

# The Today's Army Spouse Panel Proof-of-Concept Study

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Methodological Report

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## About This Research Report

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This report documents research and analysis conducted as part of a project entitled *Army Spouse Panel*, sponsored by the Deputy Chief of Staff, G-9, U.S. Army. The purpose of the project was to provide an operational proof of concept of a panel of Army spouses for short, on-demand survey requests as a mechanism for G-9 and the Army to get focused, timely answers to questions regarding the efficacy of programs and services; if the survey mechanism proves effective, future iterations may be expanded to a panel of soldiers and made available to additional Army HQ offices for Army decisionmaking.

This research was conducted within RAND Arroyo Center's Personnel, Training, and Health Program. RAND Arroyo Center, part of the RAND Corporation, is a federally funded research and development center (FFRDC) sponsored by the United States Army.

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## Summary

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Army leadership and program staff often need timely survey data from a representative sample of Army families to inform policy decisions or to better understand the scope of issues or concerns among Army families. However, timely, representative survey data on Army families is not readily available from U.S. Department of Defense or civilian sources. One way to obtain this type of information is through a panel of representative Army spouses who have agreed to participate in short, on-demand surveys examining topics relevant for Army decisionmaking.

This type of survey panel, called an *access panel*, conveys several benefits over other types of surveys. For one, panel participants can be randomly sampled from the target population to be representative of specific characteristics of that larger population. In addition, having a group of participants willing to participate in surveys enables researchers to efficiently and quickly collect data from participants who have already been recruited through rigorous methods. Researchers can statistically adjust the data to make population-level inferences and provide a timely report of survey results to inform decisionmaking.

Our research team capitalized on the Today's Army Spouse Survey (TASS), a 2018 representative survey of Army spouses, to create the Today's Army Spouse Survey Panel (TASP), an operational proof of concept of an access panel of Army spouses for short, on-demand surveys. In this report, we evaluate the effectiveness of the TASP in recruiting participants and providing timely information representative of the relevant population. The panel incorporated a probability-based sample that was originally randomly sampled from a known population (Army spouses whose soldier was stationed in the continental United States in 2018, based on personnel records), and panel participants were recruited through the resulting survey (a practice called *piggybacking*). At the end of the 2018 TASS, spouses indicated their interest in participating in future research and provided an email address. For the panel effort, eligible spouses were spouses from that set who were still married to the same soldier in 2020 (eligible  $N = 5,063$ ). Because the TASP was a proof-of-concept project, this recruitment method offered a quasi-random sampling procedure to test the efficacy of an access panel of Army spouses. These spouses were invited to participate in three online panel surveys fielded in August 2020, January 2021, and May 2021.

Prior to fielding the surveys, we worked with the Army to select topic areas; these were pre-approved by the appropriate authorities. Survey response rates ranged from 32 to 34 percent, with more than 1,500 spouses responding to each survey. We tested two different procedures for weighting the data to be representative of the relevant population, which was Army spouses eligible for the 2018 survey who were still married to an active Army soldier in 2020–2021, so respondents had been an Army spouse for at least two years and were generally more mature. A

weighting procedure based on a single annual accounting of the demographic characteristics of the Army spouse population produced similar results to a weighting procedure that used weights constructed to match the population *at each survey timepoint*. Although the latter method produced more-precise estimates, it would be more time-consuming to execute because population data on spouses would not be available until months after fielding a survey. The weighting procedure based on a single annual timepoint enabled us to quickly produce results for each survey, which was one of the main goals of the proof of concept.

By all methodological indications, the proof-of-concept project was successful, and feedback from the Army suggests that the information provided by the panel was useful for informing Army decisionmaking, with the main caveat that the panel proof of concept was not designed to be representative of *all* Army spouses in the current population. Recommendations include the following:

- Recruit and maintain a representative sample of Army spouses for an access panel.
- Weight panel survey results to be representative of the target population based on a single point-in-time documentation of the Army spouse population, updated annually, to expedite analysis and reporting of results.
- Seek a streamlined process to approve last-minute survey topics and questions to maintain the agility of the panel in providing information in response to unanticipated events and issues.
- Review and clear panel methodology reports early so that the Army can expedite the public release of panel survey results and provide a timely reporting of findings to Congress or other stakeholders.
- Schedule dedicated time and resources for additional analyses as a way to take full advantage of the information obtained through panel surveys.

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## Chapter 1. Introduction

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Army leadership and program staff often need survey data from U.S. Army families to inform policy decisions or to better understand the scope of issues or concerns among Army families. Unfortunately, most surveys sponsored by the Office of the Secretary of Defense or by the Army take considerable time between administration of the survey and receipt of survey results that can be used to influence policy or operations. Other organizations, such as Blue Star Families and the Military Family Advisory Network, conduct regular surveys of military families and publish their results relatively quickly, but the results of those surveys are not meant to be representative of the Army (Military Family Advisory Network, 2019; Sonethavilay et al., 2018). Although these surveys are useful for understanding the issues that some military spouses face, their lack of representativeness and focus on military-connected families makes them less useful for understanding the actual scope of an issue among Army families.

Part of the reason that military spouse surveys are difficult to field and take so long to process is because the U.S. Department of Defense (DoD) does not officially collect or maintain email addresses for spouses. This means paper surveys are typically mailed out, increasing processing time. Alternatively, researchers rely on email recruitment from military nongovernment organizations' listservs, social media, or other similar sources, which results in a nonrepresentative and likely biased sample.

In 2018, RAND Arroyo Center randomly selected a representative sample of Army spouses whose soldier was stationed in the continental United States (CONUS) and invited them to participate in the Today's Army Spouse Survey (TASS; Trail, Sims, and Tankard, 2019). Over 8,000 Army spouses responded to the survey. As part of the survey, we asked respondents whether they were interested in participating in future studies, and, if so, they were asked to provide an email address so that we could contact them. More than 7,100 spouses who participated in this survey agreed to participate in follow-up research and provided an email address. Because it is difficult and expensive to reach Army spouses without email addresses, this sample created a unique opportunity for the Army to leverage spouse participation to provide real time data on their use of and attitudes toward Army soldier and family programs to help inform decisions on how to prioritize funding allocations across a portfolio of programs.

### Goals of the Army Spouse Panel Proof of Concept

The main goal of this project was to capitalize on the sample of spouses recruited from the TASS to provide an operational proof of concept of a panel of Army spouses for short, on-demand surveys. For the proof of concept, we planned to recruit spouses to complete three

surveys composed of topics of interest to the Army. Survey data from the resulting panel, called the Today's Army Spouse Panel (TASP), were used as a mechanism for the Army to get focused, timely answers to questions regarding time-sensitive issues, such as the impact of the coronavirus disease 2019 (COVID-19) pandemic on Army spouse employment and child care, and the efficacy of programs and services in helping spouses with pressing needs. The current project aims to evaluate the effectiveness of the panel survey mechanism in recruiting participants and providing representative and timely information to inform Army decisionmaking and describe the methodology used to do so.

