strong. It is possible, however, that that relationship is the result of another factor not studied here that may be shaping veterans, such as a veteran's personal motivation or preference for a certain career. The methods used in this report were not causal, meaning that the results cannot show whether the outcomes were caused by using PGIB or by using PGIB for a specific type of program or educational provider.



Nonparticipants

A Look at the Characteristics and Earnings of Veterans Who Do Not Personally Use PGIB

As discussed in the introduction of this report, PGIB’s enactment substantially increased the education benefit available to military service members who served after September 10, 2001. These PGIB benefits may be used by the veteran or transferred to a spouse or dependent. Because most enlisted service members enter the military without a postsecondary degree,²⁷ and earnings generally increase with educational attainment (U.S. Bureau of Labor Statistics, 2022), PGIB-Eligible Veterans may find it worth at least considering using PGIB benefits to increase their own educational attainment and training.

This chapter seeks to better understand PGIB-Eligible Enlisted Veterans who have not yet personally used their benefits (“Nonparticipants”).²⁸ This section first examines the percentage of veterans who were Nonparticipants and how this percentage varied by the set of veteran characteristics examined throughout this report: specifically, sex, race/ethnicity, rurality, and military rank. It then looks at Nonparticipants’ earnings,

how those earnings compared to those who did use their PGIB benefits personally, and the extent to which Nonparticipants’ earnings differed by the aforementioned veteran characteristics. To help further understand the relationship between PGIB participation and earnings, this investigation also incorporates a regression analysis that takes into account the demographic and veteran characteristics already mentioned, plus factors such as academic preparation at time of enlistment using Armed Forces Qualification Test (AFQT) scores, military rank, military occupation, and the array of other characteristics noted in Appendix Table B.1. **Specifically, we seek to answer two main research questions in this chapter:**

1. What proportion of veterans had not personally used their PGIB benefits (“Nonparticipants”), and to what extent did this proportion vary by veteran characteristics?
2. What were Nonparticipants’ earnings, and to what extent did their earnings vary by veteran characteristics?

²⁷ Our prior report (Radford et al., 2024) found that about 5% of PGIB-Eligible Enlisted Veterans had an associate degree, 6% had a bachelor’s degree, and 1% had a graduate degree before entering the military.

²⁸ See Exhibit 1 for a more detailed definition of Nonparticipants.

FIGURE 1

Percentage of PGIB-Eligible Enlisted Veterans Who Were Nonparticipants, By Veteran Characteristics

■ All PGIB-Eligible Enlisted Veterans

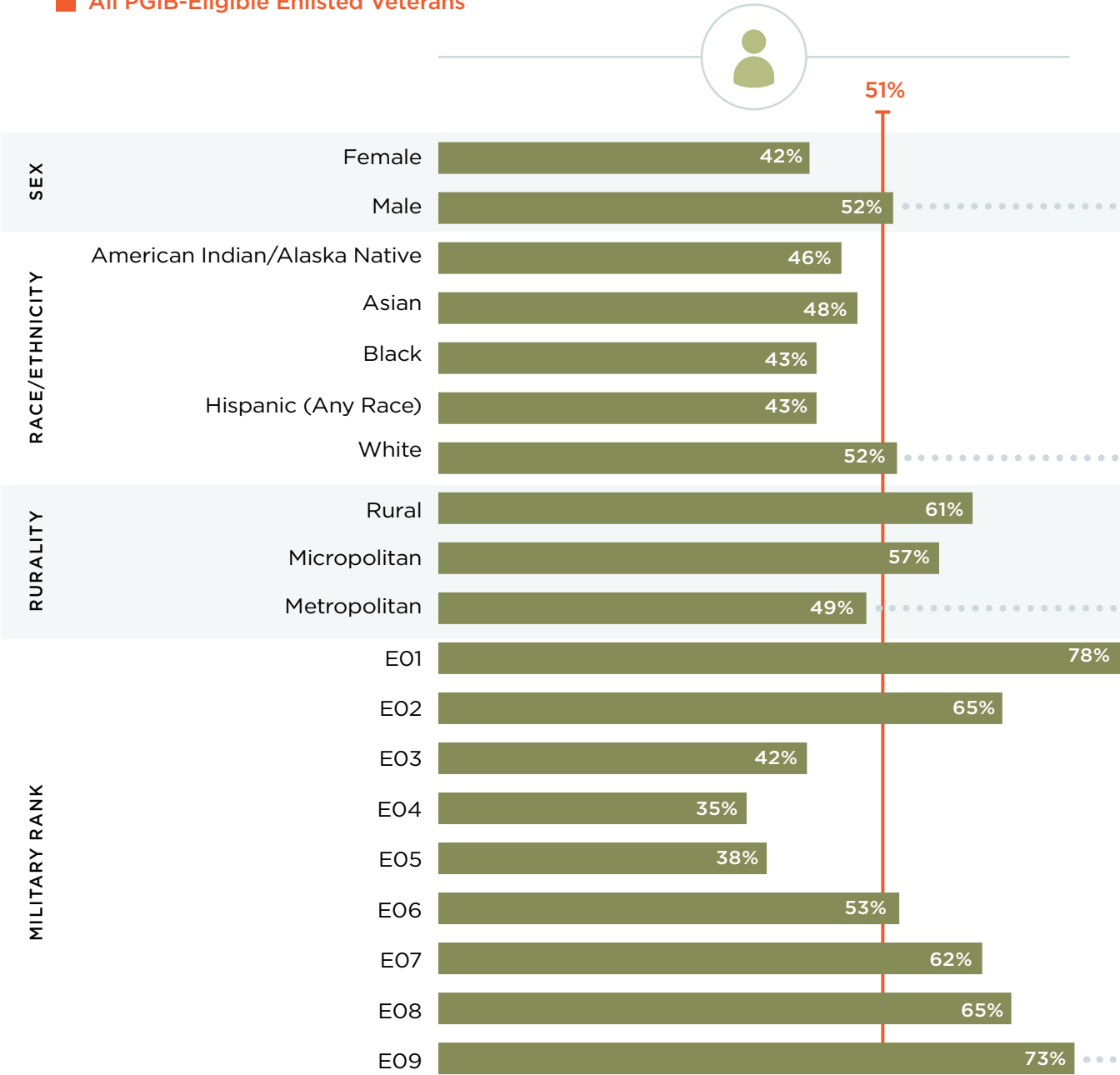
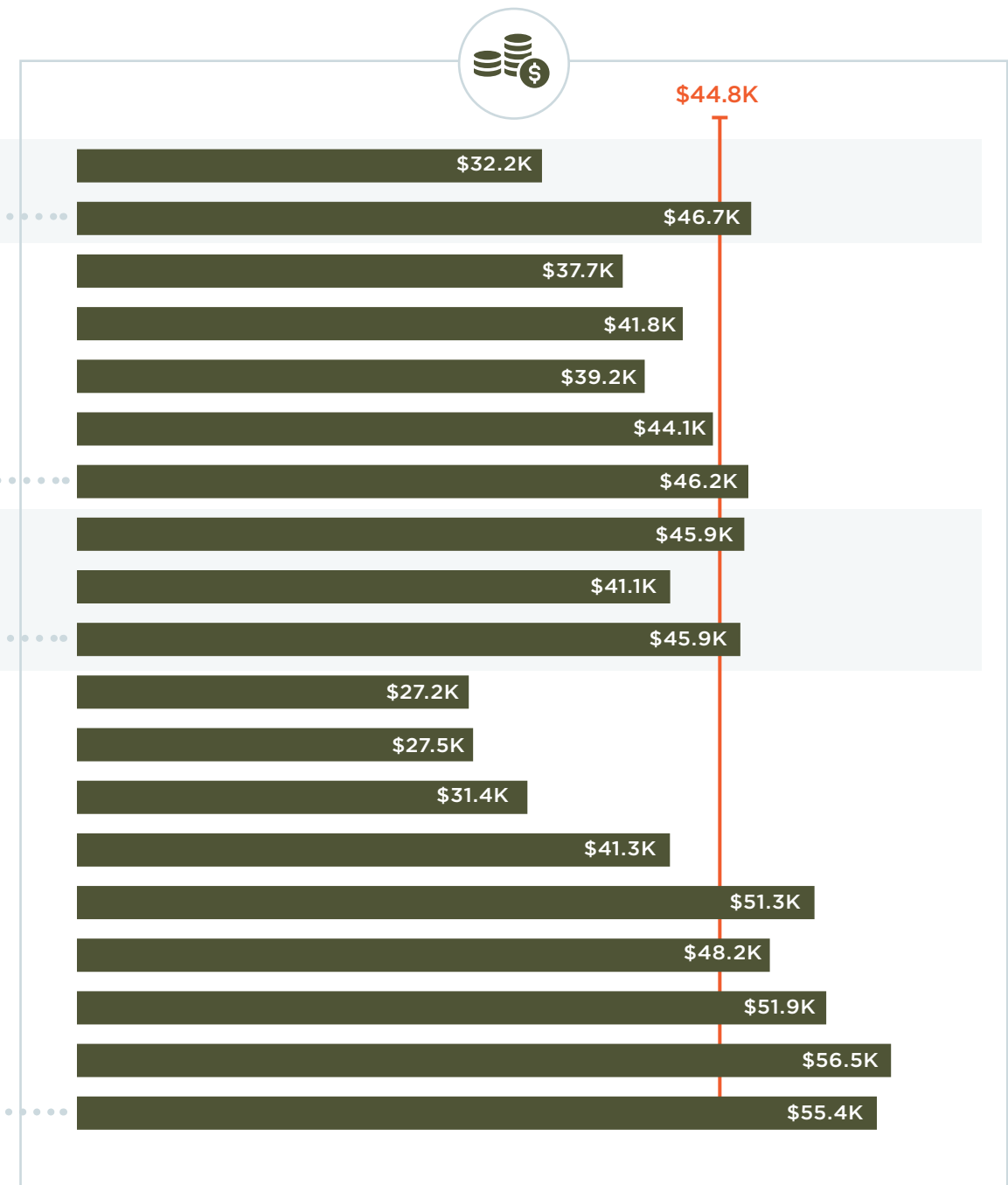


FIGURE 2

Nonparticipants' Earnings, By Veteran Characteristics

■ All Nonparticipants



What proportion of veterans had not personally used their PGIB benefits, and to what extent did this proportion vary by veteran characteristics?

Slightly more than half of veterans (51%) did not personally use PGIB (i.e., were “Nonparticipants”), but this varied by veteran characteristics. Compared to veterans at large, veterans who settled in rural and micropolitan areas and veterans who left service in the two lowest military ranks and in the three highest military ranks were at least 5 percentage points more likely to be Nonparticipants. In contrast, female, American Indian/Alaska Native, Black, and Hispanic veterans, as well as veterans who left service with a midlevel military rank, were at least 5 percentage points less likely to be Nonparticipants than veterans at large.

Slightly more than half of PGIB-Eligible Enlisted Veterans (51%) had not personally used PGIB benefits (“Nonparticipants”), meaning 49% did personally use these benefits.²⁹ Note that nonparticipants who did not personally use their benefits but transferred their benefits to a dependent are nevertheless counted as nonparticipants in this analysis. This chapter focuses on personal nonparticipation because we seek to understand how the individual earnings of veterans who do not personally use their benefits differ from those who do.³⁰ In considering this nonparticipation rate, it is also worth noting that veterans may choose to be Nonparticipants in the GI Bill if they already fare well in the labor market.

²⁹ Again, see Exhibit 1 for a more detailed definition of Nonparticipants. Usage of PGIB benefits is lower in this analysis than our previous study (Radford et al., 2024). Usage is defined in this study as having a VBA payment record with the veteran listed as beneficiary compared to our previous study which defines usage as having an NSC record. Also, the dataset of PGIB-Eligible Enlisted Veterans in this study is smaller compared to that used in our prior study due to the end date of the available VBA payment records.

³⁰ Veterans who did not personally use benefits but transferred their PGIB benefits to a spouse or dependent are still considered Nonparticipants in this analysis, because their transfer of benefits should not shape how they are faring in terms of personal earnings. Our interagency team has other work that focuses on veterans who neither personally used nor transferred benefits to a spouse or dependent. This work includes a quantitative report that examines the demographic and military characteristics of veterans who are passing up their PGIB benefits entirely. A companion brief, based on qualitative interviews with veterans, presents the reasons veterans report for doing so, and offers insights into how we might better support PGIB benefit use.

The proportion of Nonparticipants differed by veterans' demographic and military characteristics.³¹ Here we focus on which veteran groups varied by at least 5 percentage points from veterans overall, discussing the overall pattern by military rank in the next paragraph. As [Figure 1 \(page 14\)](#) shows, **veterans who lived in rural and micropolitan areas** in the year in which they separated from the military³² **were 10 and 6 percentage points, respectively, more likely to be Nonparticipants than veterans overall.** In contrast, **female,³³ Black, Hispanic, and American Indian/Alaska Native veterans** were 9, 8, 8, and 5 percentage points, respectively, **less likely to be Nonparticipants than veterans overall,** meaning they were more likely to personally use PGIB than their counterparts.³⁴

As for military rank, those who separated at the two lowest and three highest ranks differed most from veterans overall. Specifically, those who left the military at the lowest rank were 27 percentage points and those who left at the highest rank were 22 percentage points more likely than veterans overall to be Nonparticipants (meaning they did not personally use their benefits). In contrast, veterans who separated from the military at ranks roughly in the middle (specifically, E-3, E-4, and E-5) were less likely to be Nonparticipants (and thus more likely to use PGIB) than veterans overall, by 9, 16, and 13 percentage points, respectively. In considering these results by military rank, it is important to note that rank is both an indication of length of service and a sign of success in the military. Many veterans who separated from the military at lower ranks likely served for a shorter period of time, making them eligible for a smaller proportion of PGIB benefits.³⁵ Other veterans who left the military at lower ranks may have had other idiosyncrasies, such as being demoted, that affected typical rank advancement. The reasons behind their lower ranks may play a role in their thinking about using PGIB. At the other end of the ranks, it is possible that veterans who separated at higher ranks were older and/or had developed skillsets through their military service that were in demand in the civilian labor market, thereby making pursuing additional education at this stage in their careers less appealing.

³¹ Because having a spouse or dependent changes the mental calculus of deciding whether to personally use benefits (i.e., if veterans have a spouse or a dependent, they may be less likely to use benefits personally because they have someone else who can use them), we note here how the percentage of veterans who were Nonparticipants varied by family responsibilities. Not surprisingly, we find that veterans who were single with no dependents (and thus had no one to whom they could transfer their benefits) were least likely to be Nonparticipants (45%). Veterans who were single but had a dependent were slightly more likely to be Nonparticipants (48%), followed by those who were married but had no dependents (51%). Those who had both a spouse and a dependent to whom they could transfer benefits were most likely to be Nonparticipants (57%). Of course, it is possible that characteristics other than family responsibilities are driving these results. Veterans who were married and had dependents may be older and/or leave with a higher rank, which could make pursuing more education personally less attractive.

³² We combined Rural-Urban Commuting Area, based on the census definition, into the higher order categories of "metropolitan," "micropolitan," and "rural." The U.S. Census Bureau defines rural as what is not urban, meaning rural is what is left after defining metropolitan and micropolitan. For more information, see <https://www.census.gov/content/dam/Census/library/publications/2016/acs/acsgeo-1.pdf>. The metropolitan statistical area must have at least one urban area of 50,000 or more inhabitants. The micropolitan statistical area must have at least one urban cluster with a population size between 10,000 and 50,000. See <https://www.census.gov/programs-surveys/metro-micro/about.html> for more information.

³³ Data on sex comes from VA's USVETS data, which categorize veterans into two sexes: male or female.

³⁴ These results, which are based on PGIB use for education and training at any institution, are consistent with the patterns we reported in examining personal PGIB use based on Clearinghouse data in an earlier report. (The fact that these patterns are similar is not surprising, because we later report in Appendix Table A-1 that veterans were most likely to use PGIB in degree programs at institutions reporting to IPEDS, which is what Clearinghouse covers best.)

³⁵ For more on how benefits vary by length of service, see <https://www.va.gov/education/benefit-rates/post-9-11-gi-bill-rates/#how-much-of-the-full-benefit-r>.

What were Nonparticipants' earnings, and to what extent did their earnings vary by veteran characteristics?

On average, veterans who did not personally use PGIB were earning \$44,800 in 2018.

Female Nonparticipants and Nonparticipants in the three lowest military ranks were earning at least \$10,000 less than Nonparticipants overall, and American Indian/Alaska Native and Black Nonparticipants were earning at least \$5,000 less. Meanwhile, veterans in the two highest ranks who did not use PGIB were earning at least \$10,000 more than the average Nonparticipant, and veterans in the three ranks below them were earning at least \$5,000 more.

On average, Nonparticipants had W-2 wages of \$44,800 in calendar year 2018.^{36, 37} To put this in perspective, nationally 25- to 34-year-olds whose highest education was a high school degree or equivalent was \$35,300 in 2018 (U.S. Census Bureau, n.d.).³⁸ When we compared Nonparticipants to their counterparts who personally used PGIB, we found that the two groups had relatively similar earnings. Specifically, comparing pure averages, Nonparticipants earned \$300 more than PGIB users. Yet these average earnings for those using and not using PGIB fail to account for numerous demographic differences and the reality that numerous factors shape earnings. Once we accounted for factors such as academic preparation at time of enlistment using Armed Forces Qualification Test (AFQT) scores, military rank, military occupation, and an array of other demographic and military characteristics noted in Appendix Table B.1, Nonparticipants earned \$1,700 less than PGIB participants.³⁹

³⁶ We examine 2018 earnings because 2018 is the last year for which we have PGIB payment information. PGIB payment information helps us identify veterans participating in PGIB-funded education and training activities in 2018 (who may be less focused on earnings in 2018) and exclude them from our earnings analyses. Although Nonparticipants, by definition, were not using PGIB in 2018, we use 2018 earnings throughout this report to facilitate comparisons between Nonparticipants and veterans who did participate in PGIB.

³⁷ Some veterans had more than one W-2 for the 2018 calendar year. In those cases, we combined the income across W-2s to create a total earnings value. We imputed zeros when a veteran was missing all W-2 information, to avoid excluding veterans without W-2 earnings from our analysis. Following Barr et al. (2021), we also winsorized total earnings using 0.99 as the cutoff to reduce the impact of outliers on average wages.

³⁸ The age and educational attainment criteria we use here is the same that the U.S. Department of Education's Gainful Employment Rule, set to go into effect July 1, 2024, uses as a comparison point in examining postsecondary students' earnings outcomes. For more, see: <https://www.govinfo.gov/content/pkg/FR-2023-10-10/pdf/2023-20385.pdf>.

³⁹ Appendix Table A-2 also displays how Nonparticipants compare to Participants pursuing nondegrees and degrees at non-IPEDS and IPEDS providers. The table indicates that Nonparticipants are earning more on average than all four of these Participant groups (although only \$100 more than IPEDS Degree Seekers). However, again, these results should be regarded cautiously because they do not account for other veteran characteristics. As our regression result comparing Nonparticipants and Participants demonstrated, once analyses account for other characteristics, the group earning more can reverse. Conducting analyses that compare the earnings of Nonparticipants and specific types of participants shown while accounting for other factors is an area for future research.

Some Nonparticipant groups were not faring as well as others. [Figure 2 \(page 14\)](#), which highlights pure averages not accounting for other characteristics, reveals that multiple groups of veterans who did not use their PGIB benefits earned at least \$10,000 less than the \$44,800 average for Nonparticipants overall. Specifically, **female Nonparticipants were earning \$12,600 less, and Nonparticipants in the three lowest ranks were earning between \$13,400 and \$17,600 less than the average Nonparticipant.** It is also worth noting that **American Indian/Alaska Native and Black Nonparticipants were earning at least \$5,000 less** than the average Nonparticipant. Nationally, female, American Indian/Alaska Native, and Black Americans also have lower wages than other Americans. Yet, Congress specifically sought to support veterans' smooth transition to civilian careers and enacted PGIB to further that aim. Thus, the fact that female, American Indian/Alaska Native, Black, and lower ranked veterans were earning less than the average high school graduate is likely to be of concern to policymakers.

It is important to note that although several Nonparticipant groups had lower earnings, **Nonparticipants who left the military at higher ranks tended to do better.** Nonparticipants who left the military at the two highest enlisted ranks (E-8 and E-9) had average earnings that were more than \$10,000 higher, and Nonparticipants who left the military at ranks E-5 and E-7 had average earnings that were more than \$5,000 higher than the average Nonparticipant. Their higher earnings may be related to the occupations and skills they acquired during higher-ranked military service.⁴⁰

⁴⁰ Future research should explore these results further by examining veterans' earnings accounting for other veteran characteristics, such as those noted in Appendix Table B-1. Such analyses may help policymakers and practitioners better understand whether some veteran groups appear to benefit more from using PGIB, which could help in developing more nuanced outreach strategies to specific subgroups of veterans as they weigh their options after separating from the military.

