CNA

August 2023

Recruiting, Retaining, and Promoting Hispanic Servicemembers

Elizabeth Clelan, Daniel Leeds, Lauren Malone, Kevin Ng, Jeffery Tobin, and Eduardo Gamarra

with contributions by Cathy Hiatt

DRM-2023-U-035649-2Rev

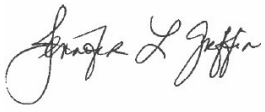
Abstract

The federal government has expressed concern in recent years about Hispanic representation in the Armed Forces, particularly in the senior ranks. The Fiscal Year 2022 National Defense Authorization Act calls for an analysis of Hispanic representation in the Services and a comparison of how each Service recruits, retains, and promotes its Hispanic servicemembers. In response to this requirement, we calculated Hispanic representation rates at accession and compared them to the civilian benchmarks for the enlisted and officer populations. We also performed cohort analysis to compare the retention and promotion rates of Hispanic versus non-Hispanic servicemembers. Next, we explored the career challenges that Hispanic servicemembers face in military recruiting, retention, and promotion, and we looked at initiatives that the Department of Defense and the individual Services have implemented to address those challenges. We reviewed policy documents and peer-reviewed literature and held discussions with subject matter experts on Hispanic representation in the workforce, barriers Hispanic servicemembers face, programs and initiatives implemented to grow Hispanic representation, and evaluations of the effectiveness of these programs. We found that few of the programs designed to address Hispanic representation gaps have been formally evaluated. We conclude the report by summarizing knowledge gaps that still exist regarding Hispanic representation in the Armed Forces and by recommending ideas for future quantitative and qualitative research.

This work was created in the performance of Federal Government Contract Number N00014-22-D-7001.

Cover image: KIRTLAND AIR FORCE BASE, NM, UNITED STATES (Aug. 3, 2023) Air Force award recipients pose for a group photo at the League of United American Citizens (LULAC) luncheon at the Albuquerque Convention Center, New Mexico, August 3, 2023. As the premier Hispanic convention, the LULAC National Convention draws over 15,000 participants each year including top leaders from the government, the private sector, and the Latino community. (Photo by Airman 1st Class Ruben Garibay, 377th Air Base Wing Public Affairs)

Approved by: **August 2023**



Jennifer Griffin, Director
Marine Corps and Defense Workforce Program
Resources and Force Readiness Division

Request additional copies of this document through inquiries@cna.org.

Executive Summary

In recent years, the Department of Defense (DOD) has increased its focus on the demographic composition of its force, with numerous initiatives, strategies, and policies aiming to ensure the military reflects the population it serves and that each member can serve with dignity and respect. To this end, several analytic efforts have sought to identify and remove barriers that diverse populations may encounter to serve. Hispanic people are the largest minority group in the US labor force, accounting for 80 percent of new workers. Hispanic people experienced a 4.5 percent growth in their labor force participation (compared with only 0.5 percent growth for non-Hispanic people) from 1990 to 2020. As such, they are increasingly becoming a critical accession source for the military. Congress and DOD, however, are concerned about the low representation of Hispanic servicemembers in the senior enlisted and officer ranks and the potential long-term effects on accessions. Based on this concern, the Fiscal Year 2022 National Defense Authorization Act (NDAA) called for a study of Hispanic representation in the Armed Forces. To fulfill this requirement, DOD's Office for Diversity, Equity, and Inclusion (ODEI) tasked CNA with analyzing how DOD's Hispanic representation compares to the civilian population and how each Service recruits, retains, and promotes Hispanic servicemembers. Based on these findings, ODEI tasked us to provide recommendations for addressing the challenges and removing the barriers facing this population.

Approach

In this study, we took a combined quantitative and qualitative approach to identify the current state of Hispanic representation and barriers to growing a more ethnically diverse force in DOD. Using data provided by the Defense Manpower Data Center (DMDC), we observed Hispanic servicemembers' representation in the officer and enlisted communities, compared their representation *at accession* to civilian benchmarks, and estimated differences in Hispanic and non-Hispanic retention and promotion rates. We also conducted a difference-in-differences analysis to evaluate the effectiveness of the Army's 2001–2005 "Yo Soy El Army" recruitment initiative. Next, we conducted a literature review of Hispanic representation in the military and in the civilian sector to understand the specific challenges faced in recruiting, retaining, and promoting Hispanic servicemembers, as well as any policies and initiatives focused on closing representation gaps. We also held discussions with program officials and diversity-related military and civilian subject matter experts (SMEs). Our objective in these conversations was to collect their insights on challenges Hispanic servicemembers have faced

and programs and initiatives that have been the most effective in growing (and maintaining) Hispanic representation. Our synthesis of the information gleaned from these discussions and the literature review helped explain observations from the data.

Hispanic accession representation and recruiting challenges and initiatives

Our accessions analyses revealed that Hispanic servicemembers are underrepresented at accessions. In all Services except the Marine Corps, Hispanic enlisted and officer accessions fall short of the civilian benchmarks. Using the American Community Survey (ACS) from 2001 to 2019, we compared enlisted accessions to the non-institutionalized 18-to-24-year-old population with at least a high school degree, and we compared officer accessions to the non-institutionalized 21-to-39-year-old population with at least a bachelor's degree. In 2019, across DOD, Hispanic servicemembers represented 22 and 9 percent of enlisted and officer accessions, compared to civilian benchmarks of 23 and 12 percent, respectively (the corresponding numbers for the Marine Corps were 26 and 12 percent). Most Hispanic accessions were from the southern border states, though even in this region they were underrepresented relative to states' civilian benchmarks. We found that Hispanic recruits' primary accession challenges include eligibility barriers and cultural challenges that affect recruiting efforts. The most cited Hispanic eligibility barriers include their lower average graduation rates and test scores, coupled with higher obesity and non-citizen rates. Some of the cultural challenges that Hispanic servicemembers face include parental language barriers and mistrust of the military due to military corruption in some countries of origin. Although many initiatives have attempted to bridge these gaps (e.g., the Air Force's Aviation Inspiration Mentorship program, the Navy's Junior Officer Diversity Outreach program), none have been evaluated for effectiveness. Our evaluation of the Army's "Yo Soy El Army" revealed that the program resulted in small accession effects (an increase of 3.9 percentage points), but these effects did not develop until several years after the campaign and were short-lived once the campaign ended. Thus, more extensive and sustained efforts will likely be required to see changes over time, and efforts should be evaluated for success.

Hispanic retention and promotion representation, challenges, and initiatives

Our retention and promotion analyses revealed that Hispanic servicemembers are, on average, *not* underrepresented after accession. Although a crude snapshot of Hispanic representation by paygrade makes it *appear* that Hispanic servicemembers are less likely to remain in service

and less competitive in the promotion process than their non-Hispanic counterparts, these findings are not sustained when using a cohort approach. That is, when we calculated the percent of servicemembers who reached a particular year of service *among those who accessed in the same fiscal year*, we found that Hispanic retention is on par with or greater than non-Hispanic retention for both enlisted and officers in all four Services, with one exception: Navy officers. Additionally, we found that conditional promotion rates—promotion conditional on having made it to the previous paygrade—were similar or higher among enlisted Hispanic servicemembers (than among their non-Hispanic counterparts). Among officers, our findings were different: Hispanic officers promote on par with non-Hispanic offers in the Army and Marine Corps but are *less likely* to promote to O-3 in the Navy and Air Force. The precise mechanisms for these promotion differences require further investigation. Findings from the literature review, our SME discussions, and our data analysis suggest they could be influenced by occupational differences—Hispanic servicemembers are less represented in occupations that tend to promote faster—or potential biases in the promotion system.

Regardless, the largest differences in Hispanic and non-Hispanic representation occur at the accession stage. Should all things remain constant, we would expect to see more Hispanic servicemembers in higher ranks over time given that Hispanic representation has increased in the past decade at lower ranks and it takes time to achieve higher ranks.

We expect that the general findings of on-par (or higher) retention patterns are due to, at least in part, deliberate efforts on the part of DOD and the Services to promote a culture of inclusivity and inculcate a sense of belonging among its servicemembers. A few recent examples are the inclusion of hyphens and accent marks on nametags to reflect names and pronunciations accurately (all Services), language training for non-native English speakers during basic training (Army, Air Force), and partnerships with civilian Hispanic affinity groups (all Services). Among the promotion-related policy changes are the exclusion of photographs from the materials reviewed by promotion boards (and other competitive boards) and updates to promotion board precepts that include language about the importance of equitable opportunity for all servicemembers. However, many of these changes have not been formally evaluated for the extent to which they improve Hispanic representation.

Conclusion and recommendations

Overall, our quantitative analysis revealed that Hispanic servicemembers, on average, are not less likely to promote or remain in service than their peers for most Services and paygrades. Hence, the observed differences in representation at the higher ranks is generally a recruitment issue rather than a retention or promotion issue. For most Services, within an accession cohort, Hispanic servicemembers' retention and promotion rates are on par with

their peers. Thus, any efforts to grow Hispanic representation at the higher ranks must start with growing the Hispanic accession pool *from which* they are retained and promoted.

Based on these findings, we recommend that DOD and the Services undertake the following:

- Expand recruiting-related DEI initiatives, with a particular emphasis on those that will help address eligibility barriers and cultural challenges;
- Maintain efforts to grow an inclusive culture for members of all racial/ethnic groups;
- Provide forums for the Services to share lessons learned about their DEI initiatives;
- Ensure that future initiatives have a pre-established data-collection/evaluation plan; and
- Conduct further analysis to determine
    - why the Marine Corps has had particular success in recruiting Hispanic servicemembers and whether any strategies or lessons learned can be adopted by the other Services;
    - why Hispanic promotion rates are lower for Air Force and Navy officers
    - where knowledge gaps about the military exist for potential Hispanic recruits and Hispanic servicemembers that have accessed into the military; and
    - which DEI initiatives have been most successful in growing Hispanic representation.

Contents

Introduction

Over the past several years, the Department of Defense (DOD) has focused greater attention on the underrepresentation of Hispanic servicemembers in the senior grades across the Services. In addition, Section 572 of the Fiscal Year (FY) 2022 National Defense Authorization Act (NDAA) calls for a study of Hispanic representation in the Armed Forces. Specifically, the NDAA requests an analysis of Hispanic representation relative to a civilian benchmark and a comparison of how each Service recruits, retains, and promotes Hispanic servicemembers. DOD's Office for Diversity, Equity, and Inclusion (ODEI) asked CNA to conduct a study to fulfill this NDAA requirement.[1]

For background, we begin with a brief discussion of why workforce diversity matters. Then we discuss several Executive Orders (EOs) that recent presidential administrations have issued to prioritize increasing racial and ethnic diversity.

Benefits of a diverse workforce

A diverse workforce, which includes employees from different backgrounds, cultures, races, genders, ages, and abilities, can create both immediate and long-term benefits for an organization [1-3]. Both employees and customers who prioritize diversity reap these benefits, which are summarized here from the civilian literature. Although the military might not have "customers" in the sense that a private-sector business does, it does have people that it serves, and the benefits of a diverse workforce extend to them.

Immediate benefits of a diverse workforce may include the following [4-6]:

- *Increased creativity and innovation*. A diverse pool of employees brings different perspectives and ideas, which can lead to new and innovative solutions.
- *Better problem-solving*. Diverse teams can better analyze and solve complex problems because they approach issues from different perspectives.
- *Improved customer relations*. A diverse workforce can better relate to a diverse customer base, leading to improved customer satisfaction and loyalty.

[1] In this report, we address in some aspect all of the NDAA requirements other than an analysis of Service academy data, which was beyond the scope of this initial study.

- *Enhanced brand reputation*. An organization that values diversity and inclusion can improve its brand reputation and attract a wider pool of customers and employees who prioritize this value.

Long-term benefits of a diverse workforce may include the following [7-9]:

- *Increased performance*. Companies with diverse workforces have been shown to outperform their less diverse counterparts, possibly because of the diverse viewpoints and ideas.
- *Higher employee retention*. A diverse workforce creates a more inclusive culture that attracts and retains talented employees.
- *Better decision-making*. Diverse teams can make more informed and thoughtful decisions by considering a broader range of perspectives and experiences.
- *Enhanced innovation*. A diverse workforce can lead to more creative and innovative ideas, helping a company stay ahead of its competitors.

A recent Office of People Analytics report found that improvements in diversity and inclusion reap rewards in the military context. Specifically, survey results indicated that retention intentions, satisfaction with military life, member and unit preparedness, and member and unit morale were all higher among those active duty servicemembers who described their unit climate as "healthy" on multiple diversity and inclusion indicators (as compared to those who characterized the unit climate as "unhealthy"). The authors also found higher separation rates among those in unhealthy climates. Thus, ensuring a diverse and inclusive operating environment results in clear readiness and retention benefits [10]. Therefore, the immediate and long-term benefits of a diverse workforce have been shown to enhance the quality of life for servicemembers and the readiness and capabilities of the force.

EOs and DOD guidance

We now discuss US presidential EOs and DOD guidance that have tried to maximize the benefits of diverse force. Recent US presidents have recognized Hispanic underrepresentation in the Armed Forces as well as throughout the federal government and have issued several EOs to address this concern. Although these issuances do not provide detailed strategies to increase Hispanic representation, they do offer broad directions from the highest level of government.

In 2000, President Clinton issued EO 13171, "Hispanic Employment in the Federal Government," which established programs to recruit and develop Hispanic federal employees [11]. This EO mandated that each federal department eliminate any barriers to Hispanic recruitment and retention by broadening the applicant pool, prohibiting non-merit factors

from entering recruitment decisions, and appointing Hispanic executives to performance review and promotion boards. The order also mandated management diversity training and required supervisors' performance plans to include specific, measurable goals for diverse recruitment and career development [11].

In 2011, President Obama signed EO 13583, "Establishing a Coordinated Government-Wide Initiative to Promote Diversity and Inclusion in the Federal Workforce" [12]. The order called for the development of a government-wide Diversity and Inclusion Strategic Plan identifying best practices for eliminating barriers to diversity [12]. More recently, in 2021, President Biden issued EO 13985, "Advancing Racial Equity and Support for Underserved Communities Through the Federal Government" [13], and EO 14035, "Diversity, Equity, Inclusion, and Accessibility in the Federal Workforce" [14]. These orders directed agencies to collect data on barriers to recruiting and retaining underrepresented groups, which will be used to update the Diversity and Inclusion Strategic Plan [11-14].

DOD and Congress have also collected data and issued broad guidance to increase diversity. DOD published its 2012–2017 Diversity and Inclusion Strategic Plan based on 20 recommendations from the Military Leadership Diversity Commission (MLDC) [15-16]. DOD's Strategic Plan sought to ensure leadership's commitment to diversity and inclusion efforts; employ an aligned strategic outreach effort; and develop, mentor, and retain top talent [17]. A later evaluation by the DOD Inspector General, however, revealed that only six of these recommendations were ultimately implemented, indicating that DOD and the individual Services still have ongoing work to do to meet the Strategic Plan's three goals [16].

In addition, the Services have created their own diversity, equity, and inclusion (DEI) strategic plans. For example, the Marine Corps' plan seeks to increase diversity through recruiting and retaining diverse talent as well as creating a culture of inclusion through DEI courses and demonstrated leadership commitment [18]. Similarly, the Army People Strategy's Diversity, Equity, and Inclusion Annex seeks to increase diversity through ensuring leadership's commitment, institutionalizing talent management, implementing diversity training, and creating an inclusive environment [19]. In 2020, DOD ordered the Under Secretary of Defense for Personnel and Readiness to review all policies that may negatively affect diversity and recommend changes to address these issues. In addition, Section 572 of the FY 2022 NDAA requires a federally funded research and development center (FFRDC) to conduct a study on Hispanic representation in the Armed Forces. The present study fulfills that requirement.

This report

The remainder of this report is organized as follows. In the next section, we describe our analytical approach, which combined quantitative data analysis, a literature and policy review, and subject matter expert (SME) and program official (PO) discussions. We began by comparing Hispanic accession percentages for both officers and enlisted servicemembers with the Hispanic representation in the eligible civilian population. We then compared the percentage of Hispanic servicemembers at different paygrades and conducted a cohort analysis to estimate the retention and promotion rates of Hispanic and non-Hispanic servicemembers. We also conducted a regression analysis using observable characteristics to try to explain any differences we observed between the Hispanic and non-Hispanic retention and promotion rates.

We then describe the identified challenges to recruiting, retaining, and promoting Hispanic servicemembers. For each identified challenge, we summarize the strategies that the Services and DOD have implemented to address it. We then summarize evidence (such as data analysis or other forms of program evaluation) for what types of policies and initiatives have worked well and have not worked well in addressing the identified challenges (to the extent that information is known). Then, we summarize findings from the civilian-sector literature and SME discussions to determine whether the military can benefit from lessons learned in the private sector.

Finally, we conclude by describing the gaps that remain in our understanding of the challenges in recruiting, retaining, and promoting Hispanic servicemembers, and we lay out an analytical way forward to address those challenges. For example, we recommend additional analysis to uncover *why* certain career challenges for Hispanic servicemembers exist and how to best address them. This analysis will help DOD craft appropriate recommendations to build a more ethnically diverse force.

Approach

Below we summarize the three analytical strategies we used for this report.

Data analysis

To calculate Hispanic representation within DOD, we used military personnel data from the Defense Manpower and Data Center (DMDC) Active-Duty Master File and Military Entrance Processing Command (MEPCOM) File. We compared military accessions to a civilian benchmark based on the American Community Survey's (ACS) one-year samples for 2001 and 2019.[2] We benchmarked the enlisted accessions using the non-institutionalized[3] 18-to-24-year-old population with at least a high school degree, and we compared the officer accessions to the non-institutionalized 21-to-39-year-old population with at least a bachelor's degree. We calculated Hispanic representation at accession and evaluated differences by gender, state, and paygrade to understand where gaps exist compared to the civilian benchmark. We then tracked Hispanic versus non-Hispanic retention and promotion rates within cohorts to identify any career points at which Hispanic servicemembers appear to have difficulty retaining and promoting. We used regression analysis to control for several factors that might also explain differences we saw in the promotion rates for Hispanic servicemembers to evaluate whether the differences observed represent an unexplained barrier warranting additional analysis.[4] Finally, we conducted a difference-in-differences analysis using the available DMDC data to evaluate the effectiveness of the "Yo Soy El Army" language marketing campaign in improving accessions by looking at the magnitude in changes over time prior to and after the implementation of this program.

Literature and policy review

We reviewed literature on the following: (1) work that examines ethnic diversity in the military and civilian sectors, (2) any programs and diversity initiatives implemented in the military or

[2] We do not provide continuous time trends because the DMDC ethnicity variable is unreliable in certain years.

[3] This excludes individuals who are in correctional facilities, nursing homes, or mental hospitals.

[4] We plan to estimate regressions for retention points as well, but we prioritized promotion points for this report because that is where we saw the most evidence of Hispanic underrepresentation in calculating conditional promotion rates.

civilian sector to improve Hispanic representation, and (3) any evaluations identifying strategies that do or do not work well. We considered a variety of sources, including previous research from CNA and other FFRDCs, peer-reviewed publications, policy documents (including presidential EOs and DOD and Service-specific memoranda and instructions), corporate documents, news articles, and data from federal agencies.

In our synthesis of this literature, we identified potential barriers to recruiting, retaining, and promoting Hispanic servicemembers, and for each of the challenges identified, we reviewed strategies that have been used to address it. We acknowledge that few of these strategies or initiatives have been formally evaluated to understand their efficacy.

SME and program official discussions

We also held discussions with civilian, DOD, and Service DEI recruiting, retention, and promotion SMEs and POs, as well as representatives from some Hispanic affinity groups. These discussions were an important part of our analytical process—they helped us determine what is known about Hispanic servicemembers' career challenges and about initiatives that have been implemented to address them, since the literature and policy review will not necessarily document everything. For example, these discussions were instrumental in familiarizing us with the most recent initiatives that the Services have tried to improve Hispanic representation because these initiatives have most likely not yet been formally documented in the literature.

Hispanic Representation

This section seeks to identify whether Hispanic servicemembers are underrepresented at accession and throughout the rest of the military life cycle. We begin by discussing historical Hispanic representation in the private sector. We then discuss how Hispanic representation differs by paygrade for a single snapshot of data and provide some potential explanations for those differences. After that, we discuss how Hispanic representation for active component (AC) military accessions compares to Hispanic representation in the relevant civilian populations. Next, we show the results of our retention and promotion analyses, which sought to determine how Hispanic servicemembers' retention and promotion rates differ from those of their non-Hispanic counterparts. We also identify factors that help explain the observed promotion differences. Finally, we summarize what we observed in this data analysis and any questions or gaps that remain regarding Hispanic representation.

Hispanic representation in the private sector

The Hispanic population is the largest ethnic minority group in the US. There were 29 million Hispanic workers in the US labor force in 2020, representing 18 percent of total US workers [20]. Hispanic workers also have been found to be the main drivers of US labor force growth, playing an important role in both the economic and social fabrics of the US [21]. According to the Bureau of Labor Statistics, the total number of Hispanic workers in the US labor force grew from 10.7 million to 29 million between 1990 and 2020, and that number is expected to rise to nearly 36 million by 2030 [20]. Hispanic workers will account for almost 80 percent of new workers during this period, despite trends showing that overall labor force growth has slowed over the past two decades [20]. Labor force growth over the past 20 years for non-Hispanic workers was negligible, at 0.5 percent [20]. When Hispanic growth is factored in, overall labor force growth increases to 4.5 percent, highlighting the importance of Hispanic workers to the overall health of the US labor market. Despite this overall growth, Hispanic workers continue to be disproportionately underrepresented in professional and leadership roles across the corporate landscape [22-26]. They also are more likely to be in jobs with fewer promotion opportunities [27].

Hispanic representation in the military

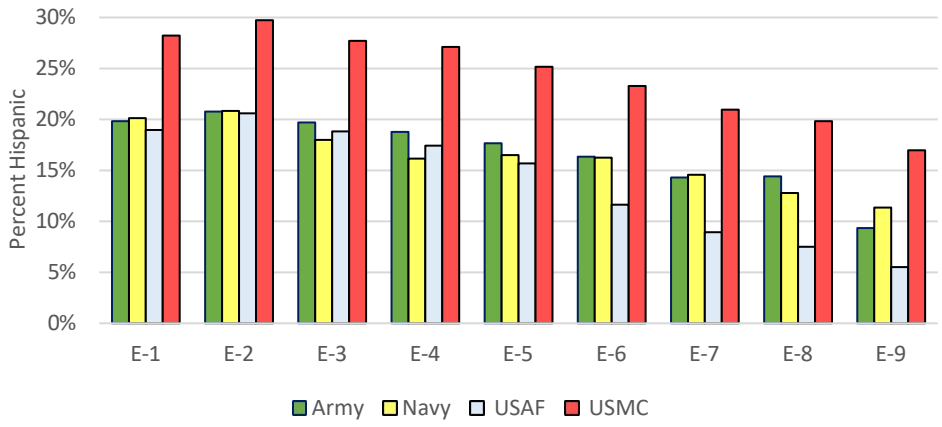
Hispanic representation in the military also has been growing over the past few decades. The overall percentage of the enlisted AC military population that was Hispanic was 11.7 percent in 2001 and increased to 21.6 percent by 2019. In addition, the officer AC Hispanic percentage doubled during that period, from 4.6 percent in 2001 to 9.2 percent in 2019. The rest of this section parses the data on AC military representation along several different dimensions, including paygrade, gender, and geography.

By paygrade

In considering Hispanic representation by paygrade, we first compared the percentage of Hispanic servicemembers in each paygrade in a single year: 2019. As seen for enlisted members in Figure 1 and officers in Figure 2, Hispanic representation declines as paygrades increase. For example, 30 percent of E-2 Marines are Hispanic, while 17 percent of Marine E-9s are Hispanic. On the officer side, 11 percent of Navy O-1s are Hispanic, while 3 percent of Navy O-7s are Hispanic. This could be one reason that Congress and DOD are concerned with Hispanic representation in the force; this snapshot makes it appear that it is more difficult for Hispanic servicemembers to advance to higher paygrades than it is for non-Hispanic servicemembers.

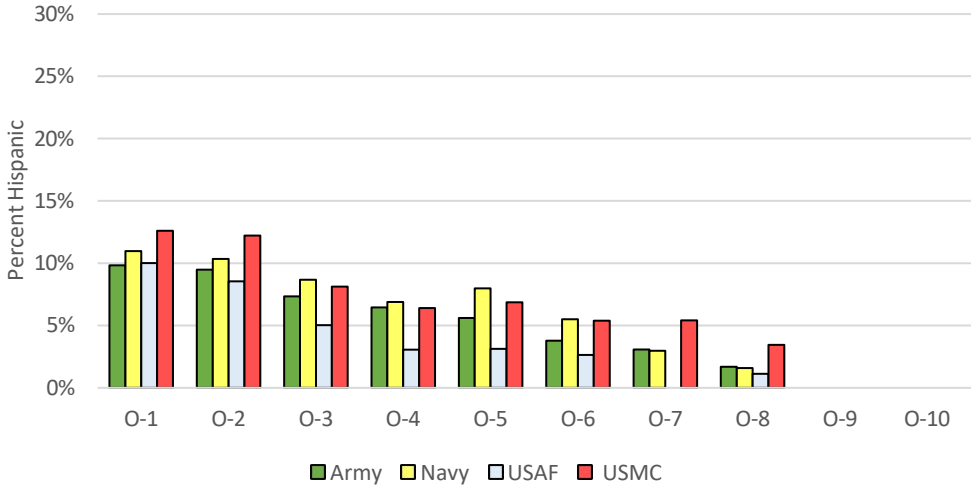
However, a single-year snapshot does not tell the full story. Hispanic representation at each paygrade depends on two main factors: (1) differences in Hispanic versus non-Hispanic retention and promotion within a cohort, and (2) differences in Hispanic versus non-Hispanic representation across cohorts given there is very little lateral entry from the civilian sector into the Armed Forces. Hispanic representation at accession has increased dramatically over the past 18 years, so Hispanic underrepresentation at higher paygrades is at least partially attributable to differences in representation at accession. To isolate the effects of differential retention and promotion from the effects of differential accessions, we considered survival curves from the 2001 cohort.

Figure 1. Percentage of enlisted Hispanic servicemembers by Service and paygrade, 2019



Source: CNA.
[a] See Appendix B for full data tables.
[b] Survival curves depict the percentage of a group that remains in the sample (in this case, the percentage that remains in service) at different points in time.

Figure 2. Percentage of Hispanic officers by Service and paygrade, 2019



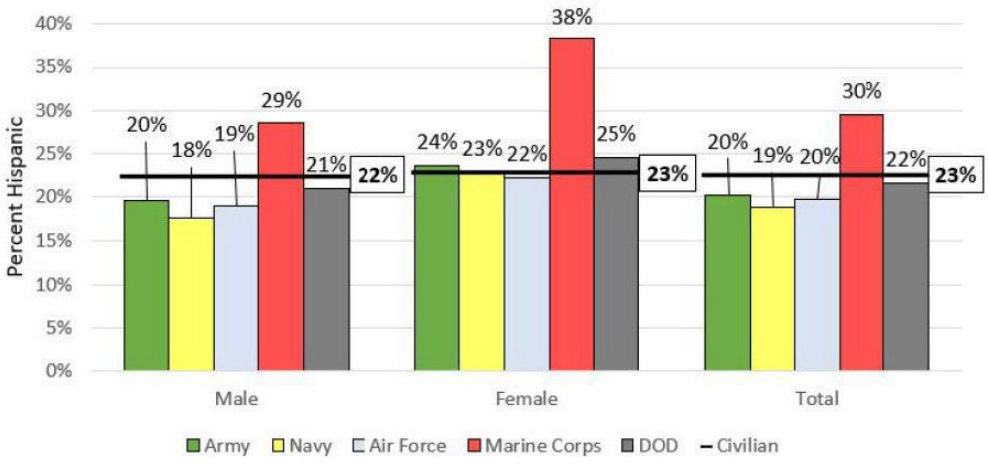
Source: CNA-generated from DMDC data.

By gender at accession compared to civilian benchmark

In this section, we compare AC military accessions in each Service and for all of DOD to a civilian benchmark. We report these comparisons separately for each gender and then in the aggregate. This analysis helped us see which Services have overrepresented and underrepresented Hispanic accessions and whether that differs by gender. We based these estimates on the ACS one-year samples for 2019 because this is the last year of data that appeared complete in the DMDC sample that we received. We benchmarked the enlisted accessions using the non-institutionalized 18-to 24-year-old population with at least a high school degree, and we compared officer accessions to the non-institutionalized 21-to-39-year-old population with at least a bachelor's degree. We recognize that more factors could disqualify someone from service besides age, education, and institutionalization status. We discuss those additional factors and how they might affect our estimates in Appendix A: Other Factors That Affect Eligibility for Military Service.

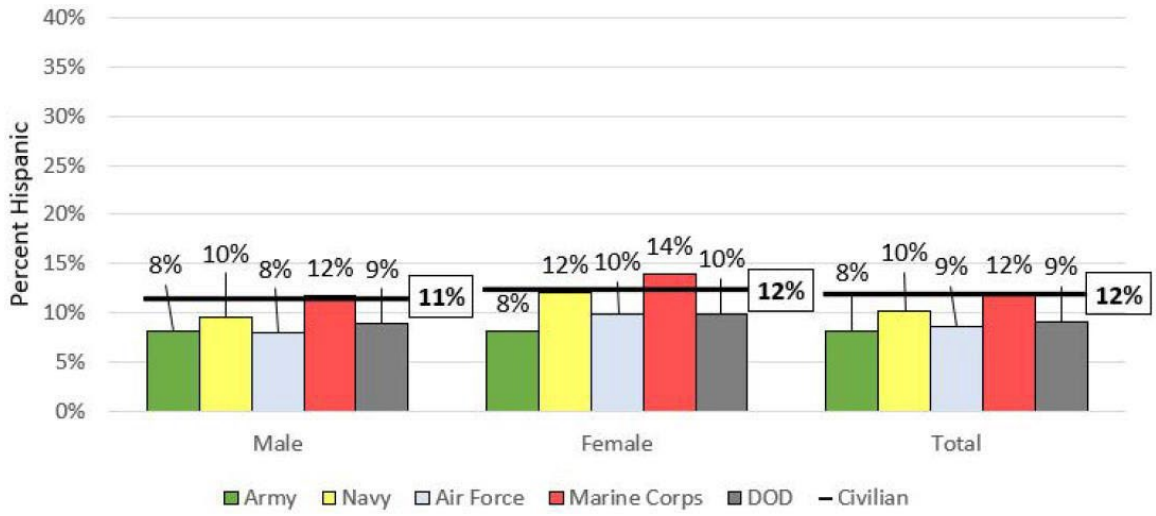
Figure 3 and Figure 4 show the percentage of Hispanic servicemembers in each Service and the total DOD, broken out by gender and the civilian benchmark (depicted with a black line). We found that Hispanic servicemembers are better represented among enlisted accessions than among officer accessions, among women than men, and among the Marine Corps than the other Services compared to the civilian benchmarks. In particular, the Marine Corps Hispanic accessions (red) consistently meet or exceed the civilian benchmark, while the other three Services match or fall short of the benchmark (black line).

Figure 3. Percentage of enlisted Hispanic servicemembers by Service and gender, 2019



Source: CNA-generated from DMDC and ACS data.
Note: The black line indicates the Hispanic rate in the civilian benchmark data calculated from the ACS.

Figure 4. Percentage of Hispanic officers by Service and gender, 2019



Source: CNA-generated from DMDC and ACS data.
Note: The black line indicates the Hispanic rate in the civilian benchmark data calculated from the ACS.

Furthermore, the gender difference is particularly stark in the Marine Corps enlisted accessions, where there is a nearly 10 percentage point difference across genders in 2019. Overall, we found that Hispanic servicemembers are either proportionally represented or overrepresented among female enlisted accessions, and consistently underrepresented among male enlisted accessions, except in the Marine Corps. For officer accessions, Hispanic servicemembers are underrepresented across both genders in every Service other than the Marine Corps.

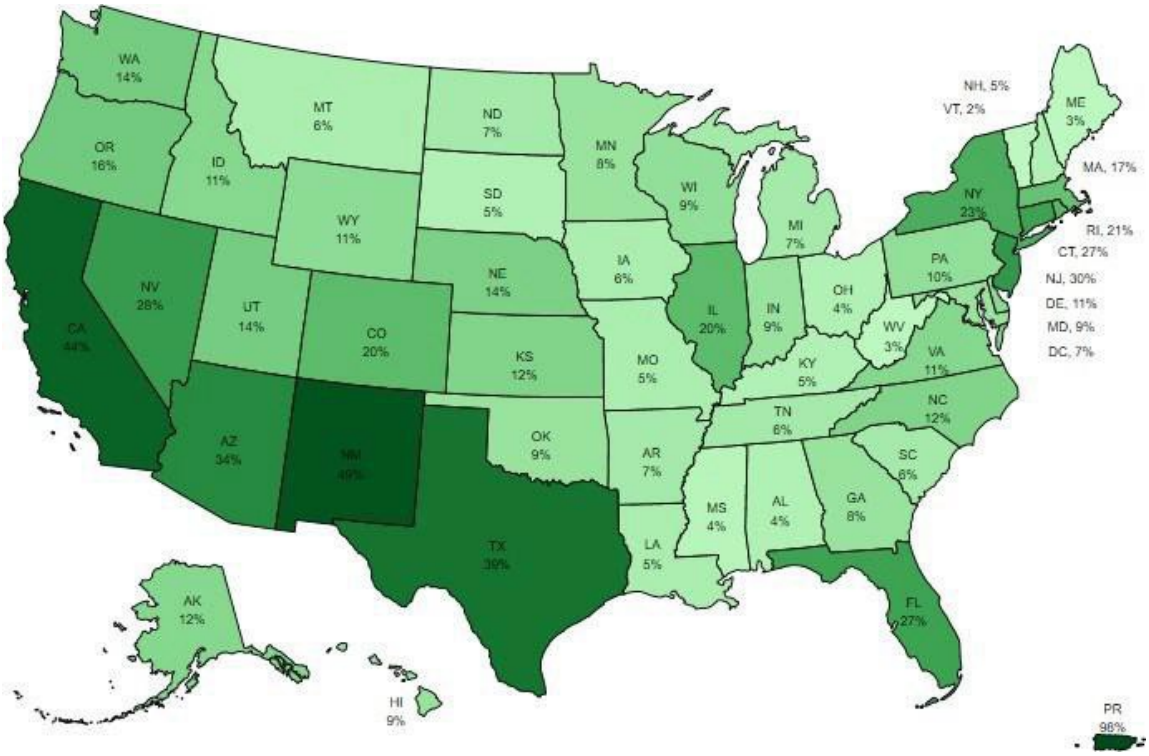
To summarize, this analysis showed us that efforts to improve underrepresentation at accession in the officer ranks may be the most fruitful pathway to increase Hispanic representation in the military. This could include identifying and leveraging lessons learned from the Marine Corps as well since they appear to do better with regards to Hispanic representation than the other Services.

By geography at accession

It is important to understand whether Hispanic servicemembers are underrepresented at accessions and, if so, if that underrepresentation is more geographically concentrated in certain areas of the country relative to others. This information can provide recruiting commands evidence of where they might require additional resources to recruit the available Hispanic population.

In this section, we consider Hispanic accession rates by home of record to identify differences in the concentration of the Hispanic population that the Services recruit from in various states. Figure 5 and Figure 6 show the percentage of fiscal year 2019 accessions in each state that are Hispanic for enlisted servicemembers and officers, respectively, with darker colors depicting states with greater percentages.

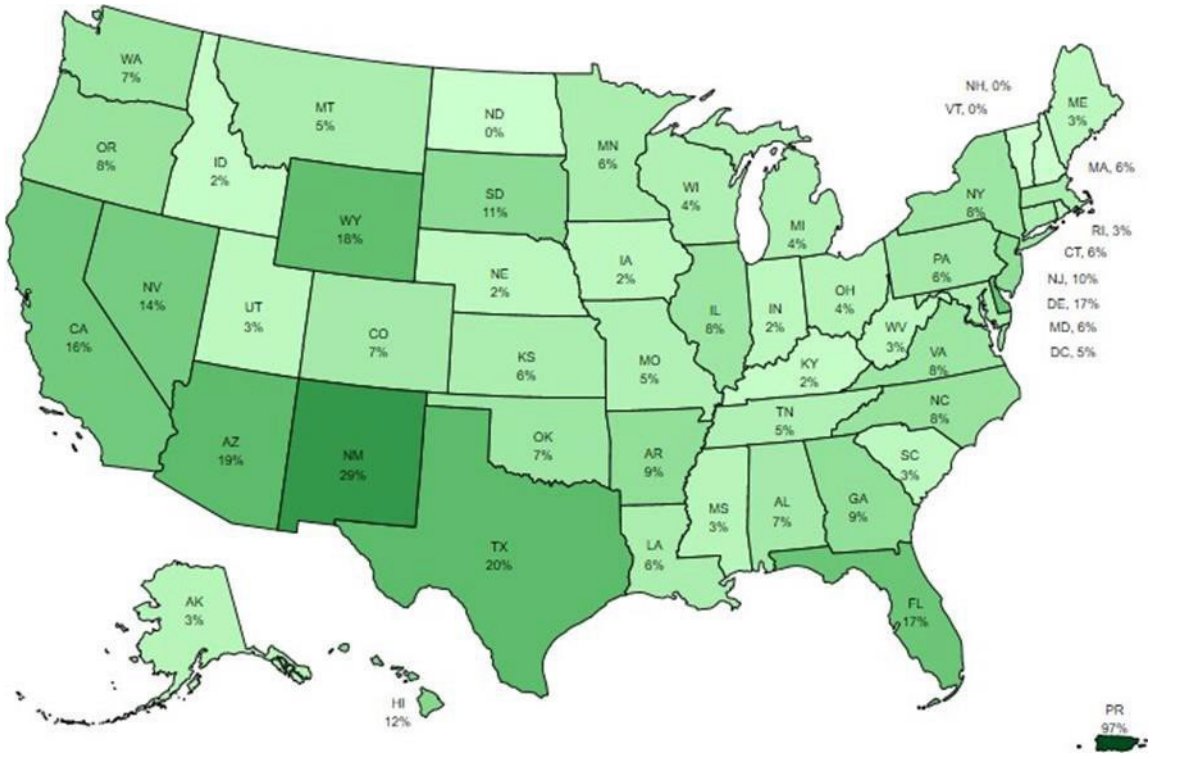
Figure 5. Percent of DOD enlisted accessions that are Hispanic by state, 2019



Source: CNA-generated from DMDC and ACS data.
Note: Darker green states have a higher proportion of Hispanic accessions compared to lighter green states.

We found that southern border states have much larger percentages of Hispanic accessions than states in other parts of the country, indicative of their greater representation within those states. For example, 49 percent of enlisted accessions from New Mexico are Hispanic, while only 5 percent of Missouri accessions are.

