

Overview

The Office of People Analytics (OPA) conducts surveys to support the personnel information needs of the Under Secretary of Defense for Personnel and Readiness. These surveys assess the attitudes and opinions of the entire Department of Defense (DoD) community on a wide range of personnel issues.

Response rates for OPA surveys have been declining for the past 15 years, and currently range from 10 to 35 percent.¹ Because of these low response rates, OPA statisticians have asserted that nonresponse bias (NRB) is likely the largest source of error in OPA estimates. However, the levels of NRB on OPA surveys are likely much lower than surveys with similar response rates due to the large volume of administrative data known for both survey respondents and survey nonrespondents that are used for weight adjustments. OPA makes weighting adjustments typically using 30–50 demographic characteristics (e.g., Service, paygrade, age).

In response to a General Accountability Office suggestion, OPA started conducting NRB studies in 2010. Table 1 below shows the NRB studies that OPA has conducted as of the date of this report.

Table 1.
List of Published NRB Studies for OPA Surveys

Survey Short Title	Name of Report ²
2010 PEV1	2010 Post-Election Voting Survey of Local Election Officials: Nonresponse Bias Study
2010 PEV5	2010 Post-Election Voting Survey of Uniformed Service Members: Mode and Nonresponse Bias Studies
2012 PEV5	2012 Post-Election Voting Survey of Active Duty Military Nonresponse Bias Analysis
2012 WGRA	2012 Workplace and Gender Relations Survey of Active Duty Members: Nonresponse Bias Analysis Report
2013 WEOA	2013 Workplace and Equal Opportunity Survey of Active Duty Members: Nonresponse Bias Analysis Report
2014 SAGR	2014 Service Academy Gender Relations Survey: Nonresponse Bias Analysis Report
2014 SAGR	2014 Service Academy Gender Relations Survey: U.S. Merchant Marine Academy Nonresponse Bias Analysis Report
2014 QCMC	2014 QuickCompass of Military Chaplains: Nonresponse Bias Analysis Report
2014 PEV5	2014 Post-Election Voting Survey of Active Duty Military: Nonresponse Bias Analysis
2014 SOFS-A	2014 Status of Forces Survey of Active Duty Members: Nonresponse Bias Analysis Report
2015 WGRR	2015 Workplace and Gender Relations Survey of Reserve Component Members: Statistical Methodology Report
2015 WEOR	2015 Workplace and Equal Opportunity Survey of Active Duty Members: Nonresponse Bias Analysis Report
2016 SAGR	2016 Service Academy Gender Relations Survey: Statistical Methodology Report
2016 SAGR	2016 Service Academy Merchant Marines Gender Relations Survey: Statistical Methodology Report

¹ Surveys of DoD civilians and the Defense Organizational Climate Survey have higher response rates than OPA’s other surveys of active duty and Reservists.

² Some NRB analyses are published as a separate report, and some are within the statistical methodology report.

Survey Short Title	Name of Report²
2016 WGRA	2016 Workplace and Gender Relations Survey of Active Duty Members: Nonresponse Bias Analysis Report
2016 WGRC	2016 Department of Defense Civilian Employee Workplace and Gender Relations Survey: Nonresponse Bias Analysis Report
2016 SOFS-R	2016 Status of Forces Survey of Reserve Component Members: Statistical Methodology Report
2017 ADSS	2017 Survey of Active Duty Spouses: Nonresponse Bias Analysis Report
2017 WGRR	2017 Workplace and Gender Relations Survey of Reserve Component Members: Statistical Methodology Report
2018 SAGR	2018 Service Academy Gender Relations Survey: Statistical Methodology Report
2018 WGRC	2018 Department of Defense Civilian Employee Workplace and Gender Relations Survey: Statistical Methodology Report
2019 RCSS	2019 Survey of Reserve Component Spouses: Statistical Methodology Report
2019 SOFS-A	2019 Status of Forces Survey of Active Duty Members: Statistical Methodology Report
2019 SOFS-R	2019 Status of Forces Survey of Reserve Component Members: Statistical Methodology Report
2019 WEOR	2019 Workplace and Equal Opportunity Survey of Reserve Component Members: Statistical Methodology Report
2019 WGRR	2019 Workplace and Gender Relations Survey of Reserve Component Members: Statistical Methodology Report
2020 SOFR	2020 Status of Forces Survey of Reserve Component Members Statistical Methodology Report
2021 WGRR	2021 Workplace and Gender Relations Survey of Military Members - Reserve Component: Statistical Methodology Report
2022 WEOA	2022 Armed Forces Workplace and Equal Opportunity Survey–Active Duty Members: Statistical Methodology Report
2022 WEOR	2022 Armed Forces Workplace and Equal Opportunity Survey – Reserve Component Members: Statistical Methodology Report