Nondegree Seekers

A Look at the Characteristics and Earnings of Veterans Who Use PGI B to Pursue a Nondegree Program

There is growing interest in education programs that do not lead to a college degree (“nondegree programs”). As noted earlier, apprenticeships also can be considered nondegree programs, but, to facilitate later comparisons to education-oriented college degree programs, this chapter’s examination of nondegree programs focuses on nondegree *education* programs. The nondegree programs examined here include diplomas and certificates in fields ranging from website development to construction to health care. Adults may look favorably upon nondegree programs advertised as taking less time to complete than degree programs but still providing a boost in earnings. In addition, many employers are increasing their skills-based hiring (Castrillon, 2023; McKinsey & Company, 2022). Congress, too, is considering legislative proposals to make some short-term programs eligible for Pell Grants.⁴¹ Our work adds to the field’s understanding of the characteristics and outcomes of individuals who pursue nondegree programs.

⁴¹ See, for example, <https://www.insidehighered.com/news/government/student-aid-policy/2023/12/12/short-term-pell-bill-would-end-federal-loans-wealthy> and <https://www.insidehighered.com/news/government/student-aid-policy/2023/05/30/momentum-building-pell-grant-expansion>.



This chapter examines the characteristics and earnings of PGIB-Eligible Enlisted Veterans who used PGIB for a nondegree program (during at least part of their PGIB usage, if they had attended more than one institution or changed their education path, as some students do). Since nondegree programs can be offered by a range of educational providers, we break out results based on providers' IPEDS status—allowing for differentiations in analysis between IPEDS institutions (about which there are additional data available) and non-IPEDS providers. As noted in Exhibit 1, we use the term “provider” when comparing IPEDS and non-IPEDS providers and when referring to non-IPEDS providers, alone, because non-IPEDS providers are not always colleges or institutions. We use the terms “colleges” and “institutions” only to refer to IPEDS providers. Nondegree providers that have taken the steps to be eligible to receive Title IV federal financial aid must report to IPEDS. Such institutions run the gamut, from community colleges, to large for-profit institutions and public universities, to highly selective nonprofit colleges.⁴² We refer to veterans who pursued nondegree programs at such institutions as IPEDS Nondegree Seekers.⁴³ We refer to veterans who enrolled in nondegree programs at providers that do not report to IPEDS and are not eligible to receive Title IV federal financial aid (such as dog-training academies and bootcamps offering training in Java programming), as Non-IPEDS Nondegree Seekers.⁴⁴

We first note the proportion of veterans who were Non-IPEDS Nondegree Seekers and the proportion of veterans who were IPEDS Nondegree Seekers.⁴⁵ We then conduct a deeper dive to determine whether Non-IPEDS Nondegree Seekers' outcomes vary by type (or control) of their provider (i.e., whether their non-IPEDS provider was a public, nonprofit, or for-profit entity) and whether IPEDS Nondegree Veterans' outcomes vary by institutional sector (a combination of the type/control and level of their provider, capturing whether their IPEDS institution was a public, nonprofit, or for-profit two- or four-year entity).⁴⁶ Next, we examine the extent to which these proportions varied by veteran characteristics. We follow the same order in presenting Nondegree Seekers' 2018 W-2 earnings results. **Our two research questions are as follows:**

1. What proportion of veterans used their PGIB benefits for nondegree programs (either “Non-IPEDS Nondegree Seekers” or “IPEDS Nondegree Seekers”) for at least part of their PGIB journey, and to what extent did this proportion vary by provider type/control or sector and by veteran characteristics?
2. What were the earnings of Non-IPEDS Nondegree Seekers and IPEDS Nondegree Seekers, and to what extent did their earnings vary by provider type/control or sector and by veteran characteristics?

⁴² More details on the more than 6,000 institutions that report to IPEDS can be found here: NCES Handbook of Survey Methods—Integrated Postsecondary Education Data System (IPEDS).

⁴³ Note that, although IPEDS Nondegree Seekers were likely attending institutions receiving Title IV funds, IPEDS Nondegree Seekers were not necessarily enrolled in programs that were eligible for Title IV funds.

⁴⁴ See Exhibit 1 for a more detailed definition of the two groups of Nondegree Seekers examined here. As that section notes, distinguishing between non-IPEDS and IPEDS providers is useful for several reasons. We can incorporate much more information about the characteristics of IPEDS providers than non-IPEDS providers. That said, the fact that we have information on non-IPEDS providers at all (in addition to whether they are public, nonprofit, or for profit), is a unique contribution of this study. College Scorecard and Gainful Employment data on students' outcomes are limited to Title IV institutions, but here we report student outcomes on other types of education providers that also receive federal dollars—in this case, through PGIB. Furthermore, by analyzing non-IPEDS and IPEDS groups separately, we can better understand the extent to which they differ.

⁴⁵ As noted in Exhibit 1, veterans may fall into more than one nondegree (or degree) category. Veterans also may pursue programs at multiple provider types. This overlap is particularly important to bear in mind when looking at earnings. The average earnings for a group of veterans pursuing a particular nondegree program at a particular provider type may be related to their use of PGIB elsewhere.

⁴⁶ Some institutions offer a few four-year degrees but primarily offer two-year degrees. We categorized these institutions as two-year colleges, using Carnegie Classifications corresponding to “Primarily Associate's” institutions.

FIGURE 3

Percentage of PGIB Eligible Veterans Who Were **Non-IPEDS Nondegree Seekers and/or IPEDS Nondegree Seekers**, By Type (Control) or Sector

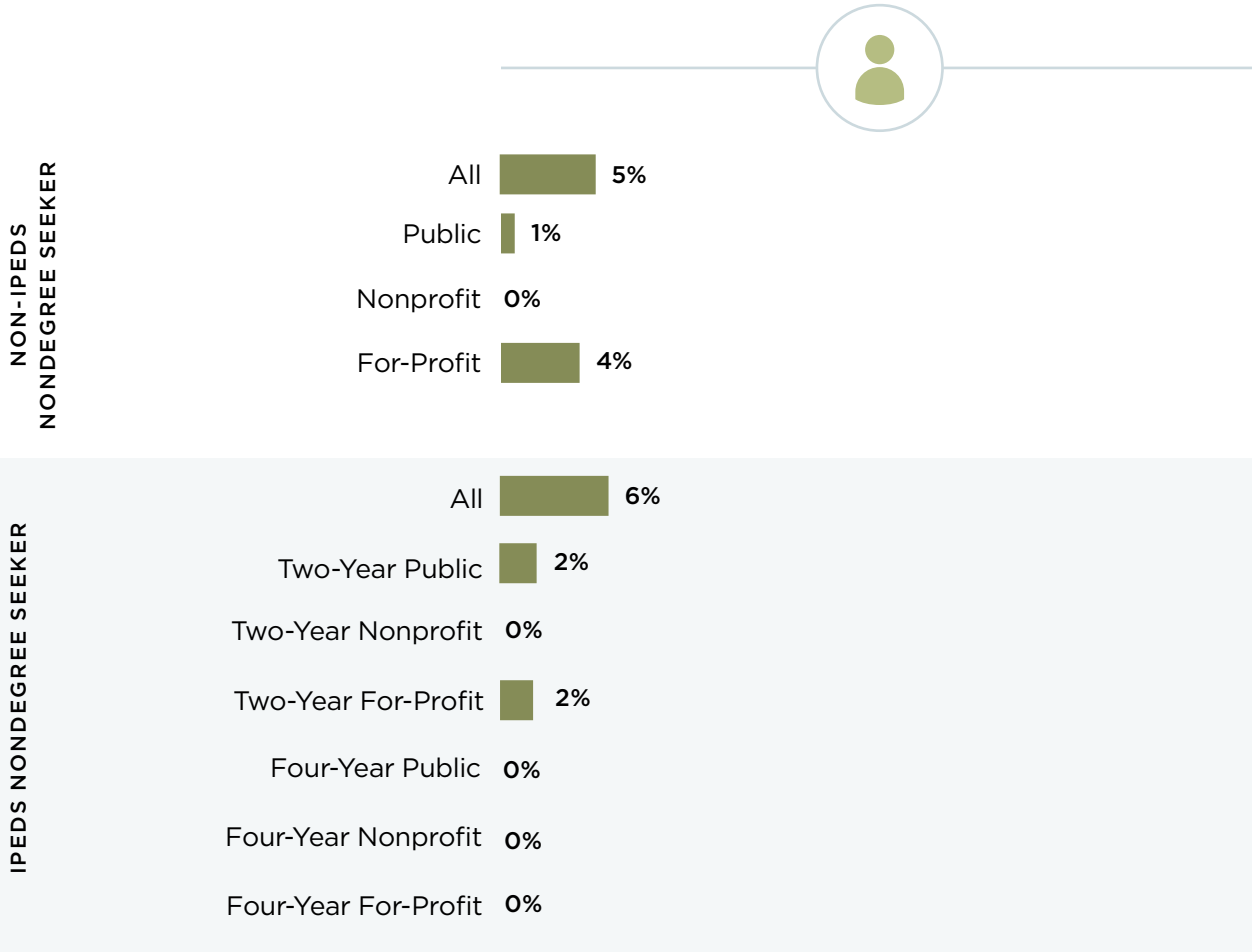
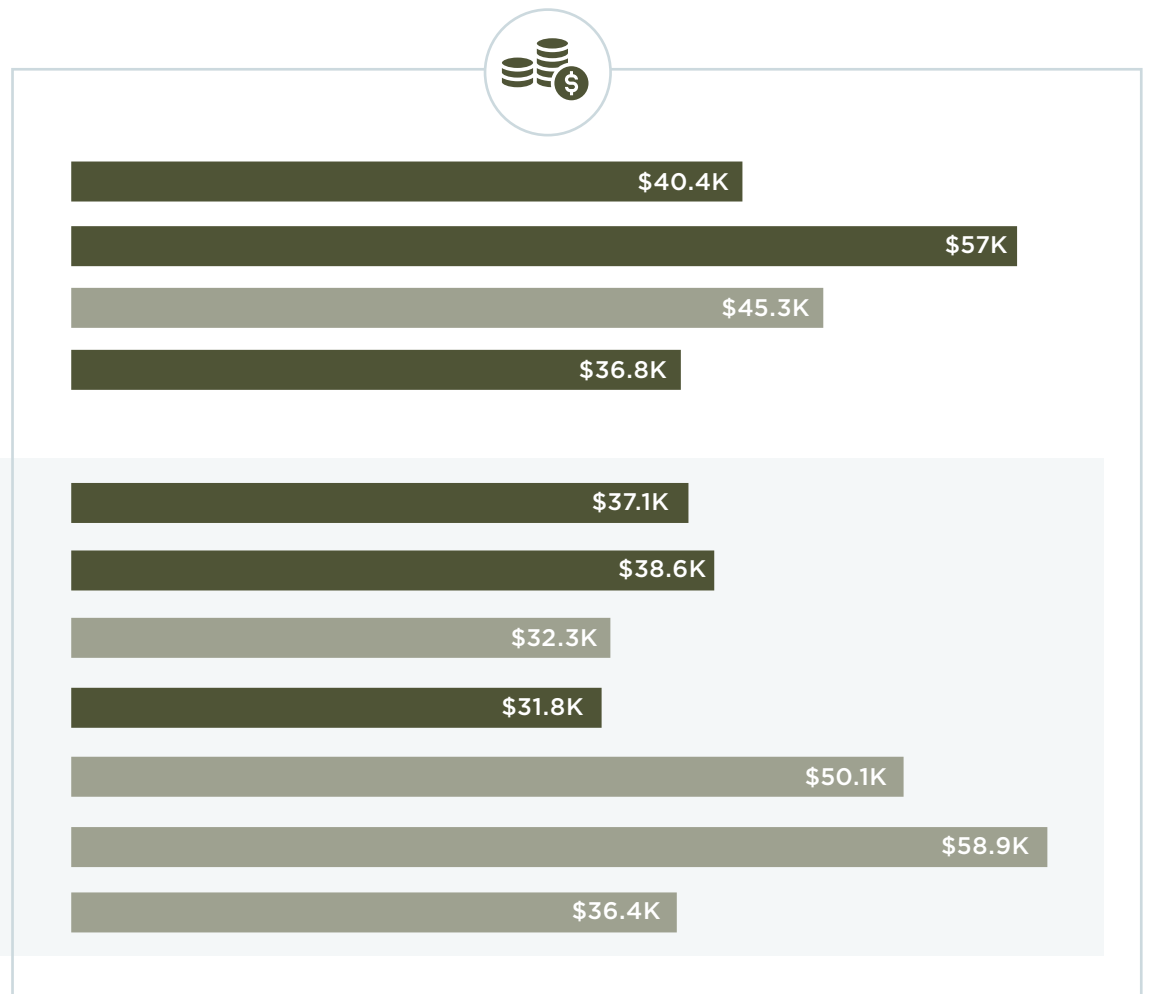


FIGURE 4

Earnings for PGIB-Eligible Enlisted Veterans Who Were **Non-IPEDS Nondegree Seekers and/or IPEDS Nondegree Seekers**, By Type (Control) or Sector



Note: Earnings for provider types where less than 1% of PGIB-Eligible Enlisted Veterans pursued a given program are shown in lighter bars.

What proportion of veterans used their PGIB benefits for nondegree programs, and to what extent did this proportion vary by provider type/control or sector and by veteran characteristics?

A relatively small proportion of veterans used PGIB for a nondegree program. About 5% of veterans used PGIB for a nondegree program at a non-IPEDS provider and 6% did so at an IPEDS institution. Diving deeper into provider type, the most common provider for nondegree seekers was a for-profit non-IPEDS provider, where 4% of veterans enrolled. The two next most common providers were two-year public and two-year for-profit IPEDS colleges at 2% each. Regardless of IPEDS status or the control or type of provider, there were few differences in participation rates by sex, rurality, race/ethnicity, or military rank.

Overall, few veterans are enrolling in nondegree programs. Veterans also selected nondegree programs at IPEDS and non-IPEDS providers at similar rates. As [Figure 3 \(page 21\)](#) depicts, **5% of veterans (or 10% of veterans who used their PGIB [“PGIB Users”]) pursued a nondegree program at a non-IPEDS provider (“Non-IPEDS Nondegree Veterans”) and 6% of veterans (or 12% of PGIB Users) pursued one at an IPEDS institution (“IPEDS Nondegree Veterans”) at some point during their PGIB usage.**⁴⁷

As for the type of provider at which veterans pursued nondegree programs, we begin by looking at non-IPEDS providers. Overall, **4% of PGIB-Eligible Enlisted Veterans (or 8% of PGIB Users) pursued nondegree programs at for-profit non-IPEDS providers.** Only 1% of veterans (or 2% of PGIB Users) pursued a nondegree program at a public non-IPEDS provider, and less than 1% of veterans (and less than 1% of PGIB Users) pursued a nondegree program at a nonprofit non-IPEDS provider. Turning

to the small universe of veterans who used their PGIB benefits for IPEDS nondegree programs (IPEDS Nondegree Seekers), veterans’ enrollment was most common at two-year institutions, both public and for-profit, with 2% of veterans at each (or 4% and 3% of PGIB Users, respectively). Less than 1% of veterans (and less than 2% of PGIB Users) pursued a nondegree program at each of the following sectors: two-year nonprofit, four-year public, four-year nonprofit, and four-year for-profit institutions.

Differences by veteran characteristics generally did not vary by more than 2 percentage points when looking at veterans’ pursuit of a nondegree program at a Non-IPEDS provider, IPEDS provider, or specific provider type (measured by control or sector, respectively).⁴⁸ The full results can be found in Appendix Tables A-3a and A-5a. (Results based on the subset of PGIB Users can be found in Appendix Tables A-3b and A-5b.)

⁴⁷ As noted in Exhibit 1, a proportion of veterans falls into both categories.

⁴⁸ Results for each veteran group fell within 3 percentage points of the average. Three-percentage-point differences occurred among Non-IPEDS Nondegree Seekers as a whole (veterans from the highest military rank pursued a nondegree at a lower rate); Non-IPEDS Nondegree Seekers at for-profits (Hispanic veterans and veterans from the highest military rank both pursued a nondegree at a lower rate); IPEDS Nondegree Seekers (veterans from the two highest military ranks pursued a nondegree at a lower rate; and Black veterans and veterans from the more middle military rank of E-3, pursued a nondegree at a higher rate).

What were the earnings of veterans in nondegree programs, and to what extent did their earnings vary by provider control or sector and by veteran characteristics?

Veterans in nondegree programs earned an average of \$40,400 at non-IPEDS providers and an average of \$37,100 at IPEDS institutions. At both non-IPEDS and IPEDS providers, veterans who used PGIB for nondegree programs at for-profit providers had substantially lower earnings than those who did so at public providers.

Earnings for veterans who used their PGIB benefits for nondegree programs (“Nondegree Seekers”) differed slightly by whether they pursued their program at a non-IPEDS or an IPEDS provider. Nondegree Seekers who enrolled at a non-IPEDS provider earned an average of \$40,400, compared to an average of \$37,100 for those who enrolled at an IPEDS institution.⁴⁹ (Note that these higher earnings at non-IPEDS providers may be driven by higher earnings at public non-IPEDS providers, noted in the next paragraph.) As Appendix Table A-2 demonstrates, this pattern of Nondegree Seekers’ earning more at non-IPEDS than at IPEDS institutions occurs consistently for each sex, race/ethnicity, rurality, and military rank category—with three exceptions: Veterans who left the military at the three highest enlisted ranks who pursued nondegree programs at IPEDS institutions earned \$2,600, \$5,100, and \$9,900 more, respectively, than those who separated at the three highest ranks who pursued nondegree programs at non-IPEDS providers. This diversion from the overall pattern may reflect these veterans’ higher-ranking military career experience and their possible choice of more specialized training that builds on this military career experience. In other words, their higher-level military experience may be influencing the programs they select and thus their later earnings.

We observe variation in earnings also by the specific type of non-IPEDS or IPEDS provider where veterans were pursuing nondegree programs. Although [Figure 4 \(page 21\)](#) shows the average earnings at all providers, we focus this discussion on provider types where at least 1% of PGIB-Eligible Enlisted Veterans pursued a nondegree program. We begin with non-IPEDS programs. The 1% of **veterans who used PGIB for a nondegree program at a public non-IPEDS provider during at least part of their PGIB usage had average earnings of \$57,000.** The 4% of **veterans who pursued a nondegree program at a for-profit non-IPEDS provider earned \$20,200 less at \$36,800.** Appendix Table A-4 also indicates that **veterans at non-IPEDS for-profit providers consistently earned less than those at non-IPEDS public providers, regardless of sex, race/ethnicity, rurality, and military rank** (though gaps were smaller at the higher ranks—less than \$10,000, compared to the \$20,200 overall gap).

⁴⁹ For context, as Appendix Table A-2 indicates, Nonparticipants (some of whom may not have participated because they were already faring well in the labor market) were earning \$44,800, but as highlighted previously, this comparison of simple averages does not account for how the characteristics of veterans pursuing these paths might have differed.

When examining earnings gaps in the context of PGIB payments, we find the average amount of PGIB payments for each veteran pursuing a nondegree program at a non-IPEDS for-profit provider was \$17,300, compared to \$3,200 at a non-IPEDS public provider.⁵⁰ In other words, **for non-IPEDS nondegree programs, for-profit providers cost the federal government \$14,100 more per veteran than public providers** (in tuition and fees charged to the U.S. Department of Veterans Affairs) **but the yearly earnings of veterans who attended a for-profit provider were \$20,200 lower.**

We now turn to the earnings of veterans who used their PGIB benefits for nondegree programs at institutions that fall within the purview of the U.S. Department of Education (meaning these institutions are qualified to participate in Title IV programs) and, therefore, report to IPEDS (i.e., “IPEDS Nondegree Seekers”). As discussed previously and shown in [Figure 3 \(page 21\)](#), only 6% of veterans did so, and only two sectors met our threshold for discussing earnings results by enrolling at least 1% of veterans: two-year public and two-year for-profit institutions, at 2% each. The pattern was similar to that found at non-IPEDS programs, though the gap was smaller. Specifically, **veterans who attended a nondegree program at a two-year for-profit college were earning \$31,800—\$6,800 less than those who attended a two-year public college, who were earning \$38,600.** Appendix Table A-6 also reveals that, **across the veteran characteristics examined, veterans pursuing nondegree programs at IPEDS two-year for-profit institutions consistently earned less than veterans at IPEDS two-year public institutions, with one exception:** Those who left the military at the lowest military rank (E-1) had \$1,400 higher earnings at two-year for-profit institutions than those at two-year public institutions.