Figure 6. Percent of DOD officer accessions that are Hispanic by state, 2019

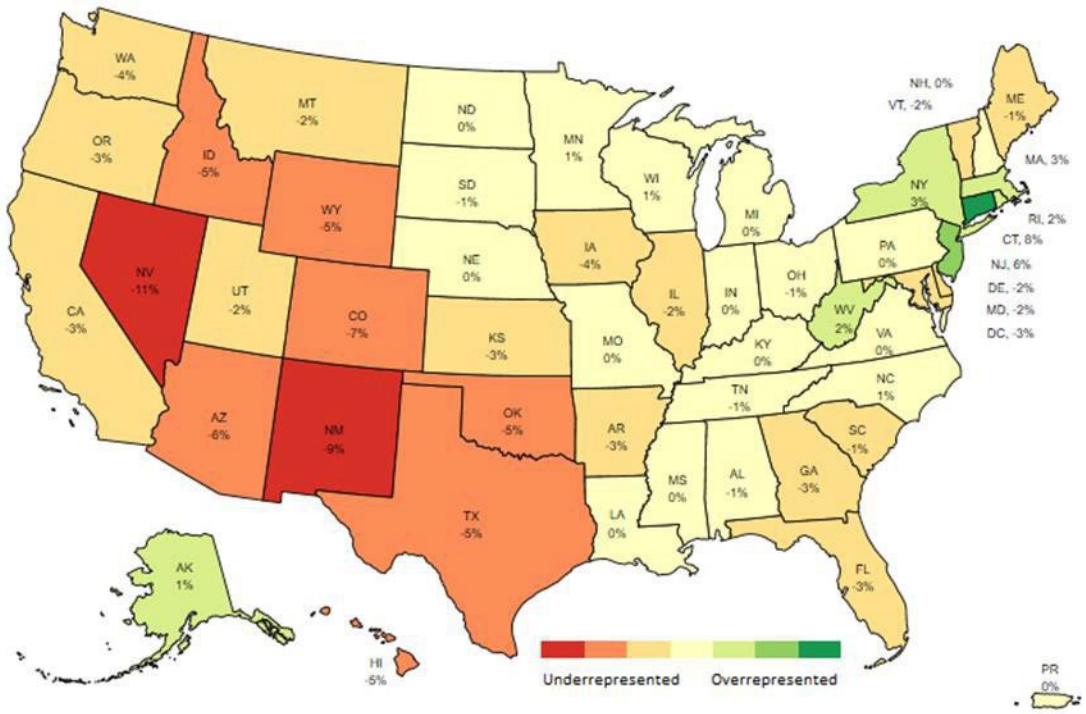


Source: CNA-generated from DMDC and ACS data.
Note: Darker green states have a higher proportion of Hispanic accessions compared to lighter green states.

For officers, we also observed a large percentage of Hispanic accessions in the southern border states, but the concentration is not as high as for the enlisted population. For example, officer accessions from New Mexico are 29 percent Hispanic compared to the 49 percent of enlisted accessions that are Hispanic.

Next, we compare the 2019 enlisted and officer Hispanic accessions to the civilian benchmarks by state in Figure 7 and Figure 8, with red depicting underrepresentation relative to the civilian benchmark and green depicting overrepresentation. This information may be particularly useful for recruiting commands that want to understand where they could focus additional effort and resources on recruiting Hispanic servicemembers.

Figure 7. Percent of DOD enlisted accessions that are Hispanic minus civilian benchmark percentage by state, 2019

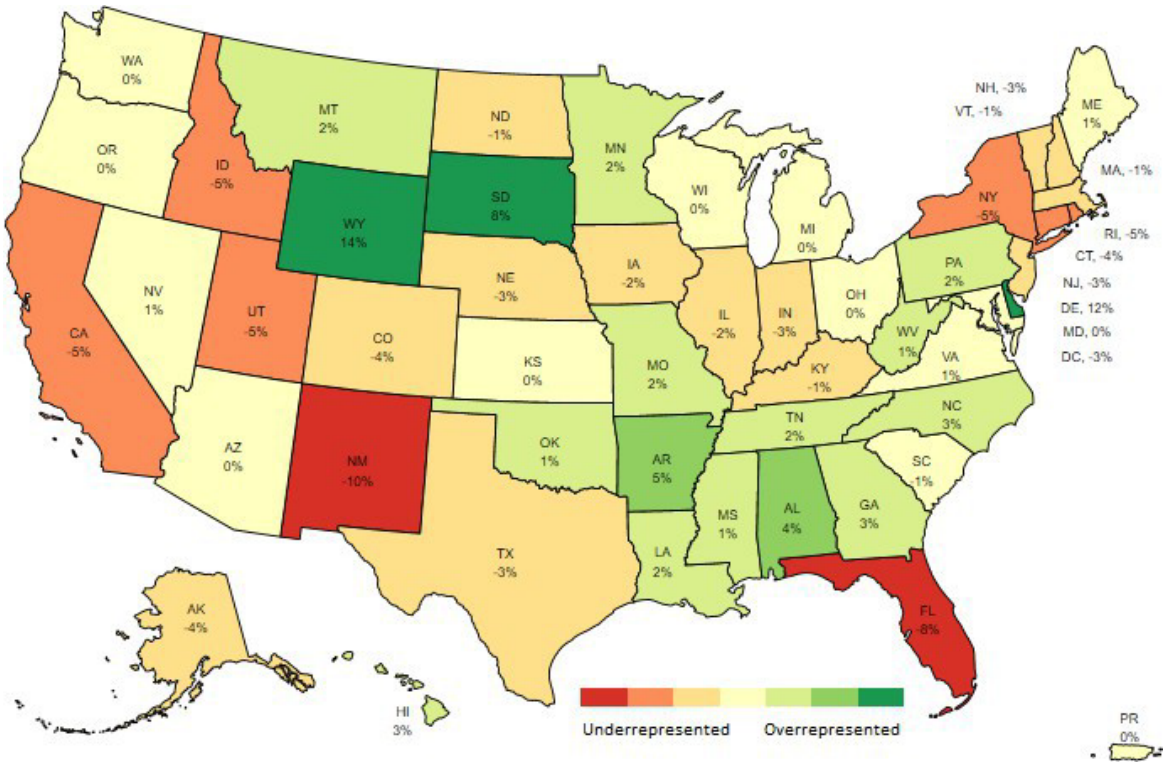


Source: CNA-generated from DMDC and ACS data.
Note: States in red represent areas where Hispanic military accessions are underrepresented relative to the civilian benchmark; states in green represent areas where they are overrepresented.

Even though Hispanic enlisted accessions arrive primarily from the states on the southern border, Hispanic accessions remain underrepresented in these regions relative to the local civilian benchmark. For example, the Hispanic percentage of DOD enlisted accessions in New Mexico is 9 percentage points lower than the civilian benchmark in New Mexico. In comparison, Hispanic accessions are overrepresented among enlisted accessions in the Northeast. For example, the Hispanic percentage of DOD enlisted accessions in New York is 3 percentage points higher than the civilian benchmark.[5]

[5] See Appendix C for the full table with the data that generated these maps.

Figure 8. Percent of DOD officer accessions that are Hispanic minus civilian benchmark percentage by state, 2019



Source: CNA-generated from DMDC and ACS data.
Note: States in red represent areas where Hispanic military accessions are underrepresented relative to the civilian benchmark; states in green represent areas where they are overrepresented.

Among officer accessions, Hispanic servicemembers are slightly underrepresented or proportionally represented in most states, with a few less-populated states (such as Wyoming and Delaware) having high degrees of overrepresentation.

However, additional examination revealed these patterns vary across the Services.[65] Among enlisted accessions, Hispanic servicemembers are underrepresented among Navy accessions in western states. In the other Services, we observed overrepresentation of Hispanic servicemembers among enlisted accessions in the Northeast. In fact, Hispanic servicemembers are overrepresented in most states among enlisted Marine Corps accessions. This finding is consistent with our previous finding that Marine Corps representation is the highest of all the

[6] The individual Service maps can be found in Appendix C.

Services relative to the civilian benchmarks. When we considered officer accessions, we found that the trends diverge noticeably across the Services. Among Army officer accessions, Hispanic representation approximately matches the civilian population. However, Hispanic servicemembers are underrepresented in the Air Force along the southern border (except in Arizona) and strongly overrepresented in Maine, South Dakota, Alabama, and Georgia. In the Navy, Hispanic servicemembers are overrepresented among officer accessions in the Midwest and underrepresented throughout the South and Northwest. For the Marine Corps, Hispanic officer accessions are slightly underrepresented throughout the country, except for the West Coast and a few other scattered states, including Wyoming and Mississippi.

By continuation rates to retention and promotion points

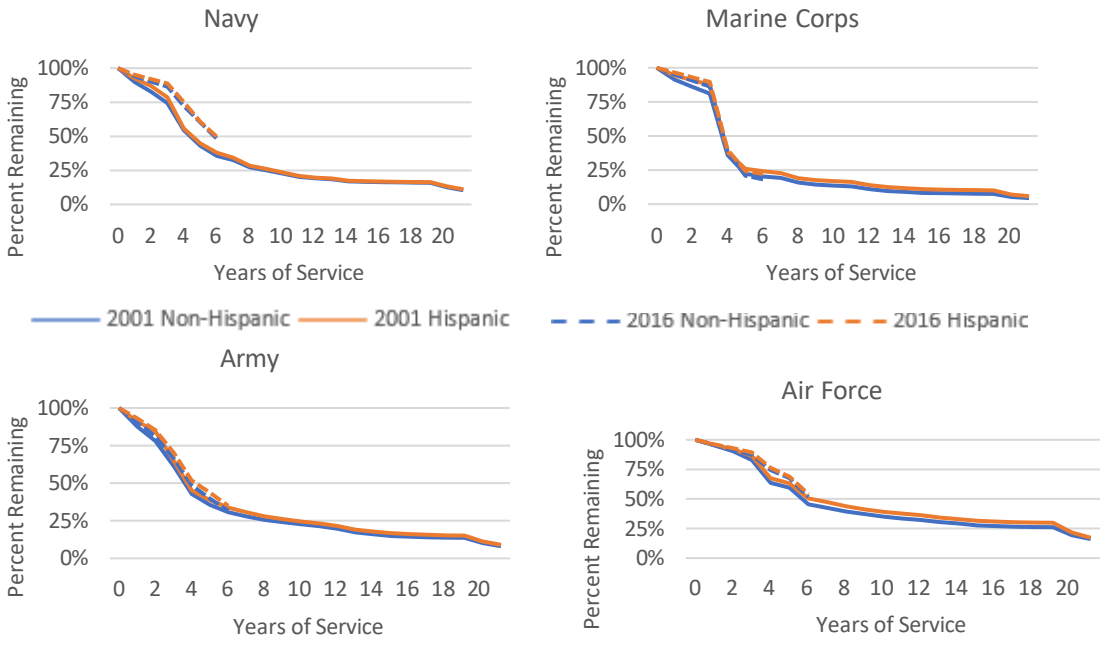
Next, we discuss differences in continuation rates at different retention and promotion points for Hispanic and non-Hispanic servicemembers. For this analysis, we utilized a cohort approach in which we followed servicemembers who entered in the same FY to see how Hispanic representation within that cohort changed in terms of retention and promotion. Doing so allowed us to identify broadly whether Hispanic servicemembers vary in their career progression compared to their non-Hispanic counterparts. However, because we were unable to account for reenlistment decisions that servicemembers make or promotion board selection data to understand whether someone was intentionally not retained, we could not disentangle whether trends observed were the result of Hispanic servicemembers retaining or promoting at different rates. Nonetheless, we refer to our analyses on continuation rates to retention and promotion points as "retention rates" and "promotion rates" throughout the rest of this section for simplicity. Examining these rates will highlight whether paygrade differences in Hispanic representation in a single-year snapshot are the result of different accession rates between cohorts or differences in continuation rates within a cohort.

Enlisted

Because enough time needs to pass to allow someone to progress through different career points, we first calculated retention rates by ethnicity for the 2001 accession cohort. The solid lines in Figure 9 show cumulative retention rates in 2001. For example, Figure 9 shows that for the Army, 100 percent of the Hispanic sample is present at 0 years of service (YOS), 84 percent of them reach 2 YOS, and 15 percent of them reach 19 YOS. Across all Services, Hispanic servicemembers have higher cumulative retention rates for every year of service. Much of this difference is attributable to approximately 4 percentage point higher retention rates in the first three years of service. This finding aligns with previous research that finds Hispanic retention rates from boot camp are 4 percentage points higher than those of their non-Hispanic White peers [28]. Around 4 YOS, when many servicemembers begin to make reenlistment decisions,

the retention rates converge in each Service before diverging again at 6 YOS in the Air Force and Marine Corps.

Figure 9. Percentage of enlisted who completed each YOS, 2001 and 2016 cohorts



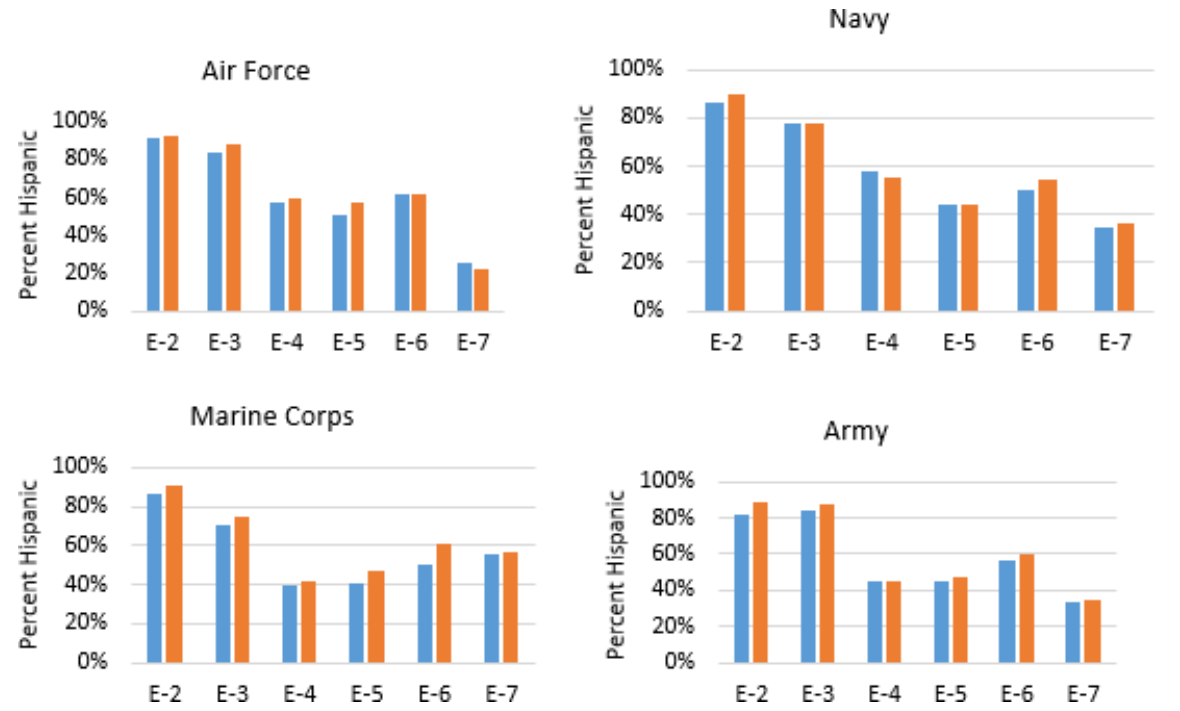
Source: CNA-generated from DMDC data..

We found similar trends when calculating the percentage of servicemembers promoting from each paygrade, as shown in Figure 10.[7] Findings suggest Hispanic servicemembers are *more* likely to promote at each enlisted paygrade for each Service up to E-7, except within the Navy. Because we did not have access to promotion board selection data for this study, we examined promotion rates within each paygrade based on servicemembers with observed "up-or-out" outcomes, which can mix promotion and retention rates. That is, we included servicemembers in this analysis if they had either promoted to the subsequent paygrade (e.g., from E-2 to E-3) or exited prior to promotion (e.g., exited as an E-2 without ever reaching E-3). Limiting the sample to "up-or-out" decisions was important because without data from promotion boards, we could not conclusively distinguish servicemembers who were ineligible to promote, who intended to promote, and who had attempted to promote. We found that Hispanic

[7] See the full data table in Appendix B.

servicemembers at paygrade E-2 have higher promotion rates (conditional on having retained to E-2) across all Services and that Hispanic servicemembers have similar promotion rates at higher paygrades.

Figure 10. Conditional enlisted promotion rates of Hispanic vs. non-Hispanic servicemembers, 2001 cohort



Source: CNA-generated from DMDC data.

Taken together, these findings suggest that the lower Hispanic representation at higher paygrades shown earlier (in Figure1) is not likely due to lower retention and promotion rates. Instead, it is largely due to lower Hispanic representation at accession in past cohorts, with Hispanic servicemembers representing only 11.8 percent of accessions in 2001 relative to 22.3 percent in 2019.

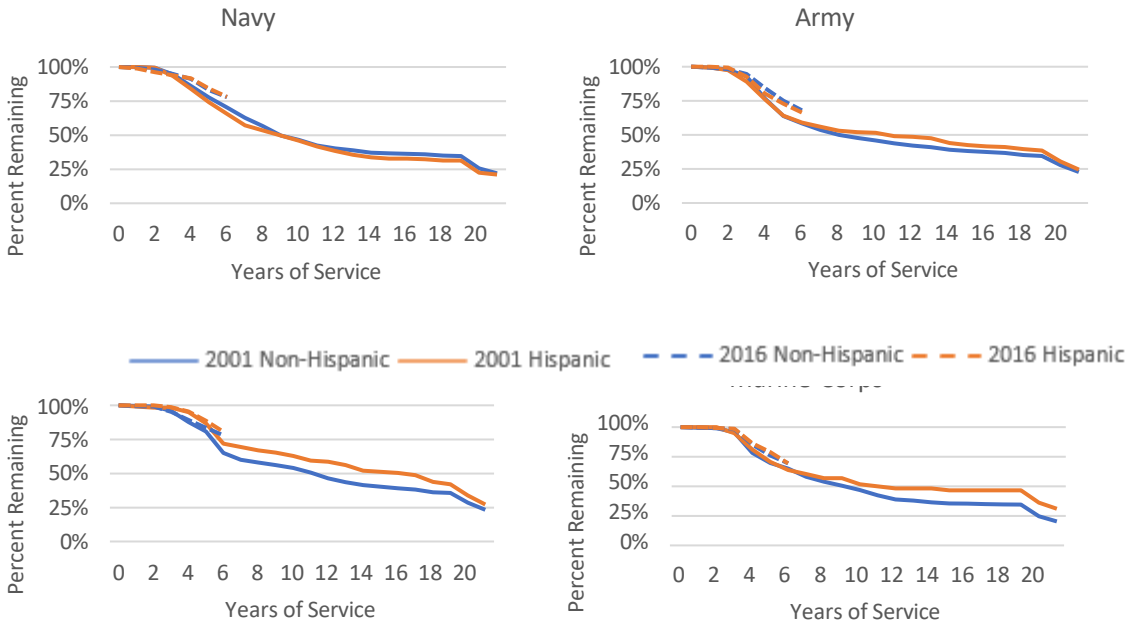
To ensure the 2001 cohort was not unique, we checked additional cohorts. Because data in the 2003 to 2015 timeframe were unreliable for the Air Force, we also recorded retention rates by YOS for the 2016 cohort using dashed lines in Figure 9. In 2016, Hispanic servicemembers represented 19.5 percent of the accessions. Although we could observe retention only up to 6 YOS for this cohort, we found that Hispanic servicemembers continued to exhibit higher retention rates than their non-Hispanic counterparts. The retention rate gap between the

groups was only about 3 percent after 3 YOS (compared to 4 percent for the 2001 cohort). Even so, the retention rates for Hispanic servicemembers remained higher, despite the 8 percentage point increase in Hispanic representation among accessions. Thus, Hispanic servicemembers retained at similar or higher rates than non-Hispanic servicemembers in both cohort analyses.

Officer

Next, we discuss officer retention and promotion. In Figure 11, Hispanic officer retention rates exceed those of non-Hispanic officers in every Service except the Navy for the 2001 cohort (solid lines) and the Army for the 2016 cohort (dashed lines). Hispanic servicemembers are retained at higher rates than non-Hispanic servicemembers starting at about 7 YOS in every Service.

Figure 11. Percentage of officers who completed each YOS, 2001 and 2016 cohorts



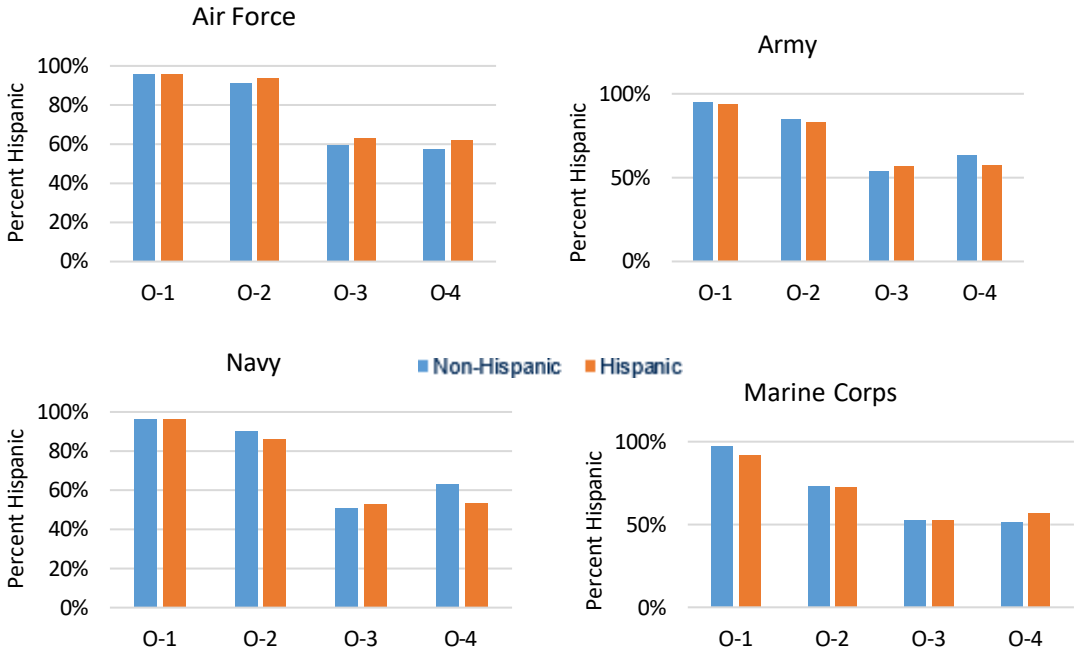
Source: CNA-generated from DMDC data.

However, these retention rate trends are not reflected in the percentage of the 2001 officer cohort at each paygrade who promote to the subsequent one, suggesting that Hispanic servicemembers are equally or more likely to retain, but less likely to promote at higher ranks. In these conditional officer promotion rates, other than for the Air Force, the percent of Hispanic servicemembers reaching each officer paygrade is lower than that of non-Hispanic

servicemembers (as seen in Figure 12).[8] For the 2001 Air Force cohort, Hispanic O-2s and O-4s promote at slightly higher rates than non-Hispanic O-2s and O-4s. The higher retention but lower promotion rates align with a 2011 CNA report that found that Hispanic officers are more likely to retain until promotion, but are less likely to promote at the higher officer paygrades [29].

Though we did not have access to promotion board data for analyses, we can speculate that Hispanic servicemembers may be more likely to enter occupations that are less competitive for promotion compared to non-Hispanic servicemembers. This hypothesis is consistent with findings from the diversity board report [30].

Figure 12. Conditional officer promotion rates, 2001



Source: CNA-generated from DMDC data.
Note: Hispanic officer promotion rates are subject to small sample size issues.

Because these rates were calculated without considering other factors such as occupation, we could not determine whether the observed differences are purely related to ethnicity or whether other factors contributed to those differences. Also, these rates reflect only one cohort,

[8] Full data table available in Appendix B.

so we wanted to make sure these trends are consistent across time. Next, we performed conditional regression analysis for various promotion points to see whether any factors that are observable in the DMDC data can help explain the differences in promotion rates that we found for Hispanic versus non-Hispanic officers. This regression analysis would also show whether the observed trends hold when controlling for other factors.

Controlling for other factors that affect promotion and retention

To better understand the promotion rates mentioned above, we also estimated a series of regressions controlling for background characteristics plausibly associated with promotion or retention. For example, because Hispanic officers are more likely than non-Hispanic officers to be prior enlisted (see Appendix D), lower promotion rates among officer paygrades might reflect that Hispanic officers are reaching service limits rather than any sort of anti-Hispanic bias.

As in the promotion analysis above, we limited our sample to the paygrade in question, separately by service, as well as to servicemembers whom we observed making "up-or-out" moves. For example, when assessing the probability of servicemembers promoting as O-3s, we limited our sample to O-3s who either promoted to O-4 (indicating success) or exited their Service prior to promotion (indicating failure). We ran separate analyses for each individual paygrade from E-3 to E-7 and from O-2 to O-4, which necessarily separated enlisted and officer paygrades.[9] For enlisted servicemembers, promotion can be to either the next enlisted paygrade or any officer paygrade; for example, an E-5 who promotes to E-6 is treated identically as an E-5 who commissions as an O-1.

These regressions accounted for personal characteristics assessed at different points. Several characteristics—ethnicity, gender, race, and fiscal year of accession—were constant for each individual. Others—education level, citizenship, and home of record state—were measured at accession to capture recruits' backgrounds. We computed each servicemember's YOS at their current rank date to account for their length of service and prior opportunities to promote. At each observed up-or-out point, we observed servicemembers' marital status, number of children, and whether they ever took on each two-digit DOD occupation code.[10] For each officer

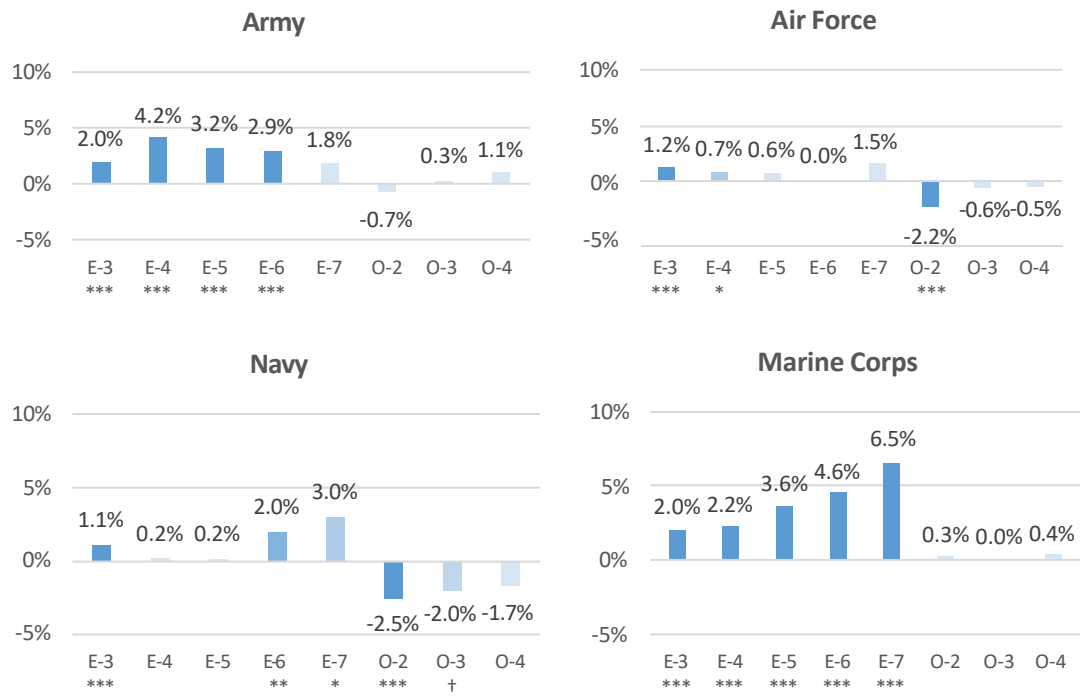
[9] We observed too few E-8s making "up-or-out" decisions to include regressions of their promotion rates.

[10] We broke out marital status into "never married," "currently married," and "previously married." Because our data contained the number of dependents but not the number of children, we subtracted one from the number of dependents if a servicemember was legally married. (If a servicemember indicated that their marital status was "separated" or "interlocutory," their marital status was treated as "previously married," but their spouse was still counted as a dependent.) Servicemembers with an unknown number of dependents were assigned both a zero value for the number of children and a dummy variable reflecting unknown family size, allowing us to include them in these regressions without treating them as identical to families of known size.

paygrade, we also included whether that officer had previously been enlisted. For each enlisted paygrade, we included the highest Armed Forces Qualification Test (AFQT) category that each servicemember attained at any point during their time in service as a measure of cognitive aptitude.

We summarize the results of these regressions in Figure 13, which illustrates how much more (positive values) or less (negative values) likely Hispanic servicemembers were than their non-Hispanic counterparts to be promoted at each paygrade, conditional on reaching an up-or-out point and controlling for the factors mentioned above (the full results are available in Appendix E). Statistical significance levels are illustrated both on the horizontal axis and by the shading of bars in each graph, with darker blue representing greater statistical significance.

Figure 13. Hispanic vs. non-Hispanic differences in promotion rates by Service, 2001-2019



Source: CNA-generated from DMDC data.
Notes: * = statistically significant at the 10% level, ** = statistically significant at the 5% level, *** = statistically significant at the 1% level. Each of the enlisted paygrades in this figure is best understood as including "or commission"; this has been omitted due to space constraints.

Figure 13 shows that, when controlling for additional factors, Hispanic servicemembers were equally or more likely to be promoted at each paygrade from E-3 to E-7 within each Service.[11] For example, Hispanic Marines were at least 2 percentage points more likely than non-Hispanic Marines to promote at every paygrade from E-3 to E-7 (or opt to commission or enter the warrant officer track). When considering promotion from the E-3 paygrade, this finding translates into 86 additional Hispanic men and 15 additional Hispanic women promoted each year, on average, than there would have been if there was no difference from non-Hispanic Marines. Conversely, although only the Navy and the Air Force results for officers were statistically significant, both indicate that Hispanic Navy and Air Force officers were somewhat less likely to be promoted as O-2s than their non-Hispanic counterparts. For Air Force officers, this finding translates into 3 fewer Hispanic male officers and 1 fewer Hispanic female officers promoted each year, on average, from the O-2 paygrade than there would have been if there was no difference from non-Hispanic Air Force officers. For Navy officers, this translates into 5 fewer Hispanic male officers and 1 fewer Hispanic female officers promoted each year, on average, from the O-2 paygrade than there would have been if there was no difference from non-Hispanic Navy officers.

Note that the background characteristics in the regressions above do not include any direct measure of physical fitness or job performance, as these are not captured in DMDC data. This analysis also treats all losses equally; in reality, some losses may reflect servicemembers pursuing high-quality civilian options in their occupational field or having other reasons for leaving military service, neither of which necessarily reflect an individual's likelihood of being promoted. A closer Service-level evaluation might therefore yield different results or interpretations.

To support these analyses, we also conducted Cox proportional hazard modeling, which estimates the probability that an individual will "survive" to a certain length of Service. We did this modeling because the raw retention rates shown in Figure 9 and Figure 11 cannot rule out that factors other than race or ethnicity *per se* (e.g., different ethnicity patterns in military occupations with different turnover levels) are actually causing the observed differences in retention. The hazard models we ran assumed that all servicemembers have some baseline risk of exiting military service in any given month, with their characteristics shifting this baseline risk up or down by some factor. In this framing, parameter values greater than one represent a higher risk of exit than baseline, and values less than one represent a lower risk of exit.

[11] Promotion to E-9 is omitted due to both the small number of E-9s in each Service and the small number of servicemembers accessing on or after FY 2000 even reaching eligibility for E-9.

We controlled for many of the same variables here as in our promotion regressions. The chief differences were as follows: we controlled for whether someone had a given military occupation in a specific period rather than whether they had ever had that occupation, we omitted years of service at rank, and we included pay grade indicators.[12] Although including time-varying characteristics (e.g., paygrade, number of dependents) presents a more complete picture, determining how these characteristics affect retention can be complicated. For example, if an increase in the number of dependents were hypothetically associated with a higher probability of exiting the military, it could reflect that servicemembers are leaving due to the demands of parenthood, that servicemembers are timing parenthood around already-planned exits, or a range of other possible explanations. Therefore, exiting at higher rates *after* having additional children would not necessarily imply exiting *because of* having additional children.

Table 1 shows results by Service for Hispanic servicemembers and the extent to which these results are further scaled for Hispanic women beyond the impact of gender or ethnicity alone. Results are presented separately for enlisted servicemembers and officers. Results for additional covariates are presented in Appendix E. We urge extreme care in interpreting results for officers, for whom the assumption of proportional hazard rates does not appear to hold; however, this assumption is much more plausible for enlisted servicemembers.[13]

Table 1. Cox proportional hazard model for probability of exit in a given month

		Enlisted	Officer
Army	Hispanic	0.8725 ***	0.8220 ***
		(0.0034)	(0.0237)
	Female	1.3684 ***	1.1815 ***
		(0.0046)	(0.0150)
	Hispanic x Female	0.9439 ***	0.9643
		(0.0077)	(0.0440)
Navy	Hispanic	0.9181 ***	0.9169 ***

[12] Use of pay grade indicators, which are correlated with length of service, may mitigate the probability or severity of violations of the proportional hazard assumption.

[13] Although hazards are unlikely to be truly proportional across all covariates, plots of $-\ln[-\ln(SSSSSSSSSSSSSSS\ RRSSRRRR)]$ against $\ln(mmmmmmRRhss)$ appear roughly parallel when computed separately for Hispanic and non-Hispanic enlisted servicemembers, suggesting that any violations of the proportional hazard assumption are likely to be minor. However, these log-log survival plots for Hispanic and non-Hispanic officers appear to intersect, suggesting a major violation of the proportional hazard assumption. While care should be used in interpreting the precise estimates in Appendix E, estimates for ethnicity are more likely to be accurate and at a minimum reinforce that Hispanic servicemembers are less likely to exit at any given point in their career than otherwise identical non-Hispanic servicemembers.

		(0.0047)	(0.0289)
	Female	1.1363 ***	1.1882 ***
		(0.0048)	(0.0200)
	Hispanic x Female	0.9505 ***	1.0201
		(0.0095)	(0.0575)
	Hispanic	0.8657 ***	0.7902 ***
		(0.0059)	(0.0379)
Air Force	Female	1.2708 ***	1.2747 ***
		(0.0062)	(0.0203)
	Hispanic x Female	0.9684 **	0.8938
		(0.0125)	(0.0746)
	Hispanic	0.9051 ***	0.8138 ***
		(0.0040)	(0.0334)
Marine Corps	Female	1.1676 ***	0.9606
		(0.0077)	(0.0315)
	Hispanic x Female	0.8944 ***	0.8598
		(0.0117)	(0.0986)

Source: CNA generated from DMDC data.

Note: Standard errors in parentheses. * = statistically significant at the 10% level, ** = statistically significant at the 5% level, *** = statistically significant at the 1% level.

The results in Table 1 should be interpreted as a multiplicative factor shifting the baseline probability of exit. This means that an enlisted male Hispanic Soldier is 87.25 percent more likely to exit the Army in a given month than an enlisted male non-Hispanic Soldier, but that an enlisted female Hispanic Soldier is 112.69 percent more likely to exit ($0.8725 \times 1.3684 \times 0.9439 \approx 1.1269$). These cumulative results are shown in Table 2.

Table 2. Observed relative risk of exit in a given month, by ethnicity and gender

		Enlisted	Officer
Army	Non-Hispanic Male	100.00%	100.00%
	Hispanic Male	87.25%	82.20%
	Non-Hispanic Female	136.84%	118.15%
	Hispanic Female	112.69%	97.12%
Navy	Non-Hispanic Male	100.00%	100.00%
	Hispanic Male	91.81%	91.69%
	Non-Hispanic Female	113.63%	118.82%
	Hispanic Female	99.16%	108.95%

	Non-Hispanic Male	100.00%	100.00%
Air	Hispanic Male	86.57%	79.02%
Force	Non-Hispanic Female	127.08%	127.47%
	Hispanic Female	106.54%	100.73%
	Non-Hispanic Male	100.00%	100.00%
Marine	Hispanic Male	90.51%	81.38%
Corps	Non-Hispanic Female	116.76%	100%
	Hispanic Female	94.52%	81.38%

Source: Output obtained by multiplying statistically significant results in Table 1 (implicitly treating statistically insignificant results as equal to one).

These results show that Hispanic servicemembers' lower probability of exiting service cannot be accounted for using the other variables contained in DMDC. Although these analyses did not allow us to pinpoint exactly why Hispanic servicemembers are less likely to exit in a given month,[14] they did let us reject certain potential causes, such as occupational sorting or different family formation patterns by ethnicity.

Summary of what we know about Hispanic representation

Our analyses revealed five broad trends in Hispanic representation among accessions:

1. Time: Hispanic representation has consistently increased in every Service over the past two decades.
2. Service: Hispanic servicemembers are overrepresented among Marine Corps accessions and underrepresented among accessions in the other Services.
3. Enlisted versus officer: In the aggregate, Hispanic servicemembers are underrepresented among enlisted and officer accessions, but the difference is greater in the officer ranks.
4. Gender: Relative to male accessions, female accessions are more likely to be Hispanic.
5. Location: Most Hispanic accessions come from southern states with the highest concentrations of Hispanic populations, though they remain underrepresented in

[14] Doing so would likely require a large-scale qualitative effort, possibly assisted by quantitative analyses of fitness reports and other evaluations, outside economic conditions, and a variety of other factors.

these areas relative to their civilian comparison groups, except among Marine Corps accessions.

When considering retention and promotion, we identified the following three broad trends from our analyses:

1. Hispanic representation declines at higher paygrades when observing a single-year snapshot, though cohort analyses revealed this is generally explained by lack of representation at accession instead of retention or promotion underrepresentation.
2. Hispanic retention rates match or exceed those of non-Hispanic retention rates, except in the Navy.
3. Enlisted Hispanic promotion rates match or exceed those of non-Hispanic promotion rates, while promotion rates for Hispanic officers are at or below those of non-Hispanic officers. In particular, when controlling for various factors, Hispanic junior officers in the Air Force and Navy promote at lower rates than non-Hispanic junior officers in these services.

If the trends documented in this report continue—retention and promotion rates by ethnicity remain fixed and Hispanic representation at accession increases slightly for the Army, Navy, and Air Force—Hispanic servicemembers should be proportionally represented among higher enlisted paygrades in the near future.

While Hispanic officers were underrepresented in previous accession cohorts, they also make it to certain promotion points at lower rates than non-Hispanic officers in some cases (e.g., junior enlisted paygrades in the Air Force and Navy). These two factors combined explain the Hispanic lower representation at higher paygrades for officers.

Remaining gaps in understanding of Hispanic representation

Though our analysis captured broad trends, it did not identify *why* the observed representation differences exist. We attempted to control for some observable characteristics that could explain differences, but our analyses were limited by available data. For example, lower promotion rates for Hispanic junior officers in the Air Force and Navy may be attributable to differences in performance as measured by fitness reports (FITREPs), occupations, or promotion board results.

We observed disparities in Hispanic accessions and underrepresentation at only junior officer promotion points in some Services. As a result, to develop the next section, we relied on a literature review and SME discussions to identify possible challenges Hispanic

servicemembers face at recruiting and promotion points and strategies to address those challenges. We discuss challenges that Hispanic servicemembers may face at retention points in Appendix F, but strategies for addressing those challenges are not the focus of this document because we do not observe large representation differences at the various retention points.

Challenges to and Strategies for Recruiting and Promoting Hispanic Servicemembers

In this section, we combine evidence from our SME/PO discussions and literature review to document the recruiting and promotion challenges that the Hispanic community faces in the military. This section helps to highlight possible reasons for any Hispanic underrepresentation that we observed in the previous section of this report.

We begin by explaining how DEI strategies and initiatives are established in the Services. We then discuss the challenges that are the most commonly mentioned in the literature and among SMEs/POs. Note that the comments from the SMEs/POs are often hypotheses and theories of the challenges that the Hispanic community faces, and further research would be needed to confirm these hypotheses with data.

After we identify the various challenges that the Hispanic community may face, we highlight strategies that the military has previously used or has considered using to combat these challenges. We begin each subsection by summarizing the list of career challenges identified through SME/PO discussions and the literature and policy review that Hispanic servicemembers face during the recruiting and promotion processes. We also list any broad strategies that DOD and the individual Services have tried or considered to address those challenges. Most of the strategies have not been formally evaluated, but we note if there are known data available to support how successful the different strategies would be. We found that only strategies related to recruiting challenges have known data or evaluations to support them. The other strategies all have a theoretical backing that should make them successful, but the return on investment DOD would receive from implementing them is unknown. Thus, a large gap remains in understanding how successful retention and promotion strategies are at increasing Hispanic representation.

