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Review of Literature on Enlisted Retention

Abstract

The MLDC has been tasked with examining continuation rates by gender and race/ethnicity. To aid the commission in this undertaking, this issue paper (IP) summarizes existing peer-reviewed literature on retention, paying special attention to studies that use statistical methods to account for other individual-level characteristics that may be correlated with both race/ethnicity and gender and retention behavior. This IP focuses only on the enlisted corps. In terms of racial/ethnic differences in reenlistment rates, the review finds that, across the Services, blacks and Hispanics are more likely to reenlist than their white counterparts, although the size of these differences decreases as time in service increases. In terms of gender differences in reenlistment rates, the review finds mixed evidence of a gap. Some studies that focus on only one Service report higher reenlistment rates among men than among women. In contrast, studies that control for other demographic characteristics, such as marital and parental status, find small or no differences in retention behavior between men and women.

One of the chartered tasks of the MLDC is to *measure the ability of current activities to increase continuation rates for ethnic- and gender-specific members of the armed forces*. To aid in this task, the commission has produced several issue papers (IPs) addressing various aspects of retention. Using the most recent data available, a separate IP presents raw, zone-specific reenlistment rates among enlisted servicemembers by race/ethnicity and gender. This IP complements the aforementioned IP by summarizing the results of more-comprehensive studies of retention outcomes by demographic groups. These more-comprehensive studies give us insight into the causal relationships and retention behavior.¹

Enlisted Career Progression

Before reviewing the literature, it is important to contextualize retention and reenlistment with respect to enlisted career progression. The process of career progression is generally similar across the entire enlisted corps. Once a servicemember fulfills an obligated period of service (i.e., as the expiration of term of service [ETS] date approaches), he or she is eligible to reenlist if he or she has no legal or health problems and he or she meets the Service's and/or occupation's specific requirements (e.g., high year tenure [HYT]/retention control-point cutoffs, recommendations and evaluations, examinations, selection boards at senior enlisted ranks). Servicemembers who are ineligible because of legal/health problems, a failure to meet requirements, or both separate from active-duty service.² The others are considered eligible to reenlist. Some of these eligible personnel separate and leave active-duty service, and others opt to continue.³ Thus, *reenlistment rates only capture the choice of individuals who have reached a decision point, are eligible to reenlist, and incur a new obligated period of service*. In contrast, retention is simply the proportion of individuals who remain in service, regardless of whether they have reached a decision point.

Reenlistment decisions can be made at different periods, or zones, in an enlisted servicemember's career. Zone A is composed of reenlistments executed between 21 months and 6 years of active service. Zone B is composed of reenlistments executed between 6 and 10 years of active service. Zone C is composed of reenlistments executed between 10 and 14 years of active service. An enlisted servicemember's zone is important because it affects his or her eligibility for a selective reenlistment bonus (SRB) and the expected size of that bonus. Although there are common requirements for reenlistment eligibility across zones, some are zone specific. In addition, many of the unique requirements vary by pay grade within a single zone.

Furthermore, enlisted servicemembers are subject to certain promotion schedules that

delineate the maximum years of service (YOS) that an enlisted servicemember can serve, and these tenure barriers are pay grade specific. After reaching a cutoff point, members must either be promoted to the next pay grade or separate from the Service. This point in a servicemember's career is known as high year tenure (HYT). Table 1 shows the HYT for pay grades E-5 through E-9 in each of the five Services.

Table 1. HYT, by Pay Grade and Service

	E-5	E-6	E-7	E-8	E-9
Army	15	23	26	29	32
Air Force	20	24	26	28	30
Navy	14	20	24	26	30
Marine Corps	13	20	24	26	30
Coast Guard	20	22	26	28	30

SOURCES: Army MLDC Briefing, January; Air Force MLDC Briefing, January; Navy Military Personnel Manual 1160-120; Marine Corps Order P1040.31J, Coast Guard Commandant Instruction 1040.10.

NOTE: HYT is called the *retention control point* in the Army and *enlisted career force control* in the Marine Corps.

The Literature

This review of retention behavior draws from 11 publically available studies spanning retention decisions from 1979 to 2007. Of these 11 studies, six focus specifically on demographic differences in retention behavior, and the other five include race/ethnicity and gender only as control variables. In general, fewer of these studies address gender than race/ethnicity.