Again, we consider these earnings differences within the context of PGIB payments. At IPEDS institutions, the average PGIB payment per veteran pursuing a nondegree program at a two-year for-profit college was \$22,200—\$15,800 more than the \$6,400 average PGIB payment amount per veteran at a two-year public college. In other words, **for IPEDS nondegree programs, two-year for-profit institutions cost the federal government \$15,800 more per veteran than two-year public IPEDS institutions** (in tuition and fees charged to the U.S. Department of Veterans Affairs) **but the yearly earnings of veterans who attended two-year for-profit institutions were \$6,800 lower.**

⁵⁰ The research team summed the awarded amounts for nondegree programs by VA control category for non-IPEDS providers; the number of unique veterans with a payment record to that control category was also captured and used to generate the average payment amount. Note that the total payments made on behalf of a veteran to a specific type of provider may have been made to multiple providers or a single provider; payments to a specific provider may have been made for multiple years of enrollment or a single term. In addition, a veteran may have had payment records to providers in multiple categories.

These findings are relevant to policymakers interested in where PGIB dollars are going as well as those considering expanding federal student aid to include for-profit nondegree programs. That said, there are a couple of points to keep in mind when considering the earnings results for both Non-IPEDS and IPEDS Nondegree Seekers. First, remember that these earnings results do not suggest causation. Lacking an experimental design such as a randomized controlled trial or a quasi-experimental design, the findings here do not prove that any earnings difference is definitively the product of the education provider the veterans attended. Instead, the results here show only correlation; there could be other factors or causes that were not studied here. For example, we could not account for differences in veterans' personal motivations. In addition, veterans who pursued a nondegree program at a public versus for-profit provider may have been at different points in their careers or have had different prior educational attainment, prior occupations, and so forth, which may have influenced their earnings. The analysis also does not capture the field of the nondegree program the veteran pursued or whether the veteran completed this credential. We know only that their PGIB payment file indicated that at least some of these veterans' PGIB was used at a nondegree education program at this provider.

Second, student debt also impacts students' overall financial standing, and survey data suggest that some veterans take out student loans even with access to PGIB.⁵¹ Unfortunately, because of privacy laws governing student data at the U.S. Department of Education, the department was unable to participate in this interagency data-sharing study and provide student debt information that could be incorporated into this project. That said, other studies have documented higher student debt levels for students, including veterans, who attend for-profit providers.⁵²

⁵¹ See Ochinko and Payea (2019).

⁵² See Armona et al. (2022), <https://www.brookings.edu/articles/the-for-profit-college-system-is-broken-and-the-biden-administration-needs-to-fix-it/>, and <https://vetsedsuccess.org/should-colleges-spend-the-gi-bill-on-veterans-education-or-late-night-tv-ads-and-which-colleges-offer-the-best-instructional-bang-for-the-gi-bill-buck/>.

Degree Seekers

A Look at the Characteristics and Earnings of Veterans Who Use PGI to Pursue a Degree Program

As both the number of Americans pursuing postsecondary education and college costs have risen, there has been increased interest in understanding students' likelihood of completing a degree, their subsequent earnings, and the extent to which both differ by the types of providers students attended and the programs students pursued. There is evidence of this interest from both sides of the political aisle. The Gainful Employment Rule⁵³ and the proposed H.R. 496 Promoting Employment and Lifetime Learning Act⁵⁴ both seek to examine the earnings of students in specific programs at specific institutions. The federal government and states are also providing information on student outcomes through tools like the U.S. Department of Education's [College Scorecard](#), Texas' SeekUT, and Utah's [Launch My Career: Utah](#).

Helping students of all backgrounds enroll in postsecondary programs and institutions that have better outcomes is key. Data show, for example, that Black and Hispanic undergraduates attend for-profit institutions at higher rates than all undergraduates (Campbell & Wescott, 2019), and that these institutions generally have lower completion rates⁵⁵ and higher default rates.⁵⁶ Similarly, Hispanic college students are more likely than average to enroll at two-year institutions (Campbell & Wescott, 2019), and these institutions generally have lower completion rates.⁵⁷ Although there has been less analysis on the earnings and degree completion outcomes of veterans, questions have been raised about the outcomes of veterans at for-profit institutions, institutions with low instructional spending, and institutions offering predominantly online education, or so-called "distance learning."⁵⁸

⁵³ See <https://www.federalregister.gov/documents/2023/10/10/2023-20385/financial-value-transparency-and-gainful-employment/>.

⁵⁴ See <https://www.congress.gov/bill/118th-congress/house-bill/496/all-actions?q=%7B%22search%22%3A%5B%22hr+5%22%5D%7D&s=1&r=22>.

⁵⁵ About 50% of first-time postsecondary students who started at a four-year for-profit institution had left postsecondary education entirely and without a credential six years later, compared with 20% and 15% of those who started at a four-year public or nonprofit institution, respectively (Chen et al., 2019).

⁵⁶ Student loan default rates provide some indication of both how much debt students took on and their outcomes in the labor market that enable them to repay that debt. Among students who began college at often more expensive for-profit institutions in 2003-04, 53% had defaulted within 12 years, compared with 26% of those who started at less expensive two-year public colleges and roughly 17% who started at four-year public and nonprofit institutions, which tend to have better graduation rates and post-collegiate earnings. See Woo et al. (2017) for more on default.

⁵⁷ About 46% of first-time postsecondary students who started in 2011-12 at a two-year public institution had left postsecondary education entirely and without a credential six years later, compared with 20% and 15% of those who started at a four-year public or private institution, respectively (Chen et al., 2019).

⁵⁸ See, for example, statements made by House Veterans Affairs Committee Ranking Member Mark Takano such as <https://medium.com/@repmarktakano/tearing-down-barriers-to-veterans-education-a-keynote-speech-to-the-national-association-of-eb6f21418319> and <https://www.youtube.com/watch?v=1WHodK588F8>. See also <https://vetsedsuccess.org/should-colleges-spend-the-gi-bill-on-veterans-education-or-late-night-tv-ads-and-which-colleges-offer-the-best-instructional-bang-for-the-gi-bill-buck/>.

This chapter provides several new insights on veterans' participation in degree programs and their outcomes. We begin by presenting participation and earnings results for Degree Seekers as we did for Nondegree Seekers in the previous chapter. Thus, in this chapter, we first present results on the proportion of veterans who used PGIB benefits to pursue a degree program at some point during their PGIB usage. We then analyze whether the proportion of veterans who used PGIB benefits differed by the type of provider they attended. In other words, are there differences by control or type (i.e., public, nonprofit, or for-profit status) for veterans pursuing degrees at non-IPEDS providers and by sector (i.e., two- or four-year public, nonprofit, or for-profit status) for veterans pursuing degrees at IPEDS institutions?⁵⁹ We then further highlight any differences in these proportions by veteran characteristics.⁶⁰ Next, we look at earnings of degree-seeking veterans at non-IPEDS and IPEDS entities; then, we break these results down further by provider type (control) or sector, respectively, and note any differences in earnings patterns by veteran characteristics.

Given the particular interest in outcomes for veterans who enroll at institutions with low instructional spending and institutions that are predominantly online (“distance learning”), this chapter also includes several additional analyses exploring enrollment and outcomes by those institutional characteristics. (We do so only for veterans who sought a degree at an IPEDS institution, as instructional spending and distance learning data are not available for students at non-IPEDS providers.) Specifically, first, we leverage additional IPEDS data to provide descriptive statistics on veterans' enrollment and earnings by instructional spending and distance education prevalence. Second, we use regression analysis to examine how sector, instructional spending, and distance education prevalence are related to earnings outcomes, after accounting for other veteran characteristics (including not only sex, race/ethnicity, rurality, and military rank but also characteristics like military occupation and AFQT).⁶¹ Third, given the interest in completion, we leverage data from the National Student Clearinghouse to analyze Clearinghouse Veterans'⁶² six-year degree completion rates by sector, instructional spending, and distance education overall, and after accounting for other veteran characteristics.⁶³

⁵⁹ As noted in Chapter 3, we recategorized some four-year institutions as two-year institutions based on their Carnegie Classification in IPEDS.

⁶⁰ See Exhibit 1 for a more detailed definition of these two groups of Degree Seekers. As Exhibit 1 notes, distinguishing between non-IPEDS and IPEDS providers is useful for several reasons. We can incorporate much more information about the characteristics of IPEDS providers than non-IPEDS providers. That said, the fact that we have information on non-IPEDS providers at all (in addition to whether they are public, nonprofit or for profit), is a unique contribution of this study. College Scorecard and Gainful Employment data on students' outcomes are limited to Title IV institutions, but here we report student outcomes on other types of education providers that also receive federal dollars—in this case, through PGIB. Furthermore, by analyzing non-IPEDS and IPEDS groups separately, we can better understand the extent to which they differ. We use the term “provider” when referring to both IPEDS and non-IPEDS providers and when referring to just non-IPEDS providers because non-IPEDS providers are not always colleges or institutions. We use “colleges” and “institutions” only to refer to IPEDS providers. Also, as indicated in Exhibit 1 and discussed in Chapter 3, veterans may fall into more than one nondegree (or degree) category. Veterans may also pursue programs at multiple provider types. This overlap is particularly important to bear in mind when looking at earnings. The average earnings for a group of veterans pursuing a particular degree program at a particular provider type may be related to their use of PGIB elsewhere.

⁶¹ For a complete list of variables included in regressions, see Appendix Table B-1. The discussion of regression results here focuses on the relationship between institutional characteristics and earnings. For information on how veteran characteristics are related to earnings, accounting for other factors, see our previous report (Radford et al., 2024).

⁶² See Exhibit 1 for a more detailed definition of Clearinghouse Veterans.

⁶³ For a complete list of variables included in regressions, see Appendix Table B-1. The discussion of regression results here focuses on the relationship between institutional characteristics and earnings. For information on how veteran characteristics are related to completion, accounting for other factors, see our previous report (Radford et al., 2024).

Our research questions for this chapter are as follows:

1. What proportion of veterans used their PGIB benefits for degree programs (at both IPEDS and non-IPES providers), and to what extent did this proportion vary by provider type/control or sector and by veteran characteristics?
2. What were the earnings of such degree-seeking veterans, and to what extent did their earnings vary by provider type/control or sector and by veteran characteristics?
3. For veterans seeking degrees at institutions for which there is data regarding instructional spending and distance education (i.e., “IPEDS Degree Seekers”), how did their enrollment and earnings vary by the instructional spending and distance education prevalence of the first IPEDS institution they attended after separating from the military?
4. For veterans who attended institutions reporting to the National Student Clearinghouse (“Clearinghouse Veterans”) for which there are data regarding completion rates, how did six-year degree completion rates vary by the sector, instructional spending, and distance education prevalence of the institution the veteran first attended after separating from the military?

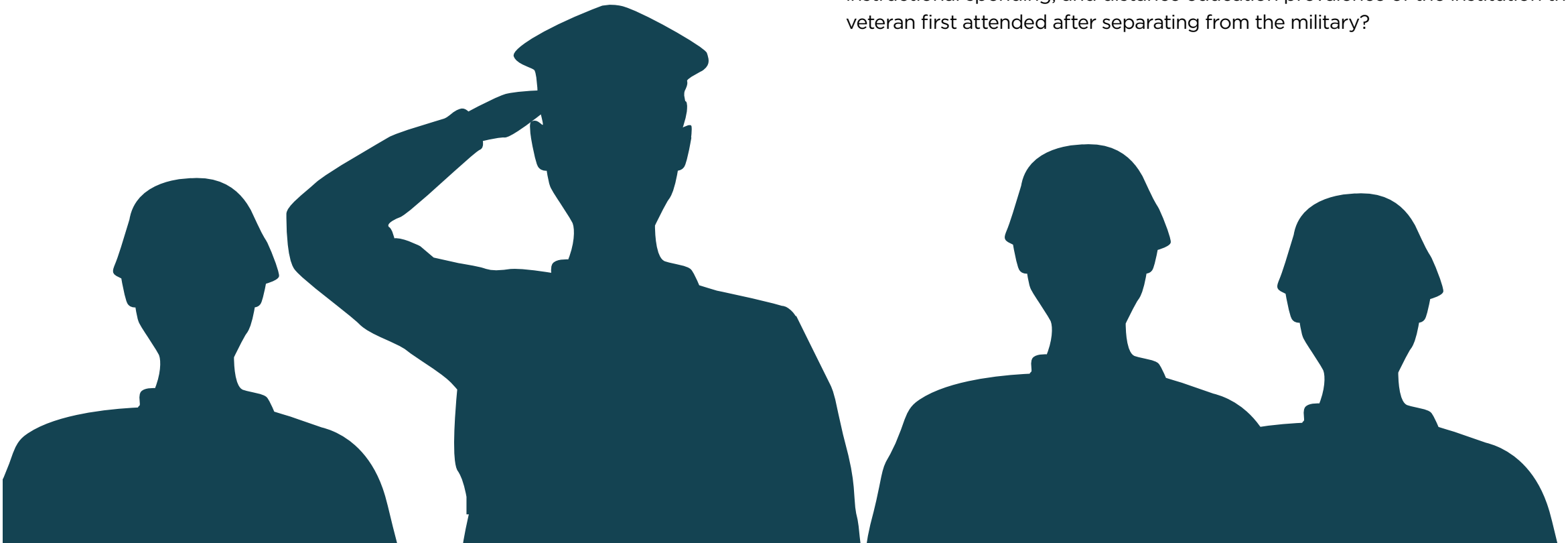


FIGURE 5

Percentage of PGIB-Eligible Veterans Who Were **Non-IPEDS Degree Seekers** and/or **IPEDS Degree Seekers**, By Type (Control) or Sector

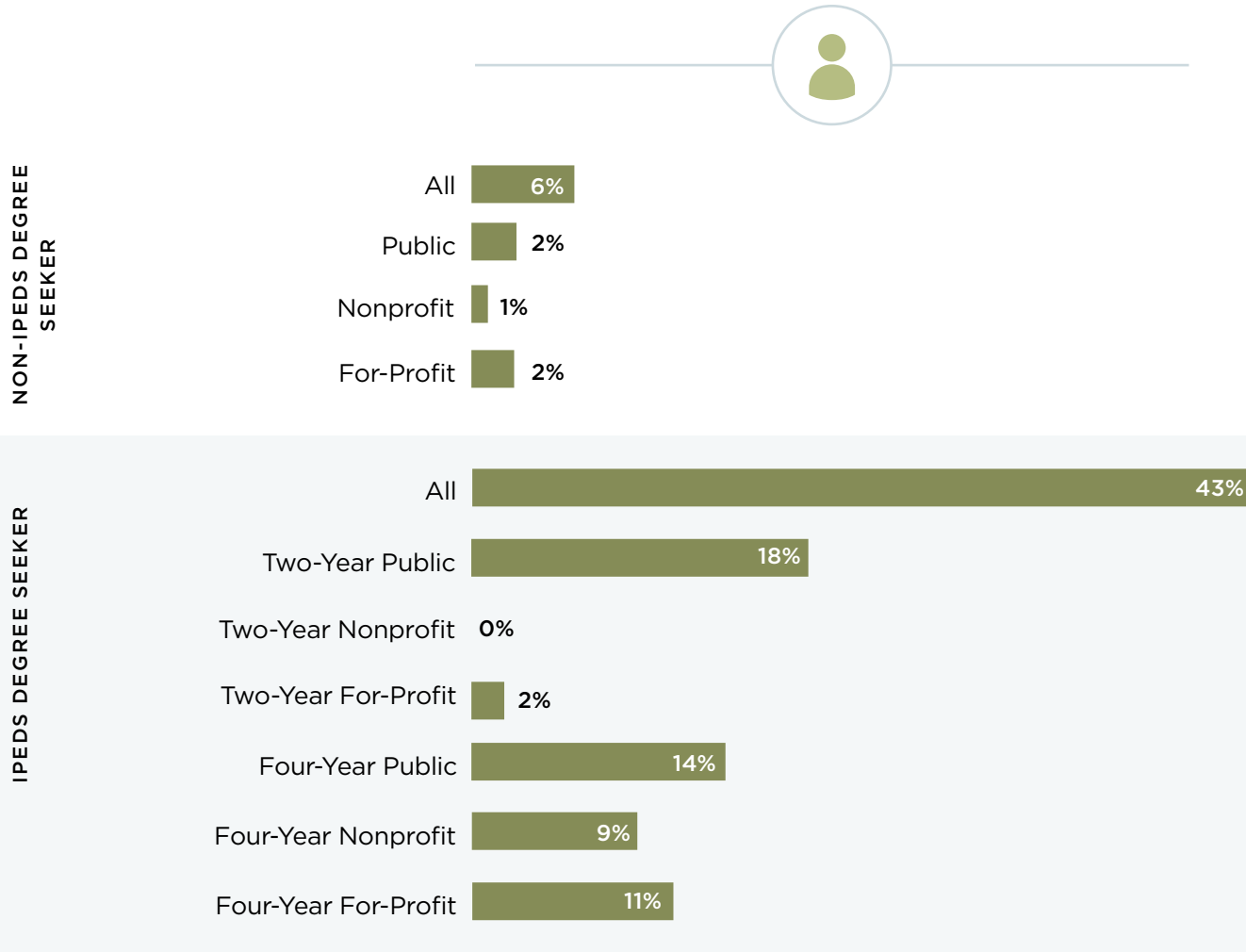
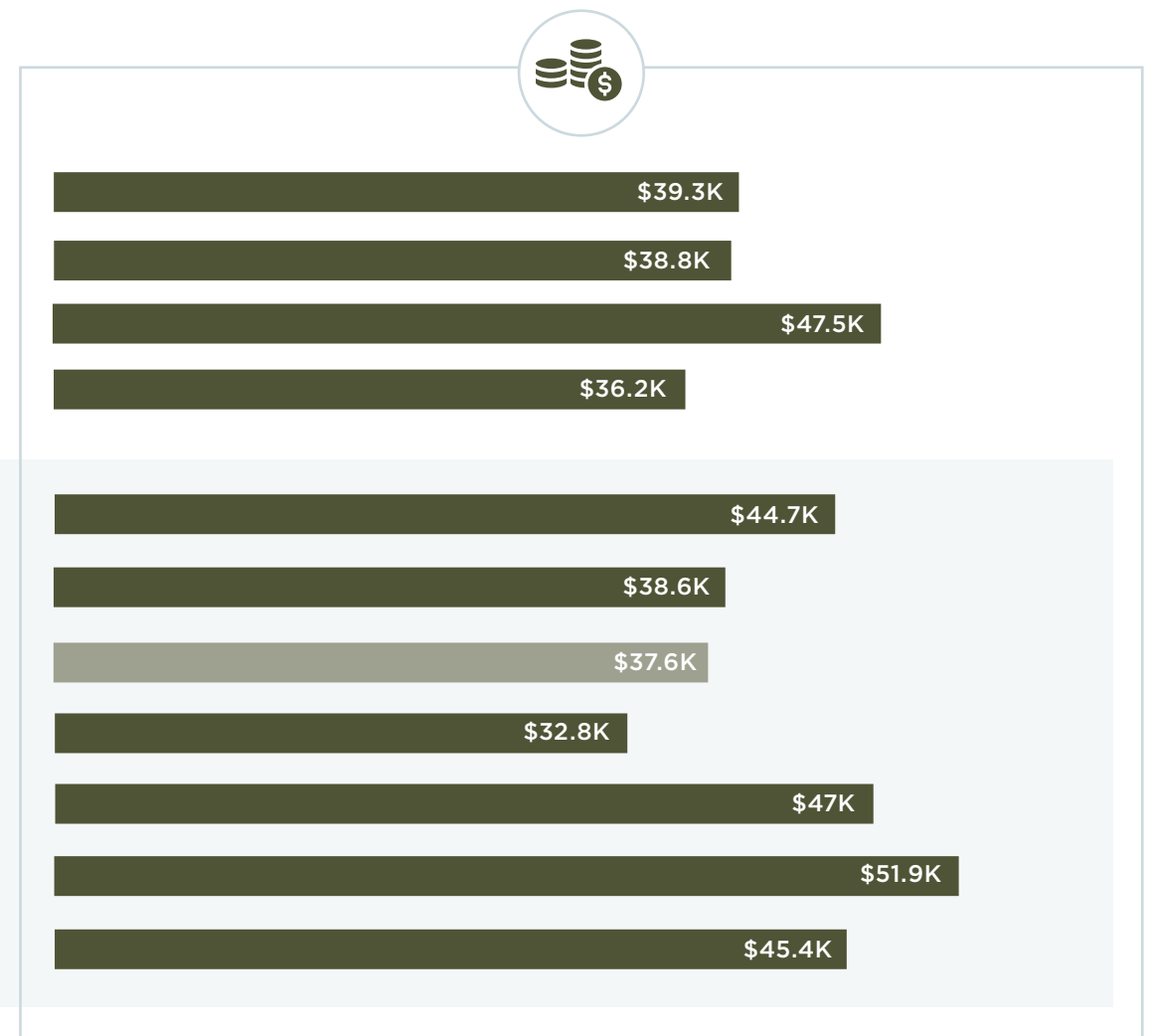


FIGURE 6

Earnings for PGIB-Eligible Enlisted Veterans who were **Non-IPEDS Degree Seekers** and/or **IPEDS Degree Seekers**, By Type (Control) or Sector



Note: Earnings for provider types where less than 1% of PGIB-Eligible Enlisted Veterans pursued a given program are shown in lighter bars.