How DEI strategies and initiatives are established

To design their DEI strategies, DOD and the Services consult their leadership and servicemembers to identify barriers and propose solutions. This process relies on gathering

feedback from servicemembers, leveraging insights from external research, and following directives from leadership.

DOD and the Services engage their servicemembers to identify challenges. At the DOD level, servicemembers provide feedback via Service-wide surveys. Similarly, the Services hold regular meetings to connect with their populations. For example, the Air Force's Hispanic Empowerment and Advancement Team (HEAT) hosts monthly meetings with servicemembers and their families to discuss concerns. Likewise, the Navy's Culture of Excellence (COE) has a working group of Hispanic O-3 to O-6 officers from each community, and the Army's dedicated Operational Planning Team meets every other week. In addition to regular meetings, the Services poll their servicemembers to gather information. For example, the HEAT conducts surveys and focus groups, the Navy solicits feedback from Sailors in the fleet, and the Army recently canvassed 11,500 Soldiers and civilians. Using insights from these meetings, demographic representation analyses, and surveys, the DOD collaborates with each Service's DEI and talent management professionals to identify challenges, priorities, and best practices.

The DOD and Services supplement these internal discussions and analyses with external research. For example, the Air Force considers industry best practices to enhance DEI efforts, while the Marine Corps uses Government Accountability Office (GAO) reports and academic research to inform policy. In addition to research, the Air Force meets with civil rights groups and non-federal entities, whereas the Army uses community partners to connect with the Hispanic community. In addition, DOD is a member of the White House Hispanic initiative [31]. These conversations with external entities offer solutions to the previously identified challenges.

Based on concerns and solutions identified through meetings, surveys, research, and external partners, DOD and the Services convene senior leadership to devise policy. DOD also creates task forces to address concerns identified through these information sources. For example, D2T (originally the Defense Equity Team but re-charted as the DOD 2040 Task Force (D2T) in early 2022) was stood up to "inform and advance agency progress on all issues relating to diversity, equity, and inclusion within the DOD" [32-33]. In response to Executive Order 13985, which required federal agencies to identify any systemic barriers faced by underserved communities in their agencies [13], D2T specifically focuses on assessing inequities in talent management, education and training, and access to programs and services [33]. Overall, "the D2T focus is to connect and institutionalize DEIA as an enduring advantage to accomplishing the DOD mission" [33].

These task forces embed DEI efforts into key documents that guide the department, such as strategic plans. Similarly, the Air Force's HEAT meets with the Chief of Staff of the Air Force quarterly; the Navy's COE Governance Board and DEI Council meet biannually with flag-level

officers; the Army's Diversity, Equity, and Inclusion Council is chaired by the Secretary of the Army; and the Marine Corps relies on a Diversity, Equity, and Inclusion Senior Advisor. In addition to guidance from internal leadership, the DOD receives guidance from the legislative and executive branches of the federal government. For instance, DOD and the Services receive mandates from Congress through legislation, such as the NDAA and the National Defense Strategy. They also receive directives from EOs and guidance from the Office of Management and Budget (OMB). These directives from leadership guide the design of DEI strategy.

Recruiting challenges and strategies to address them

This section discusses specific recruiting challenges that the Hispanic community faces, according to information provided in the SME discussions and literature review. The prevalence of these challenges across the Hispanic community is not well understood, and further qualitative and quantitative research could establish the extent to which these challenges prevent members of the Hispanic population from joining the military. In addition, the challenges discussed are not limited to the Hispanic community and could occur within other populations. We still highlight them here to offer potential barriers that could be further researched to understand whether addressing them would increase the level of Hispanic recruitment into the military. For each challenge, we discuss whether strategies have been suggested or implemented to address them, including evidence of their effectiveness if available.

We summarize the recruiting challenges in Table 3 and then discuss them in further detail below.

Table 3. Hispanic recruiting challenges and strategies to address them

Challenges (Ch) and Strategies (Str) to address them	Data evidence that strategy works
(Ch) Family influence, language barriers, and misunderstandings about the US military	
(Str) Have diverse individuals tell their story	85 percent of surveyed Hispanic people prefer products with diverse advertisements [34].
(Str) Use targeted recruiting methods	A RAND study found that more Hispanic recruiters in an area increase Hispanic recruitment [35].

(Str) Translate promotional material	Data evaluation suggests that the Army's "Yo Soy El Army" campaign increased the percentage of Hispanic servicemembers in the Army by approximately 4 percentage points (see Appendix H: "Yo Soy El Army" campaign analysis).
(Str) Be transparent about benefits and risks from military service	N/A
(Ch) Recruiting methods are not culturally targeted	
(Str) Tailor messaging to culture you are trying to target	N/A
(Str) Engage community to build trust and understanding	N/A
(Ch) Recruiter understaffing and misaligned incentives	
(Str) Outreach with minority-serving institutions or schools with high diversity rates	N/A
(Str) Maintain a social media presence	N/A
(Ch) More education-related barriers	
(Str) Support efforts to increase high school graduation rates	N/A
(Str) Provide test preparation assistance and ensure fairness	An Air Force English language–immersion course improved test scores among English as a second language recruits, according to SMEs/POs.
(Str) Support efforts to increase Hispanic STEM enrollment	STEM majors in the Army have lower commissioning rates, so this strategy may not improve representation [36].
(Ch) Higher obesity rates	
(Str) Vary weight requirements by occupational field	N/A
(Str) Provide a weight-loss program for new recruits	19 percent of Hispanic men between ages 18 and 25 are over, but within five pounds of, the

	weight limit, so there is a large margin of people who programs could benefit [37].
(Ch) Less likely to be citizens	
(Str) Advertise path to citizenship through military service and opportunities to change occupations	Military naturalizations declined by 36 percent when MAVNI program expired [38].

Source: CNA generated from literature review and SME discussions.

Challenge: Family influence, language barriers, and misunderstandings about the military

The most frequent recruiting challenge mentioned by DEI offices and recruiting SMEs/POs was convincing Hispanic family influencers of the advantages of a military career. DOD's Joint Advertising Market Research and Studies (JAMRS) research confirmed this observation and emphasized that Hispanic mothers, more than fathers, influence the enlistment decisions of Hispanic youth [39]. Extended family also plays a larger role influencing the decisions of Hispanic youth, when compared to non-Hispanic White youth [39]. While families are influential in the future decisions of Hispanic youth, this report says that family members of Hispanic youth would not be likely to support joining the military when compared to influencers of other racial/ethnic groups.

SMEs/POs also mentioned that influencers in the Hispanic community might have good reason to distrust the military, and it is the job of the Services and their recruiters to assuage those concerns. One DEI SME recognized that if some Hispanic influencers come from countries where the military is oppressive, they will likely have less confidence that the US military will "take care of their kids." The literature also asserts that some Hispanic immigrants may generally distrust militaries and servicemembers if they witnessed military corruption in their countries of origin [40]. Hispanic immigrant communities also may have specific distrust of the US military, and thus hesitancy in joining, based on their perceptions of US military involvement in their home countries or regions.

Furthermore, language and cultural gaps may inhibit communication and prevent recruiters from alleviating these types of concerns. Specifically, language barriers may restrict communication between recruiters and the parents of first-generation Hispanic Americans. Among Hispanic immigrants, only 37 percent speak English proficiently [41]. Although parents of all races and ethnicities are important influencers, recruiters have found that Hispanic parents are more involved in their children's recruiting decisions than other parents and that "Hispanic recruits are quick to suggest that recruiters talk to their parents" [40]. Thus,

language barriers could further complicate recruiter efforts to communicate the benefits of military service and dispel any distrust in the military.

Strategy: Have diverse servicemembers tell their stories

SMEs/POs recommended employing diverse recruiters and personal stories to help combat mistrust of parental influencers and connect with them in their native language in outreach material. For example, the Army employs a Diverse Outreach Inclusion Team made up of Soldiers to reach influencers and potential recruits. The Navy relies on its Junior Officer Diversity Outreach Program, comprising junior officers from underserved groups, to reach out to colleges and high schools with highly diverse populations that also have low awareness about what a military career could offer.

Strategy: Use targeted recruiting methods

Many of the Service SMEs/POs also observed that it is easier for recruiters to recruit others with whom they share the same ethnicity, race, or gender (e.g., Hispanic recruiters are better at enlisting Hispanic recruits). Through our SME/PO discussions, we learned that the Air Force is analyzing where it makes the most sense to place Spanish-speaking recruiters and how to design the assignment process to accommodate their findings.

A 2004 CNA report also recommended assigning more Spanish speakers to enlisted recruiting duty, especially in areas with large Hispanic populations [40].[15] Research has shown that Hispanic populations are responsive to Hispanic recruiters, as high-quality Hispanic Army and Navy enlistments sharply increase with the number of Hispanic recruiters [35]. In addition, if recruiters are able to communicate with the parents of potential recruits in their native language, the parents can ask relevant questions about the US military that may mitigate their concerns.

Strategy: Translate promotional material

To enable communication with non-English-speaking parents, the 2004 CNA report also recommended that the Services translate brochures and other informational material into Spanish [40]. For example, the Navy's "Para Familia" campaign, marketed to Hispanic family members in Puerto Rico, shares a mother's story in Spanish and is targeted to other Spanish-speaking mothers of potential recruits. The Air Force took a similar approach in the New York–

[15] Any intentional assignment of Hispanic servicemembers to recruiting duty based on linguistic ability should take potential career effects into account. Recent research has found that the relationship between recruiting duty and promotion potential varies by Service. Specifically, Navy officers' promotion potential declined after serving on recruiting duty, but there was no significant effect for Marine Corps officers [42-43]. The Services should be cognizant of potential unintended effects on average Hispanic promotion (and retention) rates if Spanish-speaking Hispanic servicemembers are assigned to recruiting duty more often than their peers.

New Jersey area, where they had a "zone blitz" of Spanish-language advertising targeted specifically at parent and grandparent influencers.

Although many of these Spanish-language programs have not been formally evaluated for their effectiveness, we were able to evaluate one example of a Spanish-language marketing campaign in the Army. The 2001–2005 "Yo Soy El Army" (I Am the Army) campaign distributed Spanish-language recruiting materials to encourage Hispanic people to join the military [44]. We used DMDC data to evaluate whether the "Yo Soy El Army" campaign potentially affected Hispanic recruitment numbers by examining the increase in Hispanic representation in the Army compared to increases in the other Services over the same time period.[16]

We found that the campaign increased Hispanic representation among accessions by 3.9 percentage points, which was statistically higher than the average increase in Hispanic representation among the other Services over the same time period. We also found that the effect occurred only after the campaign had run for several years and that it diminished immediately after the campaign ended. Thus, the Services should not expect immediate effects in instituting such campaigns and must continue to run these programs indefinitely to achieve the desired outcomes over time. Furthermore, this strategy is likely to be beneficial for other populations that do not speak English as a first language.

Strategy: Be transparent about the benefits and risks of military service

The literature recommends that recruiters remain transparent about military service. The Services must be sensitive to the fact that Hispanic people who come from low-income families may be particularly responsive to monetary incentives [45]. Hispanic people are 1.5 times more likely to be in poverty than non-Hispanic people, suggesting that even relatively small bonuses may entice Hispanic people into the Armed Forces [46]. However, predatory recruiting efforts should be avoided at all costs. Although they may increase recruitment in the short term, these practices may perpetuate poor perceptions of the military and harm long-term recruiting goals.

Challenge: Recruiting methods are not culturally targeted

SMEs/POs noted that their recruiting messages are usually not culturally targeted to any particular community (including the Hispanic community). Almost every SME said that the main focus is on increasing diversity in general, and they do not officially target their policies and practices toward specific groups.

[16] The full data analysis of this campaign is included in Appendix H: "Yo Soy El Army" Campaign Analysis.

Nevertheless, several DEI SMEs/POs recognized that cultural competence matters when communicating with potential recruits. A DOD DEI SME suggested that different communication tactics might be appropriate based on someone's ethnicity, age, or gender. As one SME noted, "Not all women [or other underserved groups] are a monolith." This concept can apply to Hispanic people, as there are many unique cultures and backgrounds within the Hispanic ethnic identity.

One SME said, "For decades our recruiting system…has treated Americans as Americans," but also acknowledged that culture matters in those conversations. Every person who interacts with a recruiter is going to bring a different background to the conversation, and recruiters need to keep those backgrounds in mind when talking about how the potential recruit might benefit from military service.

As the propensity for military service has declined in recent years [47], Air Force and DOD SMEs/POs said they have realized that bringing cultural competencies into conversations is necessary to better connect with and relate to potential recruits. For example, talking about educational opportunities could be more appealing to certain cultures, on average, than others. These SMEs/POs emphasized that they are not creating different programs for different groups; they simply recognize that different benefits of service will appeal to different groups. For example, a JAMRS report highlighted that Hispanic youth are more likely to have conversations surrounding pay and the benefits of a military career before joining than are non-Hispanic White youth [39, 48]. SMEs/POs who discussed this idea want the same opportunities to be provided for all, while respecting that different people value different things.

Other SMEs/POs noted that implementing culturally targeted recruiting methods and incentives does not guarantee that the target population will receive the message or benefit. These SMEs/POs cited the example of several Reserve Officer Training Corps (ROTC) programs at Hispanic Serving Institutions (HSIs), which were intended to increase the Hispanic representation in the officer ranks. However, HSIs do not only serve Hispanic students, and many of the ROTC scholarship recipients at HSIs are non-Hispanic. They further asserted that the 4-year model of the ROTC scholarship might benefit certain groups more than others. A SME explained that Hispanic student 4-year graduation rates are lower than for non-Hispanic students, while the 5- to 6-year graduation rates are similar between Hispanic and non-Hispanic students. One factor that could contribute to this difference is that Hispanic students are more likely to work during college, which could slow their progress. Therefore, if an ROTC scholarship option was more readily available that allowed 5 to 6 years to complete degrees, more Hispanic students might be eligible and apply for these opportunities.

Strategy: Tailor messaging to the culture you are trying to target

Hattiangadi, Lee, and Quester (2004) suggested that the Services collect information about recruits' ancestral country of origin to tailor their messaging appropriately [40]. For example, some countries have experienced much greater military corruption than others. Using country-of-origin data, the Services could personalize recruitment pitches to address military corruption concerns among Hispanic people whose families emigrated from these countries [40].

Air Force and Navy SMEs/POs mentioned recent recruiting efforts specifically targeted at Hispanic people in Puerto Rico. The Air Force recognized that the disaster relief efforts that the Air Force participates in might resonate with the people of Puerto Rico, who remember the US disaster relief effort following Hurricane Maria in 2017 and other disaster responses. Air Force recruiters partnered with Air Force disaster relief units to get the message out about that mission capability. Similarly, the Navy ran ads using the correct Puerto Rican dialect to better appeal to that population.

In addition, research suggests that the Services update marketing materials to represent all demographic groups [30]. Evidence indicates that such changes would be effective: 85 percent of Hispanic people have been found to be more likely to consider a product when they see a diverse or inclusive advertisement [34].

Strategy: Engage the community to build trust and understanding

Previous work suggests that to build more trust with potential Hispanic recruits and their families, the Services should continue to attend affinity group events,[17] connect with community influencers, provide mentoring programs, and locate recruiting offices and Junior Reserve Officer Training Corps (JROTC) units in areas with large Hispanic populations [50]. The Diversity Board report recommended exploring options for expanding JROTC into underserved communities [30].

Marine Corps and Air Force SMEs/POs mentioned that they incorporate special messaging and events into the strategic campaigns for all of the affinity months. For example, for a recent Hispanic heritage month, the Air Force had cultural activities and webinars for people to learn about the different subcultures within the vast Hispanic ethnic group. They ended the month with a symposium in which active, reserve, and guard Airmen all came to Washington, DC, for leadership and learning opportunities.

[17] For example, the Marine Corps often participates in the League of United Latin Citizens' National Convention and LATINA Style's "National LATINA Symposium" [49].

In addition, the Air Force uses its "Detachment 1" to focus on getting officers and enlisted servicemembers from underserved groups out into the community to interact with people at college fairs and other culturally targeted events.[18] They also encourage their general officers (GOs) to participate via the "GO Inspire Program," in which their GOs go out into communities where Detachment 1 needs them.

Some of the Service SMEs/POs mentioned specific Hispanic affinity groups that they have partnered with or are trying to partner with to reach more military-qualified Hispanic people and understand the population's career priorities. The Navy, for example, has attempted to expand its access to potential officer and enlisted candidates by partnering with organizations such as the Society of Hispanic Professional Engineers (SHPE) and Hispanics Inspiring Student Performance, an organization targeted at middle and high school students. The Air Force's HEAT has partnered with organizations such as the Alliance of Hispanic Serving Research Universities and the Hispanic Association of Colleges and Universities, while the Army has partnered with the League of United Latin American Citizens and *LATINA Style* magazine.

Challenge: Recruiter understaffing and misaligned incentives

In some circumstances, there are not enough recruiters to fill designated recruiter billets. For example, Air Force recruiting SMEs/POs said they were currently staffed at 92 percent, and this percentage has been as low as 82–85 percent. In the Air Force's case, understaffing results in certain areas or recruiting zones of the country being underserved or neglected. The SMEs/POs noted that the decision of which areas or zones to prioritize in recruiter assignments (vice leaving the recruiting centers vacant) does not heavily factor in which areas are the most demographically diverse—which could result in fewer touchpoints with underserved groups such as the Hispanic community.

In addition, one DEI SME hypothesized that recruiters who are limited in time and resources may prioritize recruiting in areas where they feel the most comfortable and where they relate with the populations. As a result, they may avoid certain areas where qualified prospective recruits live.

Furthermore, a Navy SME mentioned that in most cases, the recruiting force is siloed into officer and enlisted categories, and there is little incentive for an enlisted recruiter to connect a potential officer candidate to an officer recruiter (and vice versa). Thus, if a potential recruit is not aware of the differences between the enlisted and officer paths, the recruit might be qualified to become an officer but end up enlisting instead if their first touchpoint is an enlisted recruiter. If potential Hispanic recruits have less knowledge about the differences between the

[18] "Detachment 1" is a special Air Force recruiting detachment focused on DEI efforts.

officer and enlisted paths, they may be more likely to enlist in the military instead of pursuing different commissioning pathways after obtaining a bachelor's degree. This could further exacerbate any representation differences between the enlisted and officer populations.

Strategy: Outreach with minority-serving institutions or schools with high diversity rates

All of the Services' SMEs/POs discussed ongoing efforts to use data to identify areas with high concentrations of certain racial/ethnic groups so they can send recruiters or special teams to those schools to make sure they are prioritized.

Furthermore, when recruiting resources are in short supply, having preestablished relationships with minority serving institutions (MSIs) and maintaining those relationships will help promote racial and ethnic diversity. In this vein, the Air Force launched its first university-affiliated research center (UARC) with historically Black colleges and universities (HBCUs) to have a closer and consistent relationship with them. Organizations like the Hispanic Veterans Leadership Alliance (HVLA) have asked the Air Force to establish a similar model with HSIs.

Other examples of these types of partnerships occur within the ROTC programs. For example, Navy ROTC units are piloting "prep years" for students who might not be academically ready to begin the programs. Similarly, an Air Force ROTC initiative called "You Can Fly" aims to increase access to underrepresented groups by offering them $3,500 to get initial pilot training. Air Force SMEs/POs also mentioned an outreach program for K–12 Hispanic students to show them that the Air Force has a place for them. This program reached over 9,000 Hispanic youth in FY 2022.

Strategy: Maintain a social media presence

SMEs/POs mentioned that when resources are scarce, social media can be a powerful tool to maintain a presence in areas that are difficult to access. Using targeted ads on social media platforms allows the Services to reach certain races, ethnicities, and genders from specific geographic areas. For example, the Navy uses insights from partners such as Google and Trade Desk to understand where to place their ads. They can target specific characteristics, such as a Spanish speaker who likes music, and gain information about which platforms (e.g., certain YouTube channels or music platforms) are the most likely to reach people with those characteristics.

SMEs/POs also mentioned the importance of diversity in the ads that are pushed to these communities. It is important, they noted, for Gen Z[19] to see itself represented in marketing and advertising, so DOD and the Services try to incorporate diversity in all ads. For example, the Navy had the "Faces of the Fleet" video series, which highlighted the lifestyles of several Sailors so that viewers could see themselves in the Sailors. The Services are beginning to experiment with partnerships with various social media influencers, and oneofthe D2T sprints will evaluate the effectiveness of those strategies and summarize best practices.

Challenge: More education-related barriers

No SMEs/POs highlighted education-related recruiting barriers,[20] though such barriers to Hispanic recruitment are well documented in the literature. Graduation rates, test scores, and choice of college major (for officers) are the primary education-related barriers restricting the pool of qualified Hispanic candidates. On average, Hispanic students have lower high school graduation rates than non-Hispanic White students. According to the National Center for Education Statistics, 82 percent of Hispanic students graduate high school within four years, compared to 89 percent of non-Hispanic White students [51]. Since it is required that at least 90 percent of enlisted accessions must have a high school diploma,[21] lower high school graduation rates limit the pool of qualified Hispanic candidates.

Yet attaining a high school diploma is not the only education-related barrier to service for Hispanic people. Hispanic students also have lower standardized test scores on average, affecting their eligibility for both enlisted and officer service. Specifically, Hispanic people receive lower AFQT scores than non-Hispanic people [53]. DOD policy requires that 60 percent of enlisted accessions score above the 50th percentile on the AFQT and that no more than 4 percent score between the 10th and 30th percentiles; thus, lower AFQT scores further restrict the pool of Hispanic candidates who are qualified to enlist [52]. Hispanic students also score lower on the Scholastic Aptitude Test (SAT) and American College Test (ACT) on average [54]. Historically, colleges often impose minimum SAT and ACT score requirements, making Hispanic students less likely to be admitted to college and thereby reducing the number of Hispanic college graduates.[22] Because commissioned officers must have a bachelor's degree,

[19] Gen Z is defined as those born between 1997 and 2012.

[20] While SMEs/POs did not specifically highlight education as a barrier to service, they did summarize strategies targeted at improving educational/academic qualifications for Hispanic recruits and Service academy cadets.

[21] Per DOD Instruction 1145.01, Qualitative Distribution of Military Manpower, only 10 percent of enlisted accessions may have alternative high school credentials or no high school diploma [52].

[22] More colleges are now becoming "test optional," which could improve Hispanic representation at the undergraduate level.

lower standardized test scores thus limit the pool of qualified Hispanic candidates [55]. In fact, 91 percent of the Hispanic civilian population fail to meet educational requirements to become Air Force officers (the Service with the highest standards), compared to 74 percent of the non-Hispanic White civilian population [56].

In addition to test scores, college major or field of study may limit the pool of qualified officer candidates. Specifically, both the Air Force ROTC and Navy ROTC programs prioritize science, technology, engineering, and mathematics (STEM) fields when awarding competitive scholarships [57-58]. Since Hispanic students are less likely to have bachelor's degrees in STEM fields than non-Hispanic White and Asian students, they will likely remain underrepresented in ROTC programs if this practice continues [59]. This ROTC discrepancy may have a significant effect on overall Hispanic representation because ROTC programs are the largest single source of AC commissioned officers [60].

Strategy: Support efforts to increase high school graduation rates

The 2004 CNA report recommended that DOD partner with the Department of Education to increase high school graduation rates, especially in areas with high concentrations of Hispanic high school students [40]. The report specifically suggested promoting "stay in school" campaigns, such as the Army's "Operation Graduation"—a television campaign in the 2000s that encouraged youth to remain in school by highlighting the benefits of a high school diploma, including higher wages. The report also recommended that DOD lobby to raise the minimum age to take the General Educational Development (GED) test to 20,[23] arguing that a higher minimum-age requirement would prevent some high school students from dropping out and using the GED as a shortcut to attaining a high school–equivalent credential [40]. If successful, these efforts could increase the number of Hispanic high school graduates, thereby expanding the pool of eligible Hispanic candidates.

Strategy: Provide test preparation assistance and ensure fairness

The Army provides free Armed Services Vocational Aptitude Battery (ASVAB), SAT, and ACT test preparation materials through the "March2Success" online program [62]. To date, this program has not been evaluated to determine whether it has improved standardized test scores and thus has increased the pool of qualified applicants. However, the Army piloted the Future Soldier Preparatory Course in 2022, which helped potential recruits improve their ASVAB scores. In the pilot, 95 percent of course completers increased their score in at least one test category [63]. The value of test preparation assistance is an area ripe for further research, particularly given the MLDC's recommendation that a review be conducted on the barriers that

[23] Currently, the minimum age to complete the GED is 16 to 18, depending on the state [61].

might adversely affect diversity on certain aptitude tests, including the ASVAB, SAT, and ACT [55]. In addition, the 2020 DOD Board on Diversity and Inclusion Report recommended that the Service academies and ROTC units incorporate noncognitive standardized tests—such as validated structured interviews or personality tests—into their admission criteria to mitigate racial and ethnic disparities [30].

Furthermore, the Air Force's HEAT highlighted several efforts that helped to improve testing outcomes for Hispanic people and was instrumental in changing the scoring policies for the Air Force Officer Qualifying Test (AFOQT). HEAT recognized that many Hispanic people score high on the AFOQT overall but did not qualify for an Air Force officer commission because they scored too low on one of the individual sections (usually the verbal section). Now the only score that counts for qualification is the "super score": a composite score of the highest scores overall on the tests taken. In addition, HEAT advocated for decreasing the time people had to wait to retake the test (from 180 days to 90 days) so that the material would be fresher in the test takers' minds. HEAT also recommended increasing the time allowed to take the test for those with English as a second language. HEAT found these two changes to be helpful for the Hispanic population.

Air Force recruiting SMEs/POs also mentioned a small pilot they ran wherein a small group of recruits who spoke English as a second language attended a four-week English language–immersion course and were tested both before and after the course. They observed that 95 percent of the recruits improved their test scores after the four-week course. These recruiting SMEs/POs would also like to see the ASVAB given in English and Spanish to native Spanish speakers to see how much their scores change between the two versions of the tests. Currently there are routine analyses by the Office of People Analytics (OPA) and a Defense Advisory Committee that evaluates the fairness of the ASVAB, along many dimensions, including language barriers [64-65].

Strategy: Support efforts to increase Hispanic STEM enrollment

Air Force and Navy ROTC scholarships give preference to those majoring in STEM [57-58]. Therefore, to increase the number of Hispanic students who ultimately enroll in undergraduate STEM programs (and who are therefore eligible for ROTC scholarships), the 2020 DOD Board on Diversity and Inclusion Report recommended that DOD offer internships for underrepresented groups in STEM fields [30]. The MLDC also suggested that the Services increase ROTC enrollment and scholarships at HSIs and continue to provide summer seminar programs, academy preparatory schools, and parent weekends to increase college retention among less-prepared prospective Hispanic officers at the Service academies [50]. These practices may expand the pool of qualified Hispanic officers, although to our knowledge no

research exists on the actual effectiveness of these initiatives.[24] For some of these initiatives, the lack of data and research may be due to privacy protections (e.g., data may be more difficult to collect on minors).

Furthermore, increasing Hispanic STEM enrollment may not proportionally increase Hispanic recruitment. Although increased STEM enrollment will likely increase ROTC scholarship eligibility and thus the pool of qualified Hispanic officer candidates, a 2014 CNA report found that STEM majors in Army ROTC programs had lower reported commissioning intentions and rates, potentially because of much stronger civilian labor market opportunities [36]. Given these negative effects on diversity and commissioning rates, the report's authors recommended that the Services reconsider prioritizing STEM fields when selecting ROTC scholarship recipients in fields that do not require STEM degrees [36].

Challenge: Higher obesity rates

Obesity is another factor that may limit Hispanic representation in the Armed Forces. Specifically, obesity disqualifies potential candidates from serving, and Hispanic people on average have higher obesity rates than their non-Hispanic counterparts (i.e., non-Hispanic people of the same age, education status, and other characteristics) [53]. In addition, obesity rates have been steadily increasing, with half of the US adult population projected to be obese by 2030 [66]. However, it is difficult to determine whether obesity is frequently an independently disqualifying characteristic, since many servicemembers who are ineligible to serve because of obesity are also ineligible for education-related reasons, such as having low AFQT scores or lacking a high school diploma [37]. In fact, obesity rates for Hispanic and non-Hispanic high school graduates are similar, suggesting that weight may not be the sole disqualifying characteristic for many high school graduates [55]. However, obesity remains the only disqualifying factor for some recruits. In 2020, 11 percent of Americans between the ages of 17 and 24 were ineligible for military service only because of their weight [67].

Strategy: Vary weight requirements by occupational field

The MLDC recommended varying weight requirements by occupational field but without reducing occupation-specific fitness or strength requirements [37]. This practice may increase Hispanic representation: 19 percent of Hispanic men between ages 18 and 25 are over, but within five pounds of, the weight limit [37]. When considering this reform, the Services must recognize that, on average, servicemembers who are overweight at accession have higher

[24] An ongoing CNA study is reviewing the Services' processes and criteria for selecting schools to establish a Senior ROTC program. It also is evaluating the relationship between STEM majors and career performance for military officers.

attrition rates than their non-overweight counterparts. However, overweight Hispanic Soldiers are less likely to attrite than White Soldiers who meet weight standards [68]. Thus, this reform could increase Hispanic representation without negatively affecting overall retention for this population.

Strategy: Provide a weight-loss program for new recruits

The MLDC also suggested that providing a weight-loss program for new recruits may help Hispanic recruits overcome this specific barrier to entry [37]. It suggested that a weight-loss program would likely be most effective for those recruits who are near the weight-loss cutoff and recommended that eventual enlistment require meeting a specific weight-loss goal [37]. In 2022, the Army ran a pilot of the Future Soldier Preparatory Course, which had a fitness track that helped 87 percent of recruits meet body fat requirements [63].

Challenge: Less likely to be citizens

Citizenship can be an additional barrier for Hispanic people thinking about military service because non-citizen Hispanic servicemembers are restricted from certain military occupational fields that require security clearances. For example, non-citizens cannot join the Marine Corps' intelligence community [69]. Some potential recruits may forgo military service if their citizenship status prohibits them from their desired occupation. In addition, non-citizens attrite at about half the rate of citizens during their first term, suggesting that these potential recruits may increase Hispanic representation across junior paygrades if the Services accessed more of them [70].

Strategy: Advertise path to citizenship through military service and opportunities to change occupations

The 2004 CNA report recommended that DOD increase advertising for the streamlined path to citizenship through military service, highlighting that non-citizen recruits could ultimately obtain their desired occupation via this route [40]. In talking to non-citizen recruits, the authors found that several non-citizens were unaware that those having served honorably for any amount of time since the September 11 attacks are eligible for naturalization (per a July 2002 EO) [40, 71].[20] However, changes made in 2017 have made it more difficult for non-citizens to pursue this path [72]. Similarly, the Services could reestablish and advertise programs that expedite citizenship, such as the 09L Translator Aide program that allowed non-citizens to apply for citizenship after completing advanced individual training [73].

Other programs expanded the pool of eligible recruits. For example, the Military Accessions Vital to the National Interest (MAVNI) program, active from 2008 to 2017, allowed individuals who were not United States citizens, nationals, or permanent residents to enlist if they had a

desired skill set. Specifically, MAVNI applied to those who spoke a language critical to DOD, such as Haitian-Creole or Portuguese, and to those who could fill shortages in particular medical specialties [38]. Although research on MAVNI's effect on recruitment is limited, descriptive statistics show that the number of military naturalizations declined from more than 7,000 in 2017—when the MAVNI program expired—to about 4,500 per year from 2018 to 2020 [74]. This sharp decline suggests that the expiration of MAVNI reduced non-citizen recruits' (and potentially Hispanic) representation in the military.

Promotion challenges and strategies to address them

This section summarizes the challenges Hispanic servicemembers face to promotion, specifically in the officer ranks where there is underrepresentation in officer promotions at the junior ranks in the Air Force and Navy. After highlighting the challenges, we discuss the strategies and policies that have been implemented or discussed to address them (Table 4).

Table 4. Hispanic promotion challenges and strategies to address them

Challenges (Ch) and Strategies (Str) to address them	Data evidence that strategy works
(Ch) Less competitive occupational fields and job assignments	
(Str) Adjust promotion processes to reflect occupational differences in opportunities	N/A
(Ch) Potential inequities in policies and practices	
(Str) Understand which policies and practices are inequitable through evaluation	N/A
(Str) Design new policies and practices to address identified inequities	
(Str) Improve awareness, training, and accountability	
(Ch) More likely to enter the officer community from the enlisted community	
No known strategies to address the "E-to-O" challenge	N/A

Source: CNA generated from literature review and SME discussions.

Challenge: Less competitive occupational fields and job assignments

Hispanic representation and promotion opportunities vary by occupational field. This difference in representation is especially important in the officer populations because officers promote by cohort instead of occupation, making these differences more likely to perpetuate as officers move through the ranks.[25] Hispanic servicemembers represent only 7.7 percent of all officers in tactical operations, compared to 9.2 percent in all other occupations [60]. This finding may be attributable to differences in either preferences or pre-commissioning performance.[26] As previously described, new officers provide their occupation preference list, but those with superior pre-commissioning performance receive priority.[27] Of the two factors, research suggests that differences in preferences are more important [75-76]. These studies recommend conducting additional research to determine why Hispanic servicemembers are less likely to choose tactical operation fields and offering initiatives that address these disparities.

SMEs/POs cited these occupational field and job assignment differences as the top promotion challenge. They mentioned that, on the officer side, it is difficult to make the flag officer ranks if coming from the supporting establishment instead of combat positions. Navy SMEs/POs said this dilutes the number of Hispanic officers likely to make flag officer if they are more likely to go into these supporting establishment fields.[28] In addition, the Marine Corps SMEs/POs said that combat arms officers are more likely to serve in joint billets or to hold command, which makes them more competitive for promotion. It is not well documented whether these occupational differences between Hispanic and non-Hispanic servicemembers is due to preferences for, qualifications for, or knowledge about different occupational opportunities.

[25] Conversely, enlisted personnel promote *within* an occupational field. Thus, even if Hispanic servicemembers are more likely to be concentrated within certain occupations, such a concentration does not necessarily have implications for promotability because promotion opportunities will be available within each occupational field.

[26] The precise manner by which pre-commissioning performance enters into occupational assignments varies by service. Historically in the Marine Corps, for example, cohorts at The Basic School (TBS) are divided into thirds based on performance, with the top officers in each third being the first to voice their occupational preference and subsequently be assigned an occupation; this process ensures a quality distribution across military occupational specialties (MOSs).

[27] Some communities have additional test-score or other qualification requirements that make them more competitive (and thus harder to enter), such as the aviation and submarine communities in the Navy.

[28] The increased likelihood of Hispanic servicemembers entering supporting establishment occupations is not only well documented in the literature and SME discussions but was also seen in our data analysis. See Appendix D.

The reason these tactical operation fields promote more quickly than others is that they are the most closely linked to the Services' overall missions, according to the MLDC [75]. The literature confirms that officers assigned to combat occupations in the Army and Marine Corps, pilot roles in the Air Force, and unrestricted line (URL) communities in the Navy have higher promotion rates [75]. The fact that Hispanic representation is 16 percent lower in the tactical operations occupations reduces the likelihood that a Hispanic servicemember will make the flag- and general-officer ranks.

In terms of overall types of assignments, SMEs/POs felt that Hispanic servicemembers were also less likely to have competitive assignments, regardless of occupation. Air Force SME/POs said that Hispanic servicemembers are less likely to serve in key developmental positions (e.g., they less often serve in executive offices working with senior leaders). These assignment differences lead to fewer networking and promotion opportunities. Another assignment issue mentioned was that often Hispanic servicemembers are not given the most competitive opportunities because the Service needs a fluent Spanish-speaking person in a certain assignment overseas or in the recruiting force. This can prevent them from hitting certain career milestones, like the opportunity to command.

In addition, because fewer Hispanic senior mentors are available for Hispanic servicemembers, they might have fewer opportunities to hear about the types of professional military education (PME) and other education and training opportunities that might make them more competitive for promotion. Also, if junior Hispanic servicemembers have fewer mentorship opportunities, they might have fewer leadership opportunities (e.g., a chance to brief the commander) that could translate into other, more significant opportunities down the line if more senior leaders know them.

Strategy: Adjust promotion processes to reflect occupational differences in opportunities

While the differences in promotion opportunities and ethnicity by occupations are well documented, the efforts to address these gaps are more limited. The Air Force revised its promotion procedures to promote servicemembers based on occupational field–specific thresholds rather than a single set of standards across all occupations [77]. Similarly, the Marine Corps' precept from the 2022 major and lieutenant colonel promotion boards guided the committee to take care that no officer's promotion opportunity is disadvantaged by Service utilization policies [such as the Advanced Degree Program that may preclude a tour in the operating forces as a captain or major]. The overriding evaluation factor is the performance of assigned duties [78]. Although these are promising reforms, evaluations of them remain incomplete.

Challenge: Potential inequities in policies and practices

SMEs/POs asserted that some policies and practices might be inequitable and might give certain people or groups an advantage in promotion opportunities relative to others. If these process inequities are negatively affecting Hispanic servicemembers at higher rates than non-Hispanic servicemembers, it will present promotion challenges for the Hispanic servicemembers. For example, a policy inequity that might exist involves the treatment of non-rated periods of service by promotion boards. For example, parental leave is non-rated, which could have an impact on promotion. If Hispanic servicemembers are more likely to take parental leave (our data analysis shows they are more likely to have non-spouse dependents),[29] then they would be more affected than non-Hispanic servicemembers. This might manifest in fewer Hispanic servicemembers being promoted.

From the literature, we found further evidence of potential biases that might exist in current processes. A 2014 CNA report found that final class rankings at TBS—whose mission is to train and educate newly commissioned or appointed officers and which ultimately makes officer military occupational specialties (MOSs) assignments—have a lasting effect on a Marine's career trajectory. TBS rankings are a major factor in determining when Marines are promoted relative to others with the same commissioning date [79-80].

In addition, TBS rankings directly affect occupational assignments. Marines are divided into "TBS thirds" based on their overall ranking, which Manpower and Reserve Affairs (M&RA) uses, in conjunction with the officers' ordered list of MOS preferences, to make MOS assignments. Specifically, M&RA assigns the top student in each third to their first-choice MOS and then continues the process sequentially (i.e., the second-ranked student in each third followed by the third-ranked student in each third, and so on) until the MOS assignment process is complete [79].

Hispanic servicemembers, on average, have worse TBS rankings [80] and may therefore fail to receive their preferred MOS and ultimately promote more slowly.[30] Their slower promotion rates reduce Hispanic retention because of the military's "up-or-out" policy and frustration stemming from stagnation in rank.

Research could not rule out evaluation bias in the other Services, identifying racial and ethnic differences in both Navy fitness reports (FITREPs) [81] and Air Force promotion rates [56].

---

[29] See Appendix D.

[30] Students at TBS are evaluated on academics, military skills, and leadership, which constitute 30, 30, and 40 percent of their overall TBS score, respectively. The 2014 CNA report found that Hispanic officer candidates were equally disadvantaged in all three components of their overall score [80].

Strategy: Understand which policies and practices are inequitable through evaluation

Evaluation is a critical component of designing (and refining) DEI initiatives. It is only via independent, unbiased evaluation that DOD and the Services can determine which policy and practice changes have had their intended effect and improved Hispanic representation.

