

The Migration of Military Spouses using the 2007-2011 5-Year American Community Survey

Presented at the Annual Meeting of the Association of American Geographers
Los Angeles, CA, April 9-13, 2013

Melanie A. Rapino, Ph.D.
Journey to Work and Migration Statistics Branch

Julia Beckhusen, Ph.D.
Industry and Occupation Statistics Branch

Working Paper No. 2013-25



The Migration of Military Spouses using the 2007-2011 5-Year American Community Survey

Presented at the Annual Meeting of the Association of American Geographers
Los Angeles, CA, April 9-13, 2013

Melanie A. Rapino, Ph.D.
Journey to Work and Migration Statistics Branch
United States Census Bureau

Julia Beckhusen, Ph.D.
Industry and Occupation Statistics Branch
United States Census Bureau

Abstract

Military employment requires frequent rotation between duty stations. Active duty Armed Forces personnel move at much higher rates compared to civilians. While a move for civilians is based on the preferences and needs of the family, for military personnel, the needs of their employer determine the move. This research examines the differences between married military migrants and married civilian migrants. A descriptive analysis uses data from the American Community Survey to compare the socio-economic differences as well as the geographic differences of the husbands and wives within these moving couples. The results suggest that within military couples, wives tend to be unemployed and more educated than husbands whereas in civilian couples, employment and education gaps are much smaller. Military spouses move to locations near military installments whereas civilian spouses tend to move to Metropolitan areas with large populations.

Keywords: immigration, military spouses

Introduction

A major demand on active duty Armed Forces personnel is the frequent rotation between temporary and permanent duty stations. It is estimated that military personnel move every 2 to 3 years on average (Cooney 2003, GAO 2001, Croan et al. 1992) and that their stint at any given location may be from 6 months to 6 years (Cooney 2003). Cooney (2003) reported that military personnel of all pay grades are about 2.4 times more likely to move than employed civilians and significantly more likely to move farther distances than their civilian counterparts.

The number of active-duty service members fell from 2 million in 1990 to 1.4 million in 2010 (U.S. Census Bureau, 2012). Given that the military are the major movers in the U.S., this decrease has led to a decline in internal U.S. migration (Pingle, 2007). In 2011, 14.6% of the U.S. population moved in the past year compared to 15.5% in 2005.¹ While both numbers, migration of active duty military and

¹ These data are for those 1 year and older and come from the 2005 and 2011 1-year American Community Survey accessed on American Fact Finder (table DP02).

internal U.S. migration, are falling, active duty military personnel remain three times as likely to have moved within the last year as other persons in the U.S.

Migration of military personnel differs from civilian migration. For military personnel, migration is less of a decision than an assignment by their employer. While military personnel have some input in their assignment by listing preference bases, military needs ultimately dictate relocation decisions (Cooney 2003). Destination options are therefore limited to locations near military installments. In addition, since more than half of military personnel are married (CNA, 2012), the relocation will include military spouses and children.

For civilians, the migration of married couples originates from a joint decision based on changing needs and preferences. Ultimately, civilian married couples choose to migrate when a particular destination provides a net gain in real family income and the costs of moving are not prohibitive (Mincer, 1977). They are able to compare the benefits and costs of a large number of locations. As a result, the migration decisions of civilians are largely influenced by their personal attributes, such as age, employment status and education, and the characteristics of their family, such as number of children and home tenure.

In this paper, we examine the differences between married military migrants and married civilian migrants. Particular attention is paid to the 1.) geographic differences and 2.) socio-economic differences of the two groups. We expect to find that military spouses are more likely to have geographic origins and destinations near military bases. Moreover, a higher percentage of military migrants are expected to have international origins in countries with a high U.S. military presence, such as Iraq, Afghanistan, and Germany. Of those with international origins, their spouses should have residences in the U.S. and therefore, the destinations will show reunification of military spouses. We also anticipate finding that military migrants relocate in greater average distances than civilian movers do. Using data from the 1990 U.S. Census, Cooke and Speirs (2005) determined that around one-third of military moves were over 1,000 miles.

In terms of socio-demographic characteristics, we expect the difference in the two populations to be similar to those of military and civilian populations as a whole. Hisnanick and Little (2010) studied the income determinants of both military and civilian families, regardless of migration status.² The authors found military spouses to be younger, less educated, less likely to own their home and more likely to live in the South. Military families are also larger than their civilian counterparts and report a smaller mean family income.³

Background

The literature on migration ranges many topics. Research on migrating couples historically focused on the idea of tied-migration, where only one spouse realizes the majority of benefits from migration. The other spouse is deemed as a follower or “tied-migrant.” Typically, researchers found the wife to be the

² The authors used data from the 1996 and 2001 panels of the Survey of Income and Program Participation (SIPP).

³ Hisnanick and Little (2010) showed that after taking into account the actual compensation packages (family income plus fringe benefits) offered by the military, mean family incomes are more in-line with civilian mean family incomes. However, a slightly larger family size within military families means the per capita income is lower than in civilian families.

tied-migrant in a patriarchal system of moving for the betterment of the male's career and therefore the family's outcome (Bielby & Bielby 1992), a human capital based theory (DaVanzo 1976; Sandell 1977). Some scholars looked at the effect of gender and employment in choosing a residential location. For example, in couple-headed households, Hanson and Pratt (1995) found that the residential location was chosen more often based upon the males' convenience to their fixed job location with some consideration given to a variety of job opportunities for women. Additionally, the decision to relocate was often based upon a better job for the husband (Hanson and Pratt 1995, 121).

Cooke and Speirs (2005) specifically looked at the effect of tied migration within military families. They found that civilian women married to military men were more likely to have a decline in employment or number of hours worked after a migration. Family migration decisions are often made with the net family gain in mind rather than the individual personal gains, also indicating that relocation can be detrimental to the labor market status of the tied migrant, who is often female (Long 1974; Mincer 1977).