What proportion of veterans used their PGIB benefits for degree programs, and to what extent did this proportion vary by provider type/control or sector and by veteran characteristics?

More degree-seeking veterans used PGIB benefits at IPEDS than non-IPEDS providers. Specifically, 43% of veterans used PGIB for a degree program at an IPEDS provider, whereas only 6% used PGIB for a degree program at a non-IPEDS provider. Compared to the average veteran, female, Black, and Hispanic veterans pursued degrees at IPEDS institutions at higher rates, whereas veterans who settled in rural and micropolitan areas did so at lower rates. As for the type of provider where veterans pursued degree programs, enrollment was most common at two-year public IPEDS colleges (18%) followed by four-year public (14%), four-year for-profit (11%) and four-year nonprofit (9%) IPEDS colleges.

Veterans' use of PGIB for degree programs varied by IPEDS status as well as by type of provider. As [Figure 5 \(page 29\)](#) reveals, only about 6% of all enlisted veterans eligible for PGIB (or 11% of veterans who used PGIB ["PGIB Users"]) had pursued a degree program at a non-IPEDS provider using PGIB funds. In contrast, 43% of veterans (or 87% of PGIB users) had attended a degree program at an IPEDS institution using PGIB funds.

Turning to type of provider and focusing, first, on the smaller number of veterans who pursued degree programs at non-IPEDS providers, 2% of veterans (or 5% of PGIB Users) enrolled in a public non-IPEDS provider, another 2% (or 5% of PGIB Users) enrolled in a for-profit non-IPEDS provider, and another 1% (or 2% of PGIB Users) enrolled in a non-IPEDS nonprofit provider, which often are religiously affiliated schools.

Moving on to enrollment at IPEDS institutions, **veterans were most likely to have enrolled in a degree program at a two-year public college; 18% of all enlisted veterans eligible for PGIB (or 37% of PGIB Users) did so. As for the next most common sectors, 14% of all enlisted eligible veterans (or 28% of PGIB Users) attended four-year public institutions, 11% (or 22% of PGIB Users) enrolled at four-year for-profit institutions, and 9% (or 18% of PGIB Users) studied at four-year nonprofit institutions.** Another 2% of veterans (or 4% of PGIB Users) attended a two-year for-profit IPEDS institution for a degree; less than 1% of veterans (or 1% of PGIB Users) enrolled at a two-year nonprofit IPEDS institution.⁶⁴

⁶⁴ It is worth noting that this 9-percentage-point gap in the percentage of veterans who enrolled in a two-year public versus a four-year for-profit college is much smaller than the gap in enrollment typically observed between these two sectors for undergraduates at large. According to our calculations in the U.S. Department of Education's DataLab using 2019-20 National Postsecondary Student Aid Study data, 31% of all undergraduates pursuing a degree program in that year were enrolled in a two-year public college, whereas just 5% were enrolled at a four-year for-profit college.

We now examine degree pursuit at non-IPEDS providers overall, IPEDS providers overall, and specific types of non-IPEDS and IPEDS providers. For ease of exposition, we discuss results by veteran characteristics based on PGIB-eligible veterans, the full results of which can be found in Appendix Tables A-7a and A-9a. (Results based on the subset of PGIB Users can be found in Appendix Tables A-7b and A-9b.)

There was very little variation by veteran characteristics in the percentage of veterans pursuing a degree program. Appendix Table A-7a reveals that specific veterans' groups enrollment at non-IPEDS providers overall and at specific types of non-IPEDS providers consistently fell within 2 percentage points of the average, with two exceptions: Veterans who separated at both the lowest and highest military ranks were 3 percentage points less likely than the average veteran to have enrolled in a non-IPEDS degree program.

When we turn to degree pursuit at IPEDS institutions, however, we observe greater variation. Given the greater proportion of veterans pursuing degrees at IPEDS, rather than non-IPEDS, providers, we focus our discussion on veteran groups that varied by at least 5 percentage points from the average. First, we discuss veterans who used PGIB for a degree program at any IPEDS institution. As Appendix Table A-9a reveals, female, Black, and Hispanic veterans enrolled in IPEDS institutions at rates 10, 7, and 6 percentage points, respectively, above that of the average veteran, whereas rural and micropolitan veterans did so at rates 10 and 7 percentage points, respectively, below the average. These results are

consistent with results from our examination of PGIB use at Clearinghouse institutions discussed in more detail in our prior report (Radford et al., 2024).⁶⁵ As for results by military rank, veterans who left the military at midlevel ranks of E-3 to E-5 pursued IPEDS degree programs at rates between 7 and 13 percentage points higher than the average veteran, whereas veterans who left the military at the three highest and two lowest ranks did so at rates between 10 and 25 percentage points lower. As noted earlier, rank is an indication of length of service and a sign of success in the military. Those who left the military at lower ranks may be eligible for a smaller proportion of benefits or have experienced demotion that may disincentivize their pursuing a degree at an IPEDS institution). Those who left the military at higher ranks, on the other hand, may already be faring well in the civilian labor market and/or be older, making pursuing additional education at this stage in their careers less appealing.

Moving on to differences in degree pursuit within specific IPEDS sectors, most sectors did not show much variation in enrollment by veteran characteristics. Specifically, gaps between individual veteran groups and the average for their sector did not exceed 1 percentage point at two-year nonprofit colleges (where less than 1% of veterans enrolled), 4 percentage points at four-year nonprofit colleges (where 9% of veterans enrolled), or 2 percentage points at two-year for-profit colleges (where 2% of veterans enrolled).

⁶⁵ This similarity is not surprising given that a large portion of PGIB use occurs in degree programs at IPEDS institutions, and Clearinghouse is most likely to cover that type of enrollment.

That said, multiple veteran groups' enrollment differed at least 5 percentage points from the average in two sectors: two-year public and four-year for-profit institutions. We start with differences by race/ethnicity and sex. Compared to veterans overall, **American Indian/Alaska Native veterans and Hispanic veterans were more likely to enroll at two-year public institutions, whereas female and Black veterans were more likely to enroll in four-year for-profit institutions.** Specifically, American Indian/Alaska Native veterans and Hispanic veterans enrolled in two-year public institutions at rates 5 and 6 percentage points above the average for this sector, respectively. Female and Black veterans enrolled in four-year for-profit institutions at rates 5 and 8 percentage points above the average for this sector, respectively. These enrollment differences by race/ethnicity and sex underscore the importance of understanding the outcomes of those attending these two sectors, which we will discuss later in this chapter.

Other differences within IPEDS sectors occurred by rank. These differences by rank followed a familiar pattern, with those who left the military at lower and higher ranks less likely to pursue a degree. Specifically, veterans who left the military at the lowest enlisted rank were 8 and 6 percentage points less likely than veterans overall to have pursued a degree program at a two-year public or at a four-year for-profit college, respectively. Veterans who left the military at the lowest two and the highest three ranks were also at least 5 percentage points less likely than veterans overall to have pursued a degree program at a four-year public college.



What were the earnings of veterans using their GI Bill for degrees, and to what extent did their earnings vary by provider type/control or sector and by veteran characteristics?

Veterans who pursued a degree at an IPEDS institution earned \$44,700, whereas veterans who did so at a non-IPEDS provider earned \$39,300. By veteran characteristics, for every veteran group examined, the earnings of those who pursued a degree at an IPEDS institution were higher than the earnings of those who did so at a non-IPEDS provider. Drilling down to look at specific types of providers, both within non-IPEDS and IPEDS providers, earnings for veterans at for-profit providers were lower than for veterans at public providers, and a regression analysis for IPEDS providers found that this remained true at the two-year level, after accounting for other veteran characteristics. Two-year for-profit IPEDS institutions also cost the PGIB program more in terms of average payment per veteran than two-year public IPEDS institutions did.

Veterans who sought degrees at IPEDS institutions (“IPEDS Degree Seekers”) were earning \$44,700 in 2018.⁶⁶ As Appendix Table A-2 reveals, these earnings were \$5,400 higher than their degree-seeking counterparts at non-IPEDS providers (“Non-IPEDS Degree Seekers”) at \$39,300.⁶⁷ It is worth noting that, although the last chapter found that Nondegree Seekers at non-IPEDS providers earned more than Nondegree Seekers at IPEDS institutions, for Degree Seekers that pattern is reversed. **Veterans seeking degrees at IPEDS providers consistently had higher earnings than veterans seeking degrees at non-IPEDS providers, regardless of sex, race/ethnicity, rurality, or military rank.**

We observed even greater variation in earnings when conducting a deeper dive into the specific types of providers at which veterans pursued degree programs. Although [Figure 6 \(page 29\)](#) shows the average earnings of veterans from all providers, we again focus our discussion on the darker bars that show providers with more meaningful veteran enrollment (where at least 1% of PGIB-Eligible Enlisted Veterans pursued degree programs). We begin with the smaller number of veterans who pursued degrees at non-IPEDS providers (“Non-IPEDS Degree Seekers”), who represent 6% of all PGIB-Eligible Enlisted Veterans. Degree seekers at nonprofit non-IPEDS providers stand out as having the highest earnings among non-IPEDS providers (and among many IPEDS sectors as well), but it is important to keep in

⁶⁶ Our 2018 earnings results both here and in Chapter 3 exclude veterans who received a PGIB payment between January 1, 2018, and September 30, 2018, to avoid including veterans who were focused on pursuing education and training and were perhaps less focused on earnings in the 2018 calendar year.

⁶⁷ For further context, IPEDS Degree Seekers' earnings were also at least \$4,300 higher than Nondegree Seekers' at both IPEDS and non-IPEDS providers. IPEDS Degree Seekers were earning \$100 less than Nonparticipants (but some Nonparticipants may have chosen not to use their PGIB benefits because they were already faring well in the labor market). This comparison of pure averages also does not take into account veteran characteristics. As our regression analysis comparing Participants and Nonparticipants demonstrated, once analyses have accounted for other characteristics, the group earning more can reverse.

mind that only 1% of veterans fall into this category. Veterans who pursued a degree program at a public non-IPEDS provider had earnings \$2,600 higher than those who did so at a for-profit provider, but it is again worth noting that only 2% of veterans fell into each of these categories. **As Table A-8 reveals, this pattern of higher earnings at nonprofit entities, lower earnings at public entities, and lowest earnings at for-profit entities among veterans pursuing degrees at non-IPEDS providers remained consistent regardless of sex, race/ethnicity, and rurality.** Only for veterans who left the military at the three highest enlisted military ranks, where earnings may reflect established occupations and higher level of skills gained in the military, did the order change, with veterans at nonprofits still earning the most, but veterans at for-profit providers earning more than veterans at public providers. Recall that the data presented here on earnings does not take into account student debt levels, which obviously impact a veteran's financial standing.⁶⁸

We now switch to the earnings of the much larger proportion of veterans who sought degrees at IPEDS institutions (“IPEDS Degree Seekers”). Focusing first on level (i.e., two-year versus four-year colleges), [Figure 6 \(page 29\)](#) reveals that, compared to average earnings for such IPEDS Degree Seekers overall, average earnings at the three two-year IPEDS institutions were lower, and average earnings at the three four-year institutions were higher. These higher earnings associated with four-year institutions parallel national patterns (Ma & Pender, 2023).

⁶⁸ As noted above, because of privacy laws governing student data at the U.S. Department of Education, the U.S. Department of Education was unable to participate in this interagency data-sharing study, and, therefore, student debt levels are not included. However, other studies have found higher student debt levels among students who attend for-profit providers (Armona, Chakrabarti, & Lovenheim, 2022; Shiro & Reeves, 2021), including students who are veterans (Ochinko & Payea, 2019). Lower earnings at for-profit providers, combined with higher student debt levels, would affect a veteran's financial standing.

⁶⁹ The same pattern was reported in Chapter 3 for Nondegree IPEDS Seekers.

⁷⁰ We do not discuss two-year nonprofit colleges in this earnings discussion because less than 1% of veterans pursued a degree there.

As for institution type (control), at both the two- and four-year levels, veterans seeking degrees at for-profit institutions had the lowest earnings.⁶⁹ More specifically, at two-year colleges, veterans pursuing degrees at for-profit institutions earned \$32,800, or \$5,800 less than those at public colleges (at \$38,600).⁷⁰ Focusing on four-year colleges, veterans at for-profit colleges on average earned \$45,400, which was \$1,600 and \$6,500 less than the average earnings of veterans who pursued degrees at public and nonprofit institutions, respectively. As Table A-10 shows, this pattern of lower earnings for veterans at two-year for-profit colleges than at two-year public colleges held true when examined by sex, race/ethnicity, rurality, and rank. Similarly, among four-year colleges, for-profit colleges had the lowest earnings, public colleges had higher earnings, and nonprofit colleges had the highest earnings. This pattern by control at four-year colleges also held true by all veteran characteristics, except those who left the military at the three highest military ranks, where those who pursued a degree at a for-profit college had the highest earnings. As noted above, these enlisted veterans who left the military at high ranks may be a fairly distinct group whose earnings may reflect their established occupations and higher level of skills gained in the military. Recall, as above, that our analysis of earnings does not take into consideration higher student debt levels associated with for-profit providers, which would affect veterans' overall financial picture.

We also performed regression analysis to examine the role of first sector⁷¹ on the earnings of veterans pursuing degrees at IPEDS institutions. Our results were similar to those reported above, **even after accounting for academic preparation (as measured by AFQT quintile), age, race/ethnicity, sex, disability rating, years since separation, military rank, military occupation, family responsibilities, region, rurality, and combat status.**⁷² First, veterans who first attended a two-year college still earned less than those who first attended a four-year college—\$5,800 less (when comparing two-year public colleges to four-year for-profit colleges) and \$14,000 less (when comparing two-year for-profit colleges with four-year nonprofit colleges). Second, the order of veterans' average earnings by type or sector from lowest to highest was the same as above:⁷³ two-year for-profit, two-year public, four-year for-profit, four-year public, and four-year nonprofit colleges.

That said, earnings gaps were smaller after accounting for other characteristics in our regression analysis. Starting with four-year colleges, the earnings advantage for veterans at public versus for-profit colleges went from \$1,600 to a statistically nonsignificant difference of \$100 with controls. The earnings gap for veterans at nonprofit versus for-profit colleges, though smaller, remained: \$6,500 versus \$4,900 when accounting for other characteristics. As for two-year colleges, veterans attending public institutions saw their earnings advantage over veterans attending for-profits fall from \$5,800 to about \$3,100 when accounting for other characteristics, but an advantage was still present. **In sum, regression results indicate that, when accounting for other factors, the earnings gap fades away between veterans at four-year for-profit colleges versus four-year public colleges,**

but earnings remain lower for veterans attending four-year for-profit colleges versus four-year nonprofit colleges and for veterans attending two-year for-profit colleges versus two-year public colleges. Importantly, as noted above, these data do not take into account the higher average student debt levels others have noted at for-profit providers.

In considering these earnings gaps that remained by sector even after accounting for other variables, it is useful to again examine the average PGIB payment amount expended per veteran attending specific sectors.⁷⁴ In other words, what is the federal government paying for veterans to attend different types of colleges? At the four-year level, we found that the average per-veteran payment amount by the government was \$34,400 for four-year nonprofit colleges versus \$26,100 for four-year for-profit colleges, but nonprofits had yearly earnings that were about \$4,900 higher when accounting for other veteran characteristics.⁷⁵ At the two-year level, the average per-veteran payment amount was \$27,200 at for-profit colleges versus \$12,400 at public colleges, whereas earnings were \$3,100 greater at public colleges after accounting for other veteran characteristics. **This last comparison suggests that not only is PGIB use at two-year for-profit colleges associated with lower veteran earnings than PGIB use at two-year public colleges, even after accounting for other variables, but two-year for-profit colleges also cost the PGIB program more than twice as much as two-year public colleges do.**

⁷¹ Note that, although the preceding descriptive results considered the earnings veterans received if they had attended a sector as an IPEDS Degree Seeker, regression results considered the earnings veterans received if that sector was the first sector they had attended as an IPEDS Degree Seeker. Thus, veterans included in the descriptive earnings comparisons may not have attended that specific provider type first, as in the regression.

⁷² The complete list of variables used in this and other regression analyses in this report can be found in Appendix Table B-1.

⁷³ Just as we did in discussing [Figure 4 \(page 21\)](#) above, we do not discuss the IPEDS two-year nonprofit sector, where less than 1% of veterans were Degree Seekers.

⁷⁴ The research team summed the awarded amounts for degree programs by the sector of the institution; the number of unique veterans with a payment record to that sector of institution was also captured and used to generate the average payment amount. Note that the total payments made on behalf of a veteran to institutions within a sector may have been made to multiple institutions or a single institution; payments to a specific institution may have been made for multiple years of enrollment or a single term. In addition, a veteran may have had payment records to institutions in multiple sectors.

⁷⁵ The average per veteran amount sent to four-year public colleges between 2009 and 2018 was \$26,000, which is within \$100 of the per veteran amount sent during that time to four-year for-profit colleges. As noted previously, and unlike the other comparisons drawn in this paragraph, the difference in veterans' earnings among those who attended these two types of institutions was not statistically significant.

How did veterans' enrollment and earnings vary by instructional spending and distance education prevalence?

Overall, veterans were more likely to pursue degrees at institutions with lower levels of instructional spending—and the earnings of these veterans were lower than the earnings of veterans who pursued degrees at institutions that spent more on their instruction. Specifically, 17% of veterans pursued a degree program at an IPEDS institution in the lowest quintile of instructional spending, whereas 1% of veterans pursued a degree program at an IPEDS institution in the highest quintile of instructional spending. Veterans who first pursued a degree program at an institution in the lowest instructional spending quintile earned an average of \$41,600, or \$16,700 less than the average earnings of those who first pursued a degree program at an institution in the highest instructional spending quintile. Even accounting for other veteran characteristics in a regression analysis, the gap in earnings between veterans at institutions in the lowest and highest spending quintiles stood at \$9,100.

Previously, we examined the percentage of veterans who used at least some of their PGIB benefits to seek degrees at both IPEDS and non-IPEDS providers and their earnings by type (control) and sector, respectively. IPEDS data, however, offer the opportunity to examine additional institutional characteristics, and, here, we capitalize on this opportunity. Specifically, given policymakers' interest in instructional spending and distance education, we explore degree-seeking veterans' enrollment and earnings by instructional spending⁷⁶ and distance education prevalence⁷⁷ at IPEDS institutions overall and at specific IPEDS sectors. The instructional spending and distance education prevalence quintiles reported are based on the first IPEDS institution that veterans attended as a Degree Seeker. We discuss these additional findings below. Note that these instructional spending and distance education analyses are not possible for non-IPEDS institutions.

⁷⁶ IPEDS' instructional spending measure captures "the sum of all operating expenses associated with the colleges, schools, departments, and other instructional divisions of the institution and for departmental research and public service that are not separately budgeted. This would include compensation for academic instruction, occupational and vocational instruction, community education, preparatory and adult basic education, and remedial and tutorial instruction conducted by the teaching faculty for the institution's students" (<https://nces.ed.gov/ipeds/use-the-data/downloadsurveyaterialglossary?year=2018>). We divided this instructional spending sum by the number of full-time student equivalent (FTE) students. We then created instructional spending quintiles for each academic year based on all IPEDS institutions, weighted by the FTE of the institution in that year (to ensure that small institutions would not dominate the quintiles). For each veteran, we captured the instructional spending quintile at the first IPEDS institution for which veterans had a degree-seeking payment record. See Appendix B for more details.

⁷⁷ This distance education prevalence measure is based on the proportion of all degree-seeking undergraduate and graduate students enrolled exclusively in distance education (i.e., all courses taken in an academic year were 100% distance education) at the first IPEDS institution for which veterans had a degree-seeking payment record. IPEDS defines a distance education course as a course in which the instructional content is delivered exclusively via distance education. We then created distance education quintiles for each academic year based on all IPEDS institutions for which we had distance education information, weighted by the total number of undergraduate and graduate students at the institution. For each veteran, we captured the corresponding quintile for the institution in the veteran's first year as an IPEDS Degree Seeker. It is important to note that this measure does not reflect whether the veteran was in a distance education degree program, just how common it was for students at that institution to be pursuing distance education degree programs. Note that institutions were less likely to respond to IPEDS items related to distance education than to items for instructional spending. See Appendix B for more details.