Throughout this report, we have noted what SMEs/POs surmised or conjectured about the likely impact of different policies or practices, but formal program evaluations are often lacking. That said, SMEs/POs did speak to the importance of continuous, iterative analysis conducted in tandem with the rollout of new DEI initiatives to identify what works and to adjust as needed. Specific analytic efforts noted as critical to improving Hispanic representation across the DOD include the following:

- The Racial Disparity Review commissioned by the Air Force, which revealed that the Hispanic population is less represented in the operational career fields than in the support career fields
- The Air Force's seven Barrier Analysis Working Groups, which are tasked with identifying barriers to the accession, retention, and promotion of their respective communities (e.g., HEAT)
- The use of dashboards to produce snapshots of minority representation throughout the DOD (e.g., by service, community, paygrade)
- Promotion board outbriefs that include statistics on selection percentages by racial/ethnic group
- The use of exit surveys to identify why members of particular minority groups are choosing to separate at higher rates

Strategy: Design new policies and practices to address identified inequities

DOD and the Services have made efforts to ensure equitable promotion opportunities for all via a combination of policy changes and diversity-focused initiatives. A 2020 DOD Instruction encourages diversity in promotion selection board members "to the extent practicable" in terms of race, ethnicity, and gender [82]. DODI 1320.14 does not mandate diverse representation on these boards (e.g., a minimum percentage of board members who must be women or members of underrepresented groups). Instead, diversity is presented as more of a general goal or objective [82]. Although this DODI is not enforceable because there often is not sufficient diversity in the ranks from which board members are drawn, SMEs/POs surmised that the DODI has likely improved minority groups' representation on promotion boards.

However, no evaluation has assessed whether board representation became more diverse or if any increase in board diversity led to more diverse promotion selections.

SMEs/POs also suggested that the following practices may have improved promotion opportunities for servicemembers from racial or ethnic minority groups:

- Promotion board precepts—which are read aloud at the start of promotion board convenings—include language about the importance of equitable opportunity for all servicemembers.
- Increased emphasis on "whole person" assessments, vice relying on more easily quantifiable metrics such as standardized test scores, which may perpetuate bias and unequal opportunity.
- Starting September 1, 2020, the Secretary of Defense prohibited photographs from being included in the materials reviewed by promotion boards (and by assignment, training, education, and command selection boards). This was recommended by the 2020 DOD Board on Diversity and Inclusion Report [30].

However, ignoring ethnicity is implausible for evaluators who interact with servicemembers regularly. It also is unclear whether addressing these issues in the promotion boards themselves will resolve racial/ethnic disparities in the promotion process. A recent CNA report found that FITREPs and officer background characteristics explain most of the racial differences in promotion selection rates, suggesting that addressing biases in evaluations—whether explicit or implicit—will be more important in completely removing ethnicity considerations from the promotion process [42]. Thus, removing photographs and references to race and ethnicity from the board process will likely still have some effect if unconscious biases are at play.

Strategy: Improve awareness, training, and accountability

To reduce these biases, the DOD Board on Diversity and Inclusion Report recommended that DOD require evaluators to attend unconscious bias and communication skills training seminars while simultaneously working to prohibit hate group activity [30]. Although research suggests that these programs alone may not eliminate bias, they may be used as tools to facilitate institutional change [83]. To increase accountability and evaluate the initiatives, the report calls for increased promotion selection board transparency as well as research analyzing demographic trends in performance evaluations.

Air Force SMEs/POs suggested that the Air Force's virtual bias awareness training has been particularly effective. In the virtual training environment, servicemembers interact with avatars and are provided with a safe space to have dialogues that might otherwise be uncomfortable; it allows them to confront their biases—conscious or unconscious—without

fear of judgment or reprisal from others. Similarly, Navy SMEs/POs noted that their leadership training now includes discussions of how cultural differences may affect perceptions of Hispanic Sailors' behaviors (e.g., a sense of machismo may make Hispanic Sailors hesitant to ask for help).

Challenge: More likely to enter the officer community from the enlisted community

Another promotion challenge that SMEs/POs cited is the fact that the Hispanic officer community is more likely to come from the enlisted to officer ("E-to-O") pipeline than non-Hispanic officers. We observed this in our DMDC data analysis, as seen in Appendix D, where commissioned officers in each Service are more likely to come from the enlisted pipeline. For example, according to our sample in the O-2 to O-3 regressions, 29.4 percent of Hispanic officers in the Navy are former enlisted compared to 19.8 percent of non-Hispanic officers. This results in age differences for Hispanic officer accessions compared to non-Hispanic accessions. While these age difference might not appear significant early in one's career, it can be problematic later in a career because age is a factor in flag officer promotions, according to this SME/PO. In addition, they are more likely to hit retirement eligibility at lower officer ranks because of their prior enlisted service.

No known strategies address the E-to-O challenge

For all the other challenges we highlighted for Hispanic servicemembers, we learned of strategies to address them through our SME discussions and literature review. However, we found no strategies in these sources to address the fact that more Hispanic officers are likely to access into the officer community from the enlisted community, which likely affects their promotion opportunities in the higher ranks. One potential change that Congress could make to address this challenge is to extend the service limits and age limits of officers.

Lessons learned from the civilian sector

These challenges and strategies are not unique to DOD, as we uncovered similar issues being discussed in the civilian sector (see Appendix G for a full discussion of what is being done in the civilian sector). In addition to the strategies that the military has tried, the civilian sector is also doing the following:

- Recognizing and learning about subcultures that exist within the Hispanic community
- Building relationships with local Hispanic community leaders and organizations
- Offering training and development programs with Hispanic interests in mind

- Providing formal mentorship programs
- Setting representation goals and designing initiatives to help achieve and track those goals
- Providing training for recruiters on the challenges the Hispanic community faces
- Placing key leaders at the heart of efforts to increase Hispanic representation

Conclusion

This report addresses the FY 2022 NDAA/Section 572 requirement for an FFRDC to analyze Hispanic representation across the Services and compare that representation to civilian benchmarks. The NDAA also requires the following: "A comparison of how each of the Armed Forces [recruits, retains, and promotes] individuals who identify as Hispanic." We addressed this requirement through our recruiting, retention, and promotion data analysis, and we examined challenges and strategies for overcoming them through our SME discussions and literature review. We conclude by discussing what we learned about Hispanic representation through these analyses, and we consider what potential challenges Hispanic servicemembers face at recruiting, retention, and promotion points in their military careers. We then discuss where knowledge gaps still exist and how to address those gaps through additional research.

What we learned

We found that to fully understand Hispanic representation across paygrades, we must account for both representation across accession cohorts and different continuation rates to retention and promotion points of the Hispanic population compared to the non-Hispanic population, instead of relying solely on single year snapshots.

Results suggest the Hispanic population is generally underrepresented among military accessions compared to civilian peers, except for the Marine Corps. This underrepresentation may also explain the current low Hispanic representation in the more-senior paygrades because we found that Hispanic continuation rates to different retention and promotion points are generally higher or on par with those of non-Hispanic servicemembers. Stated differently, once in the military, Hispanic servicemembers tend to retain and promote on par with non-Hispanic servicemembers. Thus, as more Hispanic people join the military, if all other things remain constant, we would expect to see steady increases in representation across the ranks over time. As an exception, we found that Hispanic Navy and Air Force officers are somewhat less likely to promote from O-2 than non-Hispanic servicemembers.

We acknowledge, however, that additional factors feed into recruiting, retention, and promotion decisions that are not accounted for in our analysis because of data availability constraints; for example, we were unable to analyze performance evaluation and promotion selection data under the current study's scope. Hence, we relied on previous research and discussions with SMEs and POs to understand the context of the challenges and strategies being employed to target Hispanic recruitment, retention, and promotion. When summarizing

those challenges and the strategies the military has taken to address them, we have also noted whether additional information is available to show whether a strategy has been effective at addressing the identified challenges. In doing so, we found that many of the strategies have not been formally evaluated.

Focusing on the Hispanic population and continuing to address their career challenges is key to the future vitality of the all-volunteer force. The expected growth of Hispanic representation in the US labor market means that this community will become an increasingly larger proportion of the eligible population. In addition, as these members enter service in larger numbers, it will be important for DOD and the Services to monitor the retention and promotion trends to be positioned to act when and where they need to.

Where gaps still exist and how to address them

This report has highlighted numerous remaining questions that, if further explored, could help the Services and DOD design policies to improve and maintain Hispanic representation across different career milestones.

Quantitative data analysis

While our data analysis on Hispanic representation reveals broad trends, it does not identify *why* any disparities exist. Although we controlled for some observable characteristics, our analysis was limited by the study's scope.

In addition, the NDAA requires analysis of Service academy data to understand Hispanic representation at the academies. After appropriate data-use agreements are established, we will analyze how many Hispanic people apply, are accepted, enroll, and graduate from the Service academies and how those results compare to similar highly competitive institutions.

A program evaluation using quantitative data could have numerous beneficial outcomes. We could work with the Services and DOD to better understand what programs they want to evaluate and whether they are collecting the right data to evaluate those programs.

Qualitative data analysis

Several questions could be further explored through qualitative data analysis. First, we want to further understand why there are accession gaps in Hispanic representation compared to the civilian sector. Pre-established survey instruments at Florida International University could help us to understand some of these gaps. In addition, we want to better understand the Marine Corps' success with Hispanic accessions and why the Marine Corps resonates with the

youth population. Additional SME interviews and program reviews could reveal lessons learned that could be applied across the military.

We also want to use qualitative data to evaluate strategies to address challenges for the Hispanic population, especially in the recruiting and promotion areas. For example, we could execute limited focus groups to better understand any gaps in information that Hispanic people have compared to non-Hispanic people about the recruiting process or about career opportunities. In addition, we could explore challenges that E-to-O officers face to better recommend strategies that will address those challenges.

Hispanic underrepresentation in higher paygrades is a product of numerous factors. In this report, we identified these barriers and documented strategies that, theoretically, could mitigate them. Our follow-up report will directly address these strategies to advance the discussion beyond barriers and unevaluated recommendations and toward evaluated solutions.

Appendix A: Other Factors That Affect Eligibility for Military Service

Due to data limitations, we adjusted the civilian benchmark population by age, education, and institutionalized status only. However, the following disqualifying factors could also impact the comparison between the Armed Forces and the eligible population:

- Dependents
- Low AFQT scores
- Medical conditions
- Drug abuse
- Mental health conditions
- Interactions with the justice system
- Physical fitness

Given our current considerations for age, education, and institutionalized status when calculating the civilian benchmark, we found that having dependents would have little to no impact on the calculation of the Hispanic civilian benchmark. However, we would expect medical conditions, low AFQT scores, and interactions with the justice system to reduce the civilian benchmark percentage because these occur at higher rates in the Hispanic population compared to the overall sample. At the same time, substance abuse and mental health conditions may increase in the civilian benchmark percentage because these are documented at lower rates in the Hispanic population compared to the overall sample. Since these omitted variables shift the benchmark in opposite directions, the overall directional shift in the civilian benchmark remains unclear. We discuss these factors and the rate at which they occur in the Hispanic population in more detail below.

Dependents had little impact on our estimates given that we were already factoring in education level when calculating the benchmark, as these two variables are highly correlated.[31] Using the ACS data, if we were to factor in dependents, the Hispanic enlisted benchmark would fall from 22.6 to 22.0 percent, while the Hispanic officer benchmark would rise from 11.9 to 12.2 percent.

[31] We define *dependents* as children in one's own household.

Although we could use ACS data to determine that dependents have minimal effect, the remaining variables were not available in the ACS data, so we could not definitively say how they would change the calculated civilian benchmark percentage. Thus, we gleaned clues from the literature to estimate the potential effect of these factors. The literature indicates that we should expect AFQT scores, interactions with the justice system, obesity, and medical ailments to reduce the Hispanic civilian benchmark percentage. Among high school graduates, Hispanic people are less likely to pass minimum AFQT standards than their non-Hispanic White counterparts [53]. Furthermore, Hispanic people are more likely to be detained, incarcerated, and on probation than non-Hispanic people [84]. In addition, Hispanic people are more likely than non-Hispanic people to be disqualified for medical reasons, including obesity and diabetes [53]. In fact, 42.5 percent of Hispanic people are obese compared to 34.5 percent of non-Hispanic Whites. This pattern across ethnicities held when we divided the sample into those with no college, some college, and at least a bachelor's degree [85]. Similarly, 11.8 percent of Hispanic people have diabetes relative to 7.4 percent of non-Hispanic Whites [86]. Assuming these ethnic differences in diabetes and obesity rates persist in the eligible populations, these factors would reduce Hispanic representation in the civilian benchmark.

In comparison, Hispanic people's lower documented rates of substance abuse and mental health problems compared to the general population would increase Hispanic representation in the civilian benchmark. Specifically, Hispanic people have lower documented rates of mental illness than non-Hispanic Whites (19 percent relative to 26 percent) and lower rates of substance abuse disorders (14 percent compared to 19 percent) [87]. Assuming these differences persist among the military-eligible populations, their lower rates of mental illness and substance abuse relative to the general population should increase the Hispanic proportion of the civilian benchmark.

Taken together, we found three factors that may decrease the Hispanic proportion of the civilian benchmark and two factors that may increase it. Without individual-level data to account for these factors, we could not determine the aggregate effects of these factors. However, we do know that there is a high correlation between our controls for educational attainment and omitted controls (i.e., AFQT scores [88], obesity [85], diabetes [89], drug abuse [90], and mental health problems [91]).

Appendix B: Complete Data Tables on Representation Levels at Accession and Various Promotion Points

This appendix includes the full data tables for the charts and figures included in the report where the numbers were not included. While the visual representation of the data in the report is helpful for understanding the key takeaways, it is also helpful to include the actual data used to generate those charts in this appendix.

Table 5. Percent of Hispanic servicemembers by paygrade, 2019

Paygrade	Army	Navy	Air Force	Marine Corps
E-1	19.8%	20.1%	19.0%	28.2%
E-2	20.8%	20.8%	20.6%	29.7%
E-3	19.7%	18.0%	18.8%	27.7%
E-4	18.8%	16.2%	17.4%	27.1%
E-5	17.7%	16.5%	15.7%	25.2%
E-6	16.3%	16.3%	11.6%	23.3%
E-7	14.3%	14.6%	8.9%	21.0%
E-8	14.4%	12.8%	7.5%	19.8%
E-9	9.4%	11.4%	5.5%	17.0%
O-1	9.8%	11.0%	10.0%	12.6%
O-2	9.5%	10.4%	8.6%	12.2%
O-3	7.3%	8.7%	5.0%	8.1%
O-4	6.5%	6.9%	3.1%	6.4%
O-5	5.6%	8.0%	3.1%	6.9%
O-6	3.8%	5.5%	2.6%	5.4%
O-7	3.1%	3.0%	0%	5.4%
O-8	1.7%	1.6%	1.1%	3.5%
O-9	0%	0%	0%	0%
O-10	0%	0%	0%	0%

Source: CNA generated from DMDC and ACS data.

Table 6. Percentage of Hispanic servicemembers by Service and gender

Group	Army	Navy	Air Force	Marine Corps	Total DOD	Civilian Benchmark
Enlisted Men	19.5%	17.6%	18.9%	28.5%	20.9%	22.4%
Enlisted Women	23.5%	22.8%	22.2%	38.3%	24.5%	22.8%
Enlisted Total	20.2%	18.9%	19.7%	29.5%	21.6%	22.6%
Officer Men	8.2%	9.6%	8.1%	11.8%	8.9%	11.4%
Officer Women	8.2%	12.1%	9.8%	14.0%	9.9%	12.3%
Officer Total	8.2%	10.3%	8.6%	12.1%	9.2%	11.9%

Source: CNA generated from DMDC and ACS data.

Table 7. Promotion rates by paygrade and ethnicity

Paygrade	Army		Navy		Air Force		Marine Corps	
Promote from	Non-Hisp	Hisp	Non-Hisp	Hisp	Non-Hisp	Hisp	Non-Hisp	Hisp
E-2	82.3%	88.3%	86.8%	89.7%	91.4%	92.8%	86.0%	90.6%
E-3	83.8%	87.0%	77.9%	77.3%	83.9%	88.0%	70.0%	74.4%
E-4	44.5%	45.3%	57.8%	55.0%	57.7%	59.4%	40.0%	41.8%
E-5	45.5%	47.5%	44.3%	44.2%	51.0%	57.3%	40.7%	46.7%
E-6	56.7%	59.8%	50.3%	54.3%	61.6%	61.7%	50.7%	60.3%
E-7	33.5%	35.1%	34.5%	36.1%	25.2%	22.3%	55.8%	56.6%
O-1	95.0%	94.1%	96.3%	96.3%	96.0%	95.9%	97.4%	91.7%
O-2	84.8%	83.4%	90.3%	86.0%	91.4%	94.0%	73.1%	72.7%
O-3	54.2%	57.1%	50.6%	52.8%	59.7%	63.3%	52.6%	52.5%
O-4	63.3%	57.6%	63.1%	53.2%	57.5%	62.3%	51.4%	57.1%

Source: CNA generated from DMDC and ACS data.

Note: "Hisp" refers to Hispanic.

Table 8. 2001 enlisted retention rates by paygrade and ethnicity

Years of Service	Army		Navy		Air Force		Marine Corps	
Retained to year	Non-Hisp	Hisp	Non-Hisp	Hisp	Non-Hisp	Hisp	Non-Hisp	Hisp
0	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
1	87.7%	91.1%	89.9%	92.4%	95.4%	95.9%	91.3%	94.6%
2	78.0%	84.4%	82.7%	86.9%	90.4%	92.0%	86.1%	90.9%
3	61.4%	65.0%	74.4%	78.6%	83.0%	86.5%	81.1%	87.6%
4	42.8%	45.2%	54.4%	55.7%	63.6%	67.6%	36.0%	38.1%
5	35.6%	38.6%	43.1%	44.8%	59.6%	63.2%	22.2%	25.9%
6	30.7%	33.7%	35.6%	38.0%	45.5%	50.4%	20.3%	24.1%
7	27.9%	30.6%	32.6%	34.3%	42.4%	47.4%	19.3%	22.8%
8	25.6%	27.9%	27.4%	28.5%	39.4%	43.8%	15.9%	18.9%
9	24.0%	26.1%	25.1%	26.1%	37.3%	41.1%	14.3%	17.6%
10	22.7%	24.5%	22.8%	23.6%	35.0%	39.1%	13.6%	16.9%
11	21.4%	23.3%	20.2%	20.9%	33.5%	37.6%	12.9%	16.3%
12	19.7%	21.5%	19.2%	19.7%	32.2%	36.3%	11.0%	13.9%
13	17.3%	19.0%	18.5%	19.1%	30.5%	34.2%	9.6%	12.6%
14	16.0%	17.8%	17.0%	17.5%	29.3%	32.9%	9.0%	11.7%
15	14.9%	16.7%	16.7%	17.1%	27.6%	31.5%	8.2%	11.0%
16	14.4%	16.1%	16.4%	16.9%	27.1%	30.8%	8.0%	10.7%
17	14.0%	15.7%	16.2%	16.7%	26.6%	30.3%	7.8%	10.4%
18	13.8%	15.3%	16.0%	16.5%	26.3%	30.0%	7.7%	10.3%
19	13.6%	15.2%	15.9%	16.3%	26.1%	29.9%	7.5%	10.0%
20	10.1%	11.2%	12.7%	13.4%	19.3%	21.7%	5.3%	7.0%
21	8.1%	9.0%	10.5%	11.1%	16.1%	17.2%	4.4%	5.8%

Source: CNA generated from DMDC and ACS data.
Note: "Hisp" refers to Hispanic.

Table 9. 2001 officer retention rates by paygrade and ethnicity

Years of Service	Army		Navy		Air Force		Marine Corps	
Retained to year	Non-Hisp	Hisp	Non-Hisp	Hisp	Non-Hisp	Hisp	Non-Hisp	Hisp
0	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
1	99.4%	99.5%	99.9%	100.0%	99.6%	99.2%	99.4%	100.0%
2	97.8%	97.5%	99.5%	99.5%	99.1%	98.3%	99.1%	100.0%
3	92.9%	89.0%	94.5%	93.4%	95.9%	98.3%	95.5%	94.8%
4	76.6%	76.0%	86.1%	84.0%	87.7%	95.0%	78.2%	81.0%
5	63.8%	64.0%	77.7%	74.2%	80.8%	86.8%	69.7%	70.7%
6	58.4%	59.0%	70.3%	65.7%	65.1%	71.9%	65.0%	63.8%
7	53.6%	56.0%	62.7%	57.3%	60.1%	69.4%	58.1%	60.3%
8	50.0%	53.0%	56.6%	53.5%	58.0%	66.9%	54.0%	56.9%
9	47.7%	52.0%	49.8%	49.8%	56.1%	65.3%	50.5%	56.9%
10	45.8%	51.5%	46.5%	46.0%	54.1%	62.8%	46.9%	51.7%
11	43.8%	49.0%	42.5%	41.8%	50.6%	59.5%	42.4%	50.0%
12	42.1%	48.5%	40.3%	38.5%	46.5%	58.7%	38.9%	48.3%
13	40.9%	47.5%	38.9%	35.7%	43.6%	56.2%	37.9%	48.3%
14	39.1%	44.0%	37.2%	33.8%	41.5%	52.1%	36.5%	48.3%
15	38.1%	42.5%	36.7%	32.9%	40.3%	51.2%	35.5%	46.6%
16	37.5%	41.5%	36.4%	32.9%	39.2%	50.4%	35.3%	46.6%
17	36.7%	41.0%	36.0%	32.4%	38.2%	48.8%	35.0%	46.6%
18	35.2%	39.5%	35.0%	31.5%	36.2%	43.8%	34.8%	46.6%
19	34.5%	38.5%	34.7%	31.5%	35.8%	42.1%	34.6%	46.6%
20	27.8%	30.5%	25.7%	22.5%	28.6%	33.9%	24.6%	36.2%
21	22.7%	24.5%	22.1%	21.1%	23.4%	27.3%	20.3%	31.0%

Source: CNA generated from DMDC and ACS data.

Note: "Hisp" refers to Hispanic.

Table 10. 2016 enlisted retention rates by paygrade and ethnicity

Years of Service	Army		Navy		Air Force		Marine Corps	
Retained to year	Non-Hisp	Hisp	Non-Hisp	Hisp	Non-Hisp	Hisp	Non-Hisp	Hisp
0	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
1	90.8%	93.1%	94.1%	95.2%	95.5%	96.1%	95.1%	96.5%
2	81.0%	85.2%	90.1%	91.9%	91.6%	92.9%	90.7%	93.1%
3	66.6%	70.4%	86.5%	88.8%	87.4%	89.3%	86.2%	89.7%
4	48.6%	51.8%	72.3%	75.1%	74.4%	76.3%	38.6%	39.9%
5	39.8%	43.7%	60.1%	60.7%	67.6%	68.8%	20.8%	24.3%
6	31.6%	35.0%	48.3%	49.8%	51.8%	54.2%	18.2%	22.1%

Source: CNA generated from DMDC and ACS data.

Note: "Hisp" refers to Hispanic.

Table 11. 2016 officer retention rates by paygrade and ethnicity

Years of Service	Army		Navy		Air Force		Marine Corps	
Retained to year	Non-Hisp	Hisp	Non-Hisp	Hisp	Non-Hisp	Hisp	Non-Hisp	Hisp
0	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
1	99.5%	100.0%	99.4%	98.9%	99.4%	100.0%	99.6%	100.0%
2	98.2%	99.4%	98.1%	96.2%	99.1%	100.0%	99.0%	99.3%
3	94.7%	92.6%	94.9%	94.0%	95.2%	98.6%	98.3%	98.6%
4	84.3%	80.2%	91.3%	91.7%	89.3%	95.5%	85.3%	86.4%
5	75.0%	72.9%	83.0%	84.2%	83.5%	88.7%	76.1%	78.9%
6	68.0%	66.4%	77.9%	78.2%	78.0%	80.6%	69.5%	69.4%

Source: CNA generated from DMDC and ACS data.

Note: "Hisp" refers to Hispanic.

Appendix C: Geographic Hispanic Representation in Military and Civilian Sectors

In this appendix, we provide the data table (Table 12) that generated Figure 5 to Figure 8.

Table 12. State-level differences in Hispanic military accessions versus civilian benchmarks

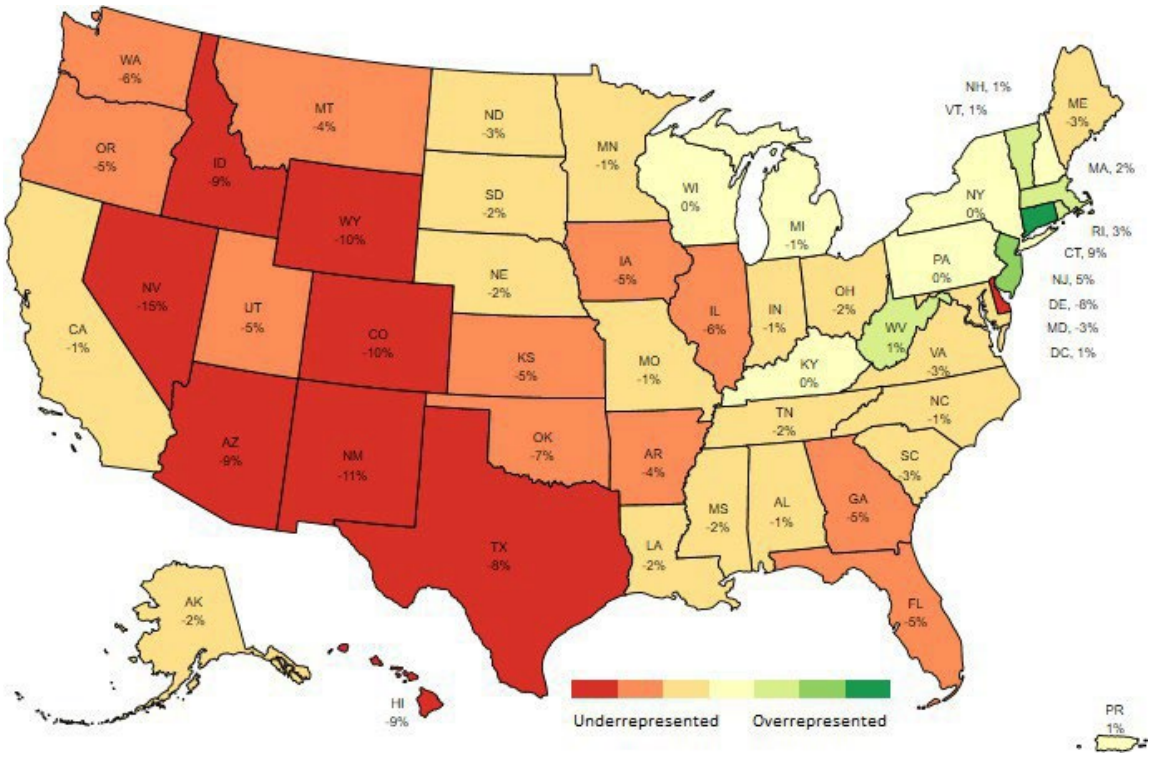
State	Enlisted	Enlisted Benchmark	Enlisted Difference	Officer	Officer Benchmark	Officer Difference
Alabama	4.4%	5.1%	-0.7%	6.6%	2.4%	4.2%
Alaska	11.6%	10.3%	1.4%	3.2%	7.1%	-3.9%
Arizona	33.7%	39.4%	-5.7%	19.1%	19.5%	-0.4%
Arkansas	6.6%	10.0%	-3.4%	9.1%	3.8%	5.3%
California	44.5%	47.5%	-3.0%	15.8%	20.4%	-4.6%
Colorado	19.8%	26.4%	-6.6%	6.7%	10.6%	-3.9%
Connecticut	26.5%	18.4%	8.2%	5.7%	10.2%	-4.4%
Delaware	10.7%	13.0%	-2.3%	16.7%	4.3%	12.3%
District of Columbia	7.4%	10.1%	-2.6%	5.3%	8.2%	-2.9%
Florida	26.6%	29.9%	-3.2%	16.5%	24.5%	-7.9%
Georgia	8.3%	11.2%	-2.8%	9.1%	5.6%	3.5%
Hawai'i	8.9%	14.2%	-5.3%	11.8%	8.5%	3.2%
Idaho	11.2%	16.4%	-5.2%	1.6%	7.0%	-5.4%
Illinois	19.9%	22.1%	-2.2%	7.9%	9.7%	-1.8%
Indiana	8.5%	8.5%	0.0%	2.1%	5.0%	-2.9%
Iowa	5.7%	9.5%	-3.8%	2.0%	3.8%	-1.7%
Kansas	12.4%	15.4%	-3.0%	5.6%	5.4%	0.1%
Kentucky	4.8%	4.4%	0.4%	1.6%	3.0%	-1.4%
Louisiana	5.3%	5.5%	-0.2%	5.7%	4.0%	1.7%
Maine	2.8%	3.9%	-1.1%	2.6%	1.6%	0.9%
Maryland	8.6%	10.8%	-2.2%	5.6%	6.0%	-0.3%
Massachusetts	17.3%	14.5%	2.8%	5.6%	7.1%	-1.4%
Michigan	6.7%	6.8%	-0.1%	4.3%	4.2%	0.0%
Minnesota	8.3%	7.5%	0.8%	5.9%	4.2%	1.7%
Mississippi	3.9%	3.5%	0.5%	3.2%	1.9%	1.3%
Missouri	5.1%	5.2%	-0.1%	4.7%	3.1%	1.6%
Montana	5.8%	7.7%	-1.9%	5.0%	3.1%	1.9%
Nebraska	13.7%	13.7%	0.0%	2.3%	5.6%	-3.3%
Nevada	28.4%	39.0%	-10.6%	14.5%	13.7%	0.8%

State	Enlisted	Enlisted Benchmark	Enlisted Difference	Officer	Officer Benchmark	Officer Difference
New Hampshire	4.8%	4.9%	-0.1%	0.0%	2.6%	-2.6%
New Jersey	29.9%	24.1%	5.9%	10.0%	13.1%	-3.2%
New Mexico	48.9%	58.0%	-9.1%	29.0%	38.7%	-9.7%
New York	23.1%	20.5%	2.7%	7.7%	12.7%	-5.0%
North Carolina	12.2%	11.6%	0.6%	8.2%	4.8%	3.4%
North Dakota	6.6%	6.7%	-0.1%	0.0%	1.3%	-1.3%
Ohio	4.1%	4.9%	-0.8%	3.7%	3.2%	0.4%
Oklahoma	8.9%	14.1%	-5.2%	7.4%	5.9%	1.4%
Oregon	15.9%	18.5%	-2.6%	8.2%	8.0%	0.2%
Pennsylvania	9.5%	9.2%	0.3%	6.3%	4.6%	1.6%
Rhode Island	21.0%	18.6%	2.4%	2.8%	7.9%	-5.2%
South Carolina	6.1%	7.4%	-1.3%	2.5%	3.5%	-1.0%
South Dakota	4.8%	5.7%	-0.9%	10.7%	2.7%	8.0%
Tennessee	6.2%	6.8%	-0.6%	4.9%	3.0%	1.9%
Texas	39.3%	44.7%	-5.4%	19.9%	23.4%	-3.5%
Utah	14.2%	15.7%	-1.5%	2.6%	7.2%	-4.6%
Vermont	2.1%	4.3%	-2.2%	0.0%	1.5%	-1.5%
Virginia	11.3%	11.3%	0.0%	7.8%	6.9%	0.9%
Washington	14.0%	17.9%	-3.9%	7.0%	7.5%	-0.5%
West Virginia	2.9%	1.3%	1.6%	2.9%	1.8%	1.1%
Wisconsin	9.4%	8.5%	0.9%	4.0%	4.0%	0.0%
Wyoming	10.7%	15.7%	-5.0%	18.2%	3.7%	14.5%
Puerto Rico	98.3%	98.1%	0.1%	97.1%	97.4%	-0.3%

Source: CNA generated from DMDC and ACS data.

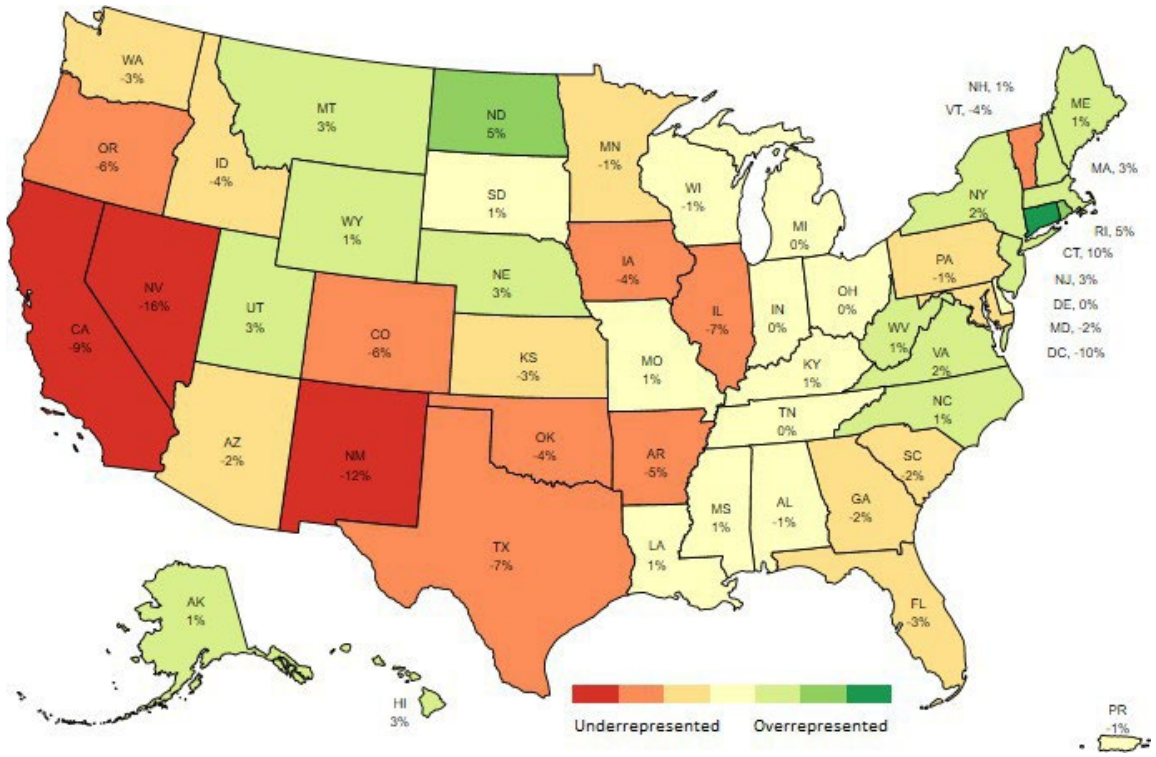
We next provide the enlisted and officer Service-level maps showing how the Hispanic percentage of military accessions compares to the Hispanic percentage in the eligible civilian population. In Figure 14 through Figure 21, we see that, similar to the DOD-level maps provided in the main body of the report, Hispanic military accessions appear to be underrepresented in the individual Services (except for the Marine Corps enlisted population) along the southern border states compared to the civilian benchmarks in those states, as evidenced by the large amount of red on each map. This raises the question of what the Marine Corps is doing differently in those states. How can the other Services learn from the strategies the Marine Corps is employing along the southern border states to recruit more Hispanic servicemembers?

Figure 14. Army Hispanic enlisted accessions minus civilian benchmark by state, 2019



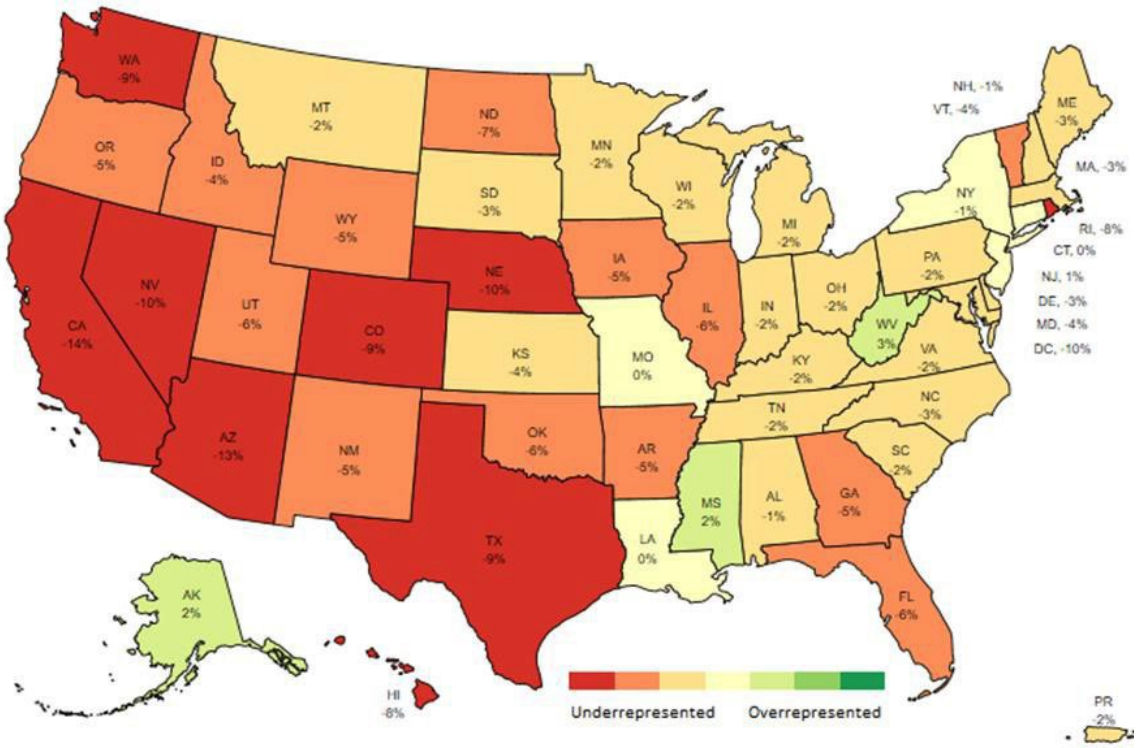
Source: CNA-generated from DMDC and ACS data.
Note: States in red represent areas where military accessions are underrepresented relative to the civilian benchmark; states in green represent areas where they are overrepresented.

Figure 15. Air Force Hispanic enlisted accessions minus civilian benchmark by state, 2019



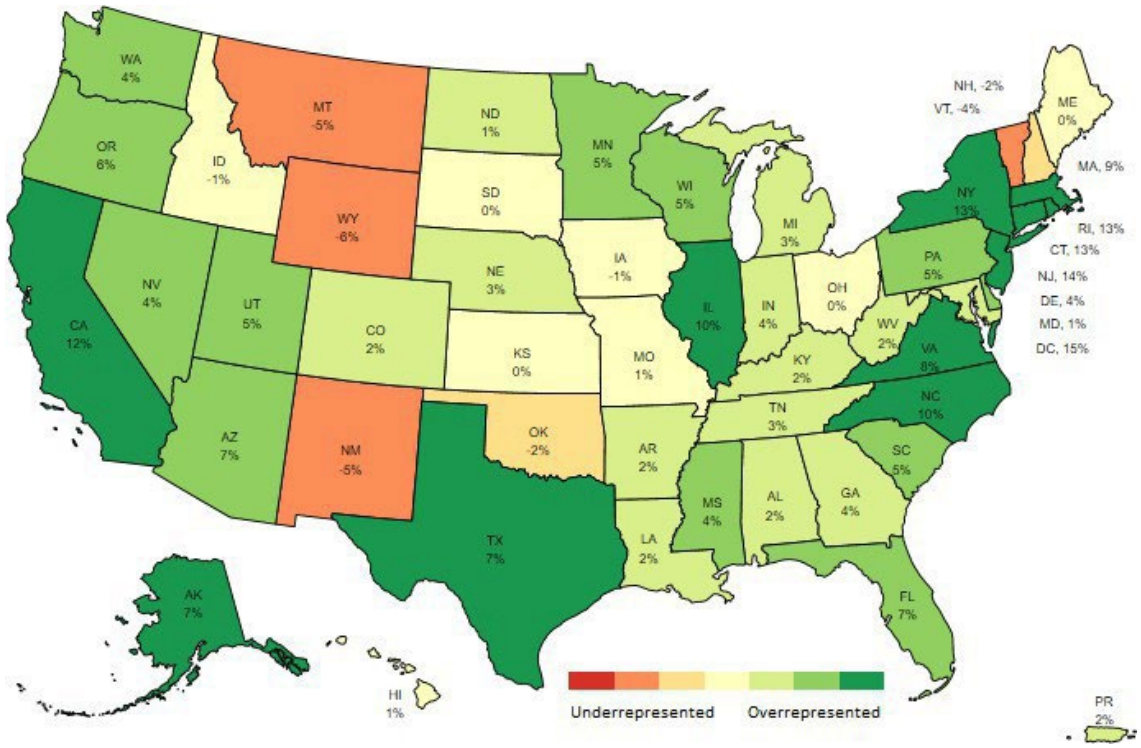
Source: CNA-generated from DMDC and ACS data.
Note: States in red represent areas where military accessions are underrepresented relative to the civilian benchmark; states in green represent areas where they are overrepresented.