Hiller and McCaig (2007) differentiate between sponsored (employer-induced) moves and unsponsored ones, indicating women's increased power and satisfaction when they have the ability to help shape the migration decisions. When the women felt they had no choice in the migration, the women expressed "resignation and unhappiness" (Hiller and McCaig 2007, 468). Migration associated with the military often times allows little decision-making power for the family because military needs ultimately dictate relocation decisions of when and where (Cooney 2003).

Cooke (2008) provides a concise summary of research on family migration by geographers, sociologists, and economists. Overall, little research to date has been published on the migration of active-duty military families. Therefore, this research examines the geographic origins and destinations as well as the socio-economic characteristics of migrating military families in comparison to migrating civilian families. This research is a descriptive undertaking of characteristics and spatial distribution. It is meant to be preliminary and exploratory research to a more in-depth look at military migration.

Data and Study Area

The American Community Survey (ACS) is a nationwide survey designed to provide communities with reliable and timely demographic, social, economic, and housing data for the nation, states, congressional districts, counties, places, and other localities every year. In 2011, the survey sampled about 3.3 million addresses across the United States and Puerto Rico. The sample includes both housing units and group quarters (e.g., nursing facilities and prisons). The U.S. Census Bureau conducts the ACS in every county throughout the nation and every municipio in Puerto Rico, where it is called the Puerto Rico Community Survey. Beginning in 2006, ACS data were released for geographic areas with populations of 65,000 and greater. For information on the ACS sample design and other topics, visit <www.census.gov/acs/www>.

This research utilizes the 2007-2011 5-year ACS data on householders and their opposite sex spouse (i.e., husbands and wives) in the U.S., excluding Puerto Rico and Island Areas,⁴ where at least one spouse reported a different residence 1 year prior (see Figure 1). Mobility rates are calculated using

⁴ Island areas include American Samoa, Commonwealth of the Northern Mariana Islands, Guam and the U.S. Virgin Islands.

information on where the respondent lived one year ago. The prior residence can be located in the U.S., Puerto Rico, Island Areas, or other countries abroad. This dataset includes both military and civilian, where military is defined as having at least one spouse in the married couple reporting as being active duty military and civilian contains non-active duty military, veterans, and all others.⁵ This dataset contains information on where husbands and wives reported living one year ago and their current residence, only capturing couples that have the same current residence. Therefore, the husband and wife may have two different origins (previous residence) but the same destination (current residence) and we examine each separately.

Additionally, using geocoded information, a Census block-to-Census block distance variable is calculated for each previous residence-to-current residence flow pair based on Euclidean distance (i.e., “as the crow flies”). This variable is used to examine the difference in average distance between active-duty military movers and all other movers.

Limitations of the Data

The ACS only includes respondents who are current residents in the household, meaning that their expected length of stay is two months or more. If anyone listed on the household roster is away from the sample unit for more than two months, including someone in the military (i.e., if they are deployed), they should not be included on the household roster. This residency rule creates a challenge in identifying military families when the military spouse is deployed. The results of this research extend to the domestic migration patterns of co-resident spouses where one or both are active-duty and cannot be applied to military families with deployed service members.

Types of Moves

Table 1 shows the mover rates by type of move for:

- Total population 1 year and over,
- Civilians – population 1 year and over who did not report being active-duty military,
- Civilian spouses – population 17-64 years of married individuals who did not report either spouse as being in the armed services,
- Civilian husbands – male subset of civilian spouses,
- Civilian wives –female subset of civilian spouses,
- Active-duty military – population 17 years or over who reported being in armed services,
- Military spouses – population 17-64 years of married individuals who had at least one person in the married couple that reported being in armed services,
- Military husbands – male subset of military spouses,
- Military wives – female subset of military spouses.

Overall, the mover rate for the population age 1 year and over in the U.S. is 15.3%. Within this population, 9.2% moved within the same county, 3.2% to a different county but within the same state,

⁵ No particular attention is paid to whether the husband or wife is the head of household or which spouse is in the military. Additionally, this data does not contain subfamilies, unmarried cohabitating partners, or same-sex partners.

2.3% to a different county, different state, and 0.6% moved from abroad.⁶ The civilian population followed the same trend as the total population, with a mover rate of about 15%. Married civilians had the lowest mover rate of 9.9%. In contrast, over 47% of active duty military moved within the last year. Unlike the civilian population, who mainly moved within the same county, the majority of military moves occurred between states.

When we look at couples specifically, both civilian and military, husbands within civilian couples have mover rates that are similar to wives, whereas husbands within military couples have mover rates that are different from their wives. Civilian couples are more likely to move together while military couples might be reuniting after a deployment or an assignment to a new permanent duty station. For example, within military couples, nearly 19% of wives moved to a different state compared to 16.6% of husbands while 6.2% of husbands moved from abroad while only 2.9% of wives did.

To look at this more in depth, we examine the rates of husbands and wives with different county origins (see Table 2). In other words, when we look specifically at that mobility status of husbands and wives that moved from different places into one household we find that almost 26% of military spouses have different county origins while that rate is about 17.5% for civilian spouses. Interestingly, within military couples, the husbands are more likely to be movers from outside the U.S. or Puerto Rico while the wives are more likely to be movers from within the U.S. or non-movers. Compared to military husbands, civilian husbands have much lower rates of movers from outside the U.S. and Puerto Rico while their civilian wives had higher rates than military wives. On the other hand, civilian spouses had much higher rates than their military counterparts of movers within the U.S. and non-movers.

