MLDC Research Areas

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Representative of Whom?

Selection of Representation Benchmarks

Abstract

Drawing on data from the Defense Man-
power Data Center and the Current Popula-
tion Survey, this issue paper outlines com-
monly considered external and internal
benchmarks, describes issues regarding their
measurement, and demonstrates how current
representation data from DoD compares
with the potential benchmarks. Our review
indicates that selection of the external
benchmark makes a difference in how one
views the appropriateness of the current
demographic mix. Further, internal bench-
marks answer important questions that DoD
and the Services may want to monitor.
When selecting benchmarks, it is most im-
portant to consider how they support organ-
izational goals for diversity.

Believing that a force reflecting
society is most likely to respect
societal values, advance societal
goals, and receive societal sup-
port, the U.S. military has sought to achieve
demographic balance while maintaining
force effectiveness (Kirby & Thie, 1997).
But how does it know when it has achieved
an appropriate balance? When assessing
demographic diversity (e.g., in terms of
race/ethnicity and gender) in the Depart-
ment of Defense (DoD) and the Services,
leaders need to determine an appropriate
benchmark, or comparison group, that they
believe the military should match. Kraus, as
cited in Lim, Cho, and Curry (2008), points
out that such "headcounting" does not illu-
minate the relationship between diversity
and performance and therefore will not suf-
fice if a broad definition of diversity is
adopted. Nevertheless, comparing current
demographic representation with appropri-
ate benchmarks (internal and external) can
show where there is weak representation in
the organization and where diversity efforts
could be focused. This issue paper outlines
commonly considered benchmarks,

describes issues regarding their measurement,
and demonstrates how current representation
data from DoD compares with these bench-
marks. The main body of the paper uses cur-
rent data for active DoD enlisted and officers.
Service-specific data from the Army, the
Navy, the Air Force, the Marine Corps, and
the Coast Guard are presented in the appen-
dix.

Data

Military data presented in this issue paper
come from the September 2008 Defense Man-
power Data Center (DMDC) dataset. Civilian
comparison data are from the October 2008
Current Population Survey (CPS). Because of
the nature of the CPS data, we deviate slightly
from the race/ethnicity categories presented in
MLDC (2009a). Our data groups Pacific Is-
landers with Asians rather than with non-
Hispanic others. For ease of readability in the
text of the document, we use *white* for white
non-Hispanics, *black* for black non-Hispanics,
Asian for Asian non-Hispanics, *other* for other
non-Hispanics, and *Hispanic* for individuals
of Hispanic ethnicity.

External Benchmarks

There are three major external benchmarks
commonly suggested for the military: the na-
tional population, the future national popula-
tion, and the eligible population. Each of these
implies a different standard. We describe
these benchmarks, discuss two issues in estab-
lishing external benchmarks (generating
benchmarks for women and dealing with
"unknown" races and ethnicities in military
data), and demonstrate the difference bench-
mark selection can make by showing repre-
sentation indexes that compare current DoD
demographic data with relevant benchmarks.

Available Benchmarks
Use of the *national population* as a bench-
mark implies that the military should be de-
mographically representative of the entire
national population. Chief of Naval

Operations ADM Gary Roughead summed up the rationale for such a benchmark thus: "When our Nation looks at its Navy, it should see its self reflected back."[1] Data for this benchmark are readily available through the CPS.

However, because the military is a closed system that develops senior leaders over the course of 20–25 years, if a Service believes that the demographic composition of its leadership should reflect the current national population, concern about the match between its incoming force and *the future national population* is warranted. The U.S. Census periodically produces estimates of future population demographics, which are publicly available.[2]

However, not all members of the U.S. population are eligible to serve in the U.S. military. Officers must be citizens, possess a college degree, meet height and weight standards, have no disqualifying medical conditions, and be of a certain age upon commission (e.g., between ages 18 and 28 for the Marine Corps). Enlisted personnel must meet their Service's requirements regarding aptitude, age, citizenship, number of dependents, moral eligibility, substance-abuse history, height and weight, physical fitness, and medical conditions. Overt homosexual identification is also a disqualifier for military personnel, but this policy is currently under review and may change. Because blacks and Hispanics currently meet eligibility requirements for officers and enlisted at lower rates than whites (Asch, Buck, Klerman, and Kleykamp, 2009), the demographic composition of the entire U.S. population does not match the population eligible for military service.[3]