Figure 16. Navy Hispanic enlisted accessions minus civilian benchmark by state, 2019



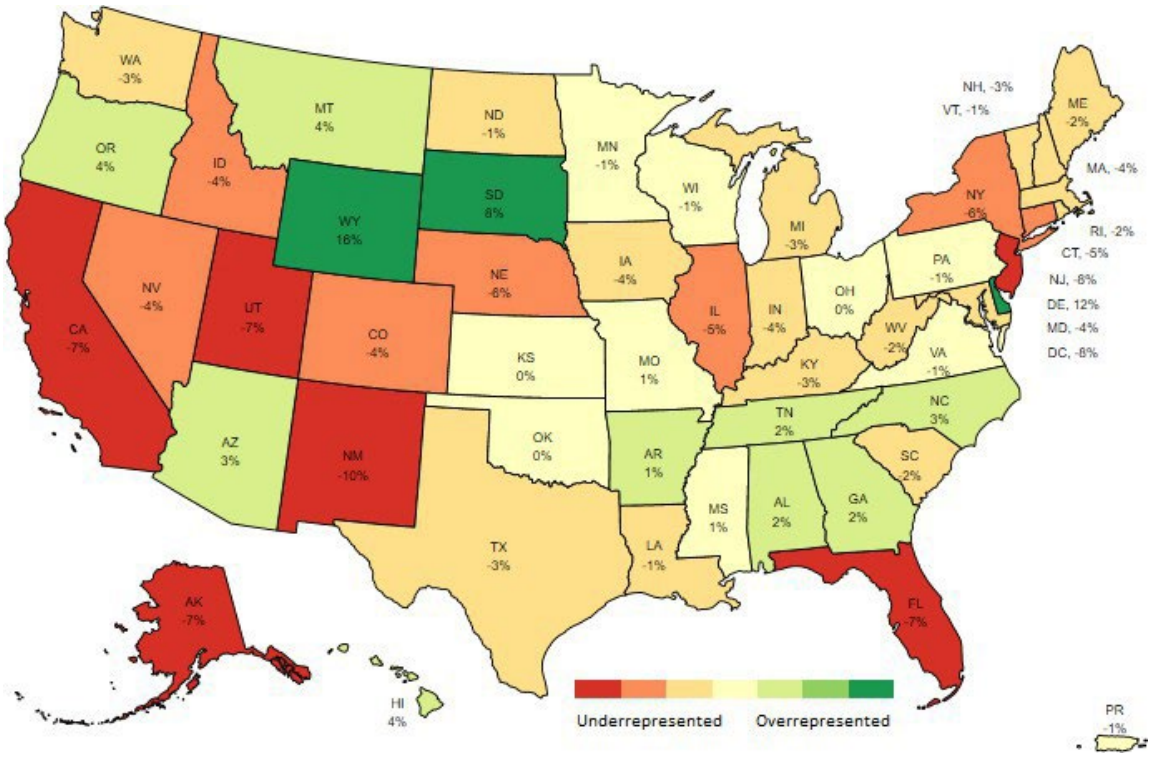
Source: CNA-generated from DMDC and ACS data.
Note: States in red represent areas where military accessions are underrepresented relative to the civilian benchmark; states in green represent areas where they are overrepresented.

Figure 17. Marine Corps Hispanic enlisted accessions minus civilian benchmark by state, 2019



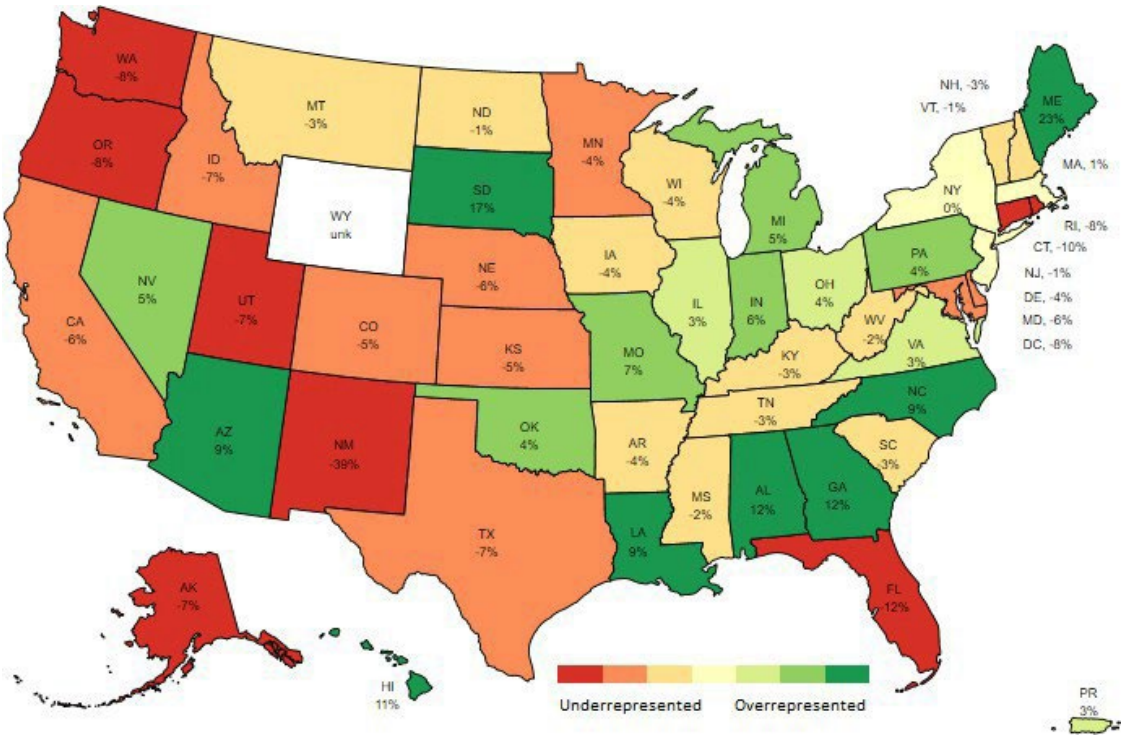
Source CNA-generated from DMDC and ACS data.
Note: States in red represent areas where military accessions are underrepresented relative to the civilian benchmark; states in green represent areas where they are overrepresented.

Figure 18. Army Hispanic officer accessions minus civilian benchmark by state, 2019



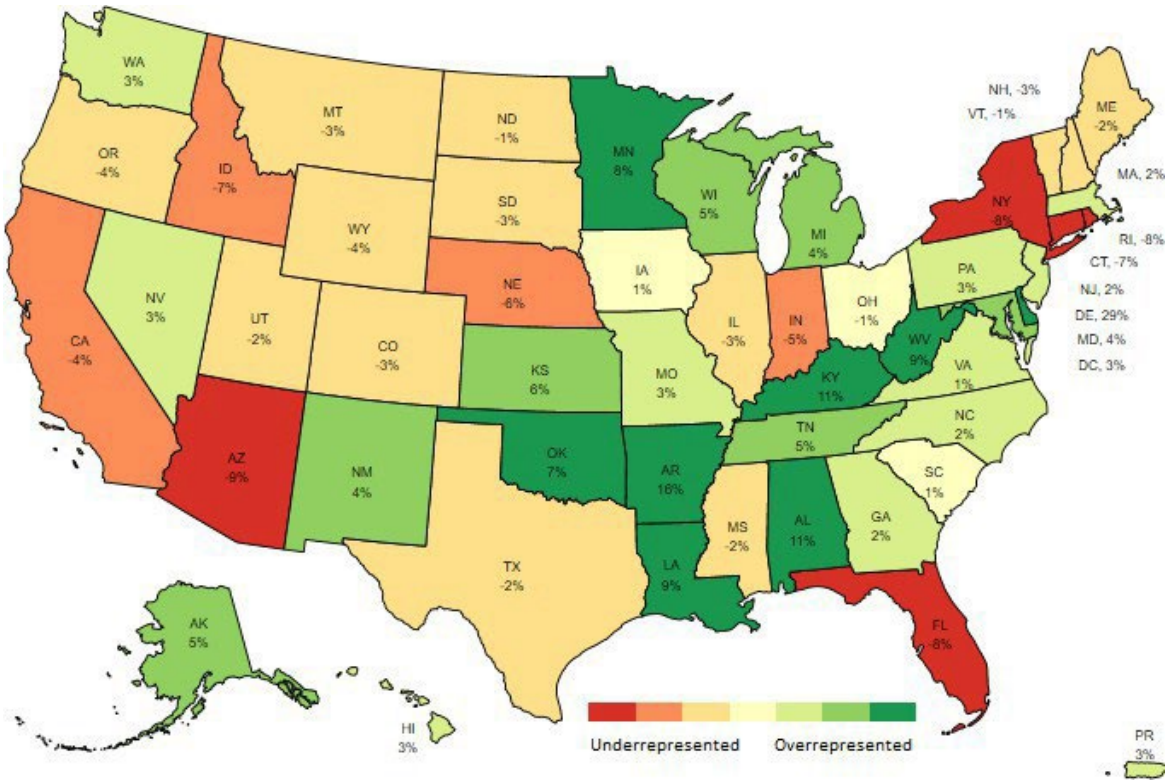
Source: CNA-generated from DMDC and ACS data.
Note: States in red represent areas where military accessions are underrepresented relative to the civilian benchmark; states in green represent areas where they are overrepresented.

Figure 19. Air Force Hispanic officer accessions minus civilian benchmark by state, 2019



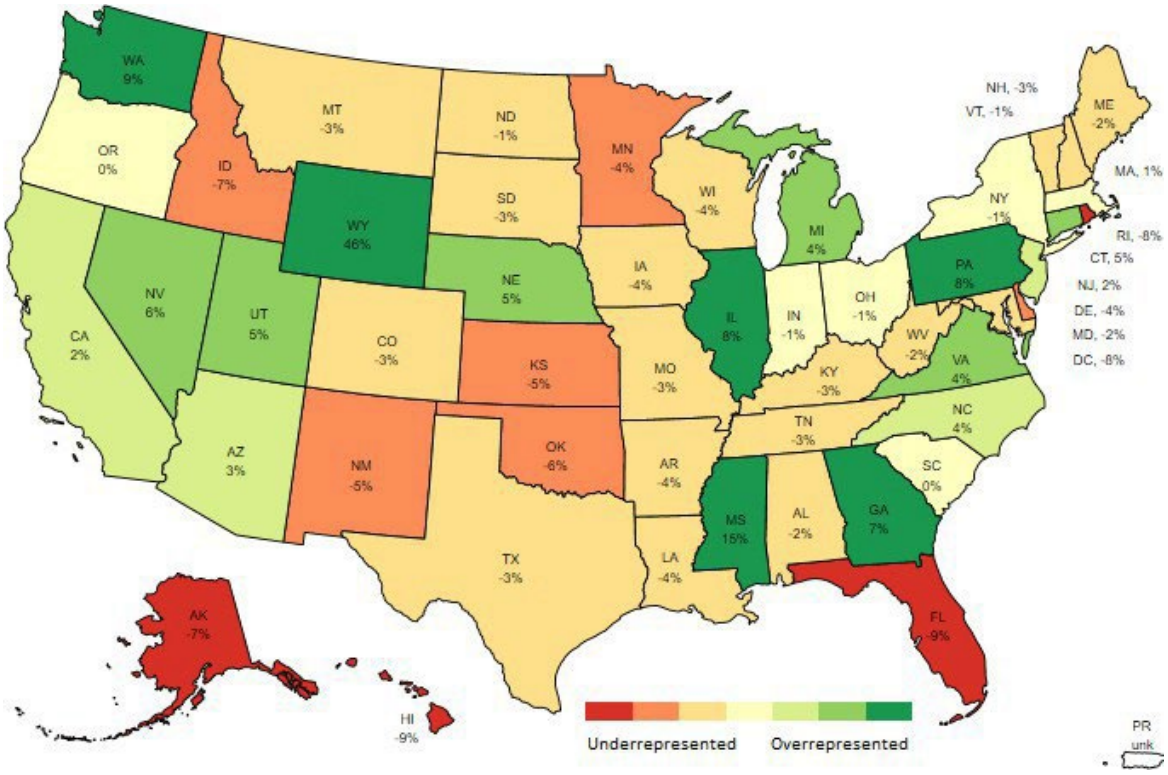
Source CNA-generated from DMDC and ACS data.
Note: States in red represent areas where military accessions are underrepresented relative to the civilian benchmark; states in green represent areas where they are overrepresented.

Figure 20. Navy Hispanic officer accessions minus civilian benchmark by state, 2019



Source: CNA-generated from DMDC and ACS data.
Note: States in red represent areas where military accessions are underrepresented relative to the civilian benchmark; states in green represent areas where they are overrepresented.

Figure 21. Marine Corps Hispanic officer accessions minus civilian benchmark by state, 2019



Source: CNA-generated from DMDC and ACS data.
Note: States in red represent areas where military accessions are underrepresented relative to the civilian benchmark; states in green represent areas where they are overrepresented.

Appendix D: Characteristics of Hispanic and non-Hispanic Servicemembers

In this appendix, we examine how the characteristics used in our promotion regression models vary by ethnicity. Table 13 and Table 14 show Service-level characteristics for enlisted servicemembers and officers, respectively, at the earliest point in our regression analyses—from E-3 to E-4 for enlisted, and from O-2 to O-3 for officers.

These tables indicate that the average Hispanic servicemember differs from the average non-Hispanic servicemember in meaningful ways. For example, Hispanic enlisted servicemembers are between 2.8 and 4.1 percentage points more likely than non-Hispanic servicemembers to be female, depending on their service. This gap is even greater for officers: Hispanic officers are between 3.3 and 5.1 percentage points more likely than non-Hispanic officers to be female. Since women are promoted and retained at lower rates than men, this might disproportionately affect Hispanic servicemembers (see Table 15 to Table 24).

The vast majority of enlisted Hispanic servicemembers list their racial identity as "White"—more frequently than non-Hispanic enlisted servicemembers. However, Hispanic servicemembers are far from a racial monolith; a notable minority of Hispanic enlisted servicemembers list their race as "Black," and members of each racial group claim Hispanic ethnicity. Hispanic officers across all four Services are substantially more likely than Hispanic enlisted servicemembers to not indicate a singular racial identity; the reason for this is not immediately clear. However, as with enlisted servicemembers, a small but notable proportion of Hispanic officers list their race as "Black," and all race options are represented among Hispanic officers.

Educational attainment also varies by ethnicity. Across all Services, Hispanic enlisted servicemembers are at least as likely as non-Hispanic servicemembers to have earned at least a high school diploma prior to accession. However, although Hispanic Soldiers are more likely than non-Hispanic Soldiers to have more than a high school diploma, the reverse is true for Sailors, Airmen, and Marines.

A lower percentage of Hispanic servicemembers than non-Hispanic servicemembers were citizens by birth, and a higher percentage were not yet citizens at accession. This may limit their ability to advance to certain paygrades or to hold certain occupations because of citizenship requirements for security clearances. This may also be reflected in occupational

patterns. In addition, we see the pattern documented in the literature and SME discussions that Hispanic servicemembers are less likely to enter the more tactical occupations and more likely to enter supporting establishment occupations.

Table 13. Enlisted characteristics for Hispanic vs. non-Hispanic servicemembers

E-3 to E-4	Army		Navy		USAF		USMC	
	Non-Hispanic	Hispanic	Non-Hispanic	Hispanic	Non-Hispanic	Hispanic	Non-Hispanic	Hispanic
Female	14.8%	17.6%	20.1%	24.2%	21.1%	24.6%	7.1%	10.6%
Race								
American Indian	1.1%	0.4%	3.6%	5.0%	0.7%	1.6%	1.2%	0.7%
Asian	4.6%	0.6%	5.5%	2.4%	3.9%	2.3%	3.3%	0.5%
Black	21.8%	4.1%	21.3%	9.6%	18.2%	6.6%	11.8%	3.0%
Pacific Islander	0.8%	0.4%	1.1%	1.4%	1.0%	1.6%	1.0%	0.5%
White	71.7%	93.6%	62.5%	71.0%	74.5%	85.1%	82.4%	93.0%
Other/Unknown	0.1%	1.0%	6.0%	10.6%	1.7%	2.7%	0.3%	2.2%
Education level at accession								
Less than high school	0.5%	0.3%	0.9%	0.9%	0.1%	0.0%	0.1%	0.1%
High school diploma	92.8%	92.8%	90.5%	91.5%	96.9%	97.7%	97.5%	98.2%
More than high school	5.8%	6.2%	8.6%	7.6%	3.0%	2.3%	2.3%	1.7%
Highest AFQT category								
AFQT 1-3A	65.8%	52.2%	77.9%	72.9%	87.4%	84.5%	74.0%	64.1%
AFQT 3B-5	34.2%	47.8%	22.1%	27.1%	12.6%	15.5%	26.0%	35.9%
Citizenship status at accession								
Citizen by birth	96.2%	91.9%	93.3%	88.4%	96.4%	91.5%	96.7%	89.0%

E-3 to E-4	Army		Navy		USAF		USMC	
	Non-Hispanic	Hispanic	Non-Hispanic	Hispanic	Non-Hispanic	Hispanic	Non-Hispanic	Hispanic
Naturalized citizen	1.6%	3.8%	2.7%	4.6%	2.0%	4.8%	1.3%	3.8%
Non-citizen	2.2%	4.3%	4.0%	7.1%	1.6%	3.8%	2.0%	7.2%
Last marital status in E-3								
Never married	72.9%	68.6%	72.9%	68.6%	67.3%	64.6%	71.2%	69.9%
Married	25.7%	30.1%	25.7%	30.1%	31.1%	33.6%	27.9%	29.3%
Formerly married	1.3%	1.3%	1.3%	1.3%	1.6%	1.8%	0.9%	0.8%
Average number of children	0.31	0.36	0.15	0.17	0.14	0.15	0.10	0.12
Military occupations (enlisted)								
Infantry, gun crews, and seamanship specialists	31.1%	28.7%	23.8%	23.1%	6.8%	5.4%	33.2%	26.0%
Electronic equipment repairers	6.2%	5.8%	14.2%	12.6%	10.0%	8.7%	7.0%	6.8%
Communications and intelligence specialists	12.8%	10.6%	7.6%	6.7%	9.7%	8.6%	9.3%	8.1%
Health care specialists	7.8%	8.5%	9.3%	11.3%	7.4%	9.4%	0.0%	0.0%
Other technical and allied specialists	3.1%	3.1%	1.0%	0.6%	4.2%	3.4%	2.6%	2.0%
Functional support and administration	10.4%	13.3%	6.8%	7.5%	14.2%	15.0%	12.5%	19.8%
Electrical/mechanical equipment repairers	13.6%	15.1%	35.7%	36.8%	26.9%	25.8%	18.8%	18.0%
Crafts workers	2.7%	2.6%	4.6%	4.3%	4.3%	4.0%	3.7%	4.0%
Service and supply handlers	13.7%	13.7%	8.2%	8.3%	14.2%	17.7%	13.1%	16.0%

E-3 to E-4	Army		Navy		USAF		USMC	
	Non-Hispanic	Hispanic	Non-Hispanic	Hispanic	Non-Hispanic	Hispanic	Non-Hispanic	Hispanic
Non-occupational	3.1%	2.6%	36.8%	38.0%	61.4%	61.3%	70.2%	69.8%

Source: CNA-generated from DMDC data.

Table 14. Officer characteristics for Hispanic vs. non-Hispanic servicemembers

O-2 to O-3	Army		Navy		USAF		USMC	
	Non-Hispanic	Hispanic	Non-Hispanic	Hispanic	Non-Hispanic	Hispanic	Non-Hispanic	Hispanic
Female	19.8%	24.9%	21.0%	26.2%	23.6%	27.9%	8.7%	12.0%
Race								
American Indian	0.5%	0.5%	1.0%	3.1%	0.6%	1.5%	0.9%	0.6%
Asian	6.8%	0.6%	5.5%	2.0%	5.8%	2.9%	3.9%	0.8%
Black	10.2%	4.1%	6.8%	4.1%	6.0%	3.8%	4.5%	2.9%
Pacific Islander	0.6%	0.1%	0.5%	0.9%	0.6%	0.8%	0.5%	0.6%
White	80.5%	46.5%	81.2%	70.2%	82.5%	67.5%	85.0%	86.8%
Other/ Unknown	1.4%	48.1%	5.0%	19.8%	4.6%	23.5%	5.3%	8.2%
Citizenship at accession								
Citizen by birth	98.8%	97.6%	95.9%	90.5%	96.0%	87.5%	98.3%	94.0%
Naturalized citizen	0.7%	1.6%	2.8%	5.6%	3.5%	9.6%	1.1%	3.6%
Non-citizen	0.5%	0.8%	1.3%	4.0%	0.5%	2.9%	0.6%	2.4%

O-2 to O-3	Army		Navy		USAF		USMC	
	Non-Hispanic	Hispanic	Non-Hispanic	Hispanic	Non-Hispanic	Hispanic	Non-Hispanic	Hispanic
Last marital status in O-2								
Never married	72.9%	68.6%	58.8%	55.8%	47.6%	41.3%	52.0%	49.0%
Married	25.7%	30.1%	41.2%	44.2%	49.7%	54.2%	46.1%	48.4%
Formerly married	1.3%	1.3%	0.0%	0.0%	2.6%	4.5%	1.9%	2.6%
Average number of children	0.35	0.48	0.35	0.45	0.34	0.49	0.26	0.39
E-to-O	17.9%	22.6%	19.8%	29.4%	14.7%	29.6%	12.9%	22.7%
Military occupations (enlisted)								
Infantry, gun crews, and seamanship specialists	2.2%	2.2%	10.6%	14.5%	4.7%	6.6%	2.5%	3.0%
Electronic equipment repairers	0.6%	0.8%	3.0%	4.4%	1.7%	2.9%	0.9%	2.8%
Communications and intelligence specialists	1.7%	2.1%	2.0%	2.4%	2.3%	3.9%	1.2%	1.9%
Health care specialists	2.3%	3.6%	1.5%	3.2%	1.5%	5.0%	0.0%	0.0%
Other technical and allied specialists	0.5%	0.9%	0.7%	0.7%	0.6%	1.3%	0.4%	0.7%
Functional support and administration	1.6%	3.5%	1.6%	3.2%	1.9%	5.1%	1.7%	4.7%
Electrical/mechanical equipment repairers	0.6%	1.2%	5.2%	8.2%	2.1%	3.8%	1.3%	2.5%
Crafts workers	0.1%	0.3%	0.3%	0.7%	0.2%	0.6%	0.2%	0.2%
Service and supply handlers	0.8%	1.3%	0.7%	0.9%	0.8%	1.9%	0.5%	0.9%

O-2 to O-3	Army		Navy		USAF		USMC	
	Non-Hispanic	Hispanic	Non-Hispanic	Hispanic	Non-Hispanic	Hispanic	Non-Hispanic	Hispanic
Non-occupational	8.5%	8.3%	3.1%	5.8%	7.8%	17.0%	10.2%	18.5%
Military occupations (officer)								
General officers and executives	1.1%	1.5%	0.0%	0.0%	7.1%	6.3%	1.4%	2.0%
Tactical operations officers	46.5%	42.6%	55.4%	51.9%	40.3%	36.4%	51.1%	41.8%
Intelligence officers	5.9%	6.3%	5.3%	4.4%	9.7%	11.9%	8.4%	6.0%
Engineering and maintenance officers	22.4%	24.9%	6.3%	8.6%	16.2%	17.0%	8.5%	11.3%
Scientists and professionals	1.9%	0.9%	4.5%	3.7%	6.6%	6.8%	3.0%	2.6%
Health care officers	11.2%	9.4%	9.0%	11.2%	9.8%	10.8%	0.0%	0.0%
Administrators	6.7%	9.0%	3.2%	4.2%	6.5%	8.9%	7.2%	11.7%
Supply, procurement, and allied officers	10.2%	12.0%	5.1%	5.7%	8.0%	9.5%	15.1%	19.9%
Non-occupational	0.5%	0.5%	72.0%	68.3%	35.9%	25.3%	91.7%	91.0%

Source: CNA-generated from DMDC data.

Appendix E: Full Retention and Promotion Model Results

In this appendix, we include the full regression results from our promotion models and our Cox proportional hazard models. There are separate promotion model tables for officers and enlisted and for each Service (Table 15 to Table 22). The tables for Cox proportional hazard models consolidate all of the Services into one table, but there are separate tables for enlisted and officers (Table 23 and Table 24).

Table 15. Army enlisted promotion regressions

	As E-2	As E-3	As E-4	As E-5	As E-6	As E-7
Ethnicity and Gender						
Hispanic	0.1962 *** (0.0013)	0.0415 *** (0.0019)	0.0319 *** (0.0031)	0.0292 *** (0.0054)	0.0182 (0.0113)	-0.0207 (0.0307)
Eth. Unknown	-0.2647 *** (0.0451)	-0.1261 † (0.0721)	-0.2719 * (0.1149)	-0.2267 (0.2134)	-0.1166 (0.3175)	-
Female	-0.0677 *** (0.0012)	-0.0420 *** (0.0018)	-0.0342 *** (0.0030)	-0.0103 † (0.0054)	0.0155 (0.0112)	0.0216 (0.0297)
Hisp. x Fem.	0.0112 *** (0.0028)	0.0295 *** (0.0042)	0.0111 (0.0069)	0.0050 (0.0124)	0.0507 * (0.0251)	0.0213 (0.0667)
Eth. Unknown x Fem.	-0.0318 (0.0963)	-0.2734 † (0.1625)	-0.2845 (0.3035)	0.1389 (0.5254)	-	-
Race						
AI/AN	-0.162 *** (0.0040)	-0.0252 *** (0.0058)	-0.0386 *** (0.0100)	-0.0427 * (0.0182)	-0.0150 (0.0412)	-0.0297 (0.0977)
Asian	0.0208 *** (0.0022)	0.0324 *** (0.0030)	0.0470 *** (0.0048)	0.0656 *** (0.0084)	0.0367 * (0.0160)	0.0354 (0.0395)
Black	-0.0099 *** (0.0011)	0.0056 *** (0.0016)	0.0684 *** (0.0027)	0.0252 *** (0.0046)	0.0195 * (0.0095)	0.0264 (0.0256)
NH/PI	0.0028 *** (0.0047)	0.0673 *** (0.0034)	0.0570 *** (0.0094)	0.0437 ** (0.0153)	0.1055 ** (0.0352)	0.1321 (0.1187)
Other/Unknown	-0.0297 *** (0.0084)	-0.1679 *** (0.0114)	-0.2484 *** (0.0193)	-0.2469 *** (0.0374)	-0.0497 (0.0878)	-0.0406) (0.1468)
Education						
Less than HS	-0.0295 *** (0.0058)	-0.0605 *** (0.0082)	-0.0122 (0.0140)	0.0098 (0.0232)	-0.0160 (0.0474)	-0.1755 (0.1080)
Some college	-0.0213 ***	0.0043	-0.0116 *	-0.0364 ***	-0.0375 †	-0.0286

	As E-2	As E-3	As E-4	As E-5	As E-6	As E-7
	(0.0022)	(0.0033)	(0.0051)	(0.0087)	(0.0196)	(0.0542)
Sub-BA award	-0.0164 ***	0.0660 ***	0.0071	0.0151	-0.0095	-0.1548 **
	(0.0024)	(0.0037)	(0.0055)	(0.0096)	(0.0201)	(0.0547)
BA	0.0542 ***	-0.0485 ***	-0.0167 ***	-0.0070	-0.0095	-0.0391
	(0.0087)	(0.0030)	(0.0036)	(0.0064)	(0.0146)	(0.0414)
Post-BA	0.0611 †	-0.1238 ***	-0.0712 ***	0.0017	0.1266 **	0.1102
	(0.0364)	(0.0076)	(0.0118)	(0.0215)	(0.0442)	(0.0930)
Unknown	-0.0515 ***	-0.0152 *	-0.0396 ***	-0.0184	-0.0564 *	-0.0241
	(0.0054)	(0.0077)	(0.0112)	(0.0164)	(0.0246)	(0.0523)
Highest AFQT						
2	-0.0125 ***	-0.0537 ***	-0.0096 **	0.0209 **	-0.0139	-0.0095
	(0.0019)	(0.0024)	(0.0035)	(0.0060)	(0.0126)	(0.0342)
3A	-0.0267 ***	-0.0915 ***	-0.0166 ***	0.0120 †	-0.0398 **	-0.0067
	(0.0019)	(0.0025)	(0.0038)	(0.0066)	(0.0136)	(0.0362)
3B	-0.0330 ***	-0.1283 ***	-0.0148 ***	0.0099	-0.0360 *	-0.0294
	(0.0020)	(0.0026)	(0.0040)	(0.0068)	(0.0143)	(0.0387)
4A	-0.0170 ***	-0.1434 ***	0.0053	0.0196	0.0152	0.0635
	(0.0035)	(0.0048)	(0.0078)	(0.0127)	(0.0272)	(0.0723)
4B	-0.1169 ***	-0.2805 ***	-0.1408 **	-0.0476	-0.1376	-0.0116
	(0.0244)	(0.0279)	(0.0483)	(0.0955)	(0.1697)	(0.3025)
4C	-0.0024	-0.3614 ***	-0.1309 *	-0.1340	0.1349	-0.1216
	(0.0403)	(0.0315)	(0.0564)	(0.1018)	(0.2241)	(0.4083)
5	-0.0854	-0.1629 *	-0.0131	0.0099	-0.7525 †	-
	(0.0732)	(0.0829)	(0.1350)	(0.2131)	(0.4480)	
Unknown	0.0422 ***	-0.0431 ***	0.0305 *	0.0667 **	0.0247	0.0149
	(0.0079)	(0.0110)	(0.0155)	(0.0227)	(0.0369)	(0.0806)
Citizenship						
Naturalized	0.0213 ***	0.0177 ***	0.0297 ***	0.0258 *	-0.0022	-0.1130 †
	(0.0029)	(0.0038)	(0.0061)	(0.0108)	(0.0231)	(0.0651)
US National	-0.0647 ***	0.0135	-0.0219	0.0044	0.0418	0.0463
	(0.0107)	(0.0135)	(0.0195)	(0.0292)	(0.0420)	(0.0764)
Non-Citizen	0.0439 ***	0.0288 ***	0.0027	0.0197	0.0622 †	0.1616
	(0.0027)	(0.0037)	(0.0063)	(0.0142)	(0.0372)	(0.1040)
Other/Unknown	0.0576 ***	0.0220 ***	0.0389 ***	0.0492 ***	0.0557 ***	0.0009
	(0.0026)	(0.0034)	(0.0049)	(0.0073)	(0.0136)	(0.0355)
Dependents						
Number	0.0050 ***	0.0092 ***	0.0125 ***	0.0131 ***	-0.0012	-0.0056
	(0.0011)	(0.0011)	(0.0014)	(0.0020)	(0.0038)	(0.0099)
None	0.0244 ***	-0.0003	-0.0335 ***	-0.0332 ***	-0.0378 **	-0.0435
	(0.0019)	(0.0022)	(0.0031)	(0.0053)	(0.0113)	(0.0319)
Unknown	-0.1664 ***	-0.1620 ***	-0.2303 ***	-04056 ***	-0.0608	-0.5158
	(0.0038)	(0.0082)	(0.0218)	(0.0570)	(0.2270)	(0.4140)

	As E-2	As E-3	As E-4	As E-5	As E-6	As E-7
5+	-0.0218 * (0.0105)	-0.0427 *** (0.0092)	-0.0662 *** (0.0098)	-0.0589 *** (0.0123)	-0.0760 *** (0.0208)	0.0178 (0.0506)
Marital Status						
Married	-0.0107 *** (0.0010)	0.0956 *** (0.0012)	0.1297 *** (0.0022)	0.1247 *** (0.0049)	0.0476 *** (0.0132)	-0.0675 † (0.0391)
Formerly married	-0.0186 *** (0.0034)	0.0694 *** (0.0031)	0.1008 *** (0.0039)	0.0598 *** (0.0064)	-0.0499 ** (0.0152)	-0.1306 ** (0.0435)
Unknown	-0.0298 (0.0317)	0.0453 (0.0319)	0.0496 (0.0475)	0.0366 (0.1196)	-0.0824 (0.3165)	-
YOS at rank	-0.0248 *** (0.0010)	-0.1481 *** (0.0023)	-0.0534 *** (0.0023)	-0.0393 *** (0.0035)	0.1420 *** (0.0061)	0.1620 *** (0.0132)
YOS^2 at rank	0.0039 *** (0.0004)	0.0098 (0.0007)	0.0027 *** (0.0003)	0.0018 *** (0.0002)	-0.0084 *** (0.0003)	-0.0101 *** (0.0005)
Ever occupation code						
Infantry, Gun Crews, and Seamanship Specialists	0.0043 † (0.0025)	-0.0034 (0.0026)	0.0897 *** (0.0033)	0.0046 (0.0048)	-0.0892 *** (0.0092)	0.0044 (0.0242)
Electronic Equipment Repairers	0.0354 *** (0.0029)	-0.0105 ** (0.0032)	0.0535 *** (0.0045)	0.0985 *** (0.0069)	0.0087 (0.0134)	-0.0236 (0.0341)
Communications and Intelligence Specialists	0.0198 *** (0.0026)	0.0544 *** (0.0028)	0.1076 *** (0.0034)	0.0181 *** (0.0048)	-0.0394 *** (0.0091)	-0.0234 (0.0224)
Health Care Specialists	0.0302 *** (0.0027)	-0.0240 *** (0.0030)	0.0937 *** (0.0042)	0.1182 *** (0.0068))	-0.0505 *** (0.0136)	0.0064 (0.0374)
Other Technical and Allied Specialists	0.0161 *** (0.0030)	0.0577 *** (0.0035)	0.1217 *** (0.0048)	0.0788 *** (0.0074)	-0.0605 *** (0.0149)	0.0141 (0.0386)
Functional Support and Administration	0.0341 *** (0.0027)	0.0178 *** (0.0029)	0.1125 *** (0.0037)	0.1621 *** (0.0049)	-0.0038 (0.0091)	-0.0636 ** (0.0242)
Electrical/ Mechanical Equipment Repairers	0.0276 *** (0.0026)	-0.0160 *** (0.0028)	0.0531 *** (0.0038)	0.1289 *** (0.0060)	0.0286 * (0.0116)	-0.0904 ** (0.0305)
Craftsworkers	0.0152 *** (0.0033)	-0.0628 *** (0.0039)	-0.0019 (0.0063)	0.0629 *** (0.0112)	-0.0361 (0.0231)	-0.0676 (0.0594)
Service and Supply Handlers	0.0040 (0.0027)	-0.0192 *** (0.0028)	0.0237 *** (0.0037)	0.0482 *** (0.0058)	-0.0378 ** (0.0118)	0.0491 (0.0316)
Non-Occupational	-0.0017 (0.0023)	0.1485 *** (0.0030)	0.1621 *** (0.0044)	0.0385 *** (0.0067)	-0.0410 ** (0.0124)	-0.0459 (0.0323)
N	856,146	800,118	307,774	99,643	21,117	2,387
Adj. R^2	0.0193	0.0620	0.0530	0.0577	0.1501	0.3583

Source: CNA analysis of DMDC data.

† Statistically significant at the 10% level

* Statistically significant at the 5% level
** Statistically significant at the 1% level
*** Statistically significant at the 0.1% level

Table 16. Army officer promotion regressions

	As O-2	As O-3	As O-4
Ethnicity and Gender			
Hispanic	-0.0073 (0.0067)	0.0025 (0.0099)	0.0105 (0.0185)
Ethnicity Unknown	0.0079 (0.0099)	-0.2109 *** (0.0106)	-0.1804 *** (0.0185)
Female	-0.0180 *** (0.0036)	-0.0332 *** (0.0049)	0.0396 *** (0.0094)
Hispanic x Female	-0.0297 ** (0.0111)	0.0212 (0.0176)	0.0396 (0.0351)
Ethnicity Unknown x Female	-0.1368 *** (0.0175)	-0.0680 *** (0.0191)	-0.0116 (0.0342)
Race			
AI/AN	0.0425 * (0.0170)	0.0002 (0.0252)	-0.0808 (0.0505)
Asian	0.0019 (0.0053)	0.0389 *** (0.0073)	0.0058 (0.0138)
Black	0.0063 (0.0044)	0.0362 *** (0.0064)	-0.0105 (0.0114)
NH/PI	0.0066 (0.0183)	0.0511 † (0.0291)	0.0841 † (0.0509)
Unknown	0.0116 † (0.0070)	0.0145 (0.0092)	-0.0314 * (0.0157)
Education			
Less than HS	0.0466 (0.0953)	-0.2088 (0.1316)	-0.0797 (0.2862)
Some college, no award	-0.1525 *** (0.0074)	0.0196 † (0.0118)	-0.1984 *** (0.0328)
Sub-BA award	-0.0424 * (0.0198)	0.0011 (0.0283)	-0.0430 (0.0466)
BA	0.0113 * (0.0052)	0.0275 *** (0.0077)	-0.0158 (0.0198)
Post-BA	0.0224 * (0.0092)	-0.0150 (0.0104)	-0.0871 *** (0.0223)
Unknown	-0.0165 * (0.0079)	0.0102 (0.0118)	-0.0018 (0.0373)
Citizenship			

	As O-2	As O-3	As O-4
Naturalized	-0.0443 **	-0.0309	0.0003
	(0.0150)	(0.0228)	(0.0406)
US National	0.2694 ***	0.1257 †	0.0842
	(0.0546)	(0.0648)	(0.0802)
Non-Citizen	-0.1495 ***	-0.0839 **	0.0711
	(0.0192)	(0.0257)	(0.0448)
Other/ Unknown	0.0633 ***	0.0325 †	-0.0644
	(0.0130)	(0.0168)	(0.0247)
Dependents			
Number	0.0119 ***	0.0478 ***	0.0149 ***
	(0.0033)	(0.0029)	(0.0041)
None	0.0124 *	-0.0455 ***	-0.0172
	(0.0060)	(0.0065)	(0.0120)
Unknown	-0.0008	-0.3821	0.0758
	(0.0603)	(0.2516)	(0.2040)
5+	-0.0467 †	-0.1287 ***	-0.0467 *
	(0.0246)	(0.0187)	(0.0231)
Marital Status			
Married	0.0248 ***	0.1483 ***	0.0854 ***
	(0.0027)	(0.0044)	(0.0124)
Formerly married	-0.0319 ***	0.0889 ***	0.0357 *
	(0.0077)	(0.0087)	(0.0174)
Unknown	0.0340	-0.1212	-0.2316
	(0.0650)	(0.1454)	(0.2867)
YOS at rank	-0.0071 **	-0.0382 ***	0.0414 ***
	(0.0025)	(0.0026)	(0.0035)
YOS^2 at rank	-0.0003 †	-0.0003 †	-0.0033 ***
	(0.0002)	(0.0002)	(0.0002)
E-to-O	-0.1442 ***	-0.0011	-0.3727 ***
	(0.0144)	(0.0201)	(0.0378)
Ever occupation code			
General Officers and Executives	-0.0352 **	0.0439 ***	0.0224
	(0.0119)	(0.0105)	(0.0137)
Tactical Operations Officers	0.0206 ***	0.1238 ***	0.0313 **
	(0.0059)	(0.0056)	(0.0099)
Intelligence Officers	0.0064	0.1328 ***	0.0087
	(0.0077)	(0.0072)	(0.0125)
Engineering and Maintenance Officers	-0.0007	0.0831 ***	0.0167 †
	(0.0059)	(0.0055)	(0.0099)
Scientists and Professionals	0.1572 ***	0.1768 ***	0.0232 *
	(0.0126)	(0.0071)	(0.0108)
Health Care Officers	0.0040	0.3247 ***	-0.1087 ***

	As O-2	As O-3	As O-4
	(0.0071)	(0.0069)	(0.0123)
Administrators	0.0090 (0.0073)	0.1650 *** (0.0076)	-0.0035 (0.0129)
Supply, Procurement, and Allied Officers	-0.0205 ** (0.0066)	0.1361 *** (0.0067)	-0.0056 (0.0119)
Non-Occupational	-0.0047 * (0.0173)	0.2419 *** (0.0122)	0.0427 ** (0.0152)
N	85,034	63,901	15,553
Adj. R^2	0.1181	0.2143	0.3501

Source: CNA analysis of DMDC data.
† Statistically significant at the 10% level
* Statistically significant at the 5% level
** Statistically significant at the 1% level
*** Statistically significant at the 0.1% level
Note: This table does not show coefficients or standard errors for year of accession indicators, initial home of record state indicators, or indicators for whether an individual ever held specific enlisted occupation codes; these are available upon request.