Table 1: Mover Rates by Type of Move, 2007-2011⁷

Selected Population	Number		Mover Rate		Percent moved			
	Total	Number of movers	Mover Rate	Margin of Error (+/-)	Same county	Different county, same state	Different county, different state	From abroad
Total Population (1 Year and over)	306,455,858	46,942,088	15.3	0.1	9.2	3.2	2.3	0.6
Civilians (1 Year and over)	305,317,702	46,402,094	15.2	0.1	9.2	3.2	2.3	0.6
Civilian Spouses (17-64 years)	89,318,544	8,868,458	9.9	0.1	6.0	1.9	1.6	0.4
Husbands	45,021,352	4,474,271	10.1	0.1	6.1	1.9	1.6	0.4
Wives	44,297,192	4,394,187	9.9	0.1	6.0	1.9	1.6	0.5
Active-Duty Military (17 Years and over)	1,138,156	539,994	47.4	0.4	10.1	4.4	25.8	7.1
Military Spouses (17-64 years)	1,003,805	360,827	35.9	0.5	10.0	3.9	17.6	4.5
Husbands	506,322	184,772	37.1	0.5	10.5	3.8	16.6	6.2

⁶ “Abroad” refers to Puerto Rico and the Island Areas, as well as all other countries.

⁷ The total number of husbands from military couples is equal to the number of wives, however, variability in the weights causes the estimate of total military husbands to not match the estimate of total military wives. For an explanation of how ACS ratio adjusts weights to agree with population totals for age, sex, race and Hispanic origin see the Accuracy of the Data at http://www.census.gov/acs/www/Downloads/data_documentation/Accuracy/MultiyearACSAccuracyofData2011.pdf.

Wives | 497,483 | 176,055 | 35.4 | 0.5 | 9.6 | 4.0 | 18.9 | 2.9

Source: U.S. Census Bureau, 2007-2011 American Community Survey.

Table 2: Migrating Military and Civilian Spouses with Different County Origins by Mobility Status, 2007-2011⁸

Mobility Status	Husband				Wife			
	Estimate	Margin of Error (+/-)	Percent	Margin of Error (+/-)	Estimate	Margin of Error (+/-)	Percent	Margin of Error (+/-)
Military Spouses								
Percent of Total Migrants*	-	-	25.9	0.8	-	-	25.8	0.8
Total	49,410	1,927	100	0	48,256	1,756	100	0
Non-Movers	6,110	601	12.4	1	11,235	711	23.3	1.2
Movers within the U.S.	23,574	1,211	47.7	1.6	33,979	1,480	70.4	1.4
Movers outside the U.S. and Puerto Rico	19,726	1,126	39.9	1.8	3,042	370	6.3	0.8
Civilian Spouses								
Percent of Total Migrants*	-	-	17.5	0.2	-	-	17.5	0.2
Total	838,196	10,343	100.0	0.0	820,888	10,019	100.0	0.0
Non-Movers	319,293	4,654	38.1	0.3	301,966	5,099	36.8	0.4
Movers within the U.S.	459,411	6,553	54.8	0.4	430,369	5,825	52.4	0.4
Movers outside the U.S. and Puerto Rico	59,492	1,898	7.1	0.2	88,553	2,150	10.8	0.2

*The percent estimate uses the number of husbands/wives that have a different county origin from their spouse as the numerator and the total number of migrating husbands/wives as the denominator.

Source: U.S. Census Bureau, 2007-2011 American Community Survey.

Socio-Demographic Characteristics

The general socio-demographic characteristics of migrating military spouses and migrating civilian spouses are different in several ways (see Appendix Table 1).⁸ First, military husbands and wives are notably younger on average than their civilian counterparts, 30.4 and 29.4 years old on average for military husbands and wives versus 39.0 and 36.8 years for their civilian counterparts, respectively. Their younger ages may have led to a younger family and so military spouses have higher percentages of younger children (i.e. under the age of six years). However, civilian spouses are more likely to have no children at all. Mostly likely due to their military lifestyle, military spouses are much less likely to live in a house that they own. They are also more likely to be white, non-Hispanic. Although diversity has increased in the military, minorities remain under-represented relative to the civilian population (Lee and Beckhusen, 2012).

In terms of educational attainment, military husbands and wives are more likely than their civilian counterparts to have an associate's degree or completed some college, 49.8% and 47.5% versus 28.8%

⁸ From this point on in the discussion, we omit the term migrating and refer to migrating military or civilian husbands and wives simply as military or civilian husbands and wives.

and 31.5%, respectively. Interestingly, while husbands within military couples are less likely to be unemployed or not in the labor force, their wives are more likely to have completed a bachelor's degree. 16.0% of military husbands have a bachelor's degree while 21.5% of military wives reported having a bachelor's degree. In civilian couples, wives also report a higher rate of bachelor's degree completion than husbands but the gap is much smaller, 22.5% for civilian wives and 20.8% for civilian husbands. Lastly, civilian husbands and wives are less likely to be a high school graduate. 13.4% and 11.5% of civilian husbands and wives do not have a high school degree while only 0.6% and 2.9% of their military counterparts do not.

In terms of economic factors, migrating military husbands and wives perform more traditional family roles. In these military couples, 95% of the husbands are the active duty service member and, likely, the main contributor to the family income – nearly 40% earn between \$30,000 and \$49,999 and 80% of military wives earn less than \$30,000. More than half of military wives are either unemployed (9.3%) or not in the labor force (45%). Only 10% are active-duty military themselves. Literature on tied migration provides evidence that the demands of military life (e.g. frequent moving to constrained geographic locations) often serve as a barrier to employment and earning potential for military wives (Payne et al., 1992; Cooke and Speirs, 2005).⁹

From the data, it is obvious that civilian wives have better employment outcomes and the gap between husband and wife is much smaller. The unemployment rate of civilian wives is only 0.3 percentage points lower than their husbands compared to a nearly 9 percentage point gap between military husbands and wives. The income distribution skews to the left for all wives but civilian wives earn a higher mean income, \$21,768 compared to \$15,244 for military wives. The lower average family incomes among the military found by Hisnanick and Little (2010) remains true when restricting the population to migrants.