## Review of the Literature on Panels

### *Terminology and Basic Concepts*

Researchers have used the term *panel* to refer to different methods of survey data collection. One use of the term refers to a longitudinal study in which a set of repeated measures are collected from the same group of individuals at regular intervals, such as every month, over long periods of time (Scherpenzeel and Das, 2010). The individuals in the *longitudinal panel* may be recruited randomly from a sampling frame that covers the population of interest, and thus the results of the surveys can be statistically weighted to be representative of that population. Because of panel member attrition or changes in panel member demographics (e.g., having children, aging), longitudinal panel studies will sometimes recruit additional respondents to replenish the sample to maintain representativeness (Callegaro et al., 2014).

In contrast, an *access panel* is a group of individuals who are readily available to answer surveys. The surveys often cover a variety of topics compared with longitudinal panel surveys, which typically assess the same set of measures repeatedly over time. In the case of an access panel, it is not essential that the same individuals answer each survey fielded to them, but that the group of individuals called upon to complete the surveys do so in a short turnaround time (Callegaro et al., 2014).

The TASP was conceived as an access panel to acquire on-demand responses to time-sensitive questions. Although the focus of the TASP was on providing quick-turnaround answers to address the needs of the Army, the panel methodology was also capable of assessing change over time in the same group of individuals, as in a longitudinal panel.

### *Recruitment*

Panels can be recruited to be representative of a specific population, meaning that they adequately replicate specific characteristics of that larger population. To be representative and minimize bias in the survey results, a panel may be sampled from a group that parallels key characteristics of the larger population (is representative) in a random manner in which all members of the population have an equal, nonzero chance of being recruited for the panel (is

unbiased) and in which only the specific individuals who are contacted by researchers can participate. If panels are randomly sampled in this way, survey results can be used to make inferences about the population they are meant to represent and are called *probability-based panels*.

In contrast, nonprobability-based panels are recruited using other means (e.g., search engine advertisements or via email listservs) in which the respondents do not necessarily reflect the larger population and do not have an equal or known probability of selection (e.g., those who use the search engine and see the advertisement, or who have joined the email listserv). Crucially, in these situations it is not possible to know who in the population will be exposed to the invitation or how many times an individual will be exposed to an invitation. Therefore, the probability of being sampled for the panel cannot be calculated, and thus generalizability to the given population is not known for these nonprobability-based panels (Callegaro et al., 2014).

The TASP incorporated a probability-based sample that was originally randomly sampled from a known population (CONUS Army spouses in 2018, based on personnel records), and panel members were recruited through the resulting survey (a practice called *piggybacking*; Martinsson, Dumitrescu, and Riedel, 2017). Because the TASP was a proof-of-concept project, this recruitment method offered a quasi-random sampling procedure to test the efficacy of an access panel of Army spouses.

Panel respondents were not specifically randomly sampled from the entire population of CONUS Army spouses or Army spouses more generally because only respondents to the TASS were eligible for recruitment into the panel. However, because the TASS sample was randomly selected from among all spouses in the target population and TASS respondents were demographically representative of the target population (Trail, Sims, and Tankard, 2019), it is likely that panel participants were representative of the sampled population. The current project tests this assumption, which is discussed in Chapter 2.

### *Benefits of Panels*

The significant time and logistical requirements of recruiting a new representative probability-based sample each time data collection is desired, especially when hardcopy contact is required, make such an approach unfeasible. A key practical benefit of panels is the ability to efficiently and quickly collect data from an existing readily accessible group of people who have already been recruited through rigorous methods. Additional benefits include data quality improvements, such as reliability of measurement over time, the ability to cross-check apparent discrepancies with previously collected information, and higher response rates than cross-sectional surveys (Schoeni et al., 2013; Sikkell and Hoogendoorn, 2008).

Panel surveys that assess the same information over time from the same respondents—whether as a longitudinal panel or an access panel such as the TASP—provide unique benefits, including reliability, ability to examine phenomena over time, and ability to differentiate

between maturation (i.e., change resulting from growth or development as individuals age) and generational or cohort differences (i.e., changes or traits associated with a particular group of people who experienced the same event). Panel surveys are able to field the same questions to the same individuals over time, providing reliability in the ways that people interpret and respond to questions. Ability to track changes over time is greatly enhanced through repeated surveys of the same sample rather than a series of different samples; any observed changes in the latter may reflect differences in the sample rather than true changes over time within samples. Furthermore, the temporal order of cause and effect can be identified when using panel data. Advancements in technology have increased the ease with which panels can be recruited, maintained, and surveyed and have made panels increasingly popular with a variety of groups, from scientific researchers to governmental agencies to the private sector (Hsiao, 2007; Sikkell and Hoogendoorn, 2008).

### *Feasibility of a Military-Specific Access Panel*

The Office of People Analytics within DoD published a report detailing the advantages and disadvantages of developing an access panel composed of military personnel (Barry and Ely, 2019). The report focused on a panel composed of service members, but many of the issues are equally applicable to a panel of spouses. In particular, the report noted the challenges of administering a panel of military-affiliated respondents. One challenge is the constantly changing military population, with members joining and leaving the military on a regular basis (Barry and Ely, 2019). This constant flux affects service members' (and their spouses') eligibility for inclusion in a panel over time. It also means that the panel sample will need to be refreshed and maintained more regularly to ensure representativeness compared with a panel of nonmilitary affiliated respondents. However, the report also notes that obtaining a probability-based sample of military-affiliated personnel is easier than with civilian panels because the military population is well-defined and relatively easy to contact (Barry and Ely, 2019).

Two additional military-specific challenges noted in the report are regulatory restrictions on providing monetary incentives to service members for completing surveys, which is not an issue with spouses, and the DoD review and approval process for licensing surveys (Barry and Ely, 2019). The report notes that "the current process for obtaining inter-Service survey review, approval, and licensing was designed for single surveys or focus group efforts. It typically takes several months" (Barry and Ely, 2019, p. 3), which hinders the ability of panel surveys to gather information on pressing issues that require data to inform DoD policy decisions (Barry and Ely, 2019). The report suggests that the approval process could be altered to expedite the approval process for panel surveys.

## Organization of the Report

Chapter 2 details the methodology used for the TASP proof-of-concept panel, including recruitment of participants, survey administration, and a test of our weighting procedures. Chapter 3 reviews the lessons learned from the proof-of-concept panel and makes recommendations for continuing the TASP beyond the proof-of-concept panel.

## Chapter 2. Panel Methodology

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The TASP proof of concept panel was composed of three online panel surveys fielded in August 2020, January 2021, and May 2021. In this chapter, we detail the methodology used for the panel, including the recruitment of participants, survey administration, and survey content. We focus on the weighting procedures and test whether the procedures used for the proof of concept are robust and could be applied to potential future iterations of the TASP.

### Recruitment of Participants

As mentioned in the previous chapter, participants in the TASP were recruited from spouses who responded to the 2018 TASS. The original sample for the TASS was a probability-based, simple random sample selected from among the population of Army spouses whose soldier was stationed in CONUS as of December 2017. The sample was composed to be representative of this set of spouses on the following characteristics: the presence of dependent children, housing location (on-post or off-post), geographic location of soldier's post (urban, mid-size city, rural), and soldier's paygrade. The response rate for the TASS was 11.1 percent, and respondents were roughly similar to the sampled population (+/- 2 percentage points), with slightly fewer spouses of junior enlisted soldiers (6.7 percent less) and more spouses of junior and senior officers (5.0 and 4.7 percent more, respectively) than the population. See Trail, Sims, and Tankard, 2019, for more details on the TASS. Spouses who completed the TASS were asked whether they were interested in participating in future research projects and, if so, to provide an email address.