Table 17. Air Force enlisted promotion regressions

	As E-2	As E-3	As E-4	As E-5	As E-6	As E-7
Ethnicity and Gender						
Hispanic	0.0122 *** (0.0017)	0.0073 * (0.0028)	0.0063 (0.0044)	0.0004 (0.0082)	0.0116 (0.0214)	0.0946 (0.0716)
Ethnicity Unknown	-0.1416 *** (0.0385)	-0.2448 *** (0.0564)	-0.1035 (0.1093)	-0.1438 (0.2936)	-	-
Female	-0.0178 *** (0.0013)	-0.0325 *** (0.0022)	-0.0297 *** (0.0033)	-0.0040 (0.0058)	0.0206 (0.0133)	-0.0258 (0.0406)
Hispanic x Female	0.0098 ** (0.0032)	0.0117 * (0.0055)	0.0217 * (0.0086)	0.0262 † (0.0156)	-0.0151 (0.0401)	0.0058 (0.1291)
Ethnicity Unknown x Female	-0.1006 (0.0858)	0.1301 (0.0948)	0.2161 (0.1677)	-0.5359 (0.5075)	-	-
Race						
AI/AN	-0.0133 * (0.0053)	-0.0071 (0.0089)	-0.0223 (0.0138)	0.0173 (0.0264)	-0.0448 (0.0631)	-0.4091 (0.2953)
Asian	0.0236 *** (0.0027)	0.0183 *** (0.0045)	0.0510 *** (0.0068)	0.0398 ** (0.0118)	0.0054 (0.0269)	0.0506 (0.0912)
Black	-0.0209 *** (0.0014)	0.0180 *** (0.0023)	0.0470 *** (0.0036)	0.0455 *** (00062)	0.0784 *** (0.0143)	0.1174 * (0.0462)
NH/PI	0.0257 *** (0.0048)	0.0362 *** (0.0078)	0.0565 *** (0.0114)	0.0629 ** (0.0197)	0.0520 (0.0580)	0.2458 (0.2574)
Unknown	0.0031 (0.0035)	0.0088 (0.0063)	0.0253 * (0.0104)	0.0195 (0.0198)	-0.0394 (0.0505)	0.1912 (0.1948)

	As E-2	As E-3	As E-4	As E-5	As E-6	As E-7
Education						
Less than HS	0.0298 (0.0217)	0.0152 (0.0348)	-0.0421 (0.0472)	0.0276 (0.0705)	0.0523 (0.1472)	-
Some college, no award	-	-	-	-	-	-
Sub-BA award	0.0424 *** (0.0045)	-0.0290 *** (0.0067)	0.0252 ** (0.0090)	-0.0057 (0.0145)	-0.0488 (0.0399)	-0.0826 (0.1484)
BA	0.0645 *** (0.0038)	-0.0418 *** (0.0058)	0.0260 ** (0.0077)	0.0189 (0.0134)	-0.0948 * (0.0366)	0.0483 (0.2178)
Post-BA	0.0467 * (0.0232)	0.0374 (0.0372)	0.0983 * (0.0475)	0.0532 (0.0589)	0.1711 (0.1064)	-0.1271 (0.2462)
Unknown	-0.0024 (0.0023)	0.0076 † (0.0039)	0.0250 *** (0.0060)	0.0289 ** (0.0095)	0.0186 (0.0164)	-0.0500 (0.0495)
Highest AFQT						
2	-0.0283 *** (0.0018)	-0.0276 *** (0.0029)	0.0067 (0.0042)	0.0579 *** (0.0074)	0.0501 ** (0.0186)	-0.0267 (0.0656)
3A	-0.0437 *** (0.0020)	-0.0657 *** (0.0032)	0.0102 * (0.0047)	0.0853 *** (0.0084)	0.0810 *** (0.0209)	0.0381 (0.0709)
3B	-0.0563 *** (0.0023)	-0.0869 *** (0.0038)	-0.0026 (0.0056)	0.1104 *** (0.0096)	0.0965 *** (0.0243)	0.0204 (0.0863)
4A	-0.0692 (0.0436)	-0.1111 (0.0716)	-0.0250 (0.1066)	-0.0815 (0.1383)	-0.2717 (0.2934)	-
4B	-0.0185 (0.0398)	0.0089 (0.0604)	-0.0405 (0.0901)	-0.2504 (0.2397)	-	-
4C	0.0706 (0.3255)	0.4307 (0.4635)	-0.5725 (0.4757)	-	-	-
5	0.1751 ** (0.0522)	0.2735 (0.2073)	0.3061 ** (0.1095)	0.4460 (0.4140)	0.6386 (0.4139)	-
Unknown	0.0310 ** (0.0123)	-0.0225 (0.0189)	0.2700 *** (0.0162)	0.0255 (0.0414)	-0.0865 (0.0951)	0.1227 (0.3093)
Citizenship						
Naturalized	0.0198 *** (0.0032)	0.0021 (0.0054)	0.0284 ** (0.0084)	0.0225 (0.0154)	0.0126 (0.0421)	0.0594 (0.1432)
US National	-0.0044 (0.0215)	0.1170 * (0.0510)	0.2707 † (0.1436)	0.0645 (0.2935)	-	-
Non-Citizen	0.0480 *** (0.0037)	0.0470 *** (0.0059)	0.0986 *** (0.0083)	0.0265 * (0.0123)	0.0327 (0.0274)	-0.0091 (0.0804)
Other/Unknown	-0.0195 * (0.0078)	-0.0247 * (0.0121)	0.0649 *** (0.0151)	0.0244 (0.0211)	0.0376 (0.0355)	-0.0224 (0.0972)
Dependents						
Number	0.0091 *** (0.0024)	0.0153 *** (0.0024)	0.0364 *** (0.0022)	-0.0018 (0.0028)	0.0006 (0.0061)	0.0050 (0.0183)

	As E-2	As E-3	As E-4	As E-5	As E-6	As E-7
None	0.0027 (0.0036)	-0.0145 *** (0.0040)	-0.0141 ** (0.0046)	-0.0259 *** (0.0072)	0.0055 (0.0169)	0.0051 (0.0538)
Unknown	-0.4255 *** (0.0083)	-0.2779 *** (0.0198)	-0.3644 *** (0.0325)	-0.6982 *** (0.0928)	-	-
5+	-0.0616 (0.0404)	-0.0573 † (0.0337)	-0.0985 *** (0.0180)	-0.0740 *** (0.0191)	-0.0415 (0.0379)	0.1527 (0.1400)
Marital Status						
Married	0.0220 *** (0.0011)	0.0929 *** (0.0018)	0.1562 *** (0.0030)	0.0725 *** (0.0074)	0.0283 (0.0233)	-0.0312 (0.0841)
Formerly married	-0.0014 (0.0037)	0.0585 *** (0.0035)	0.0916 *** (0.0045)	-0.0133 (0.0091)	-0.0716 ** (0.0265)	-0.0608 (0.0928)
Unknown	-0.0370 * (0.0162)	-0.2448 ** (0.0820)	-0.4504 (0.4758)	-	-	-
YOS at rank	0.1098 *** (0.0037)	-0.2509 *** (0.0057)	-0.0810 *** (0.0057)	0.0368 *** (0.0069)	0.0657 ** (0.0248)	0.5088 *** (0.1429)
YOS^2 at rank	-0.1184 *** (0.0032)	0.0172 *** (0.0013)	0.0026 *** (0.0006)	-0.0045 (0.0004)	-0.0068 *** (0.0009)	-0.0214 *** (0.0045)
Ever occupation code						
Infantry, Gun Crews, and Seamanship Specialists	0.1817 *** (0.0026)	0.0183 *** (0.0040)	0.0613 *** (0.0044)	-0.0165 * (0.0068)	0.0150 (0.0144)	0.0422 (0.0434)
Electronic Equipment Repairers	0.2349 *** (0.0025)	0.0439 *** (0.0044)	0.0989 *** (0.0046)	0.0049 (0.0067)	-0.0163 (0.0147)	-0.0368 (0.0417)
Communications and Intelligence Specialists	0.2325 *** (0.0025)	0.0727 *** (0.0044)	0.0921 *** (0.0046)	-0.0416 *** (0.0065)	-0.0849 *** (0.0143)	0.0160 (0.0456)
Health Care Specialists	0.2228 *** (0.0027)	0.0785 *** (0.0049)	0.1078 *** (0.0056)	-0.0004 (0.0086)	-0.0056 (0.0200)	0.1309 * (0.0664)
Other Technical and Allied Specialists	0.2153 *** (0.0031)	0.0238 *** (0.0054)	0.1062 *** (0.0064)	0.0001 (0.0095)	0.0292 (0.0206)	0.0579 (0.0607)
Functional Support and Administration	0.2176 *** (0.0024)	0.0915 *** (0.0043)	0.1229 *** (0.0043)	0.0161 ** (0.0060)	-0.0288 * (0.0124)	0.0027 (0.0380)
Electrical/ Mechanical Equipment Repairers	0.2191 *** (0.0023)	0.0689 *** (0.0042)	0.1132 *** (0.0043)	0.0017 (0.0062)	-0.0162 (0.0136)	-0.0107 (0.0412)
Craftsworkers	0.2159 *** (0.0031)	0.0725 *** (0.0054)	0.0988 *** (0.0066)	-0.0199 † (0.0103)	-0.0285 (0.0225)	-0.0176 (0.0554)
Service and Supply Handlers	0.1801 *** (0.0024)	0.0061 (0.0042)	0.0174 *** (0.0046)	-0.0394 *** (0.0073)	-0.0349 * (0.0168)	-0.0687 (0.0550)
Non-Occupational	0.0064 *** (0.0010)	-0.0111 *** (0.0017)	-0.0048 † (0.0025)	-0.0109 * (0.0043)	-0.0124 (0.0100)	-0.0468 (0.0309)

	As E-2	As E-3	As E-4	As E-5	As E-6	As E-7
N	483,110	359,569	169,510	43,402	7,993	860
Adj. R^2	0.0527	0.0775	0.0912	0.1022	0.3166	0.3403

Source: CNA analysis of DMDC data.
[†] Statistically significant at the 10% level
[*] Statistically significant at the 5% level
[**] Statistically significant at the 1% level
[***] Statistically significant at the 0.1% level
Note: This table does not show coefficients or standard errors for year of accession indicators or initial home of record state indicators; these are available upon request.

Table 18. Air Force officer promotion regressions

	As O-2	As O-3	As O-4
Ethnicity and Gender			
Hispanic	-0.0224 [**] (0.0073)	-0.0060 (0.0143)	-0.0052 (0.0255)
Ethnicity Unknown	-0.0792 [***] (0.0073)	-0.0598 [**] (0.0208)	-0.1525 [**] (0.0523)
Female	-0.0251 [***] (0.0034)	-0.0511 [***] (0.0056)	0.0093 (0.0101)
Hispanic x Female	0.0225 [†] (0.0134)	0.0152 (0.0269)	0.0451 (0.0538)
Ethnicity Unknown x Female	-0.0144 (0.0130)	-0.0255 (0.0336)	0.0206 (0.0761)
Race			
AI/AN	0.0195 (0.0163)	0.0190 (0.0275)	0.0225 (0.0525)
Asian	0.0019 (0.0059)	0.0309 [**] (0.0100)	0.0546 [**] (0.0177)
Black	0.0079 (0.0055)	0.0181 [†] (0.0095)	-0.0200 (0.0174)
NH/PI	0.0166 (0.0171)	-0.0065 (0.0297)	-0.0240 (0.0531)
Unknown	-0.0067 (0.0054)	0.0114 (0.0087)	-0.0745 [***] (0.0156)
Education			
Less than HS	-0.1200 [***] (0.0187)	-0.1166 [***] (0.0320)	-0.0253 (0.0423)
Some college, no award	-0.2710 [†] (0.1468)	-0.0644 (0.2550)	0.4481 (0.2948)
Sub-BA award	0.0550 [*] (0.0216)	-0.0048 (0.0375)	-0.0848 (0.0690)

	As O-2	As O-3	As O-4
BA	0.0136 †	0.0021	-0.0092
	(0.0075)	(0.0128)	(0.0195)
Post-BA	0.0814 ***	0.0952 ***	-0.0171
	(0.0107)	(0.0153)	(0.0228)
Unknown	-0.0010	0.0065	-0.0124
	(0.0077)	(0.0132)	(0.0200)
Citizenship			
Naturalized	-0.0067	-0.0270 *	-0.0296
	(0.0071)	(0.0112)	(0.0182)
US National	-0.0145	-0.0375	-0.1237
	(0.0491)	(0.0717)	(0.0890)
Non-Citizen	0.0869 ***	0.0293	0.0163
	(0.0184)	(0.0301)	(0.0498)
Other/ Unknown	0.0318 *	-0.0325	-0.0366
	(0.0136)	(0.0206)	(0.0278)
Dependents			
Number	0.0008	0.0225 ***	0.0307 ***
	(0.0035)	(0.0035)	(0.0047)
None	-0.0105	-0.0704 ***	-0.0032
	(0.0068)	(0.0083)	(0.0133)
Unknown	-0.0725 *	-0.0922	-0.7423 *
	(0.0316)	(0.0822)	(0.2967)
5+	-0.0169	-0.0624 **	-0.0704 **
	(0.0272)	(0.0232)	(0.0266)
Marital Status			
Married	0.0115 ***	0.1091 ***	0.0582 ***
	(0.0028)	(0.0059)	(0.0136)
Formerly married	-0.0087	0.0505 ***	0.0017
	(0.0081)	(0.0110)	(0.0205)
Unknown	0.0183	-	-
	(0.0782)		
YOS at rank	-0.0035	-0.0037	0.0250 ***
	(0.0025)	(0.0031)	(0.0044)
YOS^2 at rank	-0.0007 ***	-0.0014 ***	-0.0025 ***
	(0.0001)	(0.0002)	(0.0003)
E-to-O	-0.1513 ***	-0.0671 **	-0.2379 ***
	(0.0120)	(0.0204)	(0.0367)
Ever occupation code			
General Officers and Executives	-0.0744 ***	-0.0232 **	0.0453 ***
	(0.0059)	(0.0085)	(0.0121)
Tactical Operations Officers	0.0445 ***	0.2134 ***	-0.0416 **
	(0.0044)	(0.0088)	(0.0149)

	As O-2	As O-3	As O-4
Intelligence Officers	0.0117 * (0.0057)	0.1342 *** (0.0094)	0.0963 *** (0.0161)
Engineering and Maintenance Officers	-0.0041 (0.0052)	0.1260 *** (0.0082)	0.0542 *** (0.0134)
Scientists and Professionals	00124 † (0.0064)	0.1338 (0.0093)	0.0475 ** (0.0150)
Health Care Officers	0.0054 (0.0066)	0.2506 *** (0.0100)	-0.0159 (0.0172)
Administrators	-0.0389 *** (0.0065)	0.1023 *** (0.0109)	0.1226 *** (0.0175)
Supply, Procurement, and Allied Officers	-0.0165 ** (0.0062)	0.1094 *** (0.0097)	0.0763 *** (0.0156)
Non-Occupational	0.0479 *** (0.0036)	0.1912 *** (0.0064)	-0.1270 *** (0.0112)
N	54,458	42,477	13,936
Adj. R^2	0.1011	0.2045	0.3126

Source: CNA analysis of DMDC data.
† Statistically significant at the 10% level
* Statistically significant at the 5% level
** Statistically significant at the 1% level
*** Statistically significant at the 0.1% level
Note: This table does not show coefficients or standard errors for year of accession indicators, initial home of record state indicators, or indicators for whether an individual ever held specific enlisted occupation codes; these are available upon request.

Table 19. Navy enlisted promotion regressions

	As E-2	As E-3	As E-4	As E-5	As E-6	As E-7
Ethnicity and Gender						
Hispanic	0.0110 *** (0.0018)	0.0021 (0.0023)	0.0017 (0.0034)	0.0202 ** (0.0063)	0.0299 * (0.0132)	-0.0334 (0.0358)
Ethnicity Unknown	-0.0657 *** (0.0145)	0.0028 (0.0192)	-0.0076 (0.0257)	-0.0827 * (0.0362)	0.0214 (0.0665)	-0.1104 (0.1322)
Female	-0.0162 *** (0.0015)	-0.0512 *** (0.0020)	-0.0575 *** (0.0031)	-0.0164 ** (0.0060)	-0.0155 (0.0133)	-0.0012 (0.0358)
Hispanic x Female	0.0115 ** (0.0035)	0.0201 *** (0.0045)	0.0138 † (0.0072)	0.0185 (0.0140)	0.0403 (0.0299)	-0.0482 (0.0788)
Ethnicity Unknown x Female	-0.0051 (0.0298)	0.0162 (0.0398)	-0.0594 (0.0598)	0.1431 (0.1013)	-0.3159 (0.1956)	-0.0697 (0.4169)
Race						
AI/AN	-0.0084 ** (0.0029)	-0.0100 ** (0.0035)	-0.0128 * (0.0050)	-0.0022 (0.0088)	-0.0223 (0.0184)	-0.0220 (0.0503)
Asian	0.0211 ***	0.0333 ***	0.0559 ***	0.0345 ***	0.0289	-0.0192

	As E-2	As E-3	As E-4	As E-5	As E-6	As E-7
	(0.0029)	(0.0036)	(0.0054)	(0.0093)	(0.0190)	(0.0488)
Black	-0.0179 ***	0.0369 ***	0.0497 ***	0.0509 ***	0.0504 ***	0.0715 *
	(0.0015)	(0.0020)	(0.0032)	(0.0059)	(0.0117)	(0.0310)
NH/PI	0.0231 ***	0.0556 ***	0.0572 ***	0.0610 **	0.0720 †	0.0598
	(0.0052)	(0.0066)	(0.0096)	(0.0177)	(0.0396)	(0.1251)
Unknown	-0.0041 †	0.0012	0.0068	0.0138	0.0257	0.0390
	(0.0022)	(0.0028)	(0.0045)	(0.0091)	(0.0205)	(0.0526)
Education						
Less than HS	-0.0704 ***	-0.0292 ***	-0.0188 †	-0.0241	-0.0424	-0.0594
	(0.0057)	(0.0075)	(0.0108)	(0.0172)	(0.0278)	(0.0588)
Some college, no award	-0.0514 ***	-0.0193 ***	-0.0524 ***	-0.0424 **	-0.0411	-0.0648
	(0.0041)	(0.0052)	(0.0077)	(0.0140)	(0.0293)	(0.0827)
Sub-BA award	0.0199 ***	0.0249 ***	-0.0146 *	-0.0237 †	0.0252	0.1483
	(0.0038)	(0.0049)	(0.0070)	(0.0135)	(0.0329)	(0.0943)
BA	0.0225 ***	0.0378 ***	-0.0010	0.0027	-0.0175	-0.0506
	(0.0028)	(0.0036)	(0.0049)	(0.0090)	(0.0212)	(0.0647)
Post-BA	0.0080	0.0076	-0.0266	0.1356 **	0.0676	-
	(0.0124)	(0.0169)	(0.0237)	(0.0393)	(0.0773)	
Unknown	-0.0893 ***	-0.0014	-0.0228	-0.0633 *	0.0091	-0.1482
	(0.0100)	(0.0138)	(0.0197)	(0.0319)	(0.0429)	(0.1433)
Highest AFQT						
2	-0.0331 ***	-0.0299 ***	-0.0143 ***	0.1203 ***	0.1172 ***	0.0813 *
	(0.0022)	(0.0025)	(0.0034)	(0.0059)	(0.0140)	(0.0382)
3A	-0.0657 ***	-0.0564 ***	-0.0137 **	0.2102 ***	0.1694 ***	0.1073 *
	(0.0023)	(0.0029)	(0.040)	(0.0072)	(0.0158)	(0.0416)
3B	-0.1175 ***	-0.0820 ***	0.0205 ***	0.2560 ***	0.1775 ***	0.1406 **
	(0.0025)	(0.0032)	(0.0045)	(0.0081)	(0.0170)	(0.0450)
4A	-0.0978 **	-0.1348 **	0.0486	0.2643 **	0.2507 †	-0.0888
	(0.0338)	(0.0460)	(0.0710)	(0.0991)	(0.1308)	(0.2318)
4B	-0.1650	-0.2365	-0.1354	0.4871	-	-
	(0.1164)	(0.1698)	(0.3399)	(0.4528)		
4C	-0.1740	-0.3210	-	-	-	-
	(0.2229)	(0.3177)				
5	0.1007	0.1230	0.3096 †	0.5245 *	0.2282	-
	(0.1221)	(0.1032)	(0.1700)	(0.2270)	(0.4102)	
Unknown	-0.2259 ***	-0.2918 ***	-0.1565 ***	0.2296 ***	0.2054 ***	0.0125
	(0.0054)	(0.0075)	(0.0120)	(0.0213)	(0.0343)	(0.0757)
Citizenship						
Naturalized	0.0307 ***	0.0289 ***	0.0290 ***	0.0345 **	0.0539 †	0.0284
	(0.0034)	(0.0043)	(0.0065)	(0.0128)	(0.0288)	(0.0845)
US National	0.0640 ***	0.0486 *	0.1481 ***	0.0469	0.0291	0.0084
	(0.0162)	(0.0204)	(0.0299)	(0.0418)	(0.0586)	(0.1170)

	As E-2	As E-3	As E-4	As E-5	As E-6	As E-7
Non-Citizen	0.0722 *** (0.0029)	0.0710 *** (0.0037)	0.0950 *** (0.0055)	0.0795 *** (0.0091)	0.0425 * (0.0170)	-0.0403 (0.0421)
Other/ Unknown	0.0180 (0.0370)	0.1532 ** (0.0555)	-0.1813 *** (0.0258)	0.1576 *** (0.0336)	0.1036 (0.0657)	-
Dependents						
Number	0.0132 *** (0.0027)	0.0199 *** (0.0023)	0.0303 *** (0.0021)	0.0130 *** (0.0028)	-0.0018 (0.0048)	-0.0031 (0.0116)
None	0.0376 *** (0.0040)	-0.0065 † (0.0038)	-0.0552 *** (0.0043)	-0.0334 *** (0.0067)	-0.0019 (0.0135)	0.0248 (0.0361)
Unknown	0.0676 *** (0.0068)	-0.1775 *** (0.0241)	-0.1431 *** (0.0249)	-0.1792 *** (0.0378)	-0.2653 (0.1691)	-
5+	0.0082 (0.0371)	-0.0570 * (0.0270)	-0.0957 *** (0.0186)	-0.0982 *** (0.0197)	-0.0202 (0.0296)	0.0365 (0.0656)
Marital Status						
Married	-0.0325 *** (0.0013)	0.0133 *** (0.0015)	0.1056 *** (0.0024)	0.1448 *** (0.0051)	0.080 *** (0.0141)	0.0907 * (0.0454)
Formerly married	-0.0671 *** (0.0105)	0.0093 (0.0076)	0.1323 *** (0.0064)	0.1158 *** (0.0090)	0.0332 † (0.0188)	0.0265 (0.0533)
Unknown	0.1829 *** (0.0289)	0.1660 * (0.0655)	0.5072 *** (0.0175)	0.5705 *** (0.0243)	0.4892 *** (0.0607)	0.1493 (0.4473)
YOS at rank	-0.0939 *** (0.0017)	-0.1135 *** (0.0017)	-0.1036 *** (0.0028)	0.0510 *** (0.0044)	0.1043 *** (0.0075)	0.0460 (0.0283)
YOS^2 at rank	0.0156 *** (0.0009)	0.0061 *** (0.0004)	0.0075 *** (0.0004)	-0.0049 *** (0.0003)	-0.0071 *** (0.0003)	-0.0048 *** (0.0009)
Ever occupation code						
Infantry, Gun Crews, and Seamanship Specialists	-0.0879 *** (0.0018)	0.0018 (0.0019)	0.0270 *** (0.0027)	0.0260 *** (0.0048)	-0.0237 * (0.0092)	-0.0325 (0.0238)
Electronic Equipment Repairers	0.0335 *** (0.0023)	0.0240 *** (0.0024)	0.0161 *** (0.0031)	0.0154 ** (0.0052)	0.0220 * (0.0101)	-0.0029 (0.0246)
Communications and Intelligence Specialists	0.0404 *** (0.0026)	0.1023 *** (0.0028)	-0.0057 (0.0035)	-0.0186 ** (0.0059)	0.0044 (0.0113)	0.0309 (0.0288)
Health Care Specialists	-0.0755 *** (0.0026)	-0.0718 *** (0.0034)	0.0902 *** (0.0053)	0.0692 *** (0.0095)	0.0056 (0.0197)	0.0383 (0.0514)
Other Technical and Allied Specialists	0.0110 † (0.0057)	0.0712 *** (0.0054)	0.1822 *** (0.0062)	0.0489 *** (0.0088)	0.0392 ** (0.0149)	0.0445 (0.0349)
Functional Support and Administration	-0.0326 *** (0.0027)	0.0467 *** (0.0030)	0.0571 *** (0.0038)	0.0545 *** (0.0062)	-0.0552 *** (0.0116)	0.0393 (0.0276)

	As E-2	As E-3	As E-4	As E-5	As E-6	As E-7
Electrical/ Mechanical Equipment Repairers	-0.0586 *** (0.0021)	-0.0636 *** (0.0023)	0.0510 *** (0.0031)	-0.0630 *** (0.0053)	-0.0084 (0.0102)	0.0002 (0.0258)
Craftsworkers	-0.0200 *** (0.0031)	-0.0181 *** (0.0036)	0.0171 ** (0.0050)	0.0144 (0.0089)	-0.0571 ** (0.0167)	-0.0519 (0.0404)
Service and Supply Handlers	-0.0287 *** (0.0027)	-0.0809 *** (0.0031)	-0.0054 (0.0045)	0.0068 (0.0082)	0.0514 ** (0.0149)	-0.0103 (0.0360)
Non-Occupational	-0.0428 *** (0.0012)	-0.0221 *** (0.0016)	0.0039 † (0.0023)	0.0472 *** (0.0043)	0.0238 ** (0.0081)	-0.0012 (0.0202)
N	511,236	428,653	221,188	61,115	12,324	1,783
Adj. R^2	0.0673	0.1011	0.0760	0.1477	0.2343	0.3910

Source: CNA analysis of DMDC data.
† Statistically significant at the 10% level
* Statistically significant at the 5% level
** Statistically significant at the 1% level
*** Statistically significant at the 0.1% level
Note: This table does not show coefficients or standard errors for year of accession indicators, initial home of record state indicators, or indicators for whether an individual ever held specific enlisted occupation codes; these are available upon request.

Table 20. Navy officer promotion regressions

	As O-2	As O-3	As O-4
Ethnicity and Gender			
Hispanic	-0.0253 *** (0.0060)	-0.0197 † (0.0108)	-0.0167 (0.0205)
Ethnicity Unknown	0.0033 (0.0074)	-0.0112 (0.0120)	-0.0312 (0.0224)
Female	-0.0467 *** (0.0038)	-0.0257 *** (0.0063)	-0.0354 ** (0.0117)
Hispanic x Female	0.0227 * (0.0115)	-0.0087 (0.0207)	0.1268 ** (0.0415)
Ethnicity Unknown x Female	-0.0240 † (0.0132)	-0.0296 (0.0213)	0.0453 (0.0397)
Race			
AI/AN	0.0024 (0.0129)	0.0081 (0.0223)	-0.0481 (0.0416)
Asian	0.0000 (0.0067)	0.0009 (0.0110)	-0.0065 (0.0203)
Black	-0.0327 *** (0.0057)	-0.0023 (0.0097)	0.0272 (0.0177)
NH/PI	0.0237 (0.0187)	-0.0377 (0.0314)	0.0985 (0.0684)

	As O-2	As O-3	As O-4
Unknown	0.0014 (0.0056)	-0.0099 (0.0097)	-0.0216 (0.0185)
Education			
Less than HS	0.0487 (0.0450)	0.0995 (0.0743)	0.0280 (0.0126)
Some college, no award	-0.0153 (0.0236)	0.0159 (0.0413)	-0.0083 (0.0719)
Sub-BA award	-0.0057 (0.0208)	-0.0793 * (0.0323)	-0.1558 ** (0.0527)
BA	-0.0426 *** (0.0101)	-0.0415 * (0.0172)	-0.0281 (0.0289)
Post-BA	-0.0236 (0.0179)	0.0989 *** (0.0265)	-0.1396 ** (0.0427)
Unknown	-0.0382 *** (0.0105)	-0.0422 * (0.0177)	-0.0578 † (0.0295)
Citizenship			
Naturalized	-0.0276 ** (0.0090)	0.0104 (0.0148)	0.0107 (0.0279)
US National	0.0338 (0.0377)	0.0669 (0.0418)	0.0873 † (0.0495)
Non-Citizen	0.0312 * (0.0138)	-0.0180 (0.0233)	-0.0278 (0.0426)
Other/ Unknown	-0.0060 (0.0057)	-0.0558 *** (0.0083)	0.0426 *** (0.0120)
Dependents			
Number	0.0034 (0.0035)	0.0210 *** (0.0041)	0.0415 *** (0.0055)
None	0.0171 * (0.0072)	-0.0890 *** (0.0090)	0.0015 (0.0151)
Unknown	-0.0012 (0.0326)	0.0389 (0.0934)	-0.3012 (0.1853)
5+	-0.0829 ** (0.0268)	-0.0556 † (0.0303)	-0.1302 *** (0.0352)
Marital Status			
Married	0.0219 *** (0.0030)	0.1161 *** (0.0054)	0.0451 *** (0.0126)
Formerly married	-	-	-
Unknown	0.2566 *** (0.0444)	-0.0078 (0.1524)	-
YOS at rank	-0.0087 *** (0.0023)	-0.0267 *** (0.0028)	0.0439 *** (0.0041)
YOS^2 at rank	-0.0003 *	-0.0005 **	-0.0032 ***

	As O-2	As O-3	As O-4
	(0.0001)	(0.0002)	(0.0002)
E-to-O	-0.2145 *** (0.0137)	-0.0857 *** (0.0226)	-0.3451 *** (0.0377)
Ever occupation code			
General Officers and Executives	-0.5340 *** (0.1359)	-0.2495 (0.4563)	-
Tactical Operations Officers	0.1037 *** (0.0040)	0.0817 *** (0.0119)	-0.0267 (0.0210)
Intelligence Officers	0.0834 *** (0.0080)	0.2670 *** (0.0127)	0.0657 ** (0.0205)
Engineering and Maintenance Officers	0.0652 *** (0.0085)	0.1556 *** (0.0132)	0.1288 *** (0.0197)
Scientists and Professionals	0.1054 *** (0.0094)	0.2128 *** (0.0142)	0.1269 *** (0.0242)
Health Care Officers	0.0819 *** (0.0088)	0.2857 *** (0.0129)	-0.0650 ** (0.0210)
Administrators	0.0128 (0.0087)	0.1256 *** (0.0127)	0.0907 *** (0.0208)
Supply, Procurement, and Allied Officers	0.0590 *** (0.0084)	0.1640 *** (0.0147)	0.1575 *** (0.0271)
Non-Occupational	0.0113 † (0.0068)	0.1057 *** (0.0101)	0.0014 (0.0169)
N	50,115	40,537	10,674
Adj. R^2	0.1340	0.1633	0.3213

Source: CNA analysis of DMDC data.
† Statistically significant at the 10% level
* Statistically significant at the 5% level
** Statistically significant at the 1% level
*** Statistically significant at the 0.1% level
Note: This table does not show coefficients or standard errors for year of accession indicators, initial home of record state indicators, or indicators for whether an individual ever held specific enlisted occupation codes; these are available upon request.

Table 21. Marine Corps enlisted promotion regressions

	As E-2	As E-3	As E-4	As E-5	As E-6	As E-7
Ethnicity and Gender						
Hispanic	0.0199 *** (0.0017)	0.0223 *** (0.0023)	0.0358 *** (0.0039)	0.0455 *** (0.0088)	0.0647 *** (0.0166)	0.0038 (0.0488)
Ethnicity Unknown	-0.7017 *** (0.1204)	-	-0.5734 (0.4505)	-	-	-
Female	-0.0409 ***	-0.0050	-0.0149 **	-0.0282 *	-0.0977 ***	0.1330 †

	As E-2	As E-3	As E-4	As E-5	As E-6	As E-7
	(0.0026)	(0.0035)	(0.0056)	(0.0130)	(0.0259)	(0.0755)
Hispanic x Female	0.0416 *** (0.0048)	-	0.0524 *** (0.0107)	0.0221 (0.0237)	-0.0203 (0.0461)	-0.0656 (0.1410)
Ethnicity Unknown x Female	0.0351 (0.4194)	0.0362 *** (0.0065)	-	-	-	-
Race						
AI/AN	-0.0335 *** (0.0058)	-0.0261 ** (0.0080)	0.0163 (0.0137)	-0.0904 ** (0.0303)	-0.0586 (0.0581)	-0.0389 (0.2215)
Asian	0.0198 *** (0.0037)	-0.0063 (0.0050)	0.0336 *** (0.0083)	0.0295 (0.0190)	-0.0231 (0.0359)	-0.0338 (0.0971)
Black	-0.0132 *** (0.0021)	0.0765 *** (0.0028)	0.0586 *** (0.0045)	0.0130 (0.0096)	0.0299 † (0.0181)	-0.0041 (0.0505)
NH/PI	0.0149 * (0.0067)	0.0435 *** (0.0088)	0.0587 *** (0.0142)	0.0252 (0.0302)	0.0946 (0.0621)	0.0072 (0.1851)
Unknown	-0.0202 ** (0.0070)	-0.0624 *** (0.0092)	-0.1070 *** (0.0132)	-0.0493 † (0.0297)	-0.1753 *** (0.0412)	-0.1336 (0.1151)
Education						
Less than HS	-0.0730 *** (0.0163)	0.0093 (0.0231)	0.0001 (0.0342)	0.0610 (0.0622)	-0.0958 (0.0930)	-0.2706 (0.2705)
Some college, no award	0.0018 (0.0063)	-0.0082 (0.0080)	-0.0287 * (0.0120)	-0.0091 (0.0255)	-0.0726 (0.0564)	0.0546 (0.1551)
Sub-BA award	0.0154 * (0.0075)	0.0360 *** (0.0094)	-0.0168 (0.0138)	-0.0336 (0.0314)	0.0264 (0.0609)	-0.3399 † (0.1728)
BA	0.0451 *** (0.0071)	0.0962 *** (0.0086)	0.0593 *** (0.0104)	-0.0244 (0.0309)	0.0809 (0.0671)	-0.1690 (0.1998)
Post-BA	0.0378 (0.0431)	0.1434 ** (0.0512)	0.0107 (0.0376)	-0.0154 (0.0813)	0.1865 (0.1441)	0.5662 (0.3978)
Unknown	-0.0171 ** (0.0060)	-0.0013 (0.0078)	-0.0048 (0.0114)	0.0401 (0.0256)	-0.0118 (0.0488)	-0.2651 (0.4656)
Highest AFQT						
2	-0.0164 *** (0.0028)	-0.0183 *** (0.0036)	0.0251 *** (0.0054)	0.0471 *** (0.0124)	0.0498 † (0.0254)	0.0336 (0.0982)
3A	-0.0492 *** (0.0029)	-0.0729 *** (0.0038)	-0.0147 * (0.0058)	-0.0041 (0.0133)	0.0172 (0.0270)	0.0612 (0.1010)
3B	-0.0937 *** (0.0030)	-0.1114 *** (0.0039)	-0.0490 *** (0.0061)	-0.0326 * (0.0142)	0.0320 (0.0286)	0.0633 (0.1037)
4A	-0.1299 *** (0.00081)	-0.1065 *** (0.0115)	-0.0407 * (0.0197)	-0.0613 (0.0414)	0.1763 (0.1107)	0.2500 (0.2852)
4B	0.0769 (0.1004)	-0.0697 (0.1245)	-0.0556 (0.2005)	-0.6215 (0.4731)	-	-
4C	-0.0875 (0.1420)	-0.1993 (0.1902)	0.0868 (0.3171)	-	-	-

	As E-2	As E-3	As E-4	As E-5	As E-6	As E-7
5	-0.3018 † (0.1639)	-0.4559 † (0.2689)	-	-	-	-
Unknown	-0.1624 *** (0.0124)	-0.3019 *** (0.0177)	0.3178 *** (0.0162)	-0.6310 *** (0.1145)	-0.1584 (0.3759)	-
Citizenship						
Naturalized	0.0084 † (0.0044)	0.0089 (0.0059)	0.0207 * (0.0101)	0.0427 † (0.0233)	0.1018 * (0.0423)	0.0984 (0.1083)
US National	0.0253 (0.0164)	0.0366 † (0.0214)	0.0197 (0.0349)	0.0820 (0.0807)	0.0045 (0.1779)	-
Non-Citizen	0.0530 *** (0.0035)	0.0356 *** (0.0046)	0.0562 *** (0.0071)	0.0579 *** (0.0134)	-0.0136 (0.0229)	0.1087 † (0.0621)
Other/ Unknown	0.0320 (0.0334)	0.0549 (0.0427)	0.0556 (0.0062)	0.2593 * (0.1312)	-0.0563 (0.5109)	-
Dependents						
Number	-0.0114 ** (0.0038)	0.0680 *** (0.0033)	0.0367 *** (0.0027)	0.0141 *** (0.0039)	-0.0070 (0.0065)	-0.0032 (0.0175)
None	0.0175 ** (0.0052)	-0.0003 (0.0049)	-0.0625 *** (0.0053)	-0.0393 *** (0.0103)	-0.0303 (0.0210)	-0.0274 (0.0623)
Unknown	-0.1579 *** (0.0105)	0.0579 ** (0.0191)	-0.0821 *** (0.0229)	-0.4313 *** (0.0556)	-0.8094 *** (0.1778)	-
5+	0.0126 (0.0536)	-0.0935 * (0.0443)	-0.1471 *** (0.0253)	-0.0833 ** (0.0265)	0.0637 (0.0390)	-0.0653 (0.0948)
Marital Status						
Married	-0.0658 *** (0.0014)	0.0793 *** (0.0018)	0.1346 *** (0.0033)	0.1262 *** (0.0106)	0.0170 (0.0277)	0.1494 (0.1169)
Formerly married	-0.1463 *** (0.0064)	0.0703 *** (0.0054)	0.1111 *** (0.0058)	0.0113 (0.0129)	-0.0956 ** (0.0307)	0.0837 (0.1198)
Unknown	-	-	-			
YOS at rank	-0.0819 *** (0.0021)	-0.0302 *** (0.0046)	-0.0775 *** (0.0054)	-0.0694 *** (0.0121)	0.2204 *** (0.0232)	0.0248 (0.1289)
YOS^2 at rank	-0.0217 *** (0.0013)	0.0376 *** (0.0011)	0.0010 (0.0007)	0.0038 *** (0.0008)	-0.0113 *** (0.0010)	-0.0054 (0.0041)
Ever occupation code						
Infantry, Gun Crews, and Seamanship Specialists	-0.0856 *** (0.0033)	0.0580 *** (0.0042)	0.0650 *** (0.0045)	-0.0313 *** (0.0085)	0.0050 (0.0142)	-0.0367 (0.0374)
Electronic Equipment Repairers	0.0938 *** (0.0036)	0.1722 *** (0.0044)	0.0422 *** (0.0051)	-0.0116 (0.0094)	-0.0058 (0.0179)	0.1153 * (0.0496)
Communications and Intelligence Specialists	0.1094 *** (0.0036)	0.1243 *** (0.0044)	0.0679 *** (0.0045)	-0.0444 *** (0.0081)	-0.0621 *** (0.0151)	0.1636 *** (0.0426)

	As E-2	As E-3	As E-4	As E-5	As E-6	As E-7
Health Care Specialists	-	-	-	-	-	-
Other Technical and Allied Specialists	0.0722 *** (0.0048)	0.0962 *** (0.0061)	0.1434 *** (0.0070)	-0.0048 (0.0127)	-0.0324 (0.0228)	-0.1062 † (0.0581)
Functional Support and Administration	0.0613 *** (0.0035)	0.0662 *** (0.0043)	0.1523 *** (0.0046)	0.0303 *** (0.0082)	0.0394 ** (0.0129)	0.1257 *** (0.0348)
Electrical/ Mechanical Equipment Repairers	0.0815 *** (0.0034)	0.0827 *** (0.0043)	0.0595 *** (0.0047)	-0.0148 (0.0091)	-0.0206 (0.0164)	0.0647 (0.0456)
Craftsworkers	-0.0217 *** (0.0043)	0.0266 *** (0.0057)	0.0622 *** (0.0084)	0.0209 (0.0178)	0.0479 (0.0332)	-0.0129 (0.0978)
Service and Supply Handlers	0.0456 *** (0.0036)	0.0043 (0.0045)	0.0685 *** (0.0054)	0.0054 (0.0104)	0.0688 *** (0.0186)	0.0214 (0.0460)
Non-Occupational	-0.0602 *** (0.0013)	0.0094 *** (0.0017)	0.0483 *** (0.0029)	-0.0140 * (0.0066)	-0.0120 (0.0122)	-0.0467 (0.0323)
N	482,983	355,609	121,965	29,925	6,387	716
Adj. R^2	0.0895	0.0952	0.1250	0.0741	0.1068	0.3517

Source: CNA analysis of DMDC data.
† Statistically significant at the 10% level
* Statistically significant at the 5% level
** Statistically significant at the 1% level
*** Statistically significant at the 0.1% level
Note: This table does not show coefficients or standard errors for year of accession indicators or initial home of record state indicators; these are available upon request.