Overall, our findings validate our hypotheses and are in-line with Hisnanick and Little (2010). The demographics of migrating military spouses are just as different from migrating civilian spouses as non-migrating military and civilian spouses (see Hisnanick and Little 2010). Wives have similarly poor economic outcomes and husbands are typically the main contributor to family income.

Geographic Dispersions

Because this research uses data on where husbands and wives reported living one year ago and then their current residence, only capturing couples that have the same current residence, the husband and wife may have two different origins but the same destination. Therefore, we examine the origins of husbands and wives separately but the destinations jointly in this discussion of geographic dispersions. We also ground the patterns of mobility by first presenting the locations of active-duty military current residences across the country as well as military installations. From there, we examine the origins (previous residence) and destinations (current residence) of military and civilian husbands and wives separately. This section concludes with an examination of migration distance calculations. This distance function cannot be computed for all persons in the sample and is experimental.

⁹ Little and Hisnanick (2007) arrived at similar conclusions for husbands tied to military spouses. They found that tied military husbands earn 70% of tied civilian husbands whereas tied military wives earn 50% of tied civilian wives.

Active-Duty Military

The geographic dispersion of active-duty military and military bases provides context for the migration patterns of military spouses. Figure 2 shows the dispersion of active-duty military in the continental U.S., Alaska and Hawaii by county with an overlay of military installations. It is clear from this map that many active-duty military are clustered in areas with large military bases. For example, the largest number of active duty military by county is in San Diego County, CA. San Diego County and the surrounding counties contain a number of large military bases including, Camp Pendelton, Miramar, and Twenty Nine Palms. Other counties among the top for active-duty military include: Honolulu County, HI contains Hickam Air Force Base, Onslow County, NC contains Camp Lejuene, Cumberland County, NC contains Fort Bragg, and El Paso, CO contains the U.S. Air Force Academy, Peterson Air Force Base, Fort Carson, and Schriever Air Force Base.

International Origins

Table 3 shows five of the countries that are among the highest as origins for migrating military and civilian husbands and wives. Military husbands and wives have similar international origins, with four countries falling among the highest reported for each; these include Iraq, Germany, Japan, and South Korea. Among the top international origins for military husbands is Afghanistan, which is not included among the top international origins for military wives. These origins match with our hypothesis that military migrants will have international origins in countries with a high U.S. military presence.

Civilian husbands and wives have different top international origins in comparison to military spouses. Civilian husbands and wives have international origins that are also similar and include among the top five for both spouses, Puerto Rico, India, Mexico, Canada, and China.

Table 3: International Origins of Military and Civilian Spouses¹⁰

	Husbands			Wives		
	Country	Movers	Margin of Error (+/-)	Country	Movers	Margin of Error (+/-)
Military	Iraq	11,146	826	Germany	4,306	440
	Germany	4,657	467	Japan	2,641	374
	Afghanistan	3,292	420	Italy	955	217
	Japan	3,081	434	Iraq	785	197
	South Korea	1,777	293	South Korea	560	144
Civilian	Puerto Rico	22,487	935	India	25,988	1,380
	India	16,079	1,047	Puerto Rico	21,638	938

¹⁰ For military husbands, Afghanistan and Japan are not significantly different at the 90% confidence level. For military wives, Italy and Iraq are not significantly different at the 90% confidence level. For military wives, Iraq and South Korea are not significantly different at the 90% confidence level from several other origin countries that are not shown. For civilian husbands, Mexico and India are not significantly different at the 90% confidence level. For civilian husbands, Iraq is not significantly different at the 90% confidence level other origin counties that are not shown. For civilian wives, Puerto Rico and Mexico are not significantly different at the 90% confidence level. For civilian wives, Canada and China are not significantly different at the 90% confidence level.

	Mexico	15,688	1,050	Mexico	20,728	1,129
	Canada	10,723	821	Canada	11,204	719
	Iraq	8,380	734	China	10,450	747

Source: U.S. Census Bureau, 2007-2011 American Community Survey.

Domestic Origins

In Table 4, the states among the top five domestic origins for military spouses are the same for husbands and wives – California, Texas, Virginia, North Carolina, and Florida. Civilian husbands and wives also have identical states rankings among the top five – California, Texas, Florida, New York, and Illinois. Interestingly, the states that rank among the highest origins for both military and civilian spouses are also some of the most populous states in the U.S.

Table 4: U.S. State Origins of Military and Civilian Spouses¹¹

	Husbands			Wives		
	State	Movers	Margin of Error (+/-)	State	Movers	Margin of Error (+/-)
Military	California	18,801	922	California	18,210	843
	Texas	14,357	1,029	Texas	16,034	985
	Virginia	13,098	823	Virginia	12,838	905
	North Carolina	11,051	827	North Carolina	10,882	825
	Florida	9,131	668	Florida	9,349	673
Civilian	California	574,056	5,558	California	555,644	5,496
	Texas	415,634	4,991	Texas	398,766	5,097
	Florida	264,514	4,251	Florida	258,459	4,356
	New York	198,194	2,917	New York	192,281	2,838
	Illinois	150,507	2,854	Illinois	147,572	2,870

Source: U.S. Census Bureau, 2007-2011 American Community Survey.

The San Diego, CA, Virginia Beach, VA, Washington, DC, Honolulu, HI, and Killeen, TX metro areas are among the top origins for military spouses, both husband and wife (see Table 5). As expected, each of these metro areas contains large military bases and high numbers of active-duty military (see Figure 2).

Among the top metro area origins for civilian spouses, both husbands and wives, were the New York, NY, Los Angeles, CA, Dallas-Fort Worth, TX, Chicago, IL, and Houston, TX (see Table 6). These metro areas have some of the largest populations in the U.S.

¹¹ For military husbands, Texas and Virginia are not significantly different at the 90% confidence level.