The 11 studies can be broken down on three dimensions: (1) those that include all the Services and therefore produce results that are comparable across branches versus those that are Service-specific and more detailed in their analyses; (2) older studies that include the retention behaviors of the current population of senior enlisted servicemembers versus more-recent studies that include junior enlisted who are the potential targets of current personnel policy; and (3) studies that can be differentiated by the measure of retention that each uses: reenlistment by term, reenlistment by zone, and retention at specific YOS points.

All of the studies reviewed in this IP use a statistical methodology called *regression analysis* to isolate the effect of demographic characteristics from the effects of other personal characteristics and career experiences. That is, these studies identify the effect of being a female or a minority on retention behavior by holding constant other individual characteristics (i.e., marital status, the presence of dependents, YOS, civilian education level, Armed Forces Qualification Test score, expected promotion rates, and pay grade). For example, an individual's deployment history and eligibility for an SRB may

differentially affect retention behavior such that enlisted servicemembers who have previously been deployed may be more likely to remain on active-duty service and individuals in certain occupations targeted by SRBs may also be more likely to remain in the military.

In and of themselves, deployment history and SRB eligibility may not be problematic when interpreting the results from regression models. However, when these characteristics are also associated with the demographic characteristics that interested us—namely, race/ethnicity and gender—then we must include these variables in regression models in order to establish the true association between demographic characteristics and retention behavior.

The following sections summarize several studies on retention. We divide our discussion into two broad categories: (1) results by race and ethnicity and (2) results by gender. These categories are further subdivided into three sections apiece: multi-Service studies, Service-specific studies, and older studies.

Results by Race and Ethnicity

Multi-Service Studies. Of the recent studies on retention, Hosek and Martorell (2009) is the most comprehensive. The study examines all Services with one approach, so the findings are comparable across the Services. The authors sample all first- and second-term enlisted members of the Army, the Navy, the Marine Corps, and the Air Force who made a reenlistment decision between fiscal year (FY) 1996 and FY 2007. Among first-term enlisted servicemembers, blacks were 11–13 percentage points more likely to reenlist than comparable whites in each of the four branches. For second-termers, this figure, at 3–5 percentage points, was much smaller. Only in the Navy and the Air Force were reenlistment rates for nonblack minorities significantly different from whites. Hispanic first-termers were 8 percentage points more likely to reenlist than whites. Hispanic second-term sailors were about 6 percentage points more likely to reenlist than their white counterparts. Other minorities, including Asians, were 7 percentage points more likely to reenlist than comparable whites after their first term in the Navy or the Air Force. For these minorities, differences in the reenlistment behavior of second-termers were only significant in the Navy. A minority sailor who was not black or Hispanic was 7 percentage points more likely to reenlist than a comparable white after his or her second term.

Asch, Buck, Klerman, Kleykamp, and Loughran (2009) provide another study of reenlistment in each of the four branches. Except for blacks in the Navy, the authors find that black and Hispanic first-termers were more likely to reenlist than whites. The study data include all enlisted personnel entering military service between September 30, 1988, and September 30, 2002.

Service-Specific Studies. Other researchers have found similar results. Quester, Hattiangadi, and Shuford (2006) sample all enlisted marines in Zones A, B, and C who made

a reenlistment decision between FY 2002 and FY 2004. Their results are largely consistent with the findings on the Marine Corps in Hosek and Martorell (2009). For the Marine Corps, Hattiangadi, Lee, and Quester (2004) examine first-term retention rates during 1979–2001. They find that retention rates were higher among Hispanic recruits relative to other race/ethnicity groups.

Using data from FY 1990 to FY 2000, Hogan, Espinosa, Mackin, and Greenston (2005) and Tsui et al. (2006) find that, among enlisted soldiers in Zones A, B, and C, nonwhite servicemembers were significantly more likely to reenlist than whites, all else equal. The difference in reenlistment rates between nonwhite and white soldiers was largest for Zone A and smallest for Zone C.

In a study looking at differences in continuation behavior by education level, Kraus, Wenger, Houck, and Gregory (2004) found that the relationship between race and continuation may be less significant for sailors who had higher levels of education before entering the Navy between FY 1992 and FY 2000: Whereas race was unrelated to the continuation outcomes of those who held a bachelor's degree at the time of accession, blacks and Hispanics with lower levels of education were more likely to reenlist than comparable white sailors.