To be eligible for the TASP, those who were interested and provided an email address needed to be married to the same soldier as they were at the time of the TASS, and that soldier needed to be in the active-component Army (i.e., not a veteran or in the National Guard or Reserve) at the time of recruitment for the first TASP survey. Prior to recruiting spouses for the first survey, we examined DoD Defense Enrollment Eligibility Reporting System (DEERS) and Total Army Personnel Data Base (TAPDB) records to assess whether TASP respondents met the two eligibility criteria for inclusion in the panel: (1) the respondent's soldier was still in the active Army and (2) the respondent and the soldier were still married. Of the 7,100 spouses in the TASS who indicated that they were interested in participating in future research, 5,063 were identified through DEERS and TAPDB as being eligible to participate in an intake survey for the panel (71 percent). We did not conduct any further sampling or recruitment of those or other Army spouses, thus the recruitment method offered a quasi-random sample used to test the efficacy of an access panel of Army spouses. Eligible Army spouses were recruited for the panel via email. The initial records check for eligibility took place in March 2020, five months prior to

fielding the first survey in August 2020. Because there was a lag between examining records prior to fielding the surveys, we also used a screener question that asked survey respondents if they were “currently married to an active-duty Army soldier.” If they responded in the negative, they were thanked and dismissed from the survey ( $n = 53$  for the first survey,  $n = 22$  for the second survey, and  $n = 28$  for the third survey). All remaining eligible spouses were emailed an invitation to each of the remaining panel surveys.

## Procedure for Administering the Surveys

Each panel survey was administered online using the Confirmat platform. Respondents in the panel could use computers, smartphones, or tablets to log on to the internet and complete the surveys. All eligible spouses received an email with an individualized link to each survey at the beginning of fielding. Those who did not respond received up to three additional emails reminding them to take the survey over the fielding period of three weeks, consistent with best practices for maximizing survey participation (Dillman, Smyth, and Christi, 2014). Invitation emails emphasized the Army need for information from spouses about their experiences and needs and about any resources that the Army could provide to help them with the challenges of Army life. Invitations also noted that respondents would receive a \$10 Amazon gift card.

Each survey took about 20 minutes to complete, and respondents received a \$10 Amazon gift card for responding to each survey, in keeping with best practices based on evidence that incentives (especially monetary incentives) are among the most-effective ways that researchers can maximize participation (Brosnan, Kemperman, and Dolnicar, 2019; Callegaro et al., 2014; Creighton, King, and Martin, 2007). Furthermore, evidence suggests that incentives have a positive effect on representativeness and data quality (see Mack et al., 1998). Specifically, the use of incentives in panel studies can be effective in reducing subsequent attrition, which improves representativeness of the panel over time (Singer and Kulka, 2001).

## Content of Surveys

The panel surveys were meant to provide quick turnaround answers to pressing questions. However, when planning the surveys, we did not know what those pressing questions would be and what survey items would be needed to address those questions. Furthermore, survey items need to receive approval from RAND’s Human Subjects Protections Committee (the institutional review board for RAND) and the Army’s Human Subjects Protections Office, and surveys need to receive Army Survey Control Numbers from the Army Records Management and Declassification Agency. These processes can take several months for approval. Thus, to gain approval for a broad range of survey items that would allow us to quickly construct and field surveys relevant to the Army’s needs, we developed a “survey item bank” that included a variety of relevant items from which we could select questions to construct the individual panel surveys.

First, we selected survey items that were used as outcomes in the TASS and included those in the survey item bank. We also asked Army G-9 staff to select topic areas they thought might be pressing issues in the coming year. We conducted literature searches to determine whether validated scales existed for each suggested topic area and selected those scales, if applicable. In addition, once COVID-19 reached the United States and affected everyday life, we included items assessing the impact of the pandemic on Army spouses and their families. The actual content of each survey was selected from the resulting survey item bank by our team in consultation with Army G-9 staff and was based on the topics of concern at the time of fielding or information that program managers thought would be useful for program decisions. Final surveys were submitted for approval by RAND’s Human Subjects Protections Committee prior to fielding. An overview of content, scales, and sample items is shown in Table 2.1.

**Table 2.1. Survey Content and Sample Items for Each Panel Survey**

| <b>Panel Survey</b>                  | <b>Survey Content Areas</b>  | <b>Sample Content or Scales</b>  |
|--------------------------------------|--|--|
| Intake survey: Survey 1, August 2020 | <ul style="list-style-type: none"> <li>• Background information</li> <li>• Impact of COVID-19 pandemic</li> <li>• Outcomes</li> </ul>  | <ul style="list-style-type: none"> <li>• Current housing situation (e.g., military housing on post, civilian housing off post)</li> <li>• Employment status</li> <li>• Impact on employment, child care, permanent change of station (PCS) moves, and financial strain</li> <li>• Trust in sources of information about COVID-19</li> <li>• Perceived Stress Scale<sup>a</sup></li> <li>• Household financial strain<sup>b</sup></li> <li>• General attitudes toward the Army<sup>c</sup></li> <li>• Spouse support to remain in the Army<sup>d</sup></li> </ul>   |
| Survey 2, January 2021               | <ul style="list-style-type: none"> <li>• Background information</li> <li>• Impact of COVID-19 pandemic on child care</li> <li>• Perceptions of Soldier and Family Readiness Groups (SFRGs)</li> <li>• Interest in and use of financial counseling</li> <li>• Awareness of and experiences with the Exceptional Family Member Program (EFMP)</li> <li>• Engagement of military community</li> <li>• Outcomes</li> </ul> | <ul style="list-style-type: none"> <li>• Employment status, PCS moves</li> <li>• Use of installation child development centers, alternative sources of child care, impact of child care loss on employment</li> <li>• Experiences attending SFRG meetings</li> <li>• Perceptions of SFRGs (e.g., that information provided at SFRG meetings is accurate or useful)</li> <li>• Receipt of financial advice, education, or counseling within the military</li> <li>• Preferred resource for learning about personal finance</li> <li>• Awareness of or enrollment in EFMP</li> <li>• Awareness or use of the Army EFMP respite care services</li> <li>• Process of learning about EFMP services during PCS move</li> <li>• Perceived Army community attendance at installation events and use of family support resources</li> <li>• Same as Survey 1</li> </ul> |

| Panel Survey       | Survey Content Areas   | Sample Content or Scales   |
|--------------------|--|--|
| Survey 3, May 2021 | <ul style="list-style-type: none"> <li>• Background information</li> <li>• Experience of PCS moves</li> <li>• Impact of COVID-19 pandemic on child care</li> <li>• Employment</li> <li>• EFMP</li> <li>• Experience of intimate partner violence (IPV) and use of resources</li> <li>• Outcomes</li> </ul> | <ul style="list-style-type: none"> <li>• Education level, area of study</li> <li>• Challenges experienced during most recent PCS move, what would have been helpful in preparing for the move</li> <li>• Same as Survey 2</li> <li>• Employment status, perceived overqualification for job,<sup>e</sup> use of resources to help with employment problems</li> <li>• Satisfaction with family support</li> <li>• Experience of IPV,<sup>f</sup> awareness and use of Family Advocacy Program, conflict resolution style<sup>g</sup></li> <li>• Same as Surveys 1 and 2</li> </ul> |

<sup>a</sup> Cohen and Williamson, 1988.