Thus, the *eligible population* may be considered a more accurate demographic benchmark for DoD and the Services. However, the "true" eligible population is difficult to compute, given the number of eligibility requirements. For instance, in an effort to look at the effect of enlisted eligibility standards on Hispanics, Asch et al. (2009) used data from the 1997 National Longitudinal Survey of Youth to compute compliance with the Armed Forces Qualification Test, weight, and dependents standards; from the 2003 Youth Poll to examine compliance with standards related to drug use and criminal behavior; and from the 2000 Census to examine the impact of high-school graduation. In addition, these estimates contain inaccuracy because, for enlisted personnel, applicants can sometimes obtain a waiver for certain enlistment standards that they do not meet.

Due to the difficulty of estimating a "true" eligible population, a proxy for the eligible population is often constructed. Such proxies are used in the DoD Population Representation documents. For instance, these reports rely on CPS data, using citizens ages 18–44 as a civilian comparison for the enlisted force and using citizen college graduates ages 21–49 as a civilian comparison for the officer commissioned corps. In the data we present in this issue paper, we further refine the eligible population comparisons, using CPS data to define proxy eligible populations through age,[4] citizenship, education, and labor-force participation. Specifically, our proxy populations were the following:

- Junior enlisted (E-1–E-4): Active labor-force participant (i.e., currently working or seeking employment), high-school education or equivalent, between ages 19 and 30; no citizenship requirement because noncitizens can enlist and subsequently gain citizenship through military service
- Midlevel enlisted (E-5–E-6): Citizen, active labor-force participant, high-school education or equivalent, between ages 23 and 39
- Senior enlisted (E-7–E-9): Citizen, active labor-force participant, high-school education or equivalent, between ages 31 and 47
- Company-grade officer (O-1–O-3): Citizen, active labor-force participant, college education, between ages 23 and 40
- Field-grade officer (O-4–O-6): Citizen, active labor-force participant, college education, between ages 33 and 52
- Flag-grade officer (O-7–O-10): Citizen, active labor-force participant, college education, between ages 48 and 59.

Although one can easily compute a proxy for the current eligible population, it is less clear how one might compute a proxy for the future eligible population. Blacks and Hispanics currently meet eligibility requirements for officers and enlisted at lower rates than whites, but many policies (e.g., those focused on education and health) aim to reduce this disparity. Given current health trends, it is also possible that these disparities may increase over time, causing the future eligible population of blacks and Hispanics to be even smaller.

Issues for External Benchmarks

Selecting a Benchmark for Women. The relevant benchmark population against which to compare the statistics on gender is not obvious. Women make up about half of the U.S. population, but, with the exception of a Navy policy of seeking an enlisted force that is 20-percent female, we have not found any DoD representation "benchmark" for women.

There are two contributors to uncertainty about where to set a benchmark for women. First, women are currently prohibited from serving in combat arms positions. The proportion of restricted positions is not consistent across Services. Only two-thirds of positions in the Army and the Marine Corps are open to women, while nine of 10 ten in the Navy are and almost all positions in the Air Force are. In the current system, women have a much greater chance of reaching top leadership positions in the Navy and the Air Force than in the Army and the Marine Corps (Harrell and & Miller, 1997). In fact, the appendix shows that the percentage of female flag officers in the Navy (7 percent) and Air Force (9 percent) is greater than in the Army and the Marine Corps (approximately 4 percent each).

Second, women have a lower propensity than males to serve in the military. According to the 2008 Youth Poll,

female propensity is about half that of males (Yanosky et al., 2009). This implies that one might expect women to constitute a maximum of one-third of the military. Such a figure does not take into account limitations on careers for women in the military. However, these conditions (i.e., propensity to serve and restrictions on female service in certain military positions) could change if societal expectations shift over time.

In this issue paper, we compare female representation in the military with female representation in the national population, in the eligible population, and against a 20-percent benchmark for female representation. We do this with the understanding that there is no consensus on the desired proportion of females serving in the military.