FIGURE 7

Percentage of PGIB-Eligible Enlisted Veterans Who Were IPEDS Degree Seekers, By First IPEDS Degree Seeking Institution's Instructional Spending and Distance Education Prevalence Quintile

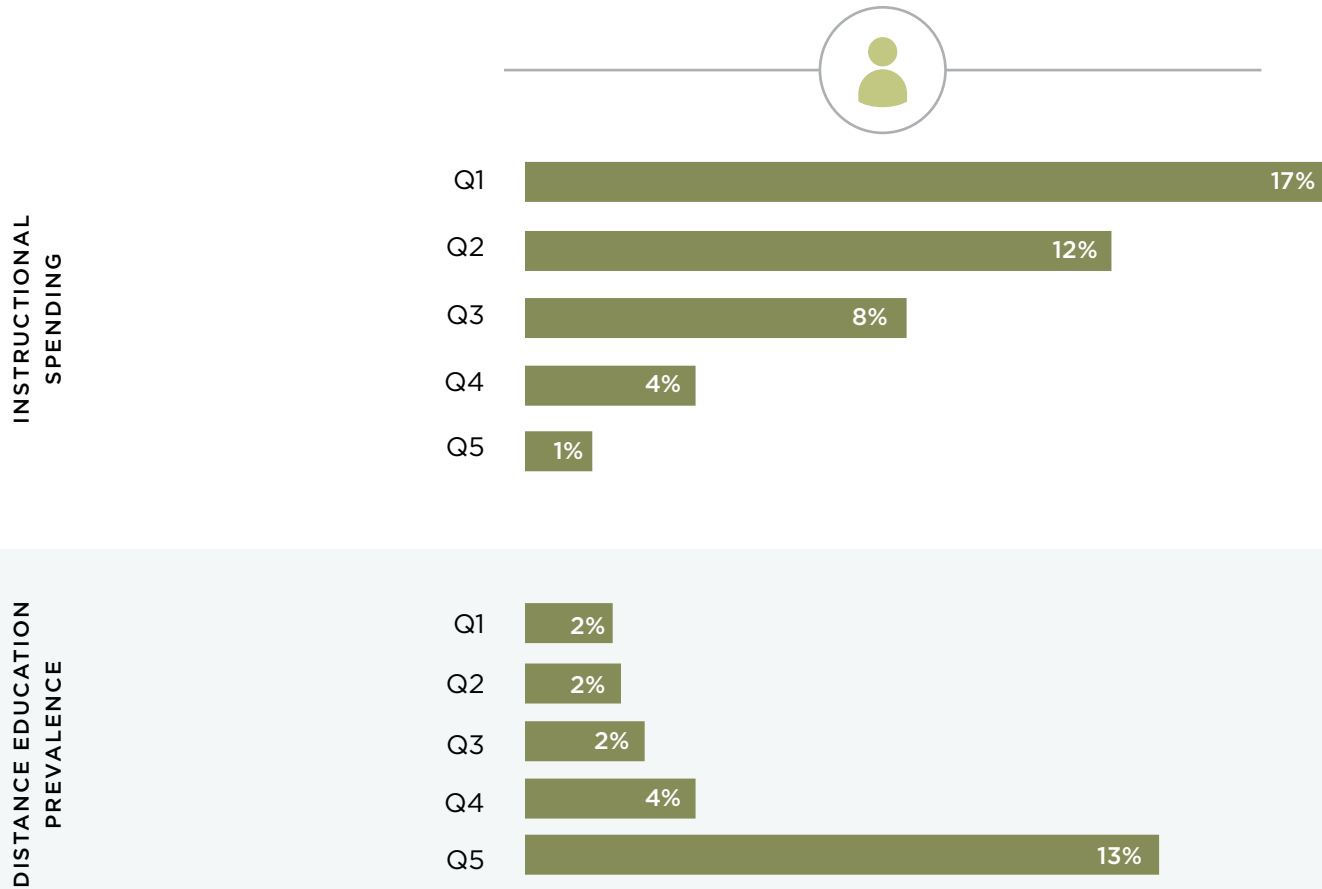
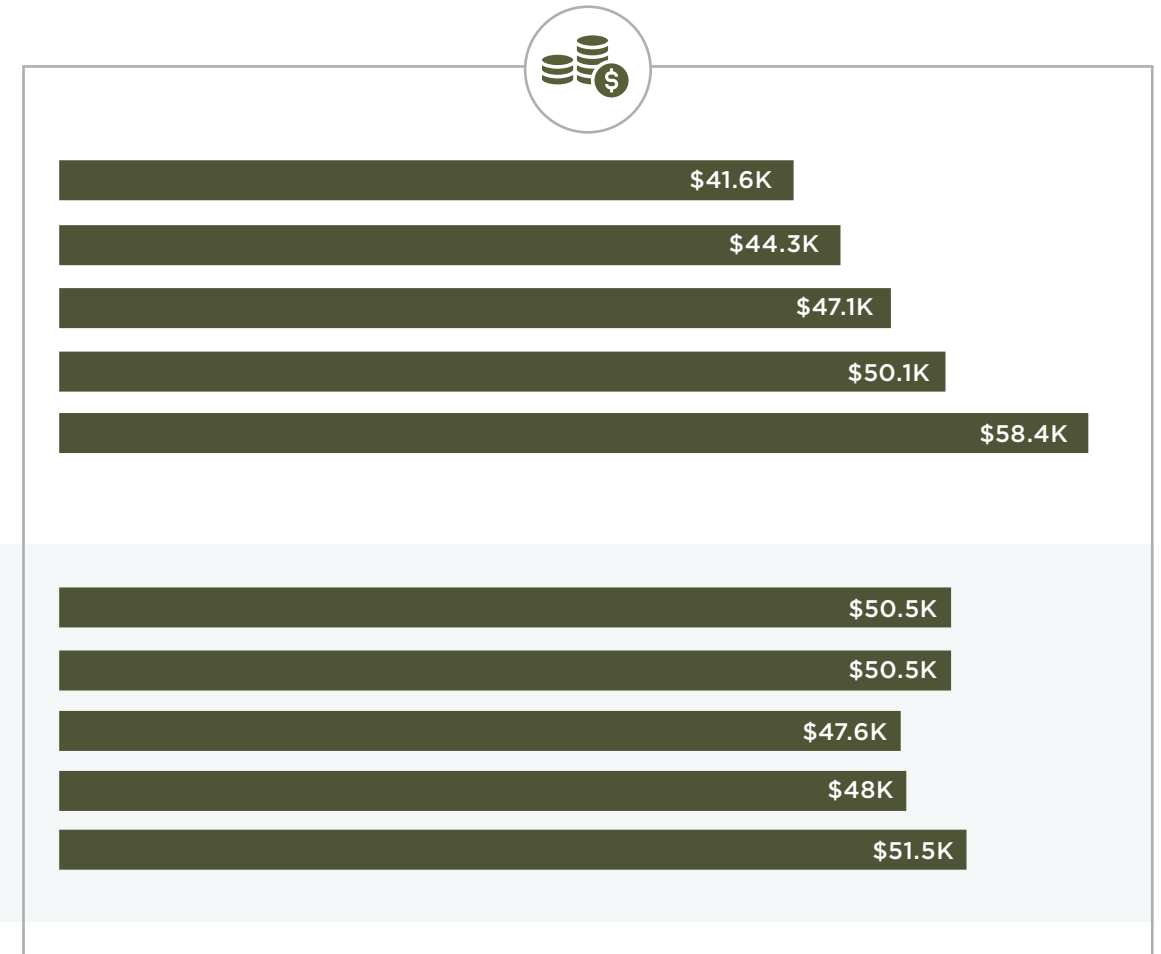


FIGURE 8

Earnings for PGIB-Eligible Enlisted Veterans Who Were IPEDS Degree Seekers, By First IPEDS Degree Seeking Institution's Instructional Spending and Distance Education Prevalence Quintile



Note: Q1=lowest quintile, Q2=second quintile, Q3=third quintile, Q4=fourth quintile, and Q5=highest quintile. Institutions were less likely to respond to IPEDS items related to distance education than items for instructional spending.

First, we look at veterans' enrollment by instructional spending, which is a category of institutional spending that the U.S. Department of Education tracks that is specifically for activities related to providing instruction at the institution, such as salaries for instructional faculty.⁷⁸ In short, **veterans tended to enroll at institutions that spent less on instruction and they were unlikely to enroll at institutions that spent the most on instruction.** Specifically, [Figure 7 \(page 37\)](#) reveals that **the percentage of veterans seeking degrees at IPEDS institutions ("IPEDS Degree Seekers") declined as the instructional spending quintile increased:** 17% of veterans first attended an institution that fell within the lowest quintile of instructional spending (Quintile 1), compared with 1% in the highest quintile of instructional spending (Quintile 5).⁷⁹

There was little variation across veteran groups, and only a few veteran categories differed by at least 5 percentage points from the overall percentage for each quintile. Specifically, military rank showed some variation. Compared with veterans overall, veterans who separated from the military at the middle military rank of E-4 were more likely to have first enrolled in an IPEDS college that fell within the lowest quintile for instructional spending. Veterans who left the military at the lowest and highest ranks, on the other hand, were less likely than veterans overall to have first enrolled in a college that fell within the two lowest quintiles but recall that they were less likely to enroll anywhere and note that they were also less likely to enroll in higher quintiles (though not always by five percentage points).

Turning to earnings, the spread in veterans' earnings by instructional spending quintile was large, with veterans in the highest instructional spending quintile earning the most. As [Figure 8 \(page 37\)](#) reveals, average earnings for veterans seeking degrees at IPEDS institutions ("IPEDS Degree Seekers") who first enrolled in a college that fell in the lowest instructional spending quintile (Quintile 1) was \$41,600, compared to \$58,400 for those who first enrolled in the highest quintile (Quintile 5)—a spread of \$16,700. Earnings increased by roughly \$3,000 between Quintiles 1 and 2, 2 and 3, and 3 and 4, respectively, before jumping by more than \$8,300 between Quintile 4 and Quintile 5. **This pattern of higher earnings for veterans at colleges with higher instructional spending held true across sex, race/ethnicity, rurality, and military rank⁸⁰** and is consistent with what has been seen for postsecondary students in general (Flaherty, 2015; Griffith & Rask, 2016; Hall, 2019).

⁷⁸ IPEDS defines instructional spending as including compensation for academic instruction, occupational and vocational instruction, community education, preparatory and adult basic education, and remedial and tutorial instruction conducted by the teaching faculty for the institution's students.

⁷⁹ This result may be related to the high proportion of veterans who attended for-profit institutions. There was an intense amount of recruiting by for-profit colleges focused on military veterans before the 90/10 loophole was closed. The 90/10 loophole in the Higher Education Act incentivized for-profit colleges to enroll veterans because veterans' education benefits did not count against the cap on federal funds that for-profit colleges faced otherwise. See <https://www.ed.gov/news/press-releases/education-department-unveils-final-rules-protect-veterans-and-service-members-improve-college-access-incarcerated-individuals-and-improve-oversight-when-colleges-change-owners> for more details.

⁸⁰ For veterans in the lowest military rank, earnings appeared to stay the same between the second and third spending quintile, but this was due to rounding. Unrounded earnings showed that earnings were greater for those in the third quintile than those in the second quintile.

To examine this further, we conducted a **regression analysis that accounted for the veteran characteristics** we have examined throughout this report (e.g., sex, race/ethnicity, rurality, and military rank) in addition to other factors like academic preparation (as measured through AFQT score), military occupation, sector, distance education and the other factors outlined in Appendix Table B-1. This regression analysis **found that the earnings of IPEDS Degree Seekers still consistently increased the higher their colleges' instructional spending quintile.** The gap in earnings between the lowest and highest quintiles shrank but still stood **at \$9,100.**

As noted earlier, it is critical to remember that these earnings results do not suggest causation. Absent an experimental design such as a randomized controlled trial or a quasi-experimental design, we cannot conclude with certainty that that this earnings difference was the *result* of the level of instructional spending of the institutions that veterans first attended. Other factors not studied here could be relevant. For example, institutions with higher instructional spending may engage in other actions that foster greater earnings among their students, including the types of students they admit. **Nevertheless, there is a strong association between veterans' earnings and the instructional spending of the colleges they attended, and this information is likely relevant to policymakers who seek to improve veterans' outcomes in thinking about how PGIB funds are used.**



About 13% of veterans pursued a degree program at a college that fell in the highest quintile in terms of distance education prevalence, whereas only 2% of veterans attended an institution that fell into each of the lowest three quintiles. Female and Black veterans were more likely than veterans at large to attend an institution in the highest quintile. As for earnings, in contrast to the clear gap observed by institutions' instructional spending, the gap by institutions' prevalence of distance education was small. The minimal variation in earnings by distance education prevalence that did exist followed a "U-shaped" pattern, with veterans who attended an institution in the highest distance education quintile having the highest earnings, followed closely behind by veterans attending an institution in either of the two lowest distance education quintiles.

We now examine enrollment and earnings for veterans by the prevalence of distance education at the first institution they attended for which distance education is tracked (which is limited to IPEDS institutions, as explained further above). Note that this measure does not reflect whether a veteran was enrolled exclusively in distance education, but, instead, the proportion of degree-seeking students at their institution that were enrolled exclusively in distance education. **Therefore, the results do not capture the role of veterans' personal enrollment in online or distance education.** Reliable data on veterans' personal enrollment in online or distance education is not available. As [Figure 7 \(page 37\)](#) shows, 13% of all veterans pursued a degree at an IPEDS institution) that fell in the highest quintile for prevalence of distance education (i.e., Quintile 5). Only 4% of veterans pursued a degree at an institution in the second highest quintile for prevalence of distance education, and only 2% did so at each of the three lowest distance education prevalence quintiles,

respectively. Focusing in on just veterans who pursued a degree program at an IPEDS institution (IPEDS degree seekers), 57% attended a college that fell in the highest quintile for prevalence of distance education, compared to 15% in the second highest quintile, and between 8% and 11% in the three lowest quintiles.

Examining these percentages by veteran characteristics reveals that there was minimal variation in enrollment across Quintiles 1 through 4, but slightly greater variation in the highest quintile for distance education (Quintile 5). Specifically, as Appendix Table A-11 shows, the percentage of veterans in the lower four quintiles most often fell within 1 percentage point of veterans overall and varied by only 3 percentage points in one instance: Veterans in the second lowest military rank were more likely to be enrolled in distance education Quintile 4. In contrast to this minimal overall variation across Quintiles 1 through 4, there was substantially more variation in the highest distance education quintile, with several gaps of at least 5 percentage

points. Specifically, compared to veterans overall, **female and Black veterans were 7 and 8 percentage points, respectively, more likely to have attended a college in the highest distance education quintile—suggesting they were more likely to be enrolled in a predominantly online institution.** Looking at military rank, veterans who left the military at ranks E-5 to E-8 were 5 to 7 percentage points, respectively, more likely to be enrolled in the highest quintile for distance education, whereas those who left the military at the two lowest ranks were 9 and 7 percentage points, respectively, less likely to do so.⁸¹

Turning to earnings, the spread and pattern by distance education prevalence differed from that observed for instructional spending. First, there was less of an earnings gap by distance education quintile (\$3,900) than there was by instructional spending quintile (\$16,800). **Earnings by distance education quintile also did not consistently increase the higher the quintile, as occurred by instructional spending quintile. Instead, earnings by distance education quintile followed a “U-shaped” pattern, with veterans in the highest distance education quintile having the highest earnings (\$51,500), followed closely by veterans in the two lowest distance education quintiles, who earned just \$1,000 less.** Veterans in the third and fourth quintiles earned the least—\$3,900 and \$3,500 less, respectively, than those in the highest quintile. Appendix Table A-12 indicates that this “U-shaped” pattern occurred consistently for all veteran groups. For example, whether we were looking at female veterans or rural veterans, their average earnings were higher in Quintiles 1, 2, and 5 than in Quintiles 3 and 4 – matching the findings for veterans overall.

Our regression analysis, which controlled for the array of veteran characteristics and institutional variables noted in Appendix Table B-1 (including academic preparation as measured by AFQT score, age, military rank, etc.), produced the same pattern. Specifically, after accounting for veteran characteristics, we found that veterans in Quintile 5 (who attended institutions with the highest prevalence of distance education) continued to have higher earnings; those in Quintile 1 (the lowest prevalence of distance education) continued to have the second highest earnings; and those in Quintile 3 continued to have the lowest earnings. The earnings advantage between Quintiles 1 and 5 increased from the \$1,000 gap observed above to \$3,400 after accounting for other characteristics, whereas the gap between Quintiles 1 and 3 shrank from \$3,900 to \$1,800 after accounting for other characteristics. **Overall, distance education prevalence did not appear to have as clear a relationship with earnings as instructional spending did. This may have occurred because the distance education measure did not reflect whether a veteran had personally enrolled in an exclusively distance education degree program.** Rather, it captured an institutional rather than veteran characteristic – specifically, how common it was for all students at the institution to be pursuing degrees exclusively through distance education. In other words, some veterans might appear in a high distance education quintile because their institution offered a lot of online education, even though an individual veteran may have been enrolled in more classroom-based instruction. **In this regard, the findings are not specific to the veteran’s personal educational experience.**

⁸¹ For more on this topic see Ochinko (2018), which found that graduate students (likely officers who already had an undergraduate degree) were more likely to be enrolled in distance education.

How did veterans' six-year degree completion rates vary by sector, instructional spending, and distance education prevalence?

We can track six-year degree completion rates by looking at institutions that report to the National Student Clearinghouse (“Clearinghouse Veterans”). Here, we look at those completion rates by the institutional sector, instructional spending, and distance education prevalence. About 47% of veterans who attended institutions reporting to the Clearinghouse completed a degree within six years, but completion gaps varied widely by sector (24 percentage points), by instructional spending (31 percentage points), and, to a lesser extent, by distance education prevalence (10%). The Post-9/11 GI Bill program spent roughly the same amount of money per veteran attending four-year for-profit and four-year public colleges, even though veterans at four-year for-profit colleges had a completion rate 15 percentage points lower than those at four-year public colleges, even after accounting for other factors. Those in the highest quintile for instructional spending had the highest earnings and completion rate, but only 1% of veterans attended institutions in this quintile.

Finally, given policymakers' and consumers' interest in college completion, we are able to track six-year degree completion rates⁸² by looking at data on veterans who attended institutions that report to the National Student Clearinghouse (“Clearinghouse Veterans”).⁸³ As [Figure 9 \(page 44\)](#) reveals, 47% of Clearinghouse Veterans completed an associate, bachelor's, or graduate degree within six years of first enrolling in higher education after their first separation from the military. The figure also indicates that these **completion gaps varied widely by institutional sector (24 percentage points), instructional spending (31 percentage points), and, to a lesser extent, distance education prevalence (10 percentage points).**

We begin by discussing results by institutional sector, which captures both type (control) of institution (i.e., public, nonprofit, for-profit) and level of institution (i.e., two-year or four-year).⁸⁴ Completion rates for Clearinghouse Veterans were highest at four-year nonprofit colleges (61%), followed closely by four-year public colleges (58%). Four-year for-profit and two-year public colleges trailed farther behind, with completion rates of 41% and 37%, respectively. This order by sector was consistent with nationally representative data on first-time postsecondary students' associate and bachelor's degree completion rates within six years for these sectors (Chen et al., 2019, Table 1). Even after accounting for academic preparation through AFQT

⁸² Since 1995, the U.S. Department of Education's National Center for Education Statistics (NCES) has used a six-year window in its Beginning Postsecondary Students Longitudinal Study (BPS) to examine the attainment of first-time postsecondary students pursuing a range of postsecondary credentials that take different amounts of time to complete. A six-year window gives bachelor's degree students 150% of the time normally needed to complete a four-year degree, an often-used yardstick by the Department of Education and others in measuring bachelor's degree completion.

⁸³ See Exhibit 1 for a more detailed definition.

⁸⁴ As discussed previously, we examine the sectors for which the Clearinghouse has good coverage, specifically: two-year public, four-year public, four-year nonprofit, and four-year for-profit colleges.

score, military rank, and an array of other veteran characteristics noted in Appendix Table B-1, this order for **completion rates by sector was the same, with the gap narrowing only slightly.**⁸⁵ Specifically, after accounting for veterans' characteristics, compared to four-year public colleges, four-year nonprofit colleges continued to have the same 3-percentage-point higher completion rate; four-year for-profit colleges still had a completion rate 15 percentage points lower (down from an original 17 percentage points); and two-year public colleges still had a completion rate 18 percentage points lower (down from 21 percentage points).