<sup>b</sup> Tanielian et al., 2014.

<sup>c</sup> Trail, Sims, and Tankard, 2019.

<sup>d</sup> Office of People Analytics, 2018.

<sup>e</sup> Maynard, Joseph, and Maynard, 2006.

<sup>f</sup> Sherin et al., 1998.

<sup>g</sup> Kurdek, 1994.

NOTE: Complete survey content is available from the authors.

## Response Rates and Number of Participants

Across all three surveys, a total of 2,307 Army spouses participated in the panel. All eligible spouses were invited to take each survey, and not all participants responded to every survey. We considered a spouse to be a respondent if they partially completed (consent plus at least one survey question answered) or fully completed the survey. As shown in Table 2.2, 1,648 spouses participated in Survey 1, the intake survey, but Survey 2 had 416 respondents who had not participated in the intake survey, and Survey 3 had 243 respondents who had not participated in either the intake survey or Survey 2. Overall, 941 participants completed all three surveys. In addition, because of soldier attrition from the Army and divorce, the number of spouses eligible for the panel decreased from 5,063 in August 2020 to 4,578 in May 2021.

**Table 2.2. Number of Respondents, Eligible Spouses, and Response Rates for Each Survey**

| <b>Panel Survey</b> | <b>Respondents</b> | <b>New Respondents</b> | <b>Eligible Spouses from TASS</b> | <b>Response Rates for Eligible Spouses</b> |
|---------------------|--------------------|------------------------|-----------------------------------|--|
| Intake (Survey 1)   | 1,648              | —                      | 5,063                             | 33%  |
| Survey 2            | 1,556              | 416                    | 4,809                             | 32%  |
| Survey 3            | 1,547              | 243                    | 4,578                             | 34%  |

SOURCE: TASP surveys, DEERS and TAPDB data.

NOTE: Response rates were calculated by dividing the number of respondents by the number of eligible spouses and do not exclude spouses with undeliverable email addresses ( $n = 50$  at intake survey).

Although response rates were higher than for the original TASS (11 percent; Trail, Sims, and Tankard, 2019), they were lower than we originally anticipated, especially given that those contacted had expressed interest in participating in future research studies. There are a couple of potential reasons for the lower response rate among TASS participants eligible for the TASP. First, there was more than a two-year gap between the TASS, fielded January to March 2018, and the first TASP survey in August 2020, so potential participants could have changed their minds about whether they still wanted to participate in research concerning Army spouses.

Second, the language used in the TASS did not ask whether spouses wanted to be part of a survey panel, only whether they were interested in participating in future research studies. For some potential participants, participating in a panel might have been more of an effort than they were willing to commit. Recruiting specifically for a panel may yield participants who are more invested in participating in multiple surveys and increase response rates, especially if the timespan between recruitment and participation can be shortened.

Table 2.3 displays the number of respondents to each survey by soldier, spouse, and household characteristics.

**Table 2.3. Number of Respondents and Demographic Characteristics by Survey**

| <b>Demographic</b>                                     | <b>Survey 1<br/>(n)</b> | <b>Survey 2<br/>(n)</b> | <b>Survey 3<br/>(n)</b> |
|--|-------------------------|-------------------------|-------------------------|
| Characteristics of the soldier                         |                         |                         |                         |
| Pay Grade <sup>a</sup>                                 |                         |                         |                         |
| E1—E4  | 90                      | 53                      | 52                      |
| E5—E9  | 944                     | 913                     | 900                     |
| O1—O3  | 243                     | 214                     | 231                     |
| O4+  | 371                     | 376                     | 364                     |
| Characteristics of the spouse                          |                         |                         |                         |
| Current employment status <sup>b</sup>                 |                         |                         |                         |
| Working full time                                      | 448                     | 441                     | 468                     |
| Working part time                                      | 208                     | 199                     | 210                     |
| Unemployed and looking for work                        | 188                     | 160                     | 165                     |
| Not employed and not looking for work                  | 763                     | 721                     | 669                     |
| Missing  | 41                      | 35                      | 35                      |
| Gender <sup>c</sup>                                    |                         |                         |                         |
| Female   | 1,583                   | 1,502                   | 1,490                   |
| Male   | 65                      | 54                      | 59                      |
| Characteristics of the family                          |                         |                         |                         |
| Presence of dependents in the household <sup>b</sup>   |                         |                         |                         |
| No dependent children                                  | 318                     | 299                     | 293                     |
| Has dependent children                                 | 1,292                   | 1,240                   | 1,222                   |
| Missing  | 38                      | 17                      | 32                      |
| Characteristics of the household                       |                         |                         |                         |
| At the same installation since the last survey in 2018 |                         |                         |                         |
| No   | 1,198                   | 1,212                   | 1,231                   |
| Yes  | 450                     | 344                     | 316                     |
| Total  | 1,648                   | 1,556                   | 1,547                   |

<sup>a</sup> TAPDB data.

<sup>b</sup> TASP August 2020 survey.

<sup>c</sup> 2018 TASS.

## Weighting Procedure and Sensitivity Analysis for Changing Target Population

One goal of the panel was to demonstrate the ability of panel surveys to provide information to support Army decisionmaking that is representative of the relevant population of Army spouses. To be able to make these population-level inferences, we calculated survey nonresponse weights for each respondent. To determine if our weighting procedure was appropriate (and would be appropriate for future panel efforts) we tested whether different weighting procedures produced demonstrably more-precise weighted estimates of key outcome variables. Note that for

the purposes of the panel proof of concept, we considered our target population to be the population of all Army spouses eligible for the 2018 TASS *brought forward in time*. What we mean by this is that we took our original TASS population representative of Army spouses whose soldiers were stationed in CONUS in December 2017 and tracked that population to the present time. Thus, our target population was one that was representative of those spouses who remained affiliated with the Army in 2020. At a minimum, they had been an Army spouse for at least two years and their soldiers tended to have advanced in rank, so in general they were more “mature” Army spouses. Therefore, the sample is not representative of Army spouses who became newly affiliated with the Army within the past two years, either through marriage or new enlistment of their soldier.

To construct the weights, we looked at response rates for strata defined by four variables: pay grade (four levels: E1–E4, E5–E9, O1–O3, O4 and above), presence of dependent children (two levels: yes/no), whether the person is at the same location as they were in 2018 (two levels: yes/no), and whether they are currently living in on-post housing (two levels: yes/no). Using these variables results in 32 strata ( $4 \times 2 \times 2 \times 2$ ). The estimated strata response probabilities are computed by dividing the number of responses by the size of the subpopulation within each strata. The weights are the reciprocal of these estimated response probabilities.