Unknown Race and Ethnicity. Unlike civilian data, military data include cases where race and ethnicity are listed as "unknown." This raises the question of how to conduct external comparisons. There are two options. The first is to drop the unknown category when analyzing the force by race and ethnicity. However, this may lead to a higher proportion of the force being categorized in some race/ethnicity categories than is accurate. The second option is to keep the unknown category but note that comparisons with the civilian population are not possible for this group. In either case, this unknown group introduces measurement error into representation indexes that measure representation against external populations. For this issue paper, we chose to keep the unknown group, partly because we believed that the MLDC

What Difference Do Various External Benchmarks Make in How One Perceives Demographic Representation in DoD?
Tables 1–4 show that selection of the external benchmark makes a difference in how one views the current representation of officers and enlisted in DoD. These tables, like the others in this issue paper, show representation indexes (RIs). Each RI is equal to the ratio of the reference group's share of the force to its share of the specified benchmark group. Values greater than one indicate overrepresentation, values less than one indicate underrepresentation, and values equal to one indicate representational parity.

Using the proxy eligible population rather than the entire U.S. population as an external benchmark tells a different story regarding representation in DoD. For instance,

- For company-grade officers, using the U.S. population as a benchmark shows an RI of 0.72 for blacks and 0.36 for Hispanics (Table 1). Using the eligible officer population shows an RI of 1.04 for blacks and an RI of 0.72 for Hispanics.
- For junior enlisted personnel, using the U.S. population as a benchmark results in an RI of 1.23 for blacks and 0.77 for Hispanics. Using the proxy eligible population results in an RI of 1.10 for blacks and 0.66 for Hispanics. In other words, using the eligible population shows a lower level overrepresentation for blacks but a higher level of underrepresentation for Hispanics.

Table 1. DoD Active-Component Officer External Representation Indexes, by Race/Ethnicity and Rank

	DoD	U.S. Population	Proxy Eligible Population	RI: U.S. Population	RI: Proxy Eligible Population
White non-Hispanic					
O1–O3	74.1%	65.8%	77.5%	1.13	0.96
O4–O6	80.4%	65.8%	79.1%	1.22	1.02
O7–O10	92.3%	65.8%	82.8%	1.40	1.11
Black non-Hispanic					
O1–O3	8.8%	12.2%	8.5%	0.72	1.04
O4–O6	8.2%	12.2%	8.4%	0.67	0.98
O7–O10	5.4%	12.2%	7.1%	0.44	0.76
Asian and Pacific Islander non-Hispanic					
O1–O3	4.3%	4.6%	6.1%	0.93	0.70
O4–O6	2.8%	4.6%	5.9%	0.61	0.47
O7–O10	0.5%	4.6%	5.3%	0.11	0.09
Other non-Hispanic					
O1–O3	1.5%	2.1%	1.3%	0.71	1.15
O4–O6	0.8%	2.1%	1.1%	0.38	0.73
O7–O10	0.1%	2.1%	0.9%	0.05	0.11
Hispanic					
O1–O3	5.6%	15.4%	6.6%	0.36	0.85
O4–O6	4.4%	15.4%	5.5%	0.29	0.80
O7–O10	1.6%	15.4%	3.9%	0.10	0.41
Unknown					
O1–O3	5.8%	N/A	N/A	N/A	N/A
O4–O6	3.4%	N/A	N/A	N/A	N/A
O7–O10	0.1%	N/A	N/A	N/A	N/A

For the appendix, please visit http://mldc.whs.mil/

There is variation in RIs by rank. For example,

- Among officers, underrepresentation for blacks, Asians, Hispanics, and others is greater at higher ranks, as is overrepresentation for whites.

- Among enlisted personnel, in comparison with the proxy eligible population, blacks are more overrepresented at higher ranks, with an RI of 1.10 among junior enlisted but an RI of 1.70 among senior enlisted. By contrast, whites have an RI of 1.03 among junior enlisted but an RI of only 0.84 among senior enlisted, indicating underrepresentation among senior enlisted.

- The proportion of individuals for which race/ethnicity is unknown differs by rank, being highest among senior enlisted personnel and junior officers.