Figures 3-6 show the dispersion of military and civilian spouses who had a different residence the previous year by metro area for their *previous* residence (i.e. origin). As expected, areas with military bases and clusters of active-duty military tend to have more migrating military husbands and wives, such as metro areas in California, Texas, Washington, Colorado, Virginia, and the District of Columbia. Clusters of migrating civilian spouses can be seen in populous metro areas in southern California, Texas, the northeast, and Chicago.

Table 5: Top 5 Metropolitan Statistical Area Origins for Military Spouses¹²

Metropolitan Statistical Area	Husbands		Wives	
	Estimate	Margin of Error (+/-)	Estimate	Margin of Error (+/-)
San Diego-Carlsbad-San Marcos, CA	8,739	549	7,312	477
Virginia Beach-Norfolk-Newport News, VA-NC	7,677	669	7,168	668
Washington-Arlington-Alexandria, DC-VA-MD-WV	5,803	513	5,962	525
Honolulu, HI	5,320	497	4,877	469
Killeen-Temple-Fort Hood, TX	4,369	569	4,361	497

Source: U.S. Census Bureau, 2007-2011 American Community Survey.

Table 6: Top 5 Metropolitan Statistical Area Origins for Civilian Spouses¹³

Metropolitan Statistical Area	Husbands		Wives	
	Estimate	Margin of Error (+/-)	Estimate	Margin of Error (+/-)
New York-Northern New Jersey-Long Island, NY-NJ-PA	204,326	2,660	196,917	2,931
Los Angeles-Long Beach-Santa Ana, CA	181,608	2,802	175,337	2,736
Dallas-Fort Worth-Arlington, TX	115,655	3,098	111,641	2,977
Chicago-Joliet-Naperville, IL-IN-WI	111,605	2,354	109,491	2,427
Houston-Sugar Land-Baytown, TX	100,107	2,243	95,876	2,096

Source: U.S. Census Bureau, 2007-2011 American Community Survey.

¹² For military husbands, the Washington-Arlington-Alexandria, DC-VA-MD-WV and Honolulu, HI metro areas are not significantly different at the 90% confidence level. For military wives, the San Diego-Carlsbad-San Marcos, CA and Virginia Beach-Norfolk-Newport News, VA-NC metro areas are not significantly different at the 90% confidence level. For military husbands and military wives, the Killeen-Temple-Fort Hood, TX metro area is not significantly different at the 90% confidence level from several other metro areas that are not shown.

¹³ For civilian wives, the Dallas-Fort Worth-Arlington, TX and Chicago-Joliet-Naperville, IL-IN-WI metro areas are not significantly different at the 90% confidence level.

Domestic Destinations

Two states, California and Texas, are among the top five most popular domestic destinations for both military and civilian spouses (see Table 7). Other state destinations that are among the highest ranking for military spouses are Virginia, North Carolina, Washington, Florida, and New York. Civilian spouses have state destinations that include California, Texas, Florida, New York, and Georgia.

Table 7: U.S. State Destinations of Military and Civilian Spouses¹⁴

	Husbands			Wives		
	State	Movers	Margin of Error (+/-)	State	Movers	Margin of Error (+/-)
Military	California	22,582	1,055	California	21,774	956
	Texas	19,950	1,083	Texas	19,037	1,016
	Virginia	17,809	991	Virginia	17,824	1,050
	North Carolina	15,990	974	North Carolina	15,793	955
	Washington	10,400	757	Washington	10,162	677
Civilian	California	612,122	5,284	California	599,323	5,242
	Texas	479,483	5,796	Texas	465,216	5,625
	Florida	302,097	4,567	Florida	298,409	4,333
	New York	208,706	3,055	New York	203,117	3,023
	Georgia	162,497	3,151	Georgia	159,043	3,174

Source: U.S. Census Bureau, 2007-2011 American Community Survey.

Similar to the top metro area origins, San Diego, CA, Virginia Beach, VA, Washington, D.C., Honolulu, HI, and Killeen, TX, are among the top five domestic metropolitan statistical area destinations for military spouses, both husbands and wives (see Table 8). These metro areas contain major military bases as well as significant numbers of active-duty military (see Figure 2). Figures 7 and 8 display the geographic dispersion of military spouses' *current* residence (i.e. destinations) by metro area, again showing clusters in metro areas with military bases and populations of active-duty military.

The list of metropolitan statistical areas among the top five destinations for civilian spouses also follows the same pattern as their origins to include, New York, NY, Los Angeles, CA, Dallas-Fort Worth, TX, Chicago, IL, and Houston, TX (see Table 9). These cities are among the most populous cities in the U.S. Figures 9 and 10 show the geographic dispersion of civilian spouses' *current* residence (i.e. destinations) by metro area with major metropolitan areas having the largest number of civilian migrants.

¹⁴ For military husbands and military wives, Washington and another state not shown are not significantly different at the 90% confidence level. For military wives, Texas and Virginia are not significantly different at the 90% confidence level. For civilian husbands and civilian wives, Georgia and another state not shown are not significantly different at the 90% confidence level.

Table 8: Top 5 Metropolitan Statistical Area Destinations for Military Spouses¹⁵

Metropolitan Statistical Area	Husband		Wife	
	Estimate	Margin of Error (+/-)	Estimate	Margin of Error (+/-)
San Diego-Carlsbad-San Marcos, CA	11,423	830	10,857	782
Virginia Beach-Norfolk-Newport News, VA-NC	10,039	680	10,165	726
Washington-Arlington-Alexandria, DC-VA-MD-WV	8,668	641	8,493	631
Honolulu, HI	7,444	553	7,296	540
Killeen-Temple-Fort Hood, TX	7,310	690	7,062	679

Source: U.S. Census Bureau, 2007-2011 American Community Survey.