Table 22. Marine Corps officer promotion regressions

	As O-2	As O-3	As O-4
Ethnicity and Gender			
Hispanic	0.0026 (0.0110)	0.0001 (0.0169)	0.0037 (0.0348)
Ethnicity Unknown	-	-	-
Female	0.0097 (0.0100)	0.0238 (0.0149)	0.0610 † (0.0320)
Hispanic x Female	0.0298 (0.0312)	0.0278 (0.0484)	-0.0589 (0.1054)
Ethnicity Unknown x Female	-	-	-
Race			
AI/AN	-0.0048 (0.0283)	-0.0438 (0.0452)	-0.0152 (0.1148)
Asian	-0.0021 (0.0144)	0.0169 (0.0221)	-0.0523 (0.0448)

	As O-2	As O-3	As O-4
Black	-0.0164 (0.0130)	-0.0205 (0.0198)	0.0963 * (0.0416)
NH/PI	0.0066 (0.0379)	0.0346 (0.0582)	0.2065 (0.1277)
Unknown	-0.0553 *** (0.0117)	-0.1704 *** (0.0168)	-0.1568 *** (0.0409)
Education			
Less than HS	0.4185 *** (0.1546)	0.0230 (0.1728)	-0.0616 (0.4052)
Some college, no award	-0.0106 (0.0617)	0.1203 (0.0756)	-0.0292 (0.1043)
Sub-BA award	0.0811 (0.0717)	0.1807 † (0.0920)	0.0046 (0.1172)
BA	0.0406 *** (0.0096)	-0.0508 ** (0.0147)	0.0558 (0.0399)
Post-BA	0.0016 (0.0265)	-0.0339 (0.0349)	-0.0107 (0.0724)
Unknown	0.0403 † (0.0206)	-0.1407 *** (0.0337)	-0.0886 (0.1099)
Citizenship			
Naturalized	-0.0061 (0.0238)	0.0248 (0.0343)	0.0310 (0.0705)
US National	0.0016 (0.0772)	0.2163 † (0.1217)	0.1115 (0.1831)
Non-Citizen	0.0791 * (0.0346)	-0.0097 (0.0444)	0.0393 (0.0740)
Other/ Unknown	-0.7340 *** (0.1823)	-	-
Dependents			
Number	0.0256 ** (0.0087)	0.0434 *** (0.0065)	0.0248 ** (0.0094)
None	0.0218 (0.0152)	-0.0658 *** (0.0150)	-0.0251 (0.0292)
Unknown	-0.1966 * (0.0854)	-0.4096 ** (0.1374)	-0.6123 *** (0.1657)
5+	-0.1381 (0.0848)	-0.1287 * (0.0497)	-0.0977 (0.0616)
Marital Status			
Married	0.0755 *** (0.0059)	0.1385 *** (0.0103)	0.0815 * (0.0334)
Formerly married	0.0359 † (0.0196)	0.0788 *** (0.0208)	-0.0189 (0.0464)

	As O-2	As O-3	As O-4
Unknown	-		
YOS at rank	0.0315 *** (0.0044)	0.0282 *** (0.0064)	0.0408 *** (0.0116)
YOS^2 at rank	-0.0022 *** (0.0003)	-0.0034 *** (0.0003)	-0.0027 *** (0.0005)
E-to-O	-0.1173 *** (0.0230)	-0.0153 (0.0314)	-0.2613 *** (0.0629)
Ever occupation code			
General Officers and Executives	0.0594 * (0.0234)	0.1170 *** (0.0275)	0.0904 † (0.0493)
Tactical Operations Officers	-0.0425 *** (0.0099)	0.0652 ** (0.0207)	-0.0460 (0.0360)
Intelligence Officers	-0.1428 *** (0.0125)	0.0102 (0.0211)	0.0056 (0.0381)
Engineering and Maintenance Officers	-0.1666 *** (0.0128)	0.0460 * (0.0232)	0.0454 (0.0418)
Scientists and Professionals	0.2509 *** (0.0230)	0.0350 (0.0282)	0.0724 (0.0446)
Health Care Officers	-	-	-
Administrators	-0.1677 *** (0.0135)	-0.0025 (0.0236)	-0.0414 (0.0458)
Supply, Procurement, and Allied Officers	-0.1686 *** (0.0114)	0.0276 (0.0223)	0.0627 (0.0380)
Non-Occupational	0.0385 ** (0.0115)	0.0093 (0.0142)	-0.0086 (0.0301)
N	24,374	14,580	2,971
Adj. R^2	0.0916	0.1570	0.3652

Source: CNA analysis of DMDC data.
† Statistically significant at the 10% level
* Statistically significant at the 5% level
** Statistically significant at the 1% level
*** Statistically significant at the 0.1% level
Note: This table does not show coefficients or standard errors for year of accession indicators, initial home of record state indicators, or indicators for whether an individual ever held specific enlisted occupation codes; these are available upon request.

Table 23. Cox Proportional Hazard model for enlisted servicemembers exiting, 2001–2019

	Army	Navy	USAF	USMC
Ethnicity and Gender				
Hispanic	0.8725 *** (0.0034)	0.9181 *** (0.0047)	0.8657 *** (0.0059)	0.9051 *** (0.0040)
Ethnicity Unknown	1.5741 *** (0.0837)	1.2224 *** (0.0424)	0.7303 ** (0.0781)	13.1313 *** (1.8057)
Female	1.3684 *** (0.0046)	1.1363 *** (0.0048)	1.2708 *** (0.0062)	1.1676 *** (0.0077)
Hispanic x Female	0.9439 *** (0.0077)	0.9505 *** (0.0095)	0.9684 * (0.0125)	0.8944 *** (0.0117)
Ethnicity Unknown x Female	1.2272 * (0.1488)	0.7070 *** (0.0538)	0.9169 (0.1868)	1.1225 (0.5253)
Race				
AI/AN	0.9115 *** (0.0099)	1.0661 *** (0.0079)	0.9248 *** (0.0188)	0.8475 *** (0.0124)
Asian	0.8522 *** (0.0054)	0.8038 *** (0.0070)	0.8070 *** (0.0089)	0.9539 *** (0.0094)
Black	0.8453 *** (0.0027)	0.8113 *** (0.0036)	0.8417 *** (0.0044)	0.8182 *** (0.0044)
NH/PI	0.8038 *** (0.0107)	0.7563 *** (0.0121)	0.7758 *** (0.0154)	0.8299 *** (0.0149)
Other/Unknown	1.6277 *** (0.0313)	0.8694 *** (0.0056)	0.8110 *** (0.0123)	1.0804 *** (0.0178)
Education				
Less than HS	1.1004 *** (0.0164)	1.3272 *** (0.0183)	0.8705 † (0.0668)	0.8698 *** (0.0337)
Some college	1.1055 *** (0.0071)	1.1809 *** (0.0124)	-	1.0970 *** (0.0169)
Sub-BA award	1.0620 *** (0.0084)	0.9869 (0.0126)	1.0712 *** (0.0178)	1.0679 ** (0.0212)
BA	1.5119 *** (0.0091)	1.1070 *** (0.0101)	1.3106 *** (0.0181)	1.2925 *** (0.0235)
Post-BA	1.9334 *** (0.0322)	1.2787 *** (0.0543)	0.9467 (0.0848)	1.0474 (0.1006)
Unknown	1.3661 *** (0.0174)	1.3044 *** (0.0302)	1.0937 *** (0.0092)	0.9951 (0.0144)
Highest AFQT				
2	0.9977 (0.0050)	0.8601 *** (0.0053)	0.8683 *** (0.0047)	1.0263 *** (0.0075)
3A	1.0075	0.7799 ***	0.8276 ***	1.1223 ***

	Army	Navy	USAF	USMC
	(0.0052)	(0.0052)	(0.0050)	(0.0085)
3B	1.0327 ***	0.7560 ***	0.8470 ***	1.2273 ***
	(0.0054)	(0.0053)	(0.0060)	(0.0094)
4A	0.8746 ***	0.6371 ***	1.1334	1.2508 ***
	(0.0084)	(0.0514)	(0.1544)	(0.0243)
4B	1.1235 *	0.6312	0.9006	0.8495
	(0.0607)	(0.2105)	(0.1329)	(0.2195)
4C	1.3878 ***	0.9197	1.1227	2.0564 *
	(0.0939)	(0.6504)	(1.1228)	(0.7278)
5	1.2251	0.1419 ***	4.0440 ***	3.3361 **
	(0.2167)	(0.0710)	(0.6658)	(1.3622)
Unknown	0.9333 ***	1.6827 ***	2.5824 ***	1.7239 ***
	(0.0167)	(0.0210)	(0.0658)	(0.0471)
Citizenship				
Naturalized	0.9867	0.8823 ***	0.9437 ***	0.9868
	(0.0081)	(0.0092)	(0.0126)	(0.0116)
US National	0.9203 **	0.9954	0.5745 ***	0.9196 †
	(0.0221)	(0.0449)	(0.0736)	(0.0400)
Non-Citizen	0.9530 ***	0.8448 ***	0.8987 ***	0.8718 ***
	(0.0079)	(0.0073)	(0.0132)	(0.0080)
Other/Unknown	0.9625 ***	1.0763 †	0.8911 ***	0.9320
	(0.0066)	(0.0471)	(0.0220)	(0.0775)
Dependents				
Number	0.9591 ***	0.9384 ***	0.9754 ***	0.9371 ***
	(0.0021)	(0.0042)	(0.0048)	(0.0048)
None	1.0491 ***	1.0525 ***	1.1013 ***	1.1516 ***
	(0.0046)	(0.0083)	(0.0099)	(0.0098)
Unknown	1.0312 **	1.1516 ***	0.8295 ***	0.2633 ***
	(0.0101)	(0.0272)	(0.0239)	(0.0068)
5+	1.1151 ***	1.1802 ***	1.2349 ***	1.2630 ***
	(0.0180)	(0.0486)	(0.0518)	(0.0599)
Marital Status				
Married	0.7913 ***	0.8636 ***	0.8037 ***	0.7621 ***
	(0.0020)	(0.0031)	(0.0035)	(0.0027)
Formerly married	0.8408 ***	0.7572 ***	0.8638 ***	0.7832 ***
	(0.0049)	(0.0101)	(0.0069)	(0.0073)
Unknown	0.5426 ***	44.0318 ***	1.3242 ***	0.1030 *
	(0.0351)	(1.1406)	(0.0988)	(0.1031)
Occupation code				
	0.7704 ***	0.7952 ***	0.7636 ***	0.6720 ***
Electronic Equipment Repairers	(0.0038)	(0.0053)	(0.0075)	(0.0045)
Communications and Intelligence Specialists	0.8976 ***	0.9454 ***	0.7286 ***	0.9525 ***

	Army	Navy	USAF	USMC
	(0.0033)	(0.0071)	(0.0071)	(0.0055)
Health Care Specialists	0.7236 *** (0.0033)	0.4791 *** (0.0035)	0.7389 *** (0.0077)	-
Other Technical and Allied Specialists	0.7652 *** (0.0051)	0.6060 *** (0.0103)	0.8202 *** (0.0097)	0.9310 *** (0.0093)
Functional Support and Administration	0.7070 *** (0.0029)	0.8111 *** (0.0062)	0.7265 *** (0.0068)	0.9973 (0.0052)
Electrical/ Mechanical Equipment Repairers	0.7412 *** (0.0027)	0.9028 *** (0.0051)	0.7141 *** (0.0062)	0.8383 *** (0.0038)
Craftsworkers	0.8467 *** (0.0058)	0.8258 *** (0.0071)	0.7426 *** (0.0089)	1.0045 (0.0084)
Service and Supply Handlers	0.8290 *** (0.0030)	0.8533 *** (0.0062)	0.8617 *** (0.0078)	0.9310 *** (0.0047)
Non-Occupational	3.3919 *** (0.0331)	1.9283 *** (0.0179)	2.2909 *** (0.0272)	1.7724 *** (0.0047)
N counts				
Observations	6,033,203	4,006,573	3,592,030	2,798,393
Individuals	1,231,794	709,068	566,003	605,925
Exits	888,194	436,199	315,324	456,764

Source: CNA analysis of DMDC data.
† Statistically significant at the 10% level
* Statistically significant at the 5% level
** Statistically significant at the 1% level
*** Statistically significant at the 0.1% level
Note: This table does not show coefficients or standard errors for initial home of record state indicators or indicators for current paygrade; these are available upon request.

Table 24. Cox Proportional Hazard model for enlisted servicemembers exiting, 2001–2019

	Army	Navy	USAF	USMC
Ethnicity and Gender				
Hispanic	8.220 *** (0.0237)	0.9169 ** (0.0289)	0.7902 *** (0.0379)	0.8138 *** (0.0334)
Ethnicity Unknown	2.0034 *** (0.0490)	1.0355 (0.0317)	1.7157 *** (0.0643)	-
Female	1.1815 *** (0.0150)	1.1882 *** (0.0200)	1.2747 *** (0.0203)	0.9606 (0.0315)
Hispanic x Female	0.9643 (0.0440)	1.0201 (0.0575)	0.8938 (0.0746)	0.8598 (0.0988)
Ethnicity Unknown x Female	1.0726 † (0.0449)	0.9354 (0.0486)	1.0754 (0.0643)	-
Race				

	Army	Navy	USAF	USMC
AI/AN	0.8961 (0.0630)	0.8660 (0.0760)	0.9587 (0.0812)	0.9589 (0.0969)
Asian	0.8724 *** (0.0173)	0.9965 (0.0312)	0.8721 *** (0.0255)	0.8594 ** (0.0432)
Black	0.7828 *** (0.0144)	0.8802 *** (0.0247)	0.8500 *** (0.0246)	0.8210 *** (0.0390)
NH/PI	0.6474 *** (0.0567)	0.7546 ** (0.0757)	0.8674 (0.0828)	0.7569 † (0.1077)
Other/Unknown	1.0769 ** (0.0266)	1.0058 (0.0255)	1.2968 *** (0.0295)	1.5913 *** (0.0529)
Education				
Less than HS	2.5371 * (1.1376)	-	1.6283 *** (0.1349)	-
Some college	1.4616 *** (0.0395)	1.2747 (1.2924)	1.0406 (0.6056)	0.6467 (0.3758)
Sub-BA award	0.8472 (0.1277)	3.3969 (3.4184)	0.4394 * (0.1407)	0.1429 † (0.1430)
BA	1.0068 (0.0195)	2.6863 (2.6871)	0.8916 * (0.0439)	0.9966 (0.0326)
Post-BA	1.4692 *** (0.0378)	1.8845 (1.8884)	1.1694 ** (0.0620)	0.9811 (0.0862)
Unknown	1.0293 (0.0325)	2.6276 (2.6282)	1.1687 ** (0.0587)	0.7276 *** (0.0517)
Citizenship				
Naturalized	0.7465 (0.3736)	0.9584 (0.0383)	1.0751 * (0.0343)	0.7243 *** (0.0602)
US National	0.6831 (0.2590)	0.8980 (0.1058)	1.2080 (0.2144)	0.5218 † (0.1849)
Non-Citizen	1.0731 (0.1194)	0.8559 (0.2586)	1.5992 † (0.3892)	0.6434 † (0.1616)
Other/Unknown	25.9488 *** (1.7255)	1.1777 *** (0.0231)	1.4158 *** (0.0753)	5.7559 *** (2.8895)
Dependents				
Number	0.9356 *** (0.0090)	0.9597 ** (0.0129)	0.9888 (0.0121)	0.9275 *** (0.0195)
None	1.0017 (0.0195)	1.0227 (0.0291)	1.0146 (0.0280)	1.0660 (0.0460)
Unknown	0.7139 * (0.0965)	2.9064 *** (0.2962)	0.9176 (0.1310)	2.5522 *** (0.5524)
5+	1.3060 *** (0.0836)	1.2402 * (0.1184)	1.0393 (0.0828)	1.1562 (0.1992)
Marital Status				

	Army	Navy	USAF	USMC
Married	0.8014 *** (0.0088)	0.8563 *** (0.0124)	0.8768 *** (0.0141)	0.7359 *** (0.0158)
Formerly married	0.9816 (0.0235)	-	1.0664 † (0.0349)	0.8901 * (0.0484)
Unknown	1.1887 (0.3073)	-	0.8127 (0.1990)	-
Occupation code				
General Officers and Executives	1.0264 (0.0515)	40.3487 *** (7.1240)	2.3425 *** (0.1743)	1.7318 ** (0.3132)
Intelligence Officers	1.0262 (0.0206)	0.8107 *** (0.0269)	1.4147 *** (0.0362)	1.4880 *** (0.0474)
Engineering and Maintenance Officers	1.1779 *** (0.0162)	0.9340 † (0.0329)	1.8527 *** (0.0403)	1.4087 *** (0.0470)
Scientists and Professionals	0.6726 *** (0.0167)	0.7795 *** (0.0281)	1.6214 *** (0.0420)	2.9344 *** (0.1448)
Health Care Officers	1.0345 * (0.0166)	1.5414 *** (0.0329)	2.4296 *** (0.0538)	-
Administrators	1.0056 (0.0212)	0.7819 *** (0.0399)	1.8229 *** (0.0514)	1.4764 *** (0.0536)
Supply, Procurement, and Allied Officers	1.1350 *** (0.0194)	1.0184 (0.0350)	1.6704 *** (0.0442)	1.4676 *** (0.0379)
Non-Occupational	0.4853 *** (0.0050)	1.2825 *** (0.0351)	0.8108 *** (0.0344)	0.6021 *** (0.0321)
N counts				
Observations	710,457	422,584	517,319	191,831
Individuals	104,728	59,334	67,684	26,874
Exits	47,642	25,761	24,741	12,880

Source: CNA analysis of DMDC data.
† Statistically significant at the 10% level
* Statistically significant at the 5% level
** Statistically significant at the 1% level
*** Statistically significant at the 0.1% level
Note: This table does not show coefficients or standard errors for initial home of record state indicators, indicators for current paygrade, or indicators for whether an individual ever held specific enlisted occupation codes; these are available upon request.

Appendix F: Retention Challenges and Strategies

This section discusses specific retention challenges that the Hispanic community faces and potential strategies for addressing them. Although we showed in this study's data analysis that Hispanic servicemembers retain at higher rates than non-Hispanic servicemembers, there still could be retention challenges that Hispanic servicemembers face, and we explore those challenges here. We also want to emphasize that these challenges are not necessarily unique to Hispanic servicemembers, but if strategies are used to address these challenges, then the Services could see an increase in Hispanic representation.

Table 25 summarizes those retention challenges and potential strategies to increase Hispanic servicemember retention.

Table 25. Hispanic retention challenges and strategies to address them

Challenges (Ch) and Strategies (Str) to address them	Data evidence that strategy works
(Ch) Lack of mentorship	
(Str) Expand mentorship programs	N/A
(Ch) Do not feel a sense of belonging	
(Str) Encourage cultural competency	N/A
(Str) Explore reenlistment options for non-citizens	N/A

Source: CNA generated from literature review and SME discussions.

Challenge: Lack of Hispanic mentorship

The most common retention challenge that SMEs/POs mentioned is the lack of mentorship for the Hispanic community in the higher ranks. Mentors play a vital role in the military to help mentees understand the types of assignments and education and training that can help them to progress and be successful. One SME acknowledged that people generally look for mentors of the same race, ethnicity, and/or gender. Hearing Hispanic leaders' success stories and their personal trajectories in the military, Hispanic youth are more likely to see these leaders as examples of what they can achieve and thereby envision a future for themselves that includes military service. Because there are currently fewer Hispanic servicemembers in the higher

ranks, it is more difficult for incoming Hispanic servicemembers to find a more senior Hispanic mentor.

Strategy: Expand mentorship programs

Navy SMEs/POs acknowledged that Hispanic servicemembers and members of any demographic group often look to people of their race or ethnicity as mentors, making it important that the Services work to improve diversity in the senior ranks and that those diverse leaders are encouraged to serve as mentors within their communities. Air Force SMEs/POs specifically spoke to the need for early mentorship and about how assignment and promotion opportunities differ by career field. They opined that if mentors were more involved in helping young Hispanic servicemembers navigate their occupation choice, these servicemembers would make more informed decisions. They likely would ultimately be more satisfied with their career fields, making them more likely to stay in service. Although the Services acknowledged the importance of in-service mentorship programs, the implementation of any mentorship programs targeted at racial or ethnic diversity were not documented in the SME discussions or literature review. Furthermore, any implementation of additional mentorship opportunities (whether formal or informal) does not necessarily mean people will use them. Therefore, if mentorship programs are expanded to target ethnic diversity, then the Services would want to track how many people actually take advantage of the new opportunities and assess whether those programs change the career outcomes of those who use them.

Challenge: Do not feel a sense of belonging

Over the past 20 years, several studies have outlined how the attitudes, perceptions, and expectations of Hispanic people—as informed by their personal experiences—affect their performance and retention. One article in the literature found that Hispanic workers who felt that they were segregated into lower paying jobs were significantly less loyal to their employer, were not as willing to work hard, viewed company fairness negatively, and were more likely to leave for another job [92]. In the military, Hispanic servicemembers may be more likely to leave if they feel that they are not being treated fairly or as an equal member of the community. In fact, a 2019 Institute for Defense Analysis (IDA) report highlights the importance of a "climate for inclusion" that specifically fosters a shared sense of belonging [93].

One Service's DEI SME/PO said that Hispanic servicemembers are not going to stay if DOD does not "have a sustainable culture where [Hispanic servicemembers] believe they belong, can add value, and know they are cared for." Another Service's retention and promotion SME stated that Hispanic servicemembers do not feel valued by the organization, so they are less likely to

stay in service. A DOD DEI SME said they knew of very few employee resource groups that are specifically for Hispanic people.

Strategy: Encourage cultural competency

DOD and the Services have worked to improve cultural inclusivity via numerous policies and initiatives. Those specifically mentioned in our SME discussions included the following:

- All the Services' nametags now include hyphens and accent marks to reflect names and pronunciations accurately.
- The Army has expanded its food courts to include foods from many cultures.
- The Army has redesigned its body armor to better accommodate the female form.
- The Air Force provides language training to non-native English speakers prior to (or during) basic training.
- The Air Force updated the leave policy for travel to US territories—including Guam and Puerto Rico—so that only one level of approval is necessary (as is required for those taking leave within the US).
- The Marine Corps sends Marines to participate with their local affinity groups to maintain networks and connections within their communities.

In addition, the 2004 CNA report recommended buddy systems that pair Hispanic servicemembers with bilingual bunkmates to encourage a sense of belonging [40]. These initiatives may increase Hispanic retention by easing their transition into the Services and demonstrating respect for them and their culture.

Strategy: Explore reenlistment options for non-citizens

Citizenship requirements also affect belonging because, although citizenship applications are expedited for servicemembers, the Air Force does not allow non-citizens to reenlist [94]. Policies that remove this restriction would likely increase retention, although more research must be done to understand the reach and ramifications of this policy change.

Appendix G: Lessons from the Civilian Sector

In this section, we turn to lessons learned in the civilian sector regarding recruitment, retention, and promotion efforts for Hispanic workers. We focus on initiatives and policies that the civilian sector has implemented to increase Hispanic representation that the military could also use. We begin by highlighting the main themes that corporate diversity documents and SMEs/POs discuss when describing how they engage Hispanic workers.

Corporate areas of focus to engage Hispanic workers

We explored the civilian sector through interviews with SMEs/POs and a sampling of corporate diversity documents from 32 Fortune 500 companies. From this exploration, it was clear that the push for recruitment, retention, and promotion of Hispanic workers has become a major factor in the perceived future success of many companies. While some companies are clearly more aggressive with their tactics than others, all of them focused on Hispanic employees to some degree. Table 26 lists the most common themes in the corporate diversity reports.

Table 26. Corporate DEI initiatives of focus

Initiatives	Frequency	Percent of documents referencing this initiative
Hispanic ERGs	**28**	**88%**
Programs for recruiting Hispanic students	**19**	**59%**
Career development/mentoring programs	**17**	**53%**
Working with external Hispanic groups	**17**	**53%**
Focused on broader Hispanic community	**10**	**31%**
Programs to highlight Hispanic heritage	**7**	**22%**
Programs that focus on retention of Hispanic employees	**7**	**22%**
Programs that focus on promotion of Hispanic employees	**7**	**22%**

Sources: DEI reports from the following corporations: 3M, Adobe, American Express, Apple, AT&T, BlackRock, Bristol Myers Squibb, CitiGroup, Corning, CVS Health, eBay, ExxonMobile, FedEx, General Electric, General Motors, Google, IBM, Indeed, Hilton, Johnson & Johnson, Lockheed Martin, Microsoft, Netflix, SalesForce, Stanley Black & Decker, Tesla, T-Mobile, Walmart, WarnerMedia, Wells Fargo, Williams Companies, and Workday.

From this review, four major themes stand out. First, the organizations prioritize creating in-house employee resource groups (ERGs) that focus on the needs of specific communities represented within the broader employee base. These ERGs tend to be led by a company's employees who share certain characteristics (e.g., are Hispanic) and are meant to foster an inclusive workplace and offer development opportunities. About 88 percent of the companies included in this analysis mentioned their ERGs. This aligns with the average for Fortune 500 companies: about 90 percent have ERGs [95]. American Express, for example, created the Hispanic Origin and Latin American Colleague Network, which hosts both local and global events that celebrate Hispanic employees' contributions, cultures, and interests. The feedback included in the diversity reports was universal in that these groups made employees feel more welcome and comfortable in their work environment.

The second most prominent theme was a focus on recruiting at HSIs. In particular, tech companies such as Apple, Google, IBM, and Microsoft all had very active recruiting programs at these universities. This strategy often aligns with broader community efforts as companies leverage relationships with specific organizations, such as the SHPE, to connect with students.

Third, while recruiting plays a significant role in companies' strategies to meet diversity goals, retention and promotion are key as well. Career development and mentoring programs are the most commonly reported ways that companies effectively addressed the shortfalls of Hispanic people in high-level positions. Again, high numbers of tech companies mentioned these programs, as did pharmaceutical and financial institutions. As an example, BlackRock's Somos (We Are) Latinx & Allies Network connects employees with not only internal development options but also external mentorship possibilities.

The fourth prominent theme is working with external Hispanic groups. Through these relationships, companies create direct connections with members of the broader Hispanic community, with the goal of leveraging those ties to recruit new employees and strengthen bonds with existing workers. This tactic often also benefits the external groups with which they partner. For example, Lockheed Martin has teamed with the SHPE's National Institute of Leadership Achievement to develop the leadership skills of the organization's student chapter leaders.

These focus areas also align with what experts say is important in establishing and maintaining a more diverse workforce. Dr. Mark Rosenberg, a civilian SME and former president of Florida International University, has said that understanding cultural expectations within Hispanic communities is a critical early step in creating a more diverse workforce. "This is an economics and prosperity problem," according to Rosenberg. "It's in the nation's interest that we have people who are prosperous….It's a moral imperative that we make sure groups are not left out so pervasively that they [do not see] any opportunities to grow. We have to increase engagement."

Companies that successfully implement diversity measures—and reap the rewards—do so through a sustained effort and commitment from all levels of the organization. It requires a willingness to listen, learn, and take action to create a more equitable and inclusive workplace. As Rosenberg said, "Mindset matters greatly. How minorities see opportunities for success matters."

In the next sections, we discuss what our literature review and SME discussions have revealed about which recruitment, retention, and promotion strategies work best for Hispanic workers.

Recruitment

When trying to recruit Hispanic people, companies should keep a few considerations in mind that could lead to more successful results [96-97]:

- English may not be their first language. Many Hispanic people speak Spanish as their first language, and although they may be bilingual, they may feel more comfortable communicating in Spanish. Thus, hiring managers should consider the language abilities of their potential candidates and ensure that they have the necessary language resources in place.
- Hispanic workers are known to value flexibility and work-life balance. Hispanic people may have different work schedules or family obligations, and hiring managers should be flexible and accommodating to their needs when possible [98]. Offering flexible schedules or remote work options can also help attract Hispanic candidates.
- They may use different recruitment resources. Hiring managers should consider the recruitment resources that Hispanic candidates are likely to use. These resources may include their personal networks, job boards and websites that cater to Hispanic job seekers, or partnerships with Hispanic organizations and community groups.
- There are many cultures within the Hispanic community. Hispanic people often come from diverse cultural backgrounds, and hiring managers should be sensitive to these differences. The hiring managers should also be aware of cultural nuances that may affect communication and workplace expectations.

Recruiting Hispanic employees requires a targeted approach that considers the unique cultural and linguistic factors relevant to this population. Some specific strategies that companies have leveraged to recruit more Hispanic employees include the following:

- Building relationships with Hispanic organizations and communities. Companies can build relationships with local Hispanic organizations and communities to better understand the needs and challenges of Hispanic job seekers [99]. By engaging with these groups, companies can create opportunities for outreach and recruitment.

- Recruiting bilingual employees. Companies can attract more Hispanic employees by actively recruiting bilingual candidates who are fluent in both Spanish and English. Bilingual employees can help bridge the language and cultural barriers that may exist in the workplace and create a more inclusive environment, while also providing other benefits such as enhanced communication skills [100].
- Offering targeted training and development programs. Companies can invest in training and development programs that are tailored to the needs and experiences of Hispanic employees. These programs can help Hispanic employees feel supported and valued and can also help them acquire new skills and advance in their careers. Past failures of these programs could be at least partly addressed if the focus shifted from simply helping Hispanic people find jobs to helping them find better jobs [101].
- Providing mentorship and networking opportunities. Companies can offer mentorship and networking opportunities to Hispanic employees, which can help them build relationships and connections within the company and the industry [102]. This can also help Hispanic employees overcome any cultural barriers that may exist and feel more included in the workplace.
- Being culturally sensitive in recruitment and retention practices. Companies should be mindful of cultural differences when recruiting and retaining Hispanic employees [103]. This can include providing flexible work arrangements that accommodate family responsibilities and cultural practices, as well as recognizing and celebrating important cultural events and holidays.

In addition, SMEs/POs highlighted the importance of having a strategic mindset when it comes to recruitment, even more so when trying to access a broader, more diverse pool of candidates. Organizations should position themselves to have a presence in Hispanic communities—both physically and online. Many top companies (and even smaller local businesses) are leveraging organizations that focus on Hispanic diversity. One example is tech companies partnering with the SHPE, but there are many other potential partnerships across the country.

SMEs/POs also emphasized that community leaders should be part of any recruitment plan. The relationship Florida International University built with various chambers of commerce and other local groups made a substantial difference in creating a presence in Miami's Hispanic communities. Hispanic culture tends to be very community-focused, leaning on family elders and community leaders first. Making connections with these community leaders can open doors to people within those communities who were previously not reachable.

Retention

Next, the literature review and SME discussions highlighted the following strategies for employers to improve retention of Hispanic employees:

- Create a welcoming workplace culture. Employers can create a welcoming and inclusive workplace culture by celebrating diversity and recognizing the contributions of Hispanic employees. Employers can also provide training to their staff on cultural competency and diversity. Organizations such as FedEx have created groups such as the Hispanic Action Network with the goal of giving the community a voice and a direct pipeline to decision-makers.
- Offer career development opportunities. Providing career development opportunities such as mentoring, coaching, training, and promotions can demonstrate that the employer is invested in the professional growth and success of its Hispanic employees. Bristol Myers Squibb started programs that positioned Hispanic workers for executive roles (vice president and higher)—with the hope of doubling their representation in these more senior jobs over the next few years.
- Provide benefits and perks. Offering competitive salaries, health insurance, retirement plans, flexible schedules, and other benefits can improve the quality of life of Hispanic employees and increase their loyalty to the company.
- Communicate effectively. Employers can ensure effective communication by providing bilingual training, offering translation services, and recognizing cultural nuances in communication styles. Improved communication should lead to greater productivity for current employees and help attract new ones. Improved safety and compliance are also important byproducts of better communication.
- Foster a sense of community. Employers can encourage Hispanic employees to form affinity groups or ERGs to connect with one another, share experiences, and build a sense of community within the workplace. Eighty-eight percent of the Fortune 500 companies' reports that we reviewed for this report highlighted that their ERGs can be a vehicle for advancing all the strategies listed above. ERGs can facilitate the provision of specific opportunities for underrepresented groups within an organization while also providing avenues for broader diversity, inclusion, and understanding. ERGs can also play a primary role in both recruitment and retention simply by demonstrating that the company has a welcoming and inclusive environment.

By implementing these strategies, employers can create an inclusive workplace where Hispanic employees feel valued and supported, leading to higher retention rates and a more diverse and productive workforce.

Promotion

Experts say there are several ways company leaders can make clearer, simpler, and more equitable paths to promotion. This starts with addressing biases that a company's leaders, employees, or organizational culture may have. Hidden biases in hiring strategies plague even those companies that aggressively address diversity and inclusion shortfalls [104]. The shortfall of underrepresented groups in leadership positions remains a significant problem in the private sector and is most dramatic among the Hispanic population [105]. Even as the Hispanic share of the total US population approaches 20 percent, they still make up only about 4 percent of company executives [106].

Addressing bias in hiring and promotion practices is a complex and ongoing process that requires a multifaceted approach. Unconscious (or implicit) bias tends to be the most common form in hiring practices. According to Vanderbilt University, unconscious bias simply favors one segment of workers over another. It can be quite subtle and involve a person exhibiting biased behavior without being conscious of discriminating against anyone. A report from Deloitte revealed that of the 3,000 people interviewed, 86 percent reported that bias at the workplace negatively affected their productivity [106]. Bias is pervasive, though, and can start before one is even hired. Experts have focused on several actions that can be taken that will chip away at bias and its long-term effects. They relate directly to many of the strategies that companies have already implemented in recent years to address recruitment, retention, and promotion [107]. SMEs highlighted the following strategies to help remove any bias from promotion practices:

- Review and update job descriptions. Companies should review their job descriptions to ensure that they do not contain any language that may be biased or discriminatory. This might include removing unnecessary educational or language requirements that may unfairly disadvantage Hispanic candidates.
- Use blind screening techniques. Companies can use blind screening techniques to minimize the impact of bias in the hiring and promotion processes. This can include removing identifying information such as names, addresses, and photographs from application materials or using software that filters resumes based on qualifications rather than on personal characteristics.
- Provide training for interviewers. Interviewers should be trained on how to recognize and avoid bias in the interview process. This can include providing them with resources on cultural sensitivity and unconscious bias and conducting regular training sessions to reinforce these principles.

- Establish DEI goals and track progress. Companies should set goals for increasing diversity and inclusion in their ranks and track their progress over time. Goals are different from quotas in that they are not binding, but tracking progress can ensure that the company is actively working to address bias and promote equity. In this way, companies can more actively promote equality of opportunity through fairness and transparency. Companies should deploy analytic tools to make their promotions and pay processes and criteria completely transparent and ensure they are fair.
- Promote openness and tackle microaggressions. Indirect and sometimes even unintentional statements or actions of discrimination are considered microaggressions. Companies should uphold a zero-tolerance policy for discriminatory behavior such as bullying and harassment—and work to develop the ability of managers and staff to identify and address microaggressions. They should also establish norms for what constitutes open, welcoming behavior and ask leaders and employees to assess each other on how they are living up to that behavior.
- Place core business leaders at the heart of the diversity effort. Companies need high-ranking leaders playing an active role in diversity efforts beyond their human resources functions or ERG participation. They also need to strengthen inclusive leadership capabilities among their managers as well as their executives and more emphatically hold all leaders to account for progress [108].

Overall, addressing bias in Hispanic hiring, retention, and promotion practices requires a commitment to ongoing education, awareness, and action. By taking these steps, companies can help to create a more diverse and inclusive workplace that reflects the full range of talent and perspectives in the larger society.

Main takeaways for the military

Civilian literature and SMEs offer many insights into strategies the private sector uses to recruit, retain, and promote Hispanic employees. Most of these strategies are also used in the military, but a few are not. We recommend DOD and the Services consider further incorporating some of these into their Hispanic recruiting, retention, and promotion efforts, including the following:

- Further recognize and learn about the subcultures that exist within the Hispanic community
- Build relationships with local Hispanic community leaders and organizations, not just the big national organizations
- Offer training and development programs with Hispanic interests in mind

- Provide formal in-service mentorship programs
- Set representation goals, design initiatives to help achieve those goals, and use data to track progress toward the goals—initiatives should be designed with a specific evaluation and data collection plan in mind
- Provide more training for recruiters on the challenges the Hispanic community faces
- Place key leaders at the heart of any effort to increase Hispanic representation to signal the importance of the effort.