This process was repeated for every survey wave. The target population used to construct the initial survey weights was drawn from DEERS and TAPDB records in March 2020, prior to fielding the intake survey (Survey 1). Summary statistics for the three sets of weights are given in Table 2.4. Note that some of the maximum weights generated by the initial weighting procedure were relatively large compared with the overall mean weight, which can lead to increased variance in estimates. For example, in Survey 3, one respondent had a weight of 315.5, meaning that their responses carried about 4.5 times as much weight as a respondent with an average weight, and 12.8 times as much weight as a respondent with the minimum weight. To test whether using these larger weights had an impact on the conclusions that could be drawn from survey results, we conducted sensitivity tests using different sets of weights constructed to match the population *at each survey timepoint*.

**Table 2.4. Descriptive Statistics for Initial Weights**

| Panel Survey           | Respondent <i>n</i> | Mean  | SD    | Min   | Median | Max    |
|------------------------|---------------------|-------|-------|-------|--------|--------|
| Survey 1: August 2020  | 1,648               | 65.23 | 26.34 | 20    | 72.34  | 169.71 |
| Survey 2: January 2021 | 1,556               | 69.09 | 30.69 | 24.32 | 77.01  | 229    |
| Survey 3: May 2021     | 1,547               | 69.73 | 34.38 | 24.64 | 77.01  | 315.5  |

SOURCE: TASP data.

The target population of Army spouses changed over time as 16,600 spouses’ soldiers left the Army or spouses and soldiers divorced between March 2020 and May 2021. Because the weights

used in these analyses are scaled to sum to the size of the target population (in this case, the population in March 2020), any changes to the composition of the population can affect the weights and subsequent analyses. This would be a particular concern if the panel respondents changed in a way that was systematically different from the changes seen at the population level (e.g., if panel members' soldiers were more likely to leave the Army compared with their relevant cohort). We received the sampling frame datasets on a three-month delay, which allowed for two approaches to weighting: Use the March 2020 dataset when deriving weights for all 2020—2021 survey waves, or use the most recent dataset (and as a consequence have a changing target population). Using the most recent target population dataset could have resulted in weighted estimates that were more representative of the current population, but it would have required extending the timeline for analyzing survey data, which was not desirable given the goals of the panel to provide timely answers to pressing questions. As we note in the following paragraphs, adjusting weights to reflect changing populations had little effect on estimates, evidence that modifying the weights to reflect the more recent population would have little impact on estimates in this report.

To assess whether weighting to the initial March 2020 target population resulted in large differences in weights in light of the changing target population characteristics over time, we conducted a sensitivity analysis to compare survey results using weights calculated on populations drawn at the different timepoints. We weighted the responses for each survey to the target population at the time of each survey and compared responses to key variables using those contemporaneous weights to responses using the initial set of March 2020 weights (i.e., we tested four sets of alternative weights). The key variables of interest were spouses' economic well-being, perceived stress, attitude toward the Army in general, attitude toward retention, and employment status.

We found that adjusting the weights to the changing target population made little to no difference when computing the overall weighted means for these variables, suggesting that the panel members and their population cohort were very stable. As can be seen in Tables 2.5–2.9 (by comparing the weighted means across rows), the overall weighted means and proportions for the variables mentioned previously do not change in any substantial way. Because we saw no evidence that changing the weights to match the changing target population would alter the conclusions drawn from the analyses, we confirmed that our use of the March 2020 sampling frame for all three sets of weights was likely not altering the conclusions drawn from the analyses, and the additional effort and time required to match the changing target population was not necessary.

**Table 2.5. Sensitivity Analysis Using Different Target Population Timeframes for Calculating Survey Weights: Economic Pressure**

|                        | <b>Mar 2020<br/>Weighted Mean<br/>(Weighted Mean<br/>95% CI)<br/>[Unweighted<br/>Mean]</b> | <b>Aug 2020<br/>Weighted Mean<br/>(Weighted Mean<br/>95% CI)<br/>[Unweighted<br/>Mean]</b> | <b>Jan 2021<br/>Weighted Mean<br/>(Weighted Mean<br/>95% CI)<br/>[Unweighted<br/>Mean]</b> | <b>May 2021<br/>Weighted Mean<br/>(Weighted Mean<br/>95% CI)<br/>[Unweighted<br/>Mean]</b> |
|------------------------|--|--|--|--|
| <b>Panel Survey</b>    |  |  |  |  |
| Survey 1: August 2020  | 7.76<br>(7.61, 7.92)<br>[7.37]   | 7.73<br>(7.58, 7.89)<br>[7.35]   | 7.7<br>(7.54, 7.85)<br>[7.33]  | 7.67<br>(7.51, 7.83)<br>[7.31]   |
| Survey 2: January 2021 | 7.28<br>(7.13, 7.43)<br>[6.89]   | 7.26<br>(7.11, 7.41)<br>[6.89]   | 7.27<br>(7.12, 7.42)<br>[6.89]   | 7.23<br>(7.08, 7.38)<br>[6.87]   |
| Survey 3: May 2021     | 7.21<br>(7.05, 7.36)<br>[6.83]   | 7.19<br>(7.04, 7.34)<br>[6.83]   | 7.17<br>(7.02, 7.32)<br>[6.82]   | 7.14<br>(6.99, 7.3)<br>[6.79]  |

SOURCE: TASP data. Economic pressure represents a summed scale based on four items adapted from Gutman and Eccles (1999) by Tanielian et al. (2014), combined to form a scale for this analysis; economic pressure scores could range between 4 and 17. Higher scores indicate more pressure.

NOTE: Confidence intervals (CIs) help convey the uncertainty that is found in any estimate. Their interpretation is as follows: for the 95 percent CIs that we report, if we measured the same variables in the same way from the same population, in 95 percent of those samples our results would fall within the upper and lower bounds that we report.

**Table 2.6. Sensitivity Analysis Using Different Target Population Timeframes for Calculating Survey Weights: Perceived Stress**

|                        | <b>Mar 2020<br/>Weighted Mean<br/>(Weighted Mean<br/>95% CI)<br/>[Unweighted<br/>Mean]</b> | <b>Aug 2020<br/>Weighted Mean<br/>(Weighted Mean<br/>95% CI)<br/>[Unweighted<br/>Mean]</b> | <b>Jan 2021<br/>Weighted Mean<br/>(Weighted Mean<br/>95% CI)<br/>[Unweighted<br/>Mean]</b> | <b>May 2021<br/>Weighted Mean<br/>(Weighted Mean<br/>95% CI)<br/>[Unweighted<br/>Mean]</b> |
|------------------------|--|--|--|--|
| <b>Panel Survey</b>    |  |  |  |  |
| Survey 1: August 2020  | 2.52<br>(2.48, 2.56)<br>[2.48]   | 2.52<br>(2.48, 2.56)<br>[2.48]   | 2.52<br>(2.48, 2.56)<br>[2.48]   | 2.50<br>(2.46, 2.54)<br>[2.47]   |
| Survey 2: January 2021 | 2.39<br>(2.35, 2.44)<br>[2.34]   | 2.39<br>(2.35, 2.43)<br>[2.34]   | 2.39<br>(2.34, 2.43)<br>[2.34]   | 2.38<br>(2.33, 2.42)<br>[2.33]   |
| Survey 3: May 2021     | 2.41<br>(2.37, 2.46)<br>[2.37]   | 2.41<br>(2.37, 2.46)<br>[2.37]   | 2.41<br>(2.36, 2.45)<br>[2.37]   | 2.40<br>(2.36, 2.45)<br>[2.37]   |

SOURCE: TASP data.