Using a future U.S. population benchmark shows increased imbalances in representation for certain groups. Because future population projections show Hispanics and Asians increasing and whites decreasing as a proportion of the total population, RIs benchmarked to the 2030 U.S. population estimates show increased overrepresentation of whites and decreased representation of Hispanics for company-grade officers and junior enlisted personnel (Table 3). This implies a potential mismatch between the future U.S. population and future military senior leadership if retention and promotion affects all race and ethnicity groups equally. For reasons noted above, we are not able to compute and compare a future eligible U.S. population.

By any external comparison, female officers and enlisted are underrepresented (Table 4). Among officers, the difference between the U.S. population RI and the eligible

population RI is minimal. Comparing the DoD female population with the proxy eligible population rather than with the U.S. population somewhat reduces the disparity but does not change the overall impression of considerable underrepresentation.

Using a 20-percent benchmark is obviously the most "favorable" comparison. The proportion of company-grade officers who are female (with an RI of 0.91) comes close to matching a 20-percent representation goal, but the proportion of women serving as officers is lower at higher ranks, with women comprising only 6 percent of flag officers (with an RI of 0.32). Among enlisted personnel, RIs for females using a 20-percent benchmark are 0.74 at junior ranks and 0.51 at senior ranks.

Internal Benchmarks

Internal benchmarks provide information about the potential experience of military personnel once they are in the armed forces. DoD and the Services can easily compute these benchmarks using their own data or, for consistency across Services, DMDC data. The military can assess three major internal benchmarks.

First, the military can assess how *the officer population compares with the enlisted population.* During the Vietnam War, the "armed forces suffered increased racial polarization, pervasive disciplinary problems, and racially motivated incidents in Vietnam and on posts around the world," in part because the percentage of minority officers was "extremely low" relative to the percentage of minorities among the enlisted ranks (Becton et al., 2003, p. 6). As a result, military leaders believe that failure to maintain racial/ethnic diversity among

Table 2. DoD Active-Component Enlisted External Representation Indexes, by Race/Ethnicity and Rank

	DoD	U.S. Population	Proxy Eligible Population	RI: U.S. Population	RI: Proxy Eligible Population
White non-Hispanic					
E1–E4	64.8%	65.8%	62.8%	0.98	1.03
E5–E6	58.3%	65.8%	66.0%	0.89	0.88
E7–E9	58.6%	65.8%	70.0%	0.89	0.84
Black non-Hispanic					
E1–E4	15.0%	12.2%	13.6%	1.23	1.10
E5–E6	20.4%	12.2%	15.1%	1.67	1.35
E7–E9	24.6%	12.2%	14.5%	2.02	1.70
Asian and Pacific Islander non-Hispanic					
E1–E4	4.0%	4.6%	3.3%	0.87	1.21
E5–E6	4.3%	4.6%	2.6%	0.93	1.65
E7–E9	3.3%	4.6%	2.5%	0.72	1.32
Other non-Hispanic					
E1–E4	3.4%	2.1%	2.4%	1.62	1.42
E5–E6	2.3%	2.1%	2.2%	1.10	1.05
E7–E9	1.2%	2.1%	1.8%	0.57	0.67
Hispanic					
E1–E4	11.9%	15.4%	18.0%	0.77	0.66
E5–E6	12.2%	15.4%	14.1%	0.79	0.87
E7–E9	8.6%	15.4%	11.2%	0.56	0.77
Unknown					
E1–E4	1.0%	N/A	N/A	N/A	N/A
E5–E6	2.7%	N/A	N/A	N/A	N/A
E7–E9	3.6%	N/A	N/A	N/A	N/A

leadership can adversely affect the execution of missions. As ADM Roughead announced, "[W]e want an Officer Corps that is reflective of the Enlisted Force it leads." [5]

Second, the military can assess how *representation in the junior ranks compares with representation in the senior ranks*.[6] Prior research has demonstrated the importance of role models of the same race/ethnicity or gender in selecting and persisting in career fields (Neumayer, 2002; Kirby, Harrell, & Sloan, 2000; Bright, Doefield, & Stone, 1998). If junior personnel see few senior personnel that "look like them," a self-perpetuating cycle may develop in which junior personnel leave the military because they do not feel that the military offers a welcoming, future career path for those like themselves.