Older Studies. Buddin, Levy, Hanley, and Waldman's (1992) analysis accounts for how differences in promotion opportunities might affect reenlistment decisions. Using data from FY 1983 to FY 1989, they find that black soldiers and airmen were, respectively, 2 and 8 percentage points more likely to reenlist than their white counterparts. They find no significant difference for Hispanics.

Quester and Adedeji (1991) focus on how pay and dependency status affect reenlistment. Among marines who made a reenlistment decision between FY 1980 and FY 1990, they find that blacks were much likelier to reenlist than comparable whites. Although Hispanics were also likelier to reenlist than whites, the difference in reenlistment behavior was not nearly as large.

Cooke, Marcus, and Quester (1992) find very similar results when looking at male enlisted sailors who made their reenlistment decisions between FY 1979 and FY 1988.

Results by Gender

Multi-Service Studies. Hosek and Martorell (2009) estimate but do not report their findings on the difference between enlisted male and enlisted female retention behavior. Asch et al. (2009) do not include females in their analysis of retention.

Service-Specific Studies. Quester et al. (2006) find a difference between male and female reenlistment in the Marine Corps. Males in Zone A were 2 percentage points more likely to reenlist than females, all else equal. The difference for Zone B, at 7 percentage points, was larger.

Quester et al. (2006) also find that the presence of dependents appears to have influenced the reenlistment behavior of male and female marines differently. Whereas males in

Zone A without dependents were 8 percentage points less likely to reenlist than females without dependents, the reenlistment rate of male marines with dependents was 8 percentage points greater than that of females with dependents. Male marines in Zone B with dependents were also more likely to reenlist than female marines in Zone B with dependents. Among marines without dependents in Zone B, the reenlistment rates of males and females were not significantly different.

Hogan et al. (2005) and Tsui et al. (2006) find that female Zone A soldiers were more likely to reenlist than their male counterparts. Looking at soldiers with more YOS, they do not find evidence that the reenlistment behavior of Zone B soldiers differed across genders.

Older Studies. Most empirical studies of enlisted retention that were published before FY 2000 do not focus on the reenlistment behavior of women. Researchers often excluded female servicemembers from their analysis or did not report an estimated difference in their retention behavior. On the other hand, Quester and Adedeji (1991) find that female enlisted marines were 5 percentage points more likely to reenlist than their male counterparts. Overall retention rates of male marines were lower during the 1990s, the period covered by this study, than they were from FY 2002 to FY 2004, the period covered by Quester, Hattiangadi, and Shuford (2006).

Summary of Findings

This IP summarizes statistical analyses of how race and gender have influenced *enlisted* retention in the military since 1973. The key findings are as follows:

- Evidence that minorities in all the Services reenlist or retain at rates greater than or equal to those of whites is fairly unanimous.
- Racial/ethnic differences in retention rates seem to decrease as YOS increase.
- Empirical studies provide mixed evidence that retention rates are different for male and female servicemembers after such factors as marital status are controlled for.

Conclusion

In this IP, we examined existing peer-reviewed literature on racial/ethnic and gender differences in retention and reenlistment rates among the enlisted corps. We focused on studies that used statistical methods to account for other individual-level characteristics that may be correlated with both race/ethnicity and gender and retention behavior. Raw reenlistment rates that do not control for these other characteristics may overstate the true association between race/ethnicity and gender and retention behavior (see Military Leadership Diversity Commission, 2010).

The results from empirical studies on gender differences in enlisted retention behavior are both rarer and more mixed than those for racial/ethnic differences. Studies that control for demographic characteristics in addition to gender, such as

marital and parental status, find small or no differences in retention behavior between men and women. These findings suggest that more work should be done to understand retention differences by gender.

Notes

¹See MLDC (2010) for a more detailed discussion of what raw retention rates can and cannot tell us.

²Individuals who leave *before* their current contract is up (i.e., prior to ETS) are used in the calculation of attrition rates.

³These are often referred to as *voluntary separations*. *Involuntary separations* occur when individuals leave active-duty service after completing their service obligation because they are ineligible to reenlist.

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