NOTE: We used the four-item version of the Perceived Stress Scale (Cohen and Williamson, 1988) that asks participants to state how often during the past month they have felt a certain way; for example, “that you were unable to control the important things in your life.” Responses to each item ranged from 0 (Never) to 4 (Very Often). The table presents the average composite score on the scale.

**Table 2.7. Sensitivity Analysis Using Different Target Population Timeframes for Calculating Survey Weights: General Attitude Toward Army**

| <b>Panel Survey</b>    | <b>Mar 2020<br/>Weighted Mean<br/>(Weighted Mean<br/>95% CI)<br/>[Unweighted<br/>Mean]</b> | <b>Aug 2020<br/>Weighted Mean<br/>(Weighted Mean<br/>95% CI)<br/>[Unweighted<br/>Mean]</b> | <b>Jan 2021<br/>Weighted Mean<br/>(Weighted Mean<br/>95% CI)<br/>[Unweighted<br/>Mean]</b> | <b>May 2021<br/>Weighted Mean<br/>(Weighted Mean<br/>95% CI)<br/>[Unweighted<br/>Mean]</b> |
|------------------------|--|--|--|--|
| Survey 1: August 2020  | -0.04<br>(-0.07, 0)<br>[0]   | -0.04<br>(-0.07, 0)<br>[0]   | -0.03<br>(-0.06, 0.01)<br>[0]  | -0.01<br>(-0.05, 0.03)<br>[0.01]   |
| Survey 2: January 2021 | -0.04<br>(-0.08, 0)<br>[0]   | -0.04<br>(-0.08, 0)<br>[0]   | -0.04<br>(-0.08, 0)<br>[0]   | -0.03<br>(-0.07, 0.02)<br>[0.01]   |
| Survey 3: May 2021     | -0.03<br>(-0.07, 0.01)<br>[0]  | -0.03<br>(-0.07, 0.01)<br>[0]  | -0.02<br>(-0.06, 0.02)<br>[0]  | -0.02<br>(-0.05, 0.02)<br>[0]  |

SOURCE: TASP data.

NOTE: We used a nine-item scale to assess spouses' general attitudes toward the military (Pittman, Kerpelman, and McFadyen, 2004). The scale was modified and used by Trail, Sims, and Tankard (2019) for a survey of Army spouses. Sample items include: "In general, how well have you adjusted to the demands of being in the Army community?" and "Overall, how satisfied are you with the military way of life?" We created a composite score from all nine items. As the items were on different scales, we transformed each item to have a mean of 0 and a standard deviation of 1 (i.e., created a z-score) prior to calculating the average score among items (overall mean = -0.02).

**Table 2.8. Sensitivity Analysis Using Different Target Population Timeframes for Calculating Survey Weights: Attitude Toward Retention**

| <b>Panel Survey</b>    | <b>Mar 2020<br/>Weighted Mean<br/>(Weighted Mean<br/>95% CI)<br/>[Unweighted<br/>Mean]</b> | <b>Aug 2020<br/>Weighted Mean<br/>(Weighted Mean<br/>95% CI)<br/>[Unweighted<br/>Mean]</b> | <b>Jan 2021<br/>Weighted Mean<br/>(Weighted Mean<br/>95% CI)<br/>[Unweighted<br/>Mean]</b> | <b>May 2021<br/>Weighted Mean<br/>(Weighted Mean<br/>95% CI)<br/>[Unweighted<br/>Mean]</b> |
|------------------------|--|--|--|--|
| Survey 1: August 2020  | 3.76<br>(3.69, 3.83)<br>[3.79]   | 3.76<br>(3.69, 3.83)<br>[3.8]  | 3.79<br>(3.72, 3.86)<br>[3.82]   | 3.82<br>(3.75, 3.89)<br>[3.84]   |
| Survey 2: January 2021 | 3.88<br>(3.8, 3.95)<br>[3.9]   | 3.87<br>(3.79, 3.94)<br>[3.9]  | 3.88<br>(3.81, 3.95)<br>[3.9]  | 3.91<br>(3.84, 3.98)<br>[3.92]   |
| Survey 3: May 2021     | 3.76<br>(3.69, 3.83)<br>[3.77]   | 3.76<br>(3.69, 3.83)<br>[3.77]   | 3.78<br>(3.7, 3.85)<br>[3.78]  | 3.78<br>(3.71, 3.85)<br>[3.77]   |

SOURCE: TASP data.

NOTE: Spouse attitudes toward their soldier's retention in the military was measured by their rating of one item: "How much do you favor your soldier staying or leaving the military," which was adapted from the Survey of Active Duty Spouses (Office of People Analytics, 2018). Responses were measured on a five-point scale ranging from 1 = "I strongly favor leaving" to 5 = "I strongly favor staying."

**Table 2.9. Sensitivity Analysis Using Different Target Population Timeframes for Calculating Survey Weights: Employment Status**

| <b>Panel Survey</b>                         | <b>Mar 2020<br/>Weighted<br/>percentage (%)<br/>[Unweighted<br/>percentage (%)]</b> | <b>Aug 2020<br/>Weighted<br/>percentage (%)<br/>[Unweighted<br/>percentage (%)]</b> | <b>Jan 2021<br/>Weighted<br/>percentage (%)<br/>[Unweighted<br/>percentage (%)]</b> | <b>May 2021<br/>Weighted<br/>percentage (%)<br/>[Unweighted<br/>percentage (%)]</b> |
|---|---|---|---|---|
| Survey 1: August 2020<br>employment status  |   |   |   |   |
| Working full time                           | 28.36<br>[27.88]  | 28.06<br>[27.85]  | 27.72<br>[27.56]  | 28.04<br>[427.64]   |
| Working part time                           | 12.52<br>[12.94]  | 12.56<br>[12.91]  | 12.62<br>[13.03]  | 312.16<br>[12.64]   |
| Unemployed and<br>looking for work          | 11.94<br>[11.7]   | 11.92<br>[11.71]  | 12.08<br>[11.53]  | 11.74<br>[11.35]  |
| Not employed and not<br>looking for work    | 47.17<br>[47.48]  | 47.45<br>[47.53]  | 47.57<br>[47.88]  | 48.06<br>[48.38]  |
| Survey 2: January 2021<br>employment status |   |   |   |   |
| Working full time                           | 29.39<br>[28.99]  | 29.45<br>[28.99]  | 29.2<br>[28.69]   | 29.21<br>[28.74]  |
| Working part time                           | 13.18<br>[13.08]  | 13.12<br>[13.08]  | 13.13<br>[13.19]  | 12.85<br>[12.97]  |
| Unemployed and<br>looking for work          | 11.32<br>[10.52]  | 11.16<br>[10.52]  | 11.35<br>[10.47]  | 10.95<br>[10.38]  |
| Not employed and not<br>looking for work    | 46.11<br>[47.4]   | 46.26<br>[47.4]   | 46.31<br>[47.65]  | 46.99<br>[47.92]  |
| Survey 3: May 2021<br>employment status     |   |   |   |   |
| Working full time                           | 31.62<br>[30.95]  | 31.48<br>[30.95]  | 31.05<br>[30.77]  | 31.09<br>[30.77]  |
| Working part time                           | 14.08<br>[13.89]  | 13.95<br>[13.89]  | 14.08<br>[14.02]  | 13.82<br>[13.96]  |
| Unemployed and<br>looking for work          | 11.39<br>[10.91]  | 11.62<br>[10.91]  | 11.68<br>[10.68]  | 11.52<br>[10.55]  |
| Not employed and not<br>looking for work    | 42.91<br>[44.25]  | 42.95<br>[44.25]  | 43.18<br>[44.53]  | 43.57<br>[44.72]  |

SOURCE: TASP data.