Third, the military can compare its *current senior leaders with past junior cohorts*. This comparison is of interest because the military must develop senior leaders over a period of 20–25 years. Low representation of minorities or women among current senior leaders may reflect low representation of incoming cohorts many years ago, or it may indicate whether minorities and women have experienced disparate outcomes in career promotion and retention relative to other groups.

What Do Various Internal Benchmarks Tell Us About the Current Demographic Representation in DoD?[7]
The match between officers and enlisted for race/ethnicity is off, particularly at senior levels. Table 5 shows RIs that compare the officer population with the enlisted population in terms of race/ethnicity and rank. Values greater than one indicate a greater proportion of officers than enlisted in that race/ethnicity group, and values lower than one indicate a lower proportion of officers than enlisted in that race/ethnicity group. The RIs for whites show higher representation in the officer corps than among enlisted personnel, while RIs for blacks and Hispanics show lower representation of these groups in the officer corps than among enlisted personnel. Differences are greatest when higher ranks are evaluated. Although the RIs indicate an imbalance between officers and enlisted in regard to race/ethnicity, it is unclear what level of imbalance would affect the military's ability to execute its mission. For this to be a robust metric, DoD and the Services would need to identify that level.

Table 3. DoD Active-Component Representation Indexes for the Future Population, by Race/Ethnicity and Rank

	DoD (2008)	Future Population (2030)	RI: Future Population
Company-Grade Officer			
White non-Hispanic	74.1%	55.5%	1.34
Black non-Hispanic	8.8%	12.2%	0.72
Asian and Pacific Islander non-Hispanic	4.3%	6.4%	0.67
Other non-Hispanic	1.5%	3.0%	0.50
Hispanic	5.6%	23.0%	0.24
Unknowns	5.8%	N/A	N/A
Junior Enlisted			
White non-Hispanic	64.8%	55.5%	1.17
Black non-Hispanic	15.0%	12.2%	1.23
Asian and Pacific Islander non-Hispanic	4.0%	6.4%	0.63
Other non-Hispanic	3.4%	3.0%	1.13
Hispanics	11.9%	23.0%	0.52
Unknown	1.0%	N/A	N/A

Table 4. DoD Active-Component External Representation Indexes for Females, by Rank

	DoD	U.S. Population	Proxy Eligible Population	RI: U.S. Population	RI: Proxy Eligible Population	RI: 20% Population
Officer						
O1–O3	18.2%	51.0%	52.7%	0.36	0.35	0.91
O4–O6	12.9%	51.0%	49.4%	0.25	0.26	0.65
O7–O10	6.4%	51.0%	47.6%	0.13	0.13	0.32
Enlisted						
E1–E4	14.7%	51.0%	45.6%	0.29	0.32	0.74
E5–E6	14.3%	51.0%	45.1%	0.28	0.32	0.72
E7–E9	10.1%	51.0%	46.6%	0.20	0.22	0.51

Junior females and junior minority officers see fewer senior leaders within their corps that "look like them." Table 6 provides RIs that compare junior with midlevel ranks, junior with senior ranks, and midlevel with senior ranks among officers and enlisted. This table indicated whether same-sex or same-race/ethnicity role models are present for more-junior personnel. Values greater than one indicate greater representation of a group among more-senior personnel than among more-junior personnel. Values less than one indicate lesser representation of that group among more-senior personnel than among more-junior personnel.

This table shows that

- Junior women are less likely than males to have access to same-sex role models, particularly in the case of officers.
- Minorities in the enlisted corps have greater access to same-race/ethnicity role models than do minorities in the officer corps, although most of these RIs are less than one.