Table 9: Top 5 Metropolitan Statistical Area Destinations for Civilian Spouses¹⁶

Metropolitan Statistical Area	Husband		Wife	
	Estimate	Margin of Error (+/-)	Estimate	Margin of Error (+/-)
New York-Northern New Jersey-Long Island, NY-NJ-PA	215,642	2,856	209,810	2,969
Los Angeles-Long Beach-Santa Ana, CA	183,297	2,876	178,442	2,858
Dallas-Fort Worth-Arlington, TX	133,653	3,368	130,133	3,082
Chicago-Joliet-Naperville, IL-IN-WI	119,984	2,637	116,825	2,662
Houston-Sugar Land-Baytown, TX	118,951	2,474	115,029	2,279

Source: U.S. Census Bureau, 2007-2011 American Community Survey.

Geography of Mover Rates

To better compare the migration rates of military and civilian spouses by geography, the populations were normalized by using the denominator of all military spouses and all civilian spouses (not just those migrating) by metro area. The results of this normalization can be seen in Figure 11. Comparing military to civilian, the rates of moving are much higher in general for military spouses. St. George, UT, Marshalltown, IA, Victoria, TX, are among the metro areas with the highest moving rates for both

¹⁵ For military husbands and military wives, the Killeen-Temple-Fort Hood, TX metro area is not significantly different at the 90% confidence level from one or several of the metro areas that are not shown. For military wives, the San Diego-Carlsbad-San Marcos, CA and Virginia Beach-Norfolk-Newport News, VA-NC metro areas are not significantly different at the 90% confidence level.

¹⁶ For civilian husbands and civilian wives, the Chicago-Joliet-Naperville, IL-IN-WI and Houston-Sugar Land-Baytown, TX metro areas are not significantly different at the 90% confidence level.

military husbands and wives.¹⁷ It should be noted that each of these metro areas may have a high mover rate for military spouses but the estimated number of movers is less than 100 for each of these. In comparison, the mover rates for the top metro area destinations for military spouses by frequency (see Table 8) are approximately 43% for San Diego, CA; Virginia Beach, VA, 32%; Washington, DC, 33%, Honolulu, HI, 44%; and, Killeen, TX, 52%.¹⁸

Among the top civilian metro areas for mover rates are Rexburg, ID, Moscow, ID, Cedar City, UT, Logan, UT, and Fort Leonard Wood, MO.¹⁹ Each of these areas has fewer than 5,000 migrating civilian husbands or wives. In comparison, the mover rates for the top metro area destinations for civilian spouses by frequency (see Table 9) are approximately 8% for New York, NY; Los Angeles, CA, 11%; Dallas, TX, 13%, Chicago, IL, 8%; and, Houston, TX, 13%.²⁰

Distance

For this research, the migration distance is calculated for military and civilian husbands and wives in order to assess in a different way the types and patterns of migration for these two groups. This distance calculation is an experimental measure. The ACS does not ask about distance of a migration. Instead, the ACS asks where the respondent lived the previous year (see Figure 1). To estimate distance, we utilize geocoded current residence and previous residence information to calculate the Census block centroid -to-Census block centroid distance variable for each individual’s previous residence-to-current residence flow pair based on Euclidean distance (i.e., “as the crow flies”) (see Equation 1).

Equation 1

$$\text{Straight Line Distance} = 3949.99 * \arccos(\sin(\text{LAT_pre}) * \sin(\text{LAT_cur}) + \cos(\text{LAT_pre}) * \cos(\text{LAT_cur}) * \cos(\text{LONG_cur} - \text{LONG_pre}))$$

where, LAT_pre is the latitude of the Census block centroid of the previous residence of each mover, LAT_cur is the latitude of the Census block centroid of the current residence of each mover, LONG_pre is the longitude of the Census block centroid of the previous residence of each mover, and LONG_cur is the longitude of the Census block centroid of the current residence of each mover.

¹⁷ For military husbands and wives, these metro areas are not significantly different at the 90% confidence level from one another nor are they significantly different from metro areas not shown.

¹⁸ For military husbands and wives, the Honolulu, HI and San Diego, CA metro areas are not significantly different at the 90% confidence level from one another. Also the Washington, DC and Virginia Beach, VA metro areas are not significantly different from one another.

¹⁹ For civilian husbands, Rexburg, ID is significantly different at the 90% confidence level from other metro areas based on mover rates. For civilian husbands (aside from Rexburg, ID) and wives, these metro areas are not significantly different at the 90% confidence level from one another nor are they significantly different from metro areas not shown.

²⁰ For civilian husbands, Dallas, TX and Houston, TX metro areas are not significantly different at the 90% confidence level from one another. For civilian wives, Dallas, TX and Houston, TX, Chicago, IL and New York, NY metro areas are not significantly different from one another at the 90% confidence level from one another.

Military spouses on average have much longer migrations than the average civilian spouses' migration distance. This finding is in accordance with Cooke and Speirs' (2005) research and is believed to be due to the geographic dispersion of military installations throughout the country. The difference between husbands and wives for both military and civilian is not statistically significant.

Because the distance equation is based upon the Census block of the previous residence, not all migrants in this analysis have a calculated distance variable. This is because some respondents leave the answer blank or provide information that could not be geocoded down to the Census block level. This also means that those who migrated from abroad were not included in this distance estimation. Of the military spouses in this sample who migrated, approximately 36% had migration block information. Of the civilian spouses in this sample who migrated, approximately 38% had migration block information. In other words, the averages in Table 10 below are calculated for only the respondents who had complete geographic information.

Table 10: Average Distance of Moves within U.S., 2007-2011

Selected Population	Mean Distance (miles)	Margin of Error (+/-)	% of Unweighted Sample with Calculated Distance
Civilian Spouses (17-64 years)	142.6	2.1	38.8
Husbands	141.8	2.1	38.7
Wives	143.4	2.2	38.9
Military Spouses (17-64 years)	709.4	26.5	36.8
Husbands	693.5	26.5	35.1
Wives	724.1	29.1	38.5

Source: U.S. Census Bureau, 2007-2011 American Community Survey.