### *Representativeness of the Weighted Respondent Demographic Characteristics*

As noted previously, because the spouses eligible for the panel were drawn from the 2018 TASS participants, the reference population for participants was the population of Army spouses

eligible for the 2018 survey who were still married to an active Army soldier in 2020–2021. The characteristics of these respondents would have changed in the two years since the TASS was fielded. Our weighting procedure took these changes into account, adjusting the respondents to each panel survey to be representative of the population of spouses who were eligible to participate in the TASS and were still married to active component soldiers—enlisted and officers—at the time of the panel surveys. As shown in Table 2.10, with these adjustments, the weighted panel respondent characteristics were very similar to the relevant population of spouses at each survey timepoint: The majority of respondents were married to soldiers at the grades of E5–E9, had dependent children, lived in off-post housing, and had moved to a new installation since 2018.

**Table 2.10. Weighted Panel Respondent Representativeness of 2018 Population, by Survey**

|  | August 2020     |                | January 2021    |                | May 2021        |                |
|--|-----------------|----------------|-----------------|----------------|-----------------|----------------|
|  | Respondents (%) | Population (%) | Respondents (%) | Population (%) | Respondents (%) | Population (%) |
| Pay Grade  |                 |                |                 |                |                 |                |
| E1–E4  | 8.4             | 8.8            | 6.8             | 6.7            | 6.7             | 5.6            |
| E5–E9  | 69.8            | 69.3           | 71.1            | 71.0           | 70.5            | 71.3           |
| O1–O3  | 9.8             | 10.0           | 9.6             | 9.7            | 9.6             | 9.6            |
| O4+  | 12.1            | 12.0           | 12.5            | 12.7           | 13.2            | 13.5           |
| Children   |                 |                |                 |                |                 |                |
| Has dependent children                                 | 80.2            | 80.5           | 81.0            | 81.4           | 81.3            | 81.7           |
| No dependent children                                  | 19.8            | 19.5           | 19.0            | 18.6           | 18.7            | 18.3           |
| Type of housing  |                 |                |                 |                |                 |                |
| Off post   | 68.0            | 68.1           | 68.0            | 67.8           | 67.7            | 68.1           |
| On post  | 32.0            | 31.9           | 32.0            | 32.2           | 32.3            | 31.9           |
| At the same installation since the last survey in 2018 |                 |                |                 |                |                 |                |
| No   | 69.8            | 69.4           | 74.5            | 75.0           | 76.8            | 77.4           |
| Yes  | 30.2            | 30.7           | 25.5            | 25.0           | 23.2            | 22.6           |

SOURCE: DEERS and TAPDB data for TASP survey respondents and the reference population.

NOTE: Respondent Ns were 1,648; 1,556; and 1,547 for Surveys 1, 2, and 3, respectively. Population Ns at the time of each survey were 101,410; 95,618; and 91,277 in August 2020, January 2021, and May 2021, respectively.

These results suggest that the weighting procedures used for the proof-of-concept panel are robust and could be applied to potential future iterations of the TASP. Weighting the survey data based on a single annual accounting of the demographic characteristics of the Army spouse population demographics was sufficient to provide estimates that were representative of the relevant population of Army spouses.

## Chapter 3. Conclusions, Lessons Learned, and Recommendations

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By all indications, the TASP proof of concept was successful: We were able to recruit a large sample of Army spouses who were broadly representative of the spouse cohort who participated in the 2018 TASS, and the weighting procedures we used were robust enough to conduct quick turnaround analyses of each panel survey's data to provide timely results to the Army (i.e., within one month of survey closure). Feedback from the Army suggests that the information provided by the panel was useful to inform Army decisionmaking, with the main caveat that the panel proof of concept was not designed to be representative of *all* Army spouses in the population but rather only the 2018 TASS brought forward in time, which did not include spouses of younger and less experienced soldiers. We next discuss lessons learned from the proof of concept and make recommendations for continuing the panel.

### Lessons Learned from the Proof of Concept

As a proof-of-concept project, we learned several lessons that could be applied to future iterations of the panel or to others who are considering development of an access panel of military-connected individuals. These lessons generally fall under two categories: planning and approvals of survey topic areas, and analysis and reporting of results.

#### *Lessons for Planning and Approvals of Survey Topic Areas*

Standing up the TASP took a substantial amount of planning, and it can take several months to obtain approvals through RAND's Human Subjects Protection Committee and Army survey approval process. The time required for these approvals was anticipated, and confirmed, to be greater than the four months we planned between panel surveys. This left us with a conundrum: How do we obtain approvals for the content of each survey while maintaining the flexibility to provide information to the Army on last-minute "hot topics" that arise throughout the year?

We chose to seek approvals for all three surveys prior to recruiting for the panel. We gained approval for the panel concept and methodology, and we worked with the Deputy Chief of Staff, G-9 to develop a set of topics and survey items that were likely to be relevant, based on the literature and past hot topics (e.g., spouse employment, housing). We also included for review any items that would affect the level of potential risk to participants (e.g., financial struggles, domestic violence), even if at project initiation their ultimate inclusion was deemed to be relatively unlikely. The survey items were conditionally approved with the requirement that

survey content not include topics outside those approved and that we submit the final questions for approval prior to fielding each survey.

The main limitation for this strategy is an inability to make quick-turn changes in survey topics in response to unanticipated events or issues. For example, we initiated the proof-of-concept survey approval process in late 2019. Because of delays in gaining approvals, the process stretched into the spring of 2020, when the burgeoning COVID-19 pandemic became the most urgent topic in the Army (and, indeed, the world). We were able to pivot and obtain approval to add questions about COVID-19 to the surveys (e.g., the impact of the pandemic on child care and spouse employment), but this incident illustrates the limits of anticipating the topics that might arise in the future and suggests that an alternative strategy is needed to gain expedited approval to add new topic areas and questions to panel surveys, as needed.