To add context, we examined the average amount of PGIB payments per veteran pursuing degree programs at different sectors of IPEDS institutions. In other words, what is the government spending for veterans to pursue degree programs at these different sectors? Four-year for-profit and four-year public institutions received about the same amount per veteran (\$26,100 and \$26,000, respectively), but four-year for-profits' completion rate was 15 percentage points lower than four-year publics', even after accounting for other factors. **This suggests that the PGIB program is paying the same amount of money per veteran to a sector that less often results in a degree for veterans.** Although two-year public institutions had a completion rate 2 percentage points lower than four-year for-profits, at \$12,400, the average payment amount per veteran to two-year public institutions was less than half that sent to four-year for-profit institutions.

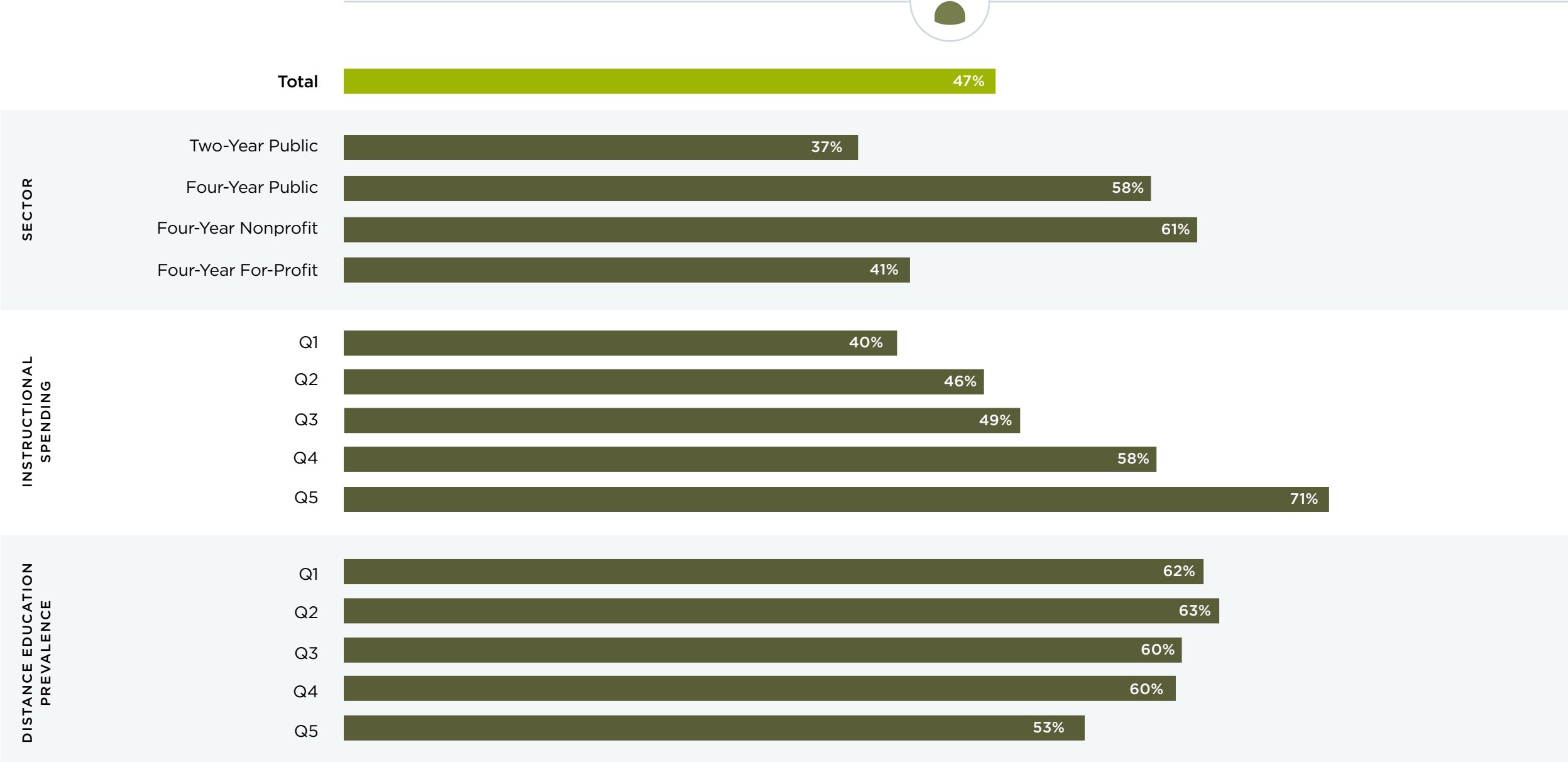
Turning to instructional spending, veterans' degree completion rate increased sharply as their institution's instructional spending quintile increased. As [Figure 9 \(page 44\)](#) indicates, approximately 40% of Clearinghouse Veterans who attended an institution in the lowest quintile for instructional spending completed their education, compared to 71% of those in the highest quintile—a 31-percentage-point difference. The jump in completion rates between Quintiles 1 and 2, and between Quintiles 2 and 3 was smaller, at 6 and 3 percentage points, respectively. Completion then jumped 9 percentage points between Quintiles 3 and 4 and 13 percentage points between Quintiles 4 and 5. **In short, there was a significant increase in veterans' completion rates as their institutions' instructional spending increased.**

Regression results indicated that **even accounting for the array of variables** noted in Appendix Table B-1 (including academic preparation and sector), Clearinghouse Veterans' **degree completion generally increased as the instructional spending quintile rose**, with veterans who attended colleges in the highest quintile having a completion rate 18 percentage points higher than their counterparts who attended colleges in the lowest quintile of instructional spending. It is worth repeating that, when we examined earnings by instructional spending for our slightly different sample of IPEDS Degree Seekers, above in [Figure 8 \(page 37\)](#), we similarly observed better results the higher the quintile, with veterans in the fifth quintile standing out as having the highest earnings. Unfortunately, as [Figure 7 \(page 37\)](#) also showed, only 1% of veterans first attended a college in this highest quintile. **This low proportion of veterans enrolled in institutions with better outcomes may interest policymakers and those providing information and guidance to veterans who are deciding where to enroll.**

⁸⁵ See our previous report (Radford et al., 2024) for information on how veterans' demographic characteristics are related to completion overall and after accounting for other characteristics.

FIGURE 9

Percentage of Clearinghouse Veterans Who Completed Within Six Years, By Sector, Instructional Spending Quintile, and Distance Education Prevalence Quintile



Note: Q1=lowest quintile, Q2=second quintile, Q3=third quintile, Q4=fourth quintile, and Q5=highest quintile.

Turning to distance education prevalence, we find that, compared to differences by institutional sector and instructional spending quintiles, there was a smaller, 10-percentage-point spread in completion rates by distance education quintiles. [Figure 9 \(page 44\)](#) indicates that the highest distance education quintile (Quintile 5) had the lowest completion rate (53%), whereas Quintiles 1 through 4 were clustered together with completion rates 7 to 10 percentage-points higher.⁸⁶ However, regression results accounting for the array of variables noted in Appendix Table B-1 (page 64), including academic preparation and sector, found that this gap in completion rates shrank. Quintile 5's completion rate now stood at 59%—within 3 percentage points of the completion rate for Quintile 1 (62%).

Overall, we find that the relationship between distance education prevalence at an institution and individual veterans' degree completion is small when accounting for other variables. This finding may again be because our distance education measure does not reflect whether a veteran was personally in an exclusively distance education degree program (for which data is not available), but rather how common it was for the institution's degree seekers to be pursuing degrees exclusively through distance education. Other studies find that students in general (Ortagus, 2023) and specifically military students (Ortagus et al., 2023) who enroll in online education have lower degree completion rates.



⁸⁶ Although the populations examined were slightly different (Clearinghouse Veterans here versus IPEDS Degree Seekers above), the fact that the highest distance education quintile had the lowest completion outcome among distance education quintiles here, but the highest earnings outcome among distance education quintiles above, is an interesting contrast, and may suggest that the earnings of those in the highest quintile may not be as tied to completion.



Conclusion

We are pleased to share these results on how veterans' outcomes differ based on whether they use their PGIB benefits and how they use their benefits. This report is possible thanks to unprecedented interagency cooperation, which allowed our interagency research team to combine and analyze previously siloed federal data as part of the evidence-building, decision-making work of the U.S. Census Bureau. Prior to this project, there had never been any definitive assessment of the outcomes associated with this critical federal investment across military branches. This report is one in a series of reports on the Post-9/11 GI Bill the research team is issuing this year.

Appendix A Tables

A-1. PERCENTAGE OF PGIB-ELIGIBLE ENLISTED VETERANS FALLING INTO THE FIVE MAIN VETERAN ANALYSIS GROUPS ANALYZED, BY VETERAN CHARACTERISTICS

A-2. AVERAGE EARNINGS OF THE FIVE MAIN VETERAN ANALYSIS GROUPS ANALYZED, BY VETERAN CHARACTERISTICS

		Non-participants	Non-IPEDS Nondegree Seeker	IPEDS Nondegree Seeker	Non-IPEDS Degree Seeker	IPEDS Degree Seeker					
ALL		51%	5%	6%	6%	43%	\$44,800	\$40,400	\$37,100	\$39,300	\$44,700
SEX	Female	42%	3%	7%	8%	53%	\$32,200	\$27,600	\$26,900	\$30,800	\$35,300
	Male	52%	5%	6%	5%	41%	\$46,700	\$41,700	\$39,500	\$41,600	\$46,900
RACE/ETHNICITY	American Indian/Alaska Native	46%	5%	6%	7%	47%	\$37,700	\$34,600	\$33,400	\$34,600	\$39,000
	Asian	48%	5%	6%	7%	45%	\$41,800	\$40,700	\$36,900	\$35,800	\$43,400
	Black	43%	7%	9%	8%	50%	\$39,200	\$34,300	\$32,000	\$36,100	\$40,900
	Hispanic (Any Race)	43%	6%	7%	7%	49%	\$44,100	\$41,400	\$37,400	\$38,800	\$44,500
	White	52%	4%	5%	5%	41%	\$46,200	\$42,400	\$39,100	\$40,900	\$46,000
RURILITY	Rural	61%	4%	5%	4%	33%	\$39,200	\$38,100	\$36,200	\$36,300	\$39,400
	Micropolitan	57%	4%	5%	4%	36%	\$41,100	\$38,400	\$35,300	\$37,500	\$40,500
	Metropolitan	49%	5%	6%	6%	44%	\$45,900	\$40,700	\$37,300	\$39,600	\$45,400
MILITARY RANK	E01	78%	3%	4%	3%	18%	\$27,200	\$24,900	\$23,000	\$22,300	\$26,300
	E02	65%	4%	6%	5%	30%	\$27,500	\$27,600	\$25,300	\$24,900	\$28,200
	E03	42%	6%	9%	8%	50%	\$31,400	\$32,400	\$29,500	\$29,200	\$32,900
	E04	35%	7%	8%	8%	56%	\$41,300	\$38,700	\$35,000	\$35,400	\$40,300
	E05	38%	5%	6%	7%	55%	\$51,300	\$44,500	\$41,500	\$44,600	\$50,300
	E06	53%	5%	5%	5%	41%	\$48,200	\$41,800	\$41,200	\$45,600	\$51,100
	E07	62%	3%	4%	4%	33%	\$51,900	\$43,900	\$46,500	\$52,700	\$54,500
	E08	65%	3%	3%	4%	30%	\$56,500	\$47,900	\$53,000	\$59,600	\$59,700
	E09	73%	2%	3%	3%	24%	\$55,400	\$42,500	\$52,400	\$57,700	\$58,100

Note: Veterans may fall into one or more of the last four analysis groups.

A-3A. PERCENTAGE OF PGIB-ELIGIBLE ENLISTED VETERANS WHO WERE NON-IPEDS NONDEGREE SEEKERS AT ANY NON-IPEDS PROVIDER AND SPECIFICALLY AT PUBLIC, NONPROFIT, AND FOR-PROFIT NON-IPEDS PROVIDERS, BY VETERAN CHARACTERISTICS

A-3B. AMONG PGIB-ELIGIBLE ENLISTED VETERANS WHO USED PGIB (PGIB USERS), THE PERCENTAGE WHO WERE NON-IPEDS NONDEGREE SEEKERS AT ANY NON-IPEDS PROVIDER AND SPECIFICALLY AT PUBLIC, NONPROFIT, AND FOR-PROFIT NON-IPEDS PROVIDERS, BY VETERAN CHARACTERISTICS

		Non-IPEDS Nondegree Seeker	Nondegree Seeker at Public Non-IPEDS Provider	Nondegree Seeker at Nonprofit Non-IPEDS Provider	Nondegree Seeker at For-Profit Non-IPEDS Provider	Non-IPEDS Nondegree Seeker	Nondegree Seeker at Public Non-IPEDS Provider	Nondegree Seeker at Nonprofit Non-IPEDS Provider	Nondegree Seeker at For-Profit Non-IPEDS Provider
ALL		5%	1%	0%	4%	10%	2%	0%	8%
SEX	Female	3%	0%	0%	3%	5%	1%	0%	4%
	Male	5%	1%	0%	4%	11%	2%	0%	9%
RACE/ETHNICITY	American Indian/Alaska Native	5%	1%	0%	4%	9%	1%	0%	7%
	Asian	5%	1%	0%	4%	10%	2%	0%	8%
	Black	7%	1%	0%	6%	12%	1%	0%	11%
	Hispanic (Any Race)	6%	0%	0%	1%	10%	2%	0%	8%
	White	4%	1%	0%	3%	9%	2%	0%	7%
RURILITY	Rural	4%	1%	0%	3%	10%	2%	0%	8%
	Micropolitan	4%	1%	0%	3%	10%	2%	0%	8%
	Metropolitan	5%	1%	0%	4%	10%	2%	0%	8%
MILITARY RANK	E01	3%	0%	0%	3%	13%	1%	0%	12%
	E02	4%	0%	0%	3%	11%	1%	0%	10%
	E03	6%	1%	0%	5%	11%	1%	0%	9%
	E04	7%	1%	0%	6%	10%	2%	0%	9%
	E05	5%	1%	0%	4%	9%	2%	0%	7%
	E06	5%	1%	0%	4%	10%	1%	0%	9%
	E07	3%	0%	0%	3%	9%	1%	0%	8%
	E08	3%	0%	0%	2%	8%	1%	0%	7%
	E09	2%	0%	0%	1%	6%	0%	0%	5%

Note: Veterans may have pursued a nondegree program (or degree program) at more than one provider.

A-4. AVERAGE EARNINGS OF NON-IPEDS NONDEGREE SEEKERS AT ANY NON-IPEDS PROVIDER AND AT PUBLIC, NONPROFIT, AND FOR-PROFIT NON-IPEDS PROVIDERS, BY VETERAN CHARACTERISTICS

		Non-IPEDS Nondegree Seeker	Nondegree Seeker at Public Non-IPEDS Provider	Nondegree Seeker at Nonprofit Non-IPEDS Provider	Nondegree Seeker at For-Profit Non-IPEDS Provider
ALL		\$40,380	\$57,000	\$45,280	\$36,800
SEX	Female	\$27,640	\$41,220	\$31,680	\$25,320
	Male	\$41,730	\$58,200	\$47,400	\$38,050
RACE/ETHNICITY	American Indian/Alaska Native	\$34,610	\$56,480	D	\$37,790
	Asian	\$40,740	\$47,280	D	\$32,580
	Black	\$34,340	\$51,100	\$35,030	\$32,700
	Hispanic (Any Race)	\$41,410	\$59,090	\$51,530	\$36,830
	White	\$42,420	\$57,990	\$48,360	\$38,360
RURILITY	Rural	\$38,110	\$47,620	\$42,350	\$36,070
	Micropolitan	\$38,430	\$49,960	\$41,900	\$36,200
	Metropolitan	\$40,700	\$58,170	\$45,740	\$36,890
MILITARY RANK	E01	\$24,910	D	D	\$23,480
	E02	\$27,630	\$45,690	D	\$25,810
	E03	\$32,410	\$48,770	D	\$30,050
	E04	\$38,670	\$55,570	\$35,780	\$35,260
	E05	\$44,450	\$58,820	\$44,390	\$41,110
	E06	\$41,830	\$49,450	\$47,000	\$40,710
	E07	\$43,930	\$47,220	\$43,850	\$43,580
	E08	\$47,880	\$52,660	D	\$47,540
	E09	\$42,530	D	D	\$43,020

Note: Veterans may have pursued a nondegree program (or degree program) at more than one provider. "D" means suppressed for disclosure.

A-5A. AMONG PGIB-ELIGIBLE ENLISTED VETERANS, THE PERCENTAGE OF PGIB-ELIGIBLE ENLISTED VETERANS WHO WERE IPEDS NONDEGREE SEEKERS AT ANY IPEDS PROVIDER AND WITHIN SPECIFIC IPEDS SECTORS, BY VETERAN CHARACTERISTICS

		IPEDS Nondegree Seeker	Nondegree Seeker at Two-Year Public IPEDS Institution	Nondegree Seeker at Four-Year Public IPEDS Institution	Nondegree Seeker at Two-Year Nonprofit IPEDS Institution	Nondegree Seeker at Four-Year Nonprofit IPEDS Institution	Nondegree Seeker at Two-Year For-Profit IPEDS Institution	Nondegree Seeker at Four-Year For-Profit IPEDS Institution
ALL		6%	2%	0%	0%	0%	2%	0%
SEX	Female	7%	2%	0%	0%	0%	2%	1%
	Male	6%	2%	0%	0%	0%	1%	0%
RACE/ETHNICITY	American Indian/Alaska Native	6%	2%	0%	0%	0%	2%	1%
	Asian	6%	1%	0%	0%	0%	2%	1%
	Black	9%	2%	0%	0%	1%	3%	1%
	Hispanic (Any Race)	7%	2%	0%	0%	0%	2%	1%
	White	5%	2%	0%	0%	0%	1%	0%
RURILITY	Rural	5%	2%	0%	0%	0%	1%	0%
	Micropolitan	5%	2%	0%	0%	0%	1%	0%
	Metropolitan	6%	2%	0%	0%	0%	2%	0%
MILITARY RANK	E01	4%	1%	0%	0%	0%	1%	0%
	E02	6%	2%	0%	0%	0%	2%	0%
	E03	9%	3%	0%	0%	0%	3%	1%
	E04	8%	3%	0%	0%	0%	3%	1%
	E05	6%	2%	0%	0%	0%	2%	0%
	E06	5%	2%	0%	0%	1%	1%	0%
	E07	4%	1%	0%	0%	1%	1%	0%
	E08	3%	1%	0%	0%	1%	1%	0%
	E09	3%	1%	0%	0%	1%	0%	0%

Note: Veterans may have pursued a nondegree program (or degree program) at more than one provider.

A-5B. AMONG PGIB-ELIGIBLE ENLISTED VETERANS WHO USED PGIB (PGIB USERS), THE PERCENTAGE OF PGIB-ELIGIBLE ENLISTED VETERANS WHO WERE IPEDS NONDEGREE SEEKERS AT ANY IPEDS PROVIDER AND WITHIN SPECIFIC IPEDS SECTORS, BY VETERAN CHARACTERISTICS

		IPEDS Nondegree Seeker	Nondegree Seeker at Two-Year Public IPEDS Institution	Nondegree Seeker at Four-Year Public IPEDS Institution	Nondegree Seeker at Two-Year Nonprofit IPEDS Institution	Nondegree Seeker at Four-Year Nonprofit IPEDS Institution	Nondegree Seeker at Two-Year For-Profit IPEDS Institution	Nondegree Seeker at Four-Year For-Profit IPEDS Institution
	ALL	12%	4%	1%	0%	1%	3%	1%
SEX	Female	12%	4%	1%	0%	1%	3%	1%
	Male	12%	3%	1%	0%	1%	4%	1%
RACE/ETHNICITY	American Indian/Alaska Native	11%	4%	1%	0%	0%	3%	1%
	Asian	11%	4%	1%	0%	1%	5%	1%
	Black	15%	4%	1%	0%	1%	3%	2%
	Hispanic (Any Race)	13%	4%	1%	0%	1%	3%	1%
	White	9%	4%	1%	0%	1%	3%	1%
RURILITY	Rural	10%	3%	1%	0%	0%	4%	1%
	Micropolitan	10%	4%	1%	0%	1%	5%	1%
	Metropolitan	10%	3%	1%	0%	0%	4%	2%
MILITARY RANK	E01	13%	3%	1%	0%	1%	3%	1%
	E02	11%	3%	1%	0%	3%	2%	1%
	E03	11%	5%	0%	0%	0%	6%	1%
	E04	10%	5%	1%	0%	0%	5%	1%
	E05	9%	4%	1%	0%	1%	3%	1%
	E06	10%	4%	1%	0%	0%	5%	1%
	E07	9%	4%	1%	0%	0%	4%	1%
	E08	8%	3%	1%	0%	1%	3%	1%
	E09	6%	3%	1%	0%	2%	2%	1%

Note: Veterans may have pursued a nondegree program (or degree program) at more than one provider.