Schedule and Frequency of Nonresponse Bias Studies

When the essential survey conditions, such as method of contact, survey mode, survey population (e.g., active duty military), and response rates stay relatively constant, the level of NRB and the direction of the bias should also remain constant. Therefore, OPA does not conduct an NRB study for each iteration of a survey. Instead, OPA conducts NRB studies at the intervals shown in Table 2.

Table 2.
Schedule of NRB Studies for OPA’s Recurring Surveys

Survey	Frequency of Survey	Recommended NRB Study Frequency
Status of Forces (active and Reserve)	Annual	Every 3rd Year
Workplace and Equal Opportunity (active and Reserve)	Every other year	Every 4th Year (every other iteration of survey)
Workplace and Gender Relations (active, Reserve, and DoD Civilians)	Every other year	Every 4th Year (every other iteration of survey)
Service Academy Gender Relations (SAGR)	Every other year	Every 4th Year (every other iteration of survey)
Spouse Surveys (active and Reserve)	Every other year	Every 4th Year (every other iteration of survey)

Types of Nonresponse Bias Analyses

OPA has investigated the presence of NRB using many different methods. Most authors recommend averaging the conclusions across several different studies to measure NRB. OPA has taken that approach and conducted several different analyses such as:

1. **Assessing late responders as a proxy for nonrespondents.** This analysis looks at the response characteristics of late responders, proxy for nonrespondents, and compares to the normal responders to determine any significant differences.
2. **Assessing hard to reach responders as a proxy for nonrespondents.** This analysis looks at the response characteristics of hard-to-reach responders, proxy for nonrespondents, and compares to the normal responders to determine any significant differences.
3. **Evaluating the composition of sample compared with survey respondents by key demographics.** This analysis compares the overall demographics of the sample versus the population to inform NRB.
4. **Analyzing response rates from several OPA surveys to determine whether the topic of the survey (topic saliency) leads to potential NRB.**
5. **Assessing how effectively OPA weighting reduces NRB.** This analysis compares unweighted and weighted estimates to determine if the weighting moved key questions in the correct direction.
6. **Analyzing item missing data for key survey questions.** This analysis explores whether there are systematically high missing data for questions that are most important.

7. **Comparing estimates from key questions to other studies.** This analysis determines if there are other surveys that have asked similar questions and compares the estimates.
8. **Comparing response rates among demographics that are not used in weighting.** Variables that are used in weighting should account for response rate differences, but those that are not may show signs of NRB if they are not correlated with weighting variables.
9. **Analyzing past responders to inform NRB.** This analysis has been used to determine whether more positive members are likely to respond to surveys. In addition, this analysis has been used to inform whether sexual assault victims are more likely to respond to future surveys.
10. **Surveying a sample of nonrespondents.** This analysis has been used to determine whether nonrespondents have similar responses to respondents from the original survey.
11. **Comparing estimates from the survey to known population totals.** This analysis has been used to compare estimates produced from the survey respondents to known population totals (e.g., number of reported sexual assaults, average age of members, etc.).
12. **Assessing participation drop-off at certain questions.** This analysis compares the rate of drop off after certain questions that could be considered “sensitive” between those who experienced something versus those who did not.