This metric may help inform career-path policies (e.g., policies related to mentoring); however, without a firm understanding about what level of "look-alike" role models is

Table 5. DoD Active-Component Representation Index Comparing Enlisted and Officer Representation, by Gender, Race/Ethnicity, and Rank

	Officers	Enlisted	Internal RI
Female			
Junior	18.2%	14.7%	1.24
Midlevel	12.9%	14.3%	0.90
Senior	6.4%	10.1%	0.63
White non-Hispanic			
Junior	74.1%	64.8%	1.14
Midlevel	80.4%	58.3%	1.38
Senior	92.3%	58.6%	1.58
Black non-Hispanic			
Junior	8.8%	15.0%	0.59
Midlevel	8.2%	20.4%	0.40
Senior	5.4%	24.6%	0.22
Asian and Pacific Islander non-Hispanic			
Junior	4.3%	4.0%	1.08
Midlevel	2.8%	4.3%	0.65
Senior	0.5%	3.3%	0.15
Other non-Hispanic			
Junior	1.5%	3.4%	0.44
Midlevel	0.8%	2.3%	0.35
Senior	0.1%	1.2%	0.08
Hispanic			
Junior	5.6%	11.9%	0.47
Midlevel	4.4%	12.2%	0.36
Senior	1.6%	8.6%	0.19

Table 6. DoD Active Component Officer Internal Representation Indexes for Rank, by Gender and Race/Ethnicity

	RI: Junior to Midlevel	RI: Junior to Senior	RI: Midlevel to Senior
Officer			
Female	0.71	0.35	0.50
White non-Hispanic	1.09	1.25	1.15
Black non-Hispanic	0.93	0.61	0.66
Asian and Pacific Islander non-Hispanic	0.65	0.12	0.18
Other non-Hispanic	0.53	0.07	0.13
Hispanic	0.79	0.29	0.36
Enlisted			
Female	0.97	0.69	0.71
White non-Hispanic	0.90	0.90	1.01
Black non-Hispanic	1.36	1.64	1.21
Asian and Pacific Islander non-Hispanic	1.08	0.83	0.77
Other non-Hispanic	0.68	0.35	0.52
Hispanic	1.03	0.72	0.70

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needed to influence retention, it is a weak indicator of real retention problems.

Current senior cohorts have a higher proportion of minorities (but a lower proportion of females) than past junior cohorts. Unfortunately, we do not have adequate data on past junior cohorts to allow comparison with current senior cohorts. Nevertheless, prior research for the Air Force found that current senior enlisted cohorts have more blacks and markedly fewer whites than past junior cohorts. Current senior cohorts of officers have a slightly smaller proportion of whites than past junior cohorts. Thus, low representation of minorities in senior leadership positions appears to be closely related to low representation of past incoming cohorts. However, current senior cohorts of enlisted and officers have smaller proportions of women than past junior cohorts (Kraus & Riche, 2006).

Conclusion

Establishing metrics of demographic diversity alone is insufficient if a broad definition of diversity is established. Nonetheless, DoD and the Services have a set of potential external and internal benchmarks from which to select for measuring demographic diversity. Each of these benchmarks implies a different standard (external) and answers a different question (internal). DoD and the Services should select a set of benchmarks that align with their goals, concerns, and accountability structures. If DoD and the Services select a set of external or internal benchmarks for race/ethnicity and gender, they must decide upon an appropriate representation goal for women and must deal with the current level of "unknown" race/ethnicity cases that exist in the data. One solution could be mandating that military personnel report their race and ethnicity.

Notes

[1] Presented in Barrett (2009).

[2] Figures in this brief are taken from the Population Division, U.S. Census Bureau (2008).

[3] Four MLDC issue papers (Military Leadership Diversity Commission, 2009b, 2009c, 2010a, 2010b) detail how requirements shape the demographic profile of the eligible population.

[4] The appropriate age for each rank classification was determined using Defense Enrollment Eligibility Reporting System/Work Experience File data for age distribution (the 5th–95th percentile range) for each rank classification.

[5] Presented in Barrett (2009).

[6] Comparisons of the profiles of today's junior personnel and today's senior leadership do not say anything about the path today's leaders took from accession to their current high ranks. In other words, differences between today's leadership cohort and today's junior cohorts provide no information about the career progression (i.e., the promotion and retention) of minorities and women from the entry cohorts of current leaders.

[7] Because looking at unknowns for the internal benchmarks is not useful, we have dropped this category from the tables. Thus, racial/ethnic percentages in Tables 5 and 6 will not sum to 100.

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