A-6. AVERAGE EARNINGS OF IPEDS NONDEGREE SEEKERS AT ANY IPEDS PROVIDER AND WITHIN SPECIFIC IPEDS SECTORS, BY VETERAN CHARACTERISTICS

		IPEDS Nondegree Seeker	Nondegree Seeker at Two-Year Public IPEDS Institution	Nondegree Seeker at Four-Year Public IPEDS Institution	Nondegree Seeker at Two-Year Nonprofit IPEDS Institution	Nondegree Seeker at Four-Year Nonprofit IPEDS Institution	Nondegree Seeker at Two-Year For-Profit IPEDS Institution	Nondegree Seeker at Four-Year For-Profit IPEDS Institution
ALL		\$39,300	\$38,600	\$50,110	\$32,280	\$58,900	\$31,800	\$36,420
SEX	Female	\$30,800	\$27,900	\$42,140	\$25,200	\$48,970	\$23,300	\$29,120
	Male	\$41,600	\$40,400	\$51,540	\$34,350	\$60,930	\$34,400	\$39,810
RACE/ETHNICITY	American Indian/Alaska Native	\$34,600	\$37,700	\$42,250	D	D	\$28,800	\$31,300
	Asian	\$35,800	\$37,500	\$51,770	D	\$60,890	\$33,800	\$36,540
	Black	\$36,100	\$31,600	\$47,050	\$25,780	\$54,350	\$27,100	\$35,140
	Hispanic (Any Race)	\$38,800	\$42,300	\$49,940	\$30,800	\$52,930	\$33,400	\$35,080
	White	\$40,900	\$40,700	\$50,890	\$34,970	\$61,490	\$33,700	\$37,380
RURILITY	Rural	\$36,300	\$36,700	\$43,060	D	\$51,890	\$32,400	\$36,380
	Micropolitan	\$37,500	\$35,500	\$47,020	\$33,050	\$53,390	\$32,400	\$29,530
	Metropolitan	\$39,600	\$39,100	\$50,780	\$32,020	\$59,560	\$31,800	\$36,830
MILITARY RANK	E01	\$22,300	\$22,000	D	D	D	\$23,400	D
	E02	\$24,900	\$28,100	D	D	D	\$23,000	\$22,660
	E03	\$29,200	\$32,500	\$36,570	\$28,330	\$41,900	\$27,800	\$25,910
	E04	\$35,400	\$37,900	\$45,730	\$33,240	\$47,500	\$32,000	\$31,060
	E05	\$44,600	\$43,900	\$52,900	\$35,000	\$60,030	\$35,300	\$40,780
	E06	\$45,600	\$38,100	\$56,170	D	\$64,040	\$34,500	\$48,890
	E07	\$52,700	\$39,300	\$59,370	D	\$67,540	\$35,400	\$52,440
	E08	\$59,600	\$40,300	\$57,740	D	\$71,360	\$35,900	\$64,000
	E09	\$57,700	\$34,000	D	D	\$70,940	D	D

Note: Veterans may have pursued a nondegree program (or degree program) at more than one provider. "D" means suppressed for disclosure.

A-7A. AMONG PGIB-ELIGIBLE ENLISTED VETERANS, THE PERCENTAGE WHO WERE NON-IPEDS DEGREE SEEKERS AT ANY NON-IPEDS PROVIDER AND SPECIFICALLY AT PUBLIC, NONPROFIT, AND FOR-PROFIT NON-IPEDS PROVIDERS, BY VETERAN CHARACTERISTICS

A-7B. AMONG PGIB-ELIGIBLE ENLISTED VETERANS WHO USED PGIB (PGIB USERS), THE PERCENTAGE OF PGIB-ELIGIBLE ENLISTED VETERANS WHO WERE NON-IPEDS DEGREE SEEKERS AT ANY NON-IPEDS PROVIDER AND SPECIFICALLY AT PUBLIC, NONPROFIT, AND FOR-PROFIT NON-IPEDS PROVIDERS, BY VETERAN CHARACTERISTICS

		Non-IPEDS Degree Seeker	Degree Seeker at Public Non-IPEDS Provider	Degree Seeker at Nonprofit Non-IPEDS Provider	Degree Seeker at For-Profit Non-IPEDS Provider				
		Non-IPEDS Degree Seeker	Degree Seeker at Public Non-IPEDS Provider	Degree Seeker at Nonprofit Non-IPEDS Provider	Degree Seeker at For-Profit Non-IPEDS Provider	Non-IPEDS Degree Seeker	Degree Seeker at Public Non-IPEDS Provider	Degree Seeker at Nonprofit Non-IPEDS Provider	Degree Seeker at For-Profit Non-IPEDS Provider
ALL		6%	2%	1%	2%	11%	5%	2%	5%
SEX	Female	8%	3%	1%	4%	14%	5%	2%	7%
	Male	5%	2%	1%	2%	11%	5%	2%	4%
	RACE/ETHNICITY								
American Indian/Alaska Native		7%	4%	1%	3%	13%	7%	1%	5%
Asian		7%	3%	1%	3%	14%	7%	2%	6%
Black		8%	2%	2%	5%	13%	3%	3%	8%
Hispanic (Any Race)		7%	3%	1%	3%	13%	6%	2%	5%
White		5%	3%	1%	2%	11%	5%	2%	4%
RURALITY	Rural	4%	2%	1%	2%	9%	4%	1%	4%
	Micropolitan	4%	2%	1%	2%	10%	5%	2%	4%
	Metropolitan	6%	3%	1%	3%	12%	5%	2%	5%
MILITARY RANK	E01	3%	1%	0%	2%	14%	6%	2%	8%
	E02	5%	2%	1%	2%	14%	6%	2%	7%
	E03	8%	3%	1%	4%	13%	6%	2%	6%
	E04	8%	4%	1%	3%	12%	6%	2%	5%
	E05	7%	3%	1%	3%	11%	5%	2%	4%
	E06	5%	2%	1%	2%	11%	4%	3%	5%
	E07	4%	1%	1%	2%	11%	3%	4%	5%
	E08	4%	1%	2%	2%	11%	2%	5%	5%
	E09	3%	1%	1%	1%	12%	3%	5%	4%

Note: Veterans may have pursued a degree program (or nondegree program) at more than one provider.

A-8. AVERAGE EARNINGS OF NON-IPEDS DEGREE SEEKERS AT ANY NON-IPEDS PROVIDER AND SPECIFICALLY AT PUBLIC, NONPROFIT, AND FOR-PROFIT NON-IPEDS PROVIDERS, BY VETERAN CHARACTERISTICS

		Non-IPEDS Degree Seeker	Degree Seeker at Public Non-IPEDS Provider	Degree Seeker at Nonprofit Non-IPEDS Provider	Degree Seeker at For-Profit Non-IPEDS Provider
ALL		\$39,300	\$38,800	\$47,500	\$36,200
SEX	Female	\$30,800	\$29,700	\$36,900	\$29,200
	Male	\$41,600	\$40,700	\$50,500	\$38,600
RACE/ETHNICITY	American Indian/Alaska Native	\$34,600	\$34,700	\$40,500	\$32,300
	Asian	\$35,800	\$37,900	\$38,800	\$31,700
	Black	\$36,100	\$34,300	\$43,800	\$33,700
	Hispanic (Any Race)	\$38,800	\$39,200	\$44,500	\$35,900
	White	\$40,900	\$39,700	\$49,900	\$38,200
RURALITY	Rural	\$36,300	\$36,100	\$42,300	\$34,400
	Micropolitan	\$37,500	\$37,300	\$44,500	\$34,900
	Metropolitan	\$39,600	\$39,100	\$48,000	\$36,400
MILITARY RANK	E01	\$22,300	\$23,200	D	\$21,100
	E02	\$24,900	\$26,300	\$28,300	\$22,700
	E03	\$29,200	\$30,700	\$33,200	\$26,600
	E04	\$35,400	\$36,600	\$39,700	\$32,300
	E05	\$44,600	\$43,800	\$52,500	\$41,500
	E06	\$45,600	\$45,100	\$51,100	\$42,900
	E07	\$52,700	\$44,900	\$58,700	\$51,700
	E08	\$59,600	\$51,700	\$65,100	\$57,500
	E09	\$57,700	\$48,900	\$61,100	\$59,800

Note: Veterans may have pursued a degree program (or nondegree program) at more than one provider. “D” means suppressed for disclosure.

A-9A. AMONG PGIB-ELIGIBLE ENLISTED VETERANS, THE PERCENTAGE WHO WERE IPEDS DEGREE SEEKERS AT ANY IPEDS PROVIDER AND WITHIN SPECIFIC IPEDS SECTORS, BY VETERAN CHARACTERISTICS

		IPEDS Degree Seeker	Degree Seeker at Two-Year Public IPEDS Institution	Degree Seeker at Four-Year Public IPEDS Institution	Degree Seeker at Two-Year Nonprofit IPEDS Institution	Degree Seeker at Four-Year Nonprofit IPEDS Institution	Degree Seeker at Two-Year For-Profit IPEDS Institution	Degree Seeker at Four-Year For-Profit IPEDS
	ALL	43%	18%	14%	0%	9%	2%	11%
SEX	Female	53%	21%	17%	0%	13%	2%	16%
	Male	41%	18%	13%	0%	8%	2%	10%
RACE/ETHNICITY	American Indian/Alaska Native	47%	23%	16%	1%	8%	2%	11%
	Asian	45%	20%	14%	0%	9%	2%	11%
	Black	50%	19%	12%	1%	12%	3%	19%
	Hispanic (Any Race)	49%	24%	14%	0%	10%	2%	12%
	White	41%	18%	14%	0%	9%	2%	9%
RURILITY	Rural	33%	15%	10%	0%	6%	1%	8%
	Micropolitan	36%	16%	12%	0%	7%	1%	8%
	Metropolitan	44%	19%	14%	0%	10%	2%	11%
MILITARY RANK	E01	18%	10%	5%	0%	2%	1%	5%
	E02	30%	17%	8%	0%	4%	2%	8%
	E03	50%	27%	14%	1%	7%	3%	13%
	E04	56%	28%	19%	1%	10%	3%	13%
	E05	55%	22%	20%	0%	13%	2%	14%
	E06	41%	12%	12%	0%	12%	1%	13%
	E07	33%	7%	7%	0%	11%	1%	12%
	E08	30%	5%	7%	0%	11%	1%	11%
	E09	24%	3%	5%	0%	10%	0%	8%

A-9B. AMONG PGIB-ELIGIBLE ENLISTED VETERANS WHO USED PGIB (PGIB USERS), THE PERCENTAGE WHO WERE IPEDS DEGREE SEEKERS AT ANY IPEDS PROVIDER AND WITHIN SPECIFIC IPEDS SECTORS, BY VETERAN CHARACTERISTICS

		IPEDS Degree Seeker	Degree Seeker at Two-Year Public IPEDS Institution	Degree Seeker at Four-Year Public IPEDS Institution	Degree Seeker at Two-Year Nonprofit IPEDS Institution	Degree Seeker at Four-Year Nonprofit IPEDS Institution	Degree Seeker at Two-Year For-Profit IPEDS Institution	Degree Seeker at Four-Year For-Profit IPEDS
ALL		87%	37%	28%	1%	18%	4%	22%
SEX	Female	92%	37%	30%	1%	23%	4%	28%
	Male	86%	37%	28%	1%	17%	3%	21%
RACE/ETHNICITY	American Indian/Alaska Native	88%	42%	30%	1%	16%	4%	20%
	Asian	86%	39%	27%	1%	18%	4%	21%
	Black	88%	33%	22%	1%	21%	4%	33%
	Hispanic (Any Race)	87%	42%	25%	1%	18%	4%	22%
	White	86%	38%	30%	1%	18%	3%	19%
RURILITY	Rural	84%	38%	27%	1%	16%	3%	20%
	Micropolitan	86%	38%	29%	1%	17%	3%	19%
	Metropolitan	87%	37%	28%	1%	19%	4%	22%
MILITARY RANK	E01	84%	46%	21%	1%	10%	7%	23%
	E02	84%	49%	22%	1%	11%	6%	22%
	E03	87%	48%	25%	1%	13%	5%	22%
	E04	87%	43%	29%	1%	15%	4%	20%
	E05	88%	35%	32%	1%	21%	3%	22%
	E06	86%	26%	25%	1%	25%	3%	28%
	E07	87%	18%	20%	0%	30%	2%	31%
	E08	87%	16%	20%	0%	33%	2%	32%
	E09	86%	12%	18%	0%	36%	0%	29%

A-10. AVERAGE EARNINGS OF IPEDS NONDEGREE SEEKERS AT ANY IPEDS PROVIDER AND WITHIN SPECIFIC IPEDS SECTORS, BY VETERAN CHARACTERISTICS

		IPEDS Degree Seeker	Degree Seeker at Two-Year Public IPEDS Institution	Degree Seeker at Four-Year Public IPEDS Institution	Degree Seeker at Two-Year Nonprofit IPEDS Institution	Degree Seeker at Four-Year Nonprofit IPEDS Institution	Degree Seeker at Two-Year For-Profit IPEDS Institution	Degree Seeker at Four-Year For-Profit IPEDS
ALL		\$44,700	\$38,600	\$47,000	\$37,600	\$51,900	\$32,800	\$45,400
SEX	Female	\$35,300	\$29,600	\$37,500	\$31,100	\$40,300	\$25,400	\$35,900
	Male	\$46,900	\$40,500	\$49,300	\$39,100	\$55,300	\$34,800	\$48,200
RACE/ETHNICITY	American Indian/Alaska Native	\$39,000	\$35,300	\$40,200	\$38,700	\$46,300	\$32,900	\$39,700
	Asian	\$43,400	\$37,300	\$46,200	\$38,100	\$51,100	\$34,700	\$43,600
	Black	\$40,900	\$34,100	\$43,400	\$32,100	\$46,500	\$27,500	\$41,800
	Hispanic (Any Race)	\$44,500	\$39,900	\$46,600	\$39,800	\$49,800	\$35,300	\$45,500
	White	\$46,000	\$39,800	\$48,000	\$39,200	\$53,800	\$34,500	\$47,400
RURILITY	Rural	\$39,400	\$35,300	\$41,400	\$36,600	\$44,900	\$33,500	\$40,100
	Micropolitan	\$40,500	\$35,700	\$42,300	\$34,600	\$47,100	\$32,900	\$41,200
	Metropolitan	\$45,400	\$39,100	\$47,800	\$37,900	\$52,500	\$32,700	\$46,000
MILITARY RANK	E01	\$26,300	\$24,600	\$30,400	D	\$32,700	\$22,100	\$25,000
	E02	\$28,200	\$26,900	\$31,200	\$25,800	\$32,100	\$24,100	\$27,300
	E03	\$32,900	\$31,100	\$35,700	\$30,600	\$36,700	\$28,600	\$31,700
	E04	\$40,300	\$37,000	\$42,600	\$36,400	\$45,600	\$32,800	\$39,500
	E05	\$50,300	\$44,200	\$52,100	\$43,000	\$55,900	\$37,100	\$50,700
	E06	\$51,100	\$42,300	\$54,000	\$45,100	\$56,100	\$33,400	\$52,600
	E07	\$54,500	\$42,000	\$53,400	\$44,300	\$58,900	\$34,800	\$58,200
	E08	\$59,700	\$45,700	\$59,000	D	\$62,700	\$35,100	\$63,400
	E09	\$58,100	\$39,300	\$58,000	D	\$60,600	D	\$62,400

Note: Veterans may have pursued a degree program (or nondegree program) at more than one provider. "D" means suppressed for disclosure.

A-11. AMONG PGIB-ELIGIBLE ENLISTED VETERANS WHO WERE IPEDS DEGREE SEEKERS, THE PERCENTAGE WHO FELL WITHIN VARIOUS FIRST IPEDS DEGREE SEEKING INSTITUTION'S INSTRUCTIONAL SPENDING AND DISTANCE EDUCATION PREVALENCE QUINTILES, BY VETERAN CHARACTERISTICS

		INSTRUCTIONAL SPENDING					DISTANCE EDUCATION				
		Q1	Q2	Q3	Q4	Q5	Q1	Q2	Q3	Q4	Q5
SEX	ALL	17%	12%	8%	4%	1%	2%	2%	2%	4%	13%
	Female	21%	15%	10%	4%	1%	2%	2%	3%	4%	20%
	Male	16%	12%	8%	3%	1%	2%	2%	2%	3%	12%
RACE/ETHNICITY	American Indian/Alaska Native	20%	13%	8%	4%	1%	2%	2%	3%	4%	12%
	Asian	17%	13%	8%	4%	2%	3%	2%	2%	3%	12%
	Black	21%	14%	10%	4%	1%	2%	1%	2%	3%	21%
	Hispanic (Any Race)	18%	16%	9%	4%	1%	2%	2%	2%	4%	13%
	White	16%	12%	7%	4%	2%	2%	2%	3%	4%	12%
RURALITY	Rural	16%	8%	5%	2%	1%	1%	1%	2%	3%	10%
	Micropolitan	18%	9%	6%	3%	1%	1%	1%	2%	4%	11%
	Metropolitan	17%	13%	8%	4%	2%	2%	2%	3%	4%	14%
MILITARY RANK	E01	9%	5%	3%	1%	0%	0%	1%	1%	1%	4%
	E02	14%	8%	5%	2%	0%	1%	1%	1%	2%	6%
	E03	21%	15%	9%	3%	1%	2%	2%	2%	3%	11%
	E04	22%	16%	10%	5%	2%	2%	3%	3%	5%	13%
	E05	20%	16%	11%	5%	2%	3%	3%	4%	5%	18%
	E06	16%	12%	8%	3%	1%	2%	2%	2%	3%	19%
	E07	14%	10%	6%	2%	1%	1%	1%	1%	2%	20%
	E08	12%	9%	6%	2%	1%	1%	1%	1%	2%	20%
	E09	9%	7%	4%	2%	0%	1%	1%	1%	2%	15%

Note: Q1=lowest quintile, Q2=second quintile, Q3=third quintile, Q4=fourth quintile, and Q5=highest quintile. Institutions were less likely to respond to IPEDS items related to distance education than items for instructional spending.

A-12. AVERAGE EARNINGS OF IPEDS DEGREE SEEKERS WHOSE FIRST IPEDS DEGREE SEEKING INSTITUTION FELL WITHIN VARIOUS INSTRUCTIONAL SPENDING AND DISTANCE EDUCATION PREVALENCE QUINTILES, BY VETERAN CHARACTERISTICS

		INSTRUCTIONAL SPENDING					DISTANCE EDUCATION				
		Q1	Q2	Q3	Q4	Q5	Q1	Q2	Q3	Q4	Q5
	ALL	\$41,600	\$44,300	\$47,100	\$50,100	\$58,400	\$50,500	\$50,500	\$47,600	\$48,000	\$51,500
SEX	Female	\$32,900	\$34,700	\$37,400	\$39,400	\$47,900	\$40,200	\$40,500	\$38,500	\$38,300	\$39,700
	Male	\$43,700	\$46,500	\$49,600	\$52,700	\$60,200	\$52,700	\$52,500	\$49,500	\$50,200	\$55,100
RACE/ETHNICITY	American Indian/Alaska Native	\$36,200	\$38,800	\$41,000	\$45,900	\$48,900	\$46,000	\$43,200	\$40,000	\$41,000	\$45,200
	Asian	\$39,700	\$42,900	\$46,000	\$48,500	\$59,300	\$50,900	\$50,100	\$47,000	\$47,800	\$50,000
	Black	\$38,700	\$40,300	\$43,700	\$45,700	\$52,900	\$43,400	\$44,500	\$43,500	\$43,700	\$46,900
	Hispanic (Any Race)	\$42,100	\$44,100	\$46,000	\$49,900	\$58,100	\$49,300	\$48,200	\$46,100	\$48,400	\$51,500
	White	\$42,800	\$45,600	\$48,500	\$51,300	\$59,100	\$52,200	\$51,600	\$48,500	\$49,000	\$53,700
RURILITY	Rural	\$37,100	\$40,800	\$41,400	\$42,700	\$52,900	\$43,500	\$44,200	\$42,800	\$41,600	\$43,700
	Micropolitan	\$37,800	\$41,600	\$42,600	\$45,700	\$53,000	\$46,000	\$44,700	\$42,700	\$43,200	\$45,900
	Metropolitan	\$42,400	\$44,600	\$47,700	\$50,800	\$58,800	\$51,000	\$51,200	\$48,400	\$48,900	\$52,400
MILITARY RANK	E01	\$25,300	\$26,000	\$26,000	\$32,100	\$38,100	\$35,100	\$34,900	\$31,000	\$30,200	\$26,600
	E02	\$26,500	\$28,100	\$30,500	\$30,700	\$39,400	\$31,400	\$32,100	\$31,300	\$31,000	\$30,100
	E03	\$31,200	\$32,700	\$34,600	\$37,100	\$44,100	\$38,100	\$38,800	\$36,500	\$35,600	\$34,900
	E04	\$37,800	\$40,000	\$42,100	\$45,000	\$51,600	\$45,200	\$45,800	\$43,000	\$43,400	\$44,500
	E05	\$46,800	\$49,600	\$52,600	\$55,300	\$61,600	\$55,800	\$55,400	\$52,600	\$52,100	\$56,200
	E06	\$47,600	\$49,400	\$54,400	\$56,700	\$71,100	\$57,100	\$56,800	\$53,100	\$52,200	\$56,700
	E07	\$52,100	\$54,500	\$57,600	\$58,600	\$65,200	\$55,400	\$52,100	\$51,300	\$54,700	\$59,800
	E08	\$58,100	\$58,500	\$62,800	\$63,200	\$70,800	\$61,100	\$59,800	\$55,500	\$60,100	\$63,900
	E09	\$55,200	\$59,300	\$59,700	\$60,600	D	\$56,200	\$59,900	\$58,500	\$58,000	\$62,700

Note: Q1=lowest quintile, Q2=second quintile, Q3=third quintile, Q4=fourth quintile, and Q5=highest quintile. Institutions were less likely to respond to IPEDS items related to distance education than items for instructional spending.