Conclusions and Discussion

The socio-demographics of migrating military spouses tend to be different from their civilian counterparts. Specifically, husbands within migrating military couples are very likely to be employed in the Armed Forces while wives are more likely to be unemployed. Additionally, wives within migrating military couples are more likely to have a bachelor's degree than their husbands or migrating civilian husbands or wives. On the civilian side, the employment and educational gap are much smaller.

In terms of geography, military husbands and wives tend to move domestically from one metro area with a large military population to another metro area with a large military population. As expected, these metro areas contain major military bases. In comparison, civilian husbands and wives tend to move to metro areas with large populations. Internationally, countries with large overseas military bases and/or a large U.S. military presence fall among the top international origins for military husbands and wives. For civilians, countries that have large migration flows in general to the U.S. are among the top international origins. When distance of migration is factored in, military spouses have much farther migrations than their civilian counterparts within the U.S.

While there are significantly more migrating civilian husbands and wives in the U.S., the rate of movers by metro area varies significantly in comparison to migrating military husbands and wives. In other words, the migration rates for military husbands and wives by metro area are much higher than their civilian counterparts. This indicates that military spouses may have greater mobility overall.

This examination of migrating military and civilian spouses indicates that the two groups are very different in terms of socio-economic characteristics as well as geographic migration patterns. This research does not attempt to explain why there are differences between the two groups. Rather, future research may include a more in-depth look at the explanatory variables of military migration. Other future research may include examining military wives and their educational attainment and labor force outcomes.

References

- Bielby WT, Bielby DD. 1992. I will follow him: family ties, gender-role beliefs, and reluctance to relocate for a better job. *American Journal of Sociology* 97:1241–1267.
- Cooke T. J. and K. Speirs. 2005. Migration and Employment Among the Civilian Spouses of Military Personnel, *Social Science Quarterly*, 86 (2).
- Cooke, T. J. 2008. Migration in a Family Way, *Population, Space, and Place*, 14: 255-265.
- Cooney Jr., R. T. 2003. Moving with the Military: Race, Class, and Gender Differences in the Employment Consequences of Tied Migration (Ph.D. dissertation, University of Maryland).
- Croan, G. M., Levine, C. T., and D. A. Blankinship. 1992. Family adjustment to relocation (Technical Report 968), Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.
- CNA, 2012. Population Representation in the Military Services Fiscal Year 2010. <http://prhome.defense.gov/RFM/MPP/ACCESSION%20POLICY/PopRep2010/index.html>
- DaVanzo J. 1976. *Why Families Move: A Model of the Geographic Mobility of Married Couples*. Rand: Santa Monica, CA.
- Hanson, S., and G. Pratt. 1995. *Gender, work, and space*. London and New York: Routledge.
- Hiller, H. H. and K. S. McCaig. 2007. Reassessing the role of partnered women in migration decision-making and migration outcomes. *Journal of Social and Personal Relationships* 24(3): 457-472.
- Hisnanick, John J. and Roger D. Little. 2010. Comparing US civilian and military family incomes: accounting for earnings shortfalls and compensation differences. *Res Militaris*, 1(1) Autumn.
- Lee, J.H. and J. Beckhusen. 2012. Veterans' racial and ethnic composition and place of birth: 2011. U.S. Census Bureau. <http://www.census.gov/prod/2012pubs/acsbr11-22.pdf>
- Little, R.D. and J.J. Hisnanick. 2007. The earnings of tied-migrant military husbands. *Armed Forces and Society*, 33(2).
- Long LH. 1974. Women's labor force participation and the residential mobility of families. *Social Forces* 52:342–348.
- Mincer J. 1977. Family migration decisions. *Journal of Political Economy* 86: 749–773.
- Payne, D.M., Warner, J.T. and R.D. Little. 1992. *Tied migration and returns to human capital: the case of military wives*. *Social Science Quarterly*, 73(2).

Pingle, J. F. 2007. A note on measuring internal migration in the United States, *Economics Letters* 94: 38–42.

Sandell SH. 1977. Women and the economics of family migration. *Review of Economics and Statistics* 59: 406–414.

U.S. Census Bureau. 2012. The 2012 Statistical Abstract: The National Data Book. Table 510. Department of Defense Personnel: 1950-2010, <http://www.census.gov/compendia/statab/2012/tables/12s0510.xls>.

U.S. Department of Defense, Office of the Under Secretary of Defense, Personnel, and Readiness. 2006. *Population representation in the military services*.

United States General Accounting Office. 2001. *Military personnel: Longer time between moves related to higher satisfaction and retention* (Publication No. GAO-01-841), Washington, D.C.: U.S. Government Printing Office.

Appendix Table 1: Socio-demographic Characteristics for Migrating Spouses, 2007-2011 5-year American Community Survey.