Appendix H: "Yo Soy El Army" Campaign Analysis

The "Yo Soy El Army" campaign was a targeted Hispanic recruitment initiative using Spanish-language advertisements from 2001 to 2005. This Army campaign provided a quasi-experimental environment to evaluate the effects of Spanish-language advertisements on Hispanic recruitment. We used a difference-in-differences regression design based on enlisted accessions in the MEPCOM data file. Specifically, we compared the percentage of accessions that are Hispanic in the Army to the percentages within the other Services. Controlling for average Hispanic accessions in each Service and each fiscal year, we expected Army Hispanic accession rates to increase relative to the other Services when the campaign was active. This design assumed that annual changes in Hispanic accessions across services would be identical in the absence of the "Yo Soy El Army" campaign. This assumption relied on two components: (1) no other simultaneous policies differentially influenced Hispanic recruitment in the Army relative to the other Services during the treatment period, and (2) Hispanic accessions during the treatment period followed similar trends. One way to test these assumptions was to establish parallel pre-trends. The parallel pre-trends test would fail if prior to the policy, Hispanic representation among Army accessions was changing faster or slower than representation in the other Services. In this case, the other Services would not serve as a representative comparison group, and the estimated effect of the policy would be biased by differential trends.

The simultaneous policies assumption would fail if the Army enacted another policy from 2001 to 2005 that increased Hispanic accessions. For instance, suppose the Army simultaneously reduced minimum education requirements, which disproportionately increased the number of Hispanic people who were eligible to enlist. In this case, we could not disentangle the effect of the "Yo Soy El Army" campaign from the reduced education requirements, so our estimates would identify the outcomes of both policies combined, rather than the single campaign.

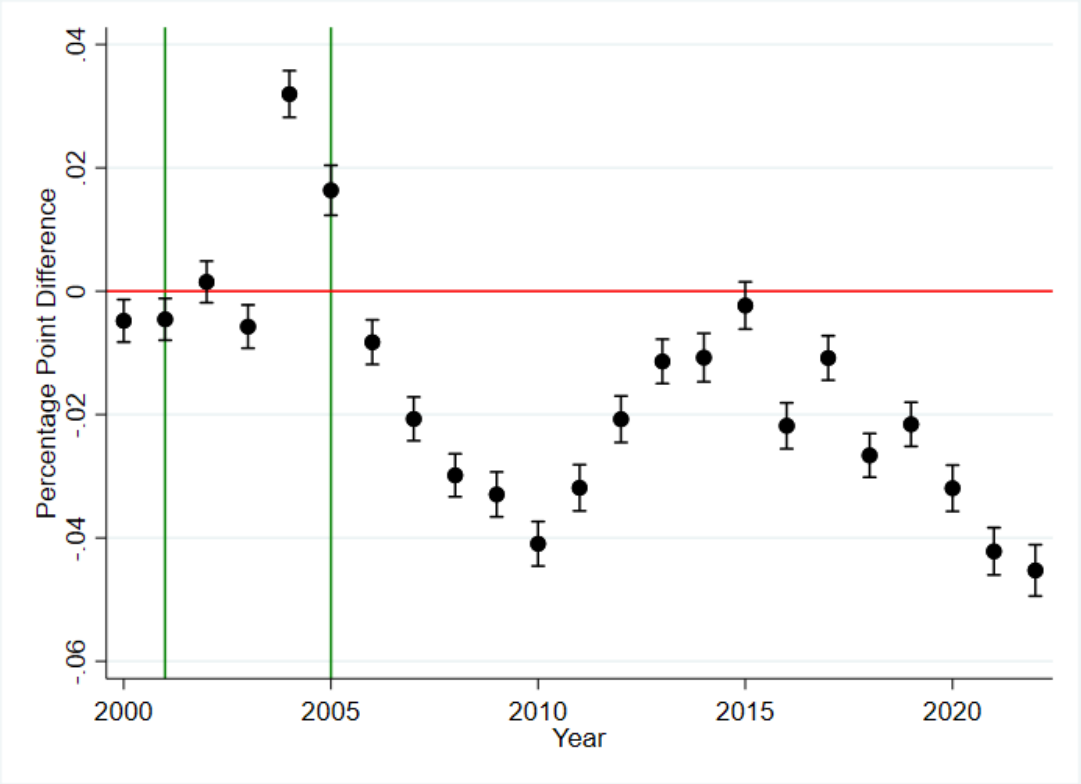
We could not empirically confirm with DMDC data the lack of simultaneous policies, which limited our ability to estimate causal effects. There were certainly other programs initiated during this period, such as the Army's "March2Success" test preparation program. However, we are not aware of any other Army-specific program influencing Hispanic accessions that was active between only 2001 and 2005, so we believe our model primarily estimated the outcomes of the "Yo Soy El Army" campaign.

We also could not evaluate pre-trends because we had only one year of data prior to the "Yor Soy El Army" campaign (2000). Nonetheless, we conducted an event study comparing Hispanic accessions in the Army to those of other Services by year. Figure 22 shows the point estimates of their associated and 95 percent confidence intervals, where each point estimate reflects the difference between the percentage of the Army's accessions and the other Services' accessions who were Hispanic in a given year.

Though we could not test for trends, we found the level of Hispanic recruitment in the Army to be similar to that in the other Services in 2000. Given limited evidence to support our assumptions, we interpreted our results cautiously.

Figure 22 visually depicts the outcomes of the campaign. If the "Yo Soy El Army" campaign influenced recruitment, we would expect a relative increase in Army Hispanic accessions between 2001 and 2005, with the strongest effect near the end of the period after the advertisements had been running for some time. We found the campaign had little effect until 2004, when there was a large increase in Hispanic accessions relative to the other Services (approximately 3 percentage points). Surprisingly, the effect did not persist after the conclusion of the campaign. After the campaign ended in 2005, Hispanic accession rates in the Army fell to levels similar to those before the program's implementation. This result aligns with a 2008 study, which found that the persuasive effects of political advertisements decay quickly and that sustained efforts are required [109].

Figure 22. Difference in Hispanic representation at accession for Army relative to other Services



Source: CNA-generated from DMDC data.

Note that a cyclical trend took place after the end of the campaign. The reasons for this trend are unclear, but it is clear that the Army performed the best in Hispanic accessions relative to the other Services while the campaign was active. When the campaign ended, it lost all the gains and has not really recovered relative to the other Services. To compare the Army trends to those of other Services, Figure 23 plots Hispanic representation among Army and other Services' accessions over time. Following the end of the "Yo Soy El Army" campaign, Hispanic representation among Army accessions was at its lowest point and remained approximately fixed until 2010. At the same time, Hispanic representation among accessions in the other Services consistently increased. After 2010, Hispanic representation among accessions steadily rose across all Services, with faster Army growth between 2010 and 2015 along with faster growth in the other Services after 2015.

Figure 23. Hispanic representation at accession for the Army and the other Services

Source: CNA-generated from DMDC data.

Next, we estimated the following difference-in-differences regression:

$$HHSSssHH_{SSssRR} = \beta\beta_1 CCSSmmHHSSSSCCmm_{ssRR} + \beta\beta_2 CCSSRRSSCCRRmm_i + \beta\beta_3 TTRRssRR_{SS} + \delta\delta_{ss} + \delta\delta_{RR} + \beta\beta_0 + \varepsilon\varepsilon_{SSssRR}$$

In this regression, $Hisp_{ist}$ indicates whether a servicemember in service who accessed in a year is Hispanic. $Campaign_{st}$ is an indicator equal to one for Army accessions during the "Yo Soy El Army" campaign from 2001 to 2005. $\beta\beta 1$ estimates the effect of the policy on the fraction of Hispanic accessions. We controlled for the servicemember's citizenship status ($CCCCCCCCCCCCnni$) and ASVAB verbal and word knowledge scores ($TTCCTTCCCC$), which may influence the impact of Spanish-language advertisements on these populations. We included controls for service ($\delta\delta TT$) and year

($\delta\delta CC$) to account for unobserved baseline differences across the Services and over time. β_0 is a constant, while ε_ist is a mean 0 error term.

Table 27 shows the estimated results. Column (1) provides the simplest regression, with each subsequent column adding additional controls. Without accounting for differences across fiscal year, service, and other controls, the campaign appears to have had a negative impact on accessions. However, lower Hispanic accession rates in the Army in the early 2000s bias this estimated effect downward. When accounting for year and Service-specific effects in columns (2) and (3), we found that the campaign increased Hispanic representation among accessions by 0.6 and 2.7 percentage points, respectively. In column (4), we added citizenship and test scores controls to match the equation above. Our main estimate in column (4) shows the "Yo Soy El Army" campaign increased Hispanic representation among accessions by 3.9 percentage points.

Table 27. Impact of "Yo Soy El Army" campaign

	(1)	(2)	(3)	(4)	(5)
Campaign	-0.038***	0.006***	0.027***	0.039***	0.186***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.004)
Campaign x Citizen					-0.154***
					(0.004)
Year FE	No	Yes	Yes	Yes	Yes
service FE	No	No	Yes	Yes	Yes
Controls	No	No	No	Yes	Yes
Observations	3,697,187	3,697,187	3,697,187	3,432,272	3,432,272

Source: DMDC data file from 2000 to 2022.

We also tested for heterogeneity in these effects. We expected the effects to be larger among groups with limited English proficiency, such as non-citizens. In fact, only 25 percent of Hispanic non-citizens speak English well compared to 52 percent of naturalized Hispanic citizens and over 88 percent of native-born Hispanic citizens [110]. Thus, we used citizenship as a proxy for English proficiency of both the recruit and their family. We interacted this variable with the indicator for the "Yo Soy El Army" campaign to estimate differential effects. In column (5), the first row shows our estimate of the impact of the campaign on Hispanic non-citizens. We found that the campaign increased relative recruitment among these groups by 18.6 percentage points. However, as shown in the second row, this effect was 15.4 percentage points lower for Hispanic citizens. So, though Hispanic recruitment for both citizens and non-citizens increased during the campaign years, when we subtracted these two coefficients, we found that non-citizen Hispanic recruitment increased about 3.2 percentage points more than Hispanic citizen recruitment. Matching our expectation, the "Yo Soy El Army" campaign increased Hispanic recruitment, especially among non-citizens (and their influencers) who were more likely to have limited English proficiency.

These results suggest that targeted advertising campaigns may take several years to become effective. As seen in Figure 22, the Army ran the "Yo Soy El Army" campaign for three years before Hispanic representation among accessions increased relative to the other Services. In addition, the immediate drop-off after 2005 suggests that the Services must continue to run these advertisements because they fail to have persistent effects when the campaign ends.

Figures

Tables

Abbreviations

ACS	American Community Survey
ACT	American College Test
AC	active component
AF/A1P	Air Force Directorate of Force Management Policy
AFOQT	Air Force Officer Qualifying Test
AFQT	Armed Forces Qualification Test
AFRS	Air Force Recruiting Service
ASVAB	Armed Services Vocational Aptitude Battery
D2T	Defense Task Force 2040
DEI	diversity, equity, and inclusion
DMDC	Defense Manpower Data Center
DMOC	Diversity Management Operations Center
DOD	Department of Defense
ERG	employee resource group
FITREP	Fitness Report
FY	fiscal year
G1 GED	General Educational Development
GO	general officer
HEAT	Hispanic Empowerment and Advancement Team
HSI	Hispanic-serving institution
HVLA	Hispanic Veterans Leadership Alliance
JROTC	Junior Reserve Officer Training Corps
M&RA	Manpower and Reserve Affairs
MAVNI	Military Accessions Vital to the National Interest
MEPCOM	Military Entrance Processing Command
MLDC	Military Leadership Diversity Commission
MOS	Military Occupational Specialty
OPA	Office of People Analytics

References

[1] Martin, Gillian Conte. 2014. "The Effects of Cultural Diversity in the Workspace." *Journal of Diversity Management* 9 (2): 89-92.

[2] Köllen, Thomas. 2019. "Diversity Management: A Critical Review and Agenda for the Future." *Journal of Management Inquiry* 30 (3): 259-272.

[3] Roberson, Quinetta M. 2019. "Diversity in the Workplace: A Review, Syntheses, and Future Research Agenda." *Annual Review of Organizational Psychology and Organizational Behavior* 6: 69-88.

[4] Hunt, Vivian, Dennis Layton, and Sara Price. 2015. *Diversity Matters.* McKinsey & Company. https://www.insurance.ca.gov/diversity/41-ISDGBD/GBDExternal/upload/McKinseyDivmatters-201501.pdf.

[5] Picincu, Andra. 2020. "What Are the Advantages of a Diverse Workforce?". *Houston Chronicle*. July 6, 2020. https://smallbusiness.chron.com/advantages-diverse-workforce-18780.html.

[6] Wilton, Leigh S., Diana T. Sanchez, Miguel M. Unzueta, and Nava Caluori. 2019. "In Good Company: When Gender Diversity Boosts a Company's Reputation." *Psychology of Women Quarterly* 43 (1): 59-72.

[7] Gomez, L.E., and Patrick Bernet. 2019. "Diversity Improves Performance Outcomes." *Journal of the National Medical Association* 111 (4): 383-392.

[8] Hunt, Vivian, Lareina Yee, Sara Prince, and Sundiatu Dixon-Fyle. 2018. "Delivering Through Diversity." McKinsey & Company. https://www.mckinsey.com/capabilities/people-and-organizational-performance/our-insights/delivering-through-diversity.

[9] Stahl, Ashley. 2021. "Benefits of Diversity in the Workplace." Forbes. Dec. 17, 2021. https://www.forbes.com/sites/ashleystahl/2021/12/17/3-benefits-of-diversity-in-the-workplace/?sh=539674b22ed2.

[10] Daniel, Samantha, Adon Neria, Katherine Schulz, Juan Arroyo-Flores, Brice McKeever, Rachel Trump-Steele, Jasmine Wheeler, and Ashlea Klahr. 2022. *An Exploration of the Return on Investment for Diversity & Inclusion in the Military Using Cluster Analysis to Identify Force-Wide Climates, Correlates, and Implications.* https://www.opa.mil/research-analysis/quality-of-work-life/workplace-climate/an-exploration-of-the-return-on-investment-for-diversity-inclusion-in-the-military-using-cluster-analysis-to-identify-force-wide-climates-correlates-and-implications-executive-report/.

[11] Executive Order 13171. Oct. 12, 2000. *Hispanic Employment in the Federal Government*. https://www.govinfo.gov/content/pkg/WCPD-2000-10-16/pdf/WCPD-2000-10-16-Pg2451.pdf.

[12] Executive Order 13583. Aug. 18, 2011. *Establishing a Coordinated Government-Wide Initiative to Promote Diversity and Inclusion in the Federal Workforce*. https://obamawhitehouse.archives.gov/the-press-office/2011/08/18/executive-order-13583-establishing-coordinated-government-wide-initiativ.

[13] Executive Order 13985. Jan. 20, 2021. *Advancing Racial Equity and Support for Underserved Communities Through the Federal Government*. https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/20/executive-order-advancing-racial-equity-and-support-for-underserved-communities-through-the-federal-government/.

[14] Executive Order 14035. June 25, 2021. *Diversity, Equity, Inclusion, and Accessibility in the Federal Workforce*. https://www.whitehouse.gov/briefing-room/presidential-actions/2021/06/25/executive-order-on-diversity-equity-inclusion-and-accessibility-in-the-federal-workforce/.

[15] Military Leadership Diversity Commission. Mar. 15, 2011. *From Representation to Inclusion: Diversity Leadership for the 21st-Century Military.*

[16] Department of Defense Inspector General. Sept. 30, 2022. *Evaluation of the DOD's Implementation of the Military Leadership Diversity Commission's 2011 Report Recommendations and the DOD Diversity and Inclusion Strategic Plan for 2012 to 2017.* DODIG-2022-144.

[17] Department of Defense. 2012. *Department of Defense Diversity and Inclusion Strategic Plan 2012-2017.* https://diversity.defense.gov/Portals/51/Documents/DoD_Diversity_Strategic_Plan_%20final_as%20of%2019%20Apr%2012%5B1%5D.pdf.

[18] US Marine Corps. 2021. *US Marine Corps Diversity, Equity, and Inclusion Strategic Plan.*

[19] US Army. Sept. 1, 2020. *Army People Strategy: Diversity, Equity, and Inclusion Annex.* https://www.army.mil/e2/downloads/rv7/the_army_people_strategy_diversity_equity_and_inclusion_annex_2020_09_01_signed_final.pdf.

[20] Dubina, Kevin. "Hispanics in the Labor Force: 5 Facts." US Department of Labor Blog. Sept. 15, 2021. https://blog.dol.gov/2021/09/15/hispanics-in-the-labor-force-5-facts.

[21] Cohn, D'Vera, and Andrea Caumont. 2016. "10 Demographic Trends Shaping the US and the World in 2016." Pew Research Center. Mar. 31, 2016. https://www.pewresearch.org/fact-tank/2016/03/31/10-demographic-trends-that-are-shaping-the-u-s-and-the-world/.

[22] Bass, Diana, and Jeff Green. 2022. "Microsoft's First Median Pay Report Shows Racial Gaps in Top Jobs." *Seattle Times*. Oct. 27, 2022. https://www.seattletimes.com/business/microsofts-first-median-pay-report-shows-racial-gaps-in-top-jobs/.

[23] Melillo, Gianna. 2022. "Report Details Underrepresentation of Hispanic Workers in the Media." Changing America. Oct. 7, 2022. https://thehill.com/changing-america/respect/diversity-inclusion/3678212-report-details-underrepresentation-of-hispanic-workers-in-the-media/.

[24] Fraser, Jayme, and Jessica Guynn. 2021. "Amazon Has More Black and Hispanic Employees than Ever, but Most People in Top Jobs Are Still White and Male." *USA Today*. Oct. 4, 2021. https://www.usatoday.com/story/tech/2021/10/04/amazon-black-hispanic-workers-executives-diversity/5955223001/?gnt-cfr=1.

[25] Long, Katherine Anne. 2021. "New Amazon Data Shows Black, Latino and Female Employees Are Underrepresented in Best-Paid Jobs." *Seattle Times*. Apr. 14, 2021. https://www.seattletimes.com/business/amazon/new-amazon-data-shows-black-latino-and-female-employees-are-underrepresented-in-best-paid-jobs/.

[26] Guadalupe, Patricia. 2015. "More Latinos Needed in Corporate Executive Positions: Report." NBC News. Nov. 30, 2015. https://www.nbcnews.com/news/latino/more-latinos-needed-corporate-executive-positions-report-n471466.

[27] Cumming, Carmen Sanchez. 2022. "Latino Workers Are Often Segregated into Bad Jobs, but a Strong US Labor Movement Can Boost Job Quality and US Economic Growth." Washington Center for Equitable Growth. Oct. 13, 2022. https://equitablegrowth.org/latino-workers-are-often-segregated-into-bad-jobs-but-a-strong-u-s-labor-movement-can-boost-job-quality-and-u-s-economic-growth/.

[28] Quester, Aline. 2010. *Marine Corps Recruits: A Historical Look at Accessions and Bootcamp Performance.* CNA. CAB D0023537.A1 Final.

[29] Malone, Lauren, Laura Kelley, and Adam Clemens. 2011. *The Qualified Candidate Population: Obtaining Highly Qualified, Diverse Accessions for the USMC Officer Corps.* CNA. CRM D0025113.A2 Final.

[30] Department of Defense. 2020. *Department of Defense Board on Diversity and Inclusion Report: Recommendations to Improve Racial and Ethnic Diversity and Inclusion in the US Military.* https://media.defense.gov/2020/Dec/18/2002554852/-1/-1/0/DOD-DIVERSITY-AND-INCLUSION-FINAL-BOARD-REPORT.PDF.

[31] White House Initiative on Advancing Education Equity, Excellence, and Economic Opportunity for Hispanics. 2023. "Interagency Working Group." https://sites.ed.gov/hispanic-initiative/federal-interagency-working-group-fiwg/.
[32] Department of Defense. 2022. *Diversity, Equity, Inclusion, and Accessibility Strategic Plan*. https://media.defense.gov/2022/Sep/30/2003088685/-1/-1/0/DEPARTMENT-OF-DEFENSE-DIVERSITY-EQUITY-INCLUSION-AND-ACCESSIBILITY-STRATEGIC-PLAN.PDF.
[33] Department of Defense. 2022. *NSM-3 DOD Agency Plan*. https://prhome.defense.gov/Portals/52/Documents/03012023_NSM-3_DoD%20Agency%20Plan.pdf?ver=AT7iH_KF1l2TsqoVI_GjMQ%3d%3d.
[34] Zalis, Shelly. 2019. "Inclusive Ads Are Affecting Consumer Behavior, According to New Research." Think with Google. Nov. 2019. https://www.thinkwithgoogle.com/future-of-marketing/management-and-culture/diversity-and-inclusion/thought-leadership-marketing-diversity-inclusion/.
[35] Asch, Beth J., Paul Heaton, and Bogdan Savych. 2009. *Recruiting Minorities: What Explains Recent Trends in the Army and Navy?* RAND. MG-861-OSD.
[36] Bradley, Elizabeth, Scott T. Macdonell, and Jeff Peterson. Dec. 2014. *Positioning Army ROTC for Future Success.* CNA. DRM-2014-U-008827-Final.
[37] Military Leadership Diversity Commission. Nov. 2009. *Requirements and the Demographic Profile of the Eligible Population: Weight Requirements and Rising and Differential Rates of Obesity.* Issue Paper #2.
[38] Department of Defense. *Military Accessions Vital to National Interest (MAVNI) Recruitment Pilot Program.* Accessed Feb. 23, 2023. https://dod.defense.gov/news/mavni-fact-sheet.pdf#:~:text=The%20Secretary%20of%20Defense%20authorized%20the%20military%20services,2016%2C%20and%20will%20continue%20through%20September%2030%2C%202016.
[39] Joint Advertising Market Research Studies (JAMRS). 2013. *Youth and Future Plans Comparisons by Race/Ethnicity*.
[40] Hattiangadi, Anita, Gary Lee, and Aline Quester. Jan. 2004. *Recruiting Hispanics: The Marine Corps Experience Final Report.* CNA. CRM D0009071.A2.
[41] Krogstad, Jens Manuel, Jeffrey S. Passel, and Luis Noe-Bustamante. 2022. "Key Facts About US Latinos for National Hispanic Heritage Month." Pew Research Center. Sept. 23, 2022. https://www.pewresearch.org/fact-tank/2022/09/23/key-facts-about-u-s-latinos-for-national-hispanic-heritage-month/.
[42] Horvath, Josh, Amanda Kraus, and Dave Reese. Aug. 2022. *Racial Differences in Navy Officer FITREP Outcomes and O-4 Selection.* CNA. DRM-2022-U-032535-1Rev.
[43] Horvath, Josh, Sarah Wilson, Amanda Kraus, and Dave Reese. Feb. 2023. *Improving Diversity in Marine Corps Officer Career Progression: Race, Ethnicity, and Gender Differences in O-5 Selection.* CNA. DRM-2023-U-034886-SR1.
[44] Garza, Irene. 2015. "Advertising Patriotism: The "Yo Soy El Army" Campaign and the Politics of Visibility for Latina/o Youth." *Latino Studies* 13 (2): 245-268.
[45] Camacho, Roberto. 2022. "Military Recruiters Are Increasingly Targeting Latinx Students for Enlistment." Prism. Sept. 19, 2022. https://prismreports.org/2022/09/19/military-recruiters-target-latinx-students/.
[46] US Census Bureau. Oct. 27, 2022. *2020 Annual Social and Economic Supplements*. https://www.census.gov/data/datasets/2020/demo/cps/cps-asec-2020.html.
[47] Joint Advertising, Market Research & Studies (JAMRS). 2022. *Spring 2022 Propensity Update*.
[48] Joint Advertising, Market Research & Studies (JAMRS) Program. 2023. *Opportunities to Attract a Diverse Population of New Recruits*.

[49] MARADMIN 584/22. Nov. 9, 2022. *Fiscal Year 2023 Outreach*. https://www.marines.mil/News/Messages/Messages-Display/Article/3213318/fiscal-year-2023-outreach-events/.
[50] Military Leadership Diversity Commission. Dec. 2009. *Common Outreach and Recruiting Practices Across the Services.* MLDC Issue Paper #8.
[51] National Center for Education Statistics. May 2021. *Public High School Graduation Rates.* US Department of Education, Institute of Education Sciences. https://nces.ed.gov/programs/coe/indicator/coi/high-school-graduation-rates.
[52] Department of Defense Instruction 1145.01. May 4, 2020. *Qualitative Distribution of Military Manpower*. https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodi/114501p.pdf.
[53] Asch, Beth J., Christopher Buck, Jacob Alex Klerman, Meredith Kleykamp, and David S. Loughran. 2005. *What Factors Affect the Military Enlistment of Hispanic Youth? A Look at Enlistment Qualifications.* RAND. DB-484-OSD. https://www.rand.org/pubs/documented_briefings/DB484.html.
[54] Jaschik, Scott. 2022. "ACT and SAT Scores Fall." Inside Higher Ed. Oct. 17, 2022. https://www.insidehighered.com/admissions/article/2022/10/17/act-and-sat-scores-fall.
[55] Military Leadership Diversity Commission. Jan. 2010. *Requirements and the Demographic Profile of the Eligible Population: The Use of Standardized Aptitude Tests in Determining Eligibility for Military Service.* MLDC Issue Paper #10.
[56] Lim, Nelson, Louis T. Mariano, Amy G. Cox, David Schulker, and Lawrence M. Hanser. 2014. *Improving Demographic Diversity in the US Air Force Officer Corps.* RAND. RR-495-AF. https://www.rand.org/pubs/research_reports/RR495.html.
[57] US Air Force ROTC. 2023. "Highly Desired Majors." Accessed Mar. 23, 2023. https://www.afrotc.com/scholarships/desired-majors/.
[58] MyNAVYHR. "Scholarship Selection Criteria." Naval Reserve Officers Training Corps. Accessed Mar. 23, 2023. https://www.netc.navy.mil/Commands/Naval-Service-Training-Command/NROTC/Program-Info/#ScholarshipOpp.
[59] Anderson, Eugene, and Dongbin Kim. 2006. *Increasing the Success of Minority Students in Science and Technology.* American Council on Education.
[60] Neering, Kyle, Ray Wang, and Robert Shuford. Apr. 2021. *Population Representation in the Military Services: Fiscal Year 2019 Summary Report.* CNA. DRM-2021-U-029312-Final.
[61] GED Testing Service. "State-By-State Info on Online GED Testing." Accessed Feb. 22, 2023. https://ged.com/state-information-online-testing/.
[62] "March2Success. US Army." Accessed Feb. 22, 2023. https://www.march2success.com/main/index.
[63] Hunter Rhoades Center for Initial Military Training/Public Affairs Office. 2023. "Future Soldier Preparatory Course to Expand Based on Initial Success." US Army. Jan. 9, 2023. https://www.army.mil/article/263129/future_soldier_preparatory_course_to_expand_based_on_initial_success.
[64] The Armed Services Vocational Aptitude Battery. 2023. "Researchers: Fairness Information." https://www.officialasvab.com/researchers/fairness-information/.
[65] "Defense Advisory Committee on Personnel Testing. 2023." https://dacmpt.com/.
[66] Ward, Zachary J., Sara N. Bleich, Angie L. Cradock, Jessica L. Barrett, Catherine M. Giles, Chasmine Flax, Michael W. Long, and Steven L. Gortmaker. 2019. "Projected US State-Level Prevalence of Adult Obesity and Severe Obesity." *New England Journal of Medicine* 381 (25): 2440-2450.
[67] Department of Defense/Office of Personnel and Readiness. "2020 Qualified Military Available (QMA) Study." Accessed Mar. 13, 2023. https://prod-media.asvabprogram.com/CEP_PDF_Contents/Qualified_Military_Available.pdf.

[68] Huff, Jared. Nov. 2013. *Obesity and Attrition in the Enlisted Army.* CNA. DRM-2013-U-006045-Final.
[69] NAVMC 1200.1H. Sept. 7, 2022. *Military Occupational Specialties Manual*. https://www.marines.mil/Portals/1/Publications/NAVMC%201200.1H.pdf?ver=FSEja2jd4eCtb1U6H3wO3w%3d%3d.
[70] McIntosh, Molly F., and Seema Sayala. Dec. 2011. *Non-Citizens in the Enlisted US Military.* CNA. CAB D0026449.A1 Final.
[71] Executive Order 13269. 2002. *Expedited Naturalization of Aliens and Noncitizen Nationals Serving in an Active-Duty Status During the War on Terrorism.* https://www.govinfo.gov/content/pkg/FR-2002-07-08/pdf/02-17273.pdf.
[72] Stock, Margaret D. 2021. *Honoring Veterans and Military Families: An Examination of Immigration and Citizenship Policies for US Military Service Members, Veterans, and Their Families.* Senate Committee on the Judiciary: Subcommittee on Immigration, Citizenship, and Border Safety.
[73] Golfin, Peggy A., Jennifer Schulte, Anita U. Hattiangadi, and David Gregory. 2013. *Recruiting Uniformed Native and Heritage Speakers: An Assessment of the Army's 09L Program.* CNA. DRM-2013-U-004442-Final.
[74] US Citizenship and Immigration Services. 2022. "Military Naturalization Statistics." Nov. 10, 2022. https://www.uscis.gov/military/military-naturalization-statistics.
[75] Military Leadership Diversity Commission. Mar. 2010. *Military Occupations and Implications for Racial/Ethnic and Gender Diversity.* MLDC Issue Paper #23.
[76] Lim, Nelson, Jefferson P. Marquis, Kimberly Curry Hall, David Schulker, and Xiaohui Zhuo. 2009. *Officer Classification and the Future of Diversity Among Senior Military Leaders.* RAND. TR-731-OSD.
[77] Cohen, Rachel S. 2022. "Officer Promotions Still Competitive, but No Decision on 5-Year Window." *Air Force Times*. Sept. 19, 2022. https://www.airforcetimes.com/news/your-air-force/2022/09/19/officer-promotions-still-competitive-but-no-decision-on-5-year-window/.
[78] Acting Assistant Secretary of the Navy (Manpower and Reserve Affairs). Aug. 2022. *Modification to the Precept Conventing the Fiscal Year 2024 US Marine Corps Unrestricted Lieutenant Colonel Promotion Selection Board and Unrestricted Major Continuation Selection Board.*
[79] Wiler, Darby, and Nicholas A. Hurndon. 2008. "An Analysis of Performance at The Basic School as a Predictor of Officer Performance in the Operating Forces." Master's thesis, Naval Postgraduate School. https://core.ac.uk/download/pdf/36697944.pdf.
[80] Malone, Lauren, and Margaux Hoar. Sept. 2014. *Racial/Ethnic Performance Differences and Implications for The Basic School (TBS): A Literature Review.* CNA. DRM-2014-U-008329-Final.
[81] Horvath, Josh, Amanda Kraus, Ann D. Parcell, and David Reese. Jan. 2022. *Racial and Ethnic Differences in Navy Officer Fitness Reports (FITREPs).* CNA. DRM-2021-U-031487-Final.
[82] DOD Instruction 1320.14. 2020. *DOD Commissioned Officer Promotion Program Procedures*. https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodi/132014p.pdf?ver=NTt066LoBvDdTP3twLaniQ%3d%3d.
[83] National Institutes of Health. Sept. 27, 2021. *Scientific Workforce Diversity Seminar Series (SWDSS) Seminar Proceedings: Is Implicit Bias Training Effective?* https://diversity.nih.gov/sites/coswd/files/images/NIH_COSWD_SWDSS_Implicit_Bias_Proceedings_508.pdf.
[84] Ibanez, Gladys E., Angel Algarin, Rana Jaber, Disler Vanessa Ayala, Steve S. Martin, and Daniel J. O'Connell. 2019. "Gender, Age, and Ethnic Differences in Offending Behavior Among Hispanic/Latino Criminal Justice Clients." *Journal of Ethnic Criminal Justice* 17 (4): 339-360.

[85] Ogden, Cynthia L., Tala H. Fakhouri, Margaret D. Carroll, Craig M. Hales, Cheryl D. Fryar, Xianfen Li, and David S. Freedman. 2017. "Prevalence of Obesity Among Adults, by Household Income and Education—United States, 2011–2014." *Morbidity and Mortality Weekly Report* 66 (50): 1369.

[86] American Diabetes Association. 2022. "Statistics About Diabetes." July 7, 2022. https://diabetes.org/about-us/statistics/about-diabetes.

[87] Panchal, Nirmita, Heather Saunders, and Nambi Ndugga. 2022. *Five Key Findings on Mental Health and Substance Use Disorders by Race/Ethnicity.* Kaiser Family Foundation. https://www.kff.org/racial-equity-and-health-policy/issue-brief/five-key-findings-on-mental-health-and-substance-use-disorders-by-race-ethnicity/.

[88] "AFQT Test." Accessed Feb. 22, 2023. https://afqttest.com/.

[89] Borrell, Luisa N., Florence J. Dallo, and Kellee White. 2006. "Education and Diabetes in a Racially and Ethnically Diverse Population." *American Journal of Public Health* 96 (9): 1637-1642.

[90] Fothergill, Kate E., Margaret E. Ensminger, Kerry M. Green, Rosa M. Crum, Judith Robertson, and Hee-Soon Juon. 2008. "The Impact of Early School Behavior and Educational Achievement on Adult Drug Use Disorders: A Prospective Study." *Drug and Alcohol Dependence* 92 (1-3): 191-199.

[91] Niemeyer, Helen, Angela Bieda, Johannes Michalak, Silvia Schneider, and Juergen Margraf. 2019. "Education and Mental Health: Do Psychosocial Resources Matter?". *SSM-population Health* 7.

[92] Dickerson, Niki, Lisa Schur, Douglas Kruse, and Joseph Blasi. 2010. "Worksite Segregation and Performance-Related Attitudes." *Work and Occupations* 37 (1): 45-72.

[93] Earle, Caroline R. July 24, 2019. *Considerations for the Development of an Inclusive Military Model Phase 2 Inclusion Factor Findings.* Institute for Defense Analyses. NS D-10776.

[94] Air Force News. 2023. "The US Military Helps Naturalize Non-Citizens." Military.com. Accessed Mar. 23, 2023. https://www.military.com/join-armed-forces/eligibility-requirements/the-us-military-helps-naturlize-non-citizens.html#:~:text=Other%20restrictions%20non%2Dcitizens%20encounter,not%20receive%20until%20they%20reenlist.

[95] Catalino, Natacha, Nora Gardner, Drew Goldstein, and Jackie Wong. 2022. "Effective Employee Resource Groups Are Key to Inclusion at Work. Here's How to Get Them Right." McKinsey & Company. Dec. 7, 2022. https://www.mckinsey.com/capabilities/people-and-organizational-performance/our-insights/effective-employee-resource-groups-are-key-to-inclusion-at-work-heres-how-to-get-them-right#/.

[96] Coulombe, Kathleen, and William Rafael Gil. 2016. *The Changing US Workforce: The Growing Hispanic Demographic and Workplace.* Society for Human Resource Management and the Congressional Hispanic Caucus Institute. https://www.shrm.org/hr-today/public-policy/hr-public-policy-issues/documents/15-0746%20chci_research_report_fnl.pdf.

[97] Smith, Ray A. 2022. "Black and Hispanic Employees Often Get Stuck at the Lowest Rung in the Workplace." *Wall Street Journal*. July 31, 2022. https://www.wsj.com/articles/black-hispanic-employees-stuck-lowest-rung-workplace-11659131490#:~:text=Among%20the%20factors%20holding%20back,and%20customers%20and%20leading%20others.

[98] Erickson, Tammy. 2014. "Hispanic Talent Is the Future for Big Companies." *Harvard Business Review*. Jan. 14, 2014. https://hbr.org/2014/01/hispanic-talent-is-the-future-for-big-companies.

[99] Wachsman, Melanie Wolkoff. 2020. "10 Ways Companies Can Attract a Diverse Pool of Job Candidates." TechRepublic. Aug. 28, 2020. https://www.techrepublic.com/article/10-ways-companies-can-attract-a-diverse-pool-of-job-candidates/.

[100] National Institutes of Health. 2012. "Bilinguals Switch Tasks Faster Than Monolinguals, NIH Funded Study Shows." National Institutes of Health. Apr. 3, 2012. https://www.nih.gov/news-events/news-releases/bilinguals-switch-tasks-faster-monolinguals-nih-funded-study-shows.

[101] Klerman, Jacob Alex, and Michelle Blocklin. Apr. 17, 2019. "Tailoring Job Training Programs for Hispanics." National Research Center on Hispanic Children and Families. https://www.hispanicresearchcenter.org/research-resources/tailoring-job-training-programs-for-hispanics/.

[102] Perna, Mark C. 2021. "Why Mentoring Hispanic Youth Today Is Critical for the Talent Pipelines of Tomorrow." Forbes. Oct. 15, 2021. https://www.forbes.com/sites/markcperna/2021/10/15/why-mentoring-hispanic-youth-today-is-critical-for-the-talent-pipelines-of-tomorrow/?sh=2238adaf20f2.

[103] Navarro, Bruno J. 2022. "Latinx and Hispanic People Embody Their Diverse Cultures to Thrive at Workday." Workday Blog. Oct. 3, 2022. https://blog.workday.com/en-us/2022/latinx-hispanic-people-embody-diverse-cultures-thrive-workday.html.

[104] Kalev, Alexandra, Frank Dobbin, and Erin Kelly. 2006. "Best Practices or Best Guesses? Assessing the Efficacy of Corporate Affirmative Action and Diversity Policies." *American Sociological Review* 71 (4): 589-617.

[105] Swerzenski, J.D., Donald Tomaskovic-Devey, and Eric Hoyt. 2020. "This Is Where There Are the Most Hispanic Executives (and It's Not Where You Think)." Fast Company. Jan. 28, 2020. https://www.fastcompany.com/90456329/this-is-where-there-are-the-most-hispanic-executives-and-its-not-where-you-think.

[106] Nangla, Nehal, and Kathl Enderes. 2020. "Mitigating Bias in Performance Management." Deloitte Insights. June 22, 2020. https://www2.deloitte.com/us/en/insights/topics/talent/mitigating-bias-in-performance-management.html.

[107] Windley, David. "Recruiting for Diversity: Four Steps to Success." Forbes. Sept. 20, 2021. https://www.forbes.com/sites/forbeshumanresourcescouncil/2021/09/20/recruiting-for-diversity-four-steps-to-success/?sh=3d9c094a7fe5.

[108] Hunt, Vivian, Sara Prince, Sundiatu Dixon-Fyle, and Kevin Dolan. May 2020. *Diversity Wins: How Inclusion Matters.* McKinsey & Company. https://www.mckinsey.com/featured-insights/diversity-and-inclusion/diversity-wins-how-inclusion-matters#/.

[109] Hill, Seth J., James Lo, Lynn Vavreck, and John Zaller. 2008. *The Duration of Advertising Effects in the 2000 Presidential Campaign.* Proceedings of the Annual Meeting of the American Political Science Association.

[110] Hakimzadeh, Shirin, and D'Vera Cohn. 2007. *English Usage among Hispanics in the United States.* Pew Hispanic Center.

This page intentionally left blank.

This report was written by CNA's Resources and Force Readiness Division (RFR).

RFR provides analytic support grounded in data to inform resource, process, and policy decisions that affect military and force readiness. RFR's quantitative and qualitative analyses provide insights on a full range of resource allocation and investment decisions, including those pertaining to manning, maintenance, supply, and training. Drawing on years of accumulated individual and unit data, as well as primary data collections, the RFR toolbox includes predictive data analytics, statistical analysis, and simulation to answer optimization and what-if questions, allowing military leaders to make better informed decisions.

Dedicated to the Safety and Security of the Nation

CNA is a not-for-profit research organization that serves the public interest by providing in-depth analysis and result-oriented solutions to help government leaders choose the best course of action in setting policy and managing operations.

DRM-2023-U-035649-2Rev

3003 Washington Boulevard, Arlington, VA 22201
www.cna.org 703-824-2000