Appendix B

Methods

This methodological appendix provides additional information on our data sources and methods for answering the study's research questions.

Data sources

This project required significant cooperation across U.S. government agencies and the National Student Clearinghouse.

Below, we note the data that each entity provided to help us answer the research questions. Appendix Table B-1 shows more specifically how the data were used.

- **The U.S. Department of Veterans Affairs (VA):** A list of all Post-9/11 GI Bill (PGIB)-eligible veterans; veteran demographic data from 2020 included in the U.S. Veterans Trends and Statistics (USVETS) data.
- **The Veterans Benefits Administration (VBA):** Veterans' use of PGIB benefits through March 2020; a list of all PGIB payment records through fiscal year 2018; veteran demographic data from 2020 included in VA's Benefits Administration's Education Services Files.
- **National Student Clearinghouse:** PGIB-eligible veterans' postsecondary enrollment and attainment records through June 2020.
- **The Internal Revenue Service (IRS):** W-2 income from tax year 2018 and marital and dependents status, region, and ZIP code as of year of first separation.
- **The U.S. Census Bureau:** The Census Bureau's crosswalk of Rural-Urban Commuting Area Codes (RUCA) and region for ZIP codes.
- **The U.S. Department of Education's Integrated Postsecondary Education Data System (IPEDS):** Institution-level data from 2009 to 2019 on institution sector; count of undergraduate and graduate degree seekers involved exclusively in distance education courses and total number of those degree seekers; and the total amount spent by the institution on instructional expenses divided by the total full-time equivalent (FTE) for the institution. These variables were merged with information on students' institutions using the Clearinghouse's Unit ID Crosswalk Table and with the Unit ID field in the PGIB payments file.
- All individual-level data were merged using the U.S. Census Bureau's Protected Identification Key, which uses a variety of record linkage techniques to identify individuals on incoming files while simultaneously protecting respondent confidentiality (Wagner & Layne, 2014).

Methods

Here we discuss the methods used to answer the research questions in this series. For more detail on the groups noted, see Exhibit 1 in the main report.

Chapter 2, Research Question 1. To address the question of who does not personally use PGIB benefits according to VBA payment records, the study team used bivariate descriptive statistics to examine the frequency of Nonparticipants across demographic and military service variables. The study sample included all PGIB-Eligible Enlisted Veterans.

Chapter 2, Research Question 2. To explore the earnings of veterans who did not use PGIB benefits for themselves versus those who did, the study team used bivariate descriptive statistics to compare W-2 wage averages and how average earnings differed across demographic and military service variables. The study team also used a regression analysis to investigate the relationship between being a Nonparticipant and wages when controlling for other variables. To account for the number of policy-relevant variables included in the regression, the study team used false discovery rate (FDR; Benjamini & Hochberg, 1995) on a robust (HC-3) Wald test statistic that tested whether all levels in a variable were statistically significant. The sample included PGIB-Eligible Enlisted Veterans except for those who had a payment record with an enrollment start or end date in 2018; participating in education or training activities during 2018 could have reduced the amount of time veterans were able to work and thus adversely affected their 2018 W-2 wages.

Chapter 3, Research Question 1. To explore the percentage of veterans who had ever enrolled in a nondegree program using PGIB benefits, the study team used bivariate descriptive statistics to examine the frequency of enrollment at non-IPEDS nondegree programs and IPEDS nondegree programs across demographic and military service variables. The study sample included all PGIB-Eligible Enlisted Veterans with a payment record containing a training type of “non-college degree” associated either with a facility code indicating a public, private nonprofit, or private for-profit provider (non-IPEDS provider) or an IPEDS Unit ID (IPEDS provider). Within each subset of veterans who had used PGIB benefits for non-IPEDS nondegree programs, the study team examined the relationship between the type (or control, e.g., public, nonprofit, or for-profit) of the non-IPEDS institution and frequency of veterans using their benefits at those institutions, broken out by demographic and military service variables. The study team conducted a similar set of analyses for IPEDS institutions, investigating the relationship between enrollment and the sector of the IPEDS institution (an IPEDS institution can be public, nonprofit, or for-profit and two-year or four-year) across demographic and military service variables.

Chapter 3, Research Question 2. To explore the earnings of veterans who had used their benefits at non-IPEDS or IPEDS nondegree programs at some point during their PGIB usage, the study team used bivariate descriptive statistics to examine the association between use of PGIB benefits at a non-IPEDS or an IPEDS nondegree program and 2018 W-2 earnings across demographic and military service variables. The team also examined the relationship between the type (control) of a non-IPEDS provider and average W-2 wages as well as between the sector of an IPEDS institution and average W-2 wages, across demographic and military service variables.

Chapter 4, Research Question 1. To explore the frequency of veterans personally enrolling in degree programs using PGIB benefits, the study team used bivariate descriptive statistics to examine the frequency of enrollment at non-IPEDS degree programs and IPEDS degree programs across demographic and military service variables. The study sample included all PGIB-Eligible Enlisted Veterans with a payment record containing a training type of “undergraduate” or “graduate” associated either with a facility code indicating a public, private nonprofit, or private for-profit provider (non-IPEDS provider) or an IPEDS Unit ID (IPEDS provider). Within each subset of veterans who had used PGIB benefits for non-IPEDS college expenses, the study team examined the relationship between the type (or control—e.g., public, nonprofit, or for-profit) of the non-IPEDS institution and the frequency of veterans using

their benefits at those institutions, broken out by demographic and military service variables. The study team conducted a parallel set of analyses for IPEDS institutions, investigating the relationship between the sector of the IPEDS institution (IPEDS institutions examined can be public, nonprofit, or for-profit and two- or four-year) and the frequency of veterans using their benefits at those institutions, broken out by demographic and military service variables. Focusing only on veterans who had a payment record for an IPEDS institution, the study team explored the relationship between the frequency of enrollment and earnings by quintile of undergraduate and graduate degree seekers enrolled exclusively in distance education at that institution and the quintile of instructional spending at that institution. Frequency of enrollment was broken out by demographic and military service variables.

Chapter 4, Research Question 2. To explore the 2018 W-2 earnings of veterans who had personally enrolled in degree programs using PGIB benefits, the study team used bivariate descriptive statistics to examine the earnings of those who had used PGIB benefits for non-IPEDS degree programs and IPEDS degree programs across demographic and military service variables. Within the subset of veterans who had used PGIB benefits for non-IPEDS degrees, the study team examined the relationship between the type (control) of the non-IPEDS institution and earnings, broken out by demographic and military service variables. The study team conducted a similar set of analyses for IPEDS institutions, investigating the relationship between earnings and the sector of the IPEDS institution across demographic and military service variables.

Chapter 4, Research Question 3. Focusing only on veterans who had a payment record for an IPEDS institution degree program, the study team explored the relationship between the quintile of students enrolled exclusively in distance education of that institution and earnings by demographic and military service variables, as well as between the quintile of instructional spending at that institution and earnings by demographic and military service variables. In addition to bivariate descriptive statistics, the study team also conducted a linear regression analysis exploring how sector, distance education prevalence, and instructional spending were related to earnings after controlling for demographic and military service variables. The same method of HC-3 Wald tests and FDR discussed previously was applied.

Chapter 4, Research Question 4. Also focusing only on veterans who had a payment record for an IPEDS institution degree program, analyses examined the relationship between the IPEDS institutional characteristics (sector, distance education quintile, and instructional spending quintile) and likelihood of completing an associate degree or higher within six years of first enrolling after separating from the military. The institution at which the veteran first enrolled following separation from the military and completion records were taken from Clearinghouse records (in contrast to the VBA PGIB payment records used for the preceding research questions). The study team used bivariate descriptive statistics and logistic regression to examine the relationship between the institutional characteristics and likelihood of completing a degree, controlling for demographic and military service variables. The team also used a simplified logistic regression focusing on the relationship between institutional sector and its relationship to completion, accounting for demographic and military service variables. The same method of HC-3 Wald tests and FDR was applied.

APPENDIX TABLE B-1. VARIABLES USED IN ANALYSES BY THE CHAPTERS IN WHICH THEY ARE USED

VARIABLE	DEFINITION	SOURCE	CH 2-1	CH 2-2*	CH 3-1	CH 3-2	CH 4-1	CH 4-2	CH 4-3*	CH 4-4*
Nonparticipant	Indicates whether the veteran did not have any payment record for themselves	VBA PGIB payments file	●	●						
PGIB User	Indicates whether the veteran has a payment record indicating use of PGIB for themselves	VBA PGIB payments file	●	●	●	●	●	●	●	●
Clearinghouse Veteran	Indicates that the veteran had a Clearinghouse record	Clearinghouse					●	●	●	●
Enrollment in 2018	Indicates whether the veteran had a record in the VBA PGIB payments file with an enrollment end date or enrollment begin date in 2018 where they were listed as the beneficiary	VBA PGIB payments file		●		●		●	●	
College record	Indicates whether the payment record had a training type of undergraduate or graduate (college record = 1) or non-college degree (college record = 0); other training types (e.g., on-the-job training) were not included in Chapter 3 and 4 analyses.	VBA PGIB payments file			●	●	●	●	●	●
IPEDS record	Indicates whether the payment record had a corresponding IPEDS UNIT ID code	VBA PGIB payments file			●	●	●	●	●	●
Non-IPEDS Nondegree Seeker	Indicates whether a veteran had any payment record for a non-IPEDS institution for a non-college degree training type	VBA PGIB payments file			●	●				
IPEDS Nondegree Seeker	Indicates whether a veteran had any payment record for an IPEDS institution for a non-college degree training type	VBA PGIB payments file			●	●				
Non-IPEDS Degree Seeker	Indicates whether a veteran had any payment record for a non-IPEDS institution for an undergraduate or graduate training type	VBA PGIB payments file					●	●		

APPENDIX TABLE B-1. VARIABLES USED IN ANALYSES BY THE CHAPTERS IN WHICH THEY ARE USED

VARIABLE	DEFINITION	SOURCE	CH 2-1	CH 2-2*	CH 3-1	CH 3-2	CH 4-1	CH 4-2	CH 4-3*	CH 4-4*
IPEDS Degree Seeker	Indicates whether a veteran had any payment record for an IPEDS institution for an undergraduate or graduate training type	VBA PGIB payments file					●	●	●	●
Instructional spending quintile¹—first Clearinghouse institution	The institution’s instructional spending (e.g., compensation for academic instruction) per FTE quintile in which veteran’s first institution after separating falls per the Clearinghouse records	IPEDS tables fYYYY_f1a, fYYYY_f2, and fYYYY_f3 ²								●
Instructional spending quintile—first payment to an IPEDS institution	The quintile into which an IPEDS institution falls in instructional spending (e.g., compensation for academic instruction) per FTE in the veteran’s first year of enrollment per the VBA PGIB payment records	IPEDS tables fYYYY_f1a, fYYYY_f2, and fYYYY_f3							●	
Distance education prevalence quintile³—first Clearinghouse institution	The quintile in which a veteran’s first institution after separating from military service falls in percentage of undergraduate and graduate students enrolled exclusively in distance education in the veteran’s first year of enrollment per the Clearinghouse records	IPEDS table EFYYYYA_DIST ⁴								●
Distance education prevalence quintile—first payment to an IPEDS institution	The quintile in which a veteran’s first institution falls in percentage of undergraduate and graduate students enrolled exclusively in distance education in the veteran’s first year of enrollment per the VBA PGIB payment records	IPEDS table EFYYYYA_DIST							●	
IPEDS sector—first Clearinghouse institution	The sector of the first institution in which the veteran enrolls after their first separation from the military, per Clearinghouse records	IPEDS table hdYYYY								●
IPEDS sector—first payment to an IPEDS institution	The sector of the first institution at which the veteran enrolled in the veteran’s first year of enrollment per VBA PGIB payment records	IPEDS table hdYYYY							●	

¹ Instructional spending quintiles varied by year; for the 2017-18 academic year, the quintiles were: 20th = \$6,710, 40th = \$8,791, 60th = \$11,916, 80th = \$17,035, and 100th = \$50,742

² Missing IPEDS data for an institution in any year were filled in by the closest year of available data.

³ Distance education quintiles varied by year; for the 2017-18 academic year, the quintiles were: 20th = 15.5%, 40th = 44%, 60th = 86.7%, 80th = 100%, and 100th = 100%.

⁴ IPEDS has distance education data starting in 2012; for years prior to 2012, the 2012 IPEDS data were used.

APPENDIX TABLE B-1. VARIABLES USED IN ANALYSES BY THE CHAPTERS IN WHICH THEY ARE USED

VARIABLE	DEFINITION	SOURCE	CH 2-1	CH 2-2*	CH 3-1	CH 3-2	CH 4-1	CH 4-2	CH 4-3*	CH 4-4*
IPEDS Sector—any payment to an IPEDS institution	Indicates whether the veteran had any record of having enrolled at an institution in that sector, per VBA PGIB payment records	IPEDS table hdYYYY			●	●	●	●	●	
VA control	Based on the first digit of the facility code in the VBA PGIB payment records, this indicates whether the veteran had any record of a payment to a non-IPEDS institution that was in the control category (public, nonprofit, or for-profit) per the VBA PGIB payment records	VBA PGIB payments file			●	●	●	●		
Race/ethnicity	Race and ethnicity were imputed when missing. As a result, it is expected that some individuals may have the wrong race or ethnicity mapped to them. In addition, there are some “original” race/ethnicity classifications that cannot be assigned to the most recent Office of Management and Budget classification. For example, if an original source had an individual as “Asian or Pacific Islander,” whether the person is “Asian” or “Hawaiian or Pacific Islander” cannot be recovered. Ethnicity Hispanic/not Hispanic is collected separately from race.	USVETS data	●	●	●	●	●	●	●	●
Sex	USVETS categorizes veterans into two sexes: male or female	USVETS data	●	●	●	●	●	●	●	●
Age range	Difference, in years between birth date and 12/31/2018	VA PGIB eligibility file		●					●	●
Disability rating category	Latest nonmissing value where available; veterans with only missing values were categorized as having “No Disability Rating”	USVETS data		●					●	●
Years since separation	Difference, in years between first separation date and 12/31/2018	USVETS data; if missing, DMDC		●					●	●

APPENDIX TABLE B-1. VARIABLES USED IN ANALYSES BY THE CHAPTERS IN WHICH THEY ARE USED

VARIABLE	DEFINITION	SOURCE	CH 2-1	CH 2-2*	CH 3-1	CH 3-2	CH 4-1	CH 4-2	CH 4-3*	CH 4-4*
Rank⁵	Pay plan and pay grade; rank at time of first separation from the military is an approximation of the salary level the veteran had prior to leaving the military	DMDC	●	●	●	●	●	●	●	●
Two-digit Standard Occupational Classification (SOC) grouping for military occupation	Two-digit SOC code, clustered for some codes with low incidence rates	DMDC		●					●	●
AFQT percentile	The AFQT measures incoming service members' arithmetic reasoning, mathematical knowledge, paragraph comprehension, and word knowledge; thus, it can provide a snapshot of veterans' academic preparedness at the time they enlisted. The AFQT percentile used in analyses is associated with veterans' earliest available Uniform Service Agreement Date from Department of Defense Military Entrance Processing Command records.	DMDC		●					●	●
Family responsibilities	Combined filing status and dependent information from tax filing year of first separation from military	IRS	●	●	●	●	●	●	●	●
Region	Derived from ZIP code for the year the veteran first separated from the military, translated into region using Census Bureau crosswalk	IRS if available, USVETS data if available, and VA eligibility file as last data source if previous two sources were missing		●					●	●
Rurality	Derived from ZIP code for the year the veteran first separated from the military, Census RUCA codes combined into the higher-order categories of "rural," "micropolitan," and "metropolitan"	USVETS data	●	●	●	●	●	●	●	●

⁵ Pay rates by rank as of 2017 (the last year of enrollment as required in our analyses) are available at <https://www.dfas.mil/Portals/98/2017MilitaryPayChart.pdf>. The range of rates varies depending on the number of years the military member had served, but for those who had served more than 10 years, the value for an E1 is \$1,599.90 bimonthly, compared to \$5,052.60 for an E9.

APPENDIX TABLE B-1. VARIABLES USED IN ANALYSES BY THE CHAPTERS IN WHICH THEY ARE USED

VARIABLE	DEFINITION	SOURCE	CH 2-1	CH 2-2*	CH 3-1	CH 3-2	CH 4-1	CH 4-2	CH 4-3*	CH 4-4*
Combat status	Served in Afghanistan, Syria, or Iraq	DMDC		●					●	●
AFQT percentile X race				●					●	●
AFQT percentile X sex				●					●	●
AFQT percentile X ethnicity				●					●	●
AFQT percentile X RUCA				●					●	●
OUTCOME VARIABLES										
Degree completion within six years	Attained an associate degree or higher per Clearinghouse records within six years of first enrollment record postseparation and prior to June 30, 2019	Clearinghouse								●
W-2 earnings	W-2 earnings for 2018 for those who were not using PGIB for education or training in 2018 according to the VBA PGIB payment records. Zero was imputed when a veteran was missing W-2 information. Analyses for earnings included veterans not in the labor force and those not working full time.	IRS		●		●		●		

*The study team used regressions to investigate these research questions.

AFQT = Armed Forces Qualification Test

Clearinghouse = National Student Clearinghouse

DMDC = Defense Manpower Data Center

IPEDS = Integrated Postsecondary Education Data System

IRS = Internal Revenue Service

PGIB = Post-9/11 GI Bill

RUCA = Rural-Urban Commuting Area

VA = Veterans Administration

Appendix C Methodological Details

Logistic Regression

Logistic regression estimates the probability of using the PGIB through a latent regression, a mapping of the latent parameter to the probability space, and a variance function from that mapping.

$$E(\mathbf{Y}|\mathbf{X}) = \pi(\mathbf{X}) = \text{logit}(\mathbf{X}\boldsymbol{\beta})$$

$$\text{Var}(\mathbf{Y}|\mathbf{X}) = \pi(\mathbf{X})(\mathbf{1} - \pi(\mathbf{X}))$$

Where \mathbf{Y} is a vector that is 1 if the veteran takes up the GI Bill and 0 if they do not; \mathbf{X} is a matrix of the covariates, shown below; π is the predicted probabilities; and $\boldsymbol{\beta}$ is regression coefficients. To linearize the coefficients, we simply difference the variable in the two states, evaluated at the mean of other coefficients.

$$\Delta\mathbf{Y} = \text{logit}(\mathbf{X}_1\hat{\boldsymbol{\beta}}) - \text{logit}(\mathbf{X}_0\hat{\boldsymbol{\beta}})$$

Where $\hat{\boldsymbol{\beta}}$ is the fitted regression coefficients; X_0 are the actual data, with the coefficient of interest set to 0; and X_1 are the actual data, with the coefficient of interest set to 1; and $\Delta\mathbf{Y}$ is the estimated change in program take-up associated with having the covariate level.

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