Selected Characteristics	Military								Civilian							
	Husband				Wife				Husband				Wife			
	Estimate	Margin of Error (+/-)	Percent	Margin of Error (+/-)	Estimate	Margin of Error (+/-)	Percent	Margin of Error (+/-)	Estimate	Margin of Error (+/-)	Percent	Margin of Error (+/-)	Estimate	Margin of Error (+/-)	Percent	Margin of Error (+/-)
Age																
Mean	30.4	0.1	-	-	29.4	0.1	-	-	39.0	0.1	-	-	36.8	0.0	-	-
Race and Hispanic Origin																
White alone	138,095	2,784	72.3	0.8	131,224	2,703	70.1	0.8	3,048,572	11,900	63.6	0.2	2,981,314	12,471	63.5	0.2
Black or African American alone	20,783	1,118	10.9	0.5	16,984	1,062	9.1	0.5	451,860	5,636	9.4	0.1	384,767	4,715	8.2	0.1
Asian alone	5,726	604	3.0	0.3	9,365	603	5.0	0.3	379,656	4,860	7.9	0.1	425,737	4,607	9.1	0.1
Hispanic or Latino	23,519	1,408	12.3	0.6	25,491	1,273	13.6	0.6	843,410	6,956	17.6	0.1	831,748	6,859	17.7	0.1
Other	2,759	340	1.4	0.2	4,226	482	2.3	0.3	70,066	1,881	1.5	0.0	72,587	2,156	1.5	0.0
Tenure																
In an owner-occupied housing unit	47,017	1,615	24.6	0.7	46,586	1,625	24.9	0.7	2,067,667	16,569	43.1	0.3	2,032,603	16,530	43.3	0.3
In a renter-occupied housing unit	143,865	3,288	75.4	0.7	140,704	2,709	75.1	0.7	2,725,897	16,248	56.9	0.3	2,663,550	18,615	56.7	0.3
Educational Attainment																
Not a high school graduate	1,067	236	0.6	0.1	5,422	568	2.9	0.3	630,450	6,101	13.4	0.1	540,358	6,304	11.5	0.1
High school graduate	45,858	1,747	24.5	0.8	37,154	1,373	19.8	0.7	1,196,401	9,479	25.5	0.2	1,053,747	10,301	22.4	0.2
Some college or associate's degree	93,278	2,614	49.8	0.9	88,999	2,261	47.5	0.8	1,350,527	9,355	28.8	0.2	1,478,790	8,780	31.5	0.2
Bachelor's degree	29,885	1,237	16.0	0.6	40,180	1,435	21.5	0.7	977,605	7,846	20.8	0.2	1,055,182	7,755	22.5	0.2
Professional or graduate degree	20,794	947	11.1	0.5	15,535	859	8.3	0.4	638,581	6,136	13.6	0.1	568,076	5,817	12.1	0.1
Employment Status																
Employed	6,122	637	3.2	0.3	65,711	2,006	35.1	0.8	4,017,645	14,446	83.8	0.1	2,860,696	12,783	60.9	0.2
Unemployed	1,404	239	0.7	0.1	17,350	831	9.3	0.4	293,790	3,751	6.1	0.1	298,290	4,594	6.4	0.1
Armed Forces	181,371	3,751	95.0	0.4	19,719	1,059	10.5	0.5	-	-	-	-	-	-	-	-
Not in labor force	1,985	315	1.0	0.2	84,510	2,037	45.1	0.9	482,129	5,048	10.1	0.1	1,537,167	9,341	32.7	0.2
Salary/Wages Income																
Without income	1,607	246	0.9	0.1	69,261	1,920	37.0	0.9	683,363	5,637	14.6	0.1	1,507,690	10,485	32.1	0.2
Under \$10,000	3,694	465	2.0	0.2	37,453	1,473	20.0	0.7	322,835	4,471	6.9	0.1	649,630	6,247	13.8	0.1
\$10,000 to \$29,999	43,159	1,603	23.0	0.7	42,067	1,550	22.5	0.7	1,144,974	7,401	24.4	0.1	1,187,516	8,840	25.3	0.2
\$30,000 to \$49,999	70,474	2,192	37.6	0.9	24,465	957	13.1	0.5	1,078,237	7,013	23.0	0.1	747,209	5,758	15.9	0.1
\$50,000 to \$74,999	44,246	1,409	23.6	0.6	9,487	739	5.1	0.4	761,318	6,366	16.2	0.1	370,613	3,621	7.9	0.1
\$75,000 to \$99,999	17,067	946	9.1	0.5	3,004	400	1.6	0.2	346,692	4,652	7.4	0.1	123,328	2,749	2.6	0.1
\$100,000 and over	10,635	731	5.7	0.4	1,553	252	0.8	0.1	456,145	4,509	9.7	0.1	110,167	2,005	2.3	0.0
Mean	47,208.00	518.10	-	-	15,244.00	392.70	-	-	45,734.00	194.40	-	-	21,768.00	102.30	-	-
Presence and Age of Children																
Children under 6	59,844	1,917	32.0	0.9	58,681	1,830	31.3	0.9	1,029,618	9,964	21.9	0.2	1,005,894	8,799	21.4	0.2
Children ages 6-17	31,391	1,293	16.8	0.6	31,015	1,248	16.6	0.6	1,062,227	8,448	22.6	0.2	1,041,261	8,325	22.2	0.2
Children under 18	28,320	1,313	15.1	0.7	28,169	1,274	15.0	0.6	701,524	6,739	14.9	0.1	684,787	7,665	14.6	0.1
No children present	71,327	2,474	38.1	1.0	69,425	2,185	37.1	0.9	2,000,195	10,131	42.6	0.2	1,964,211	10,147	41.8	0.2
Veteran's Status																
Active Duty Military	181,371	3,751	95.0	0.4	19,719	1,059	10.5	0.5	-	-	-	-	-	-	-	-
Veteran	5,628	543	2.9	0.3	17,392	960	9.3	0.5	657,476	6,023	13.7	0.1	70,409	2,138	1.5	0.0
Nonveteran	3,883	424	2.0	0.2	150,179	2,780	80.2	0.7	4,136,088	14,579	86.3	0.1	4,625,744	15,249	98.5	0.0

Figure 1. Reproduction of Migration question (#15) from American Community Survey.

15 a. Did this person live in this house or apartment 1 year ago?

Person is under 1 year old → *SKIP to question 16*

Yes, this house → *SKIP to question 16*

No, outside the United States and Puerto Rico – *Print name of foreign country, or U.S. Virgin Islands, Guam, etc., below; then SKIP to question 16*

No, different house in the United States or Puerto Rico

b. Where did this person live 1 year ago?

Address (Number and street name)

Name of city, town, or post office

Name of U.S. county or municipio in Puerto Rico

Name of U.S. state or Puerto Rico **ZIP Code**