



## MLDC Research Areas

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Legal Implications  
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# What Is the Relationship Between Demographic Diversity and Cognitive Diversity?

## Abstract

Diversity is often defined demographically, but it is also possible to define it more broadly in terms of cognitive traits, such as personality and thinking styles. Achieving diversity in this broader sense may improve the ability of the military to perform its wide variety of functions. This issue paper addresses the question of whether the U.S. military's efforts to promote demographic diversity within its ranks could affect the cognitive diversity of its personnel. Focusing on one aspect of cognitive diversity—personality—we find in the literature small to moderate relationships between personality and the demographic characteristics of race/ethnicity and gender. We conclude that efforts by the military to increase demographic diversity may also have the secondary effect of somewhat increasing cognitive diversity. However, given the modest sizes of many of these relationships and the importance of other factors involved in increasing cognitive diversity, we expect this secondary effect to be small.

When addressing the issue of diversity, organizations, researchers, and policymakers have typically focused on *demographic diversity*, which is usually defined in terms of race, ethnicity, and gender and sometimes encompasses other demographic variables, including age, religion, and sexual orientation. However, it is possible to define diversity more broadly to include other aspects of individuals' personal qualities, experience, and background. For example, *cognitive diversity*—as defined by Riche, Kraus, and Hodari (2007)—describes how individuals in a group vary in terms of their personalities and thinking styles. Given the wide variety of functions

the U.S. military performs—and the fact that different positions require different skills, personalities, and thinking styles—the military may have an interest in managing both cognitive and demographic diversity.

This issue paper addresses the question of whether the U.S. military's efforts to promote demographic diversity within its ranks could affect the cognitive diversity of its personnel. We explore this question by examining the literature for insights on the relationships between demographic diversity and cognitive diversity. Specifically, we focus on how one aspect of cognitive diversity, *personality*, is related to *gender* and to *race/ethnicity*.<sup>1</sup>

## How Is Personality Measured?

The studies we examined used measures of personality based on the “Big Five” personality traits: Agreeableness, Conscientiousness, Emotional Stability, Extraversion, and Openness to Experience. Also known as the Five Factor Model (FFM), the Big Five personality traits were derived using factor analysis and are generally accepted by the scientific community. One commonly used measure of the Big Five traits is the Revised NEO Personality Inventory (NEO PI-R). For the NEO PI-R, each of the Big Five traits is made up of six facets. For example, the Conscientiousness factor on the NEO PI-R includes the following facets: competence, order, dutifulness, achievement striving, self-discipline, and deliberation. Table 1 presents a list of FFM facets promoted by Hough and Ones (2001).

## What Is the Relationship Between Gender and Personality?

There is a great deal of research on the relationship between gender and personality (e.g., Costa, Terracciano, & McCrae, 2001; Schmitt, Realo, Voracek, & Allik, 2008). This body of research generally finds consistent, albeit small-to-moderate, average differences

between men and women on measures of the Big Five personality traits (i.e., typically one-third of a standard deviation or less). Compared with men, women score higher on the Agreeableness factor but lower on the Emotional Stability factor. For the other three Big Five factors, women score higher than men on some facets (e.g., the sociability facet of Extraversion), whereas men score higher than women on other facets (e.g., the dominance facet of Extraversion). Although consistent, these average differences in personality across genders are small compared with differences between individuals *within* gender groups.

**Table 1. Measuring Personality: The Five Factor Model (FFM) and Its Facets**

Factor	Facet
Agreeableness	Nurturance
Conscientiousness	Achievement Dependability Cautiousness/impulse control Order Persistence
Emotional Stability	Self-esteem Low anxiety Even-tempered
Extraversion	Dominance Sociability Activity/energy
Openness to Experience	Complexity Culture/artistic Creativity/innovation Change/variety Curiosity/breadth Intellect

**SOURCE:** Hough & Ones (2001) created this taxonomy of FFM facets based on their review of several different personality measures, including the NEO PI-R.

### What Is the Relationship Between Race/Ethnicity and Personality?

The relationship between race/ethnicity and personality has received much less attention than the relationship between gender and personality. Recent studies have found some differences between race/ethnicity groups in the United States, although these differences are often small and inconsistent.<sup>2</sup> To address the inconsistencies, Foldes, Duehr, and Ones (2008) conducted meta-analyses to examine how blacks, whites, Hispanics, Asians, and American Indians differ on the Big Five personality traits and their facets. Generally, differences between groups were small, although there were some moderate effect sizes at the facet level. The largest, most-consistent differences were between blacks and Asians on facets of Extraversion, such that blacks, on average, scored higher than Asians ( $d = 0.29$  to  $0.55$ ).

Perhaps the most important finding from this study was that group differences at the factor level (e.g., Extraversion) were often moderated by differences at the facet level (e.g., the sociability facet of Extraversion).

### Conclusions

Overall, it appears that race, ethnicity, and gender are associated with some differences in personality. However, the literature suggests that average differences in personality across gender, race, and ethnicity groups are small-to-moderate in magnitude and that, more importantly, differences in personality are larger *within* demographic groups. As a result, it is unlikely that promoting demographic diversity will substantially increase cognitive diversity. Even if race/ethnicity or gender differences in personality traits were large, increasing demographic diversity may not result in increased cognitive diversity because of other factors. For example, individuals with certain personality traits may self-select both into the military overall and into certain career fields within the military, regardless of race/ethnicity or gender. Therefore, if the military decides that creating a workforce with diverse personalities is a priority, it will likely have to actively pursue that goal by selecting more individuals with different personalities or other desired cognitive characteristics.

### Notes

<sup>1</sup>We found little evidence in the literature on the association between another important aspect of cognitive diversity—thinking styles—and demographic diversity; therefore, we omit this relationship from this paper.

<sup>2</sup>According to Cohen (1992), an effect size measured as  $d$  is small if it is around 0.2, moderate if around 0.5, and large if around 0.8.

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