### *Lessons for Analysis and Reporting of Panel Survey Results*

As noted earlier, the goal of the TASP was to demonstrate the utility of a panel of Army spouses to provide the Army with focused, timely answers to questions regarding time-sensitive issues. To accomplish this goal, we structured survey analysis and reporting to provide the Army with a briefing of survey results within one month of the end of survey fielding and a short infographic report of survey findings delivered within three months of the end of survey fielding. We were able to meet these delivery dates with all three surveys. However, although the briefings and infographics proved useful to the Army, we were unable to publicly release the findings because the current report on panel survey methodology and results had not received full RAND quality assurance review or been through the security clearance process by the Army. This left the Army unable to provide a timely reporting of findings to Congress or other stakeholders with an interest in the panel results for several months after each survey's findings were initially generated.

In addition, although the quick turnaround of survey analysis and reporting was useful for Army decisionmaking, it limited the time available for a complete and thorough analysis of the survey data we obtained. The briefings and infographics delivered top-line results to the Army, but the quick succession of deliverables and subsequent survey fieldings left little time to explore additional questions generated from the results of each survey or to conduct longitudinal analysis of trends over time.

### **Recommendations for Continuing the Panel**

Based on our experiences conducting the TASP proof of concept, feedback from the Army, and the analysis of the weighting procedure, we have several recommendations for the continuing administration of the panel.

**Recruit and maintain a representative sample of Army spouses for the TASP.** Because the proof-of-concept panel was recruited from a 2018 survey, the panel respondents were not representative of Army spouses as a whole. This entails sample refreshment. Recruiting new spouses and maintaining existing spouses to provide a representative sample of Army spouses from across paygrades would enable the exploration of important subpopulations of Army spouses (e.g., those married to junior enlisted soldiers) and, because results would be representative of all Army spouses, would provide more actionable results for Army policymaking.

**Weight results based on a single point-in-time documentation of the Army spouse population, updated annually.** Results of our sensitivity analysis of the proof-of-concept weighting procedure suggests that weighting the survey data based on a single annual accounting of Army spouse population demographics should be sufficient to provide precise results from the panel. This method enables the quick turnaround of weighted, representative results to the Army with little sacrifice of precision.

**Seek a streamlined process to approve survey topics and questions.** To maintain the agility of the panel in providing information in response to unanticipated events and issues, the Army needs the ability to add last-minute topics and survey questions to panel surveys throughout the year. This issue was also raised in the Office of People Analytics report, which recommended an expedited process to approve panel survey questions for military personnel (Barry and Ely, 2019). The Army Deputy Chief of Staff, G-9; the Army's licensing authority for surveys; and the Records Management and Declassification Agency should cooperate to produce a process to ensure appropriate review of panel surveys while maintaining the flexibility to provide quick-turn approval of survey topics and questions that were unanticipated at the time of the initial approval application.

**Provide for early review and clearance of future panel methodology reports to speed public release of findings.** To expedite the public release of panel survey results, researchers should seek the review and public release of the panel methodology at the beginning of the panel cycle. This would enable the public release of individual survey results closer to the time of survey fielding, potentially increasing their usefulness for the Army and other stakeholders. The methodology report could be updated annually to reflect changes in panel participation and methodology.

**Schedule dedicated time and resources for additional analyses.** Finally, to take full advantage of the information obtained through panel surveys, researchers should schedule time and allocate resources for additional cross-sectional and longitudinal analysis of survey results.

## Additional Caveats and Considerations for Extending the Panel

### *Bias and Data Quality*

Panels, like all studies, are subject to bias stemming from the target population not coinciding with the actual population sampled (i.e., coverage error); the estimates being derived from a sample rather than from being directly collected from the entire population, resulting in difference between the statistic and the population parameter it is meant to estimate (i.e., sampling error); inability to get usable responses from all respondents on all survey items, which can lead to bias if there are differences on a particular measure between respondents who answered and those who did not (i.e., nonresponse error); and the difference between the true value of a variable or metric and the estimate that the measurement makes (i.e., measurement error).

One potential issue that panels may contend with is panel *effects*, which is the phenomenon of individuals changing in some way because of their participation in previous surveys in a panel (Scherpenzeel and Das, 2010). For example, this change can be to their survey-taking behavior (e.g., strategically answering so they can avoid follow up questions in surveys with skip logic, providing random answers rather than considering each answer) and actual behavior that they then report (e.g., handling money more responsibly after being surveyed previously about their spending habits, which, in turn, inspired them to change for the better; Sikkel and Hoogendoorn, 2008).

The presence of panel effects does not inherently indicate that data will be of poorer quality. In fact, Sun, Tourangeau, and Presser (2019) did not find evidence that participating in a panel over time resulted in changes to data quality. It is important to assess the quality of the data (such as by comparing distributions of an estimate from one's panel to large probability-based panels that are publicly available), and leading researchers have provided recommendations on how to do so (Callegaro et al., 2014).

### *Attrition*

Panel membership fluctuates constantly because of individuals leaving the panel. Such attrition from the panel can occur when respondents simply stop answering (passive attrition), when respondents contact the research team and request to be removed from the panel (voluntary attrition), through death or incapacitation, or through forced removal of the panel member because of noncompliance (e.g., not answering a few surveys consecutively; Callegaro et al., 2014). In the case of the current effort, attrition also occurs when soldiers and their spouses leave the military or get divorced. Assessing potential causes of attrition is especially critical for longitudinal panels, which rely on a stable set of respondents to every survey, but it is also useful for access panel researchers to examine the potential causes of attrition to determine if a nonrandom subset of panel members leave, which would indicate bias.

Bias means that the estimates might not be trustworthy because, for example, the individuals who dropped out of the panel may be different from those who stayed in the panel in a systematic way (e.g., those with lower education or income dropping out of the panel over time). Managing attrition is important because it determines how well the panel performs and how biased the estimates are, but the way that attrition is managed can introduce bias. Ways of managing attrition that are less likely to introduce bias include re-recruitment of original members who left and instituting an incentive program to retain members over the course of the panel (Callegaro et al., 2014), as well as addressing concerns when respondents share issues with the survey staff (Sikkel and Hoogendoorn, 2008). As noted, panel respondents were provided with financial incentives to increase response rates as well as minimize attrition from the panel over time.

## Conclusion

The TASP was successful as a proof of concept to inform Army decisionmaking. Continuing the panel into the future will require adjustments to make participants more representative of Army spouses as a whole and to take into account lessons learned from the proof of concept. To the extent that these adjustments can be made, an updated panel of Army spouses should continue to provide useful, timely information for Army decisionmaking.

## Abbreviations

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|          |   |
|----------|---|
| CI       | confidence interval                             |
| CONUS    | continental United States                       |
| COVID-19 | coronavirus disease 2019                        |
| DCS      | Deputy Chief of Staff                           |
| DEERS    | Defense Enrollment Eligibility Reporting System |
| DoD      | U.S. Department of Defense                      |
| EFMP     | Exceptional Family Member Program               |
| PCS      | permanent change of station                     |
| SFRG     | Soldier and Family Readiness Group              |
| TAPDB    | Total Army Personnel Data Base                  |
| TASS     | Today's Army Spouse Survey                      |
| TASP     | Today's Army Spouse Survey Panel                |

## References

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- Barry, Amanda, and Katherine Ely, *Feasibility of a DoD Survey Panel*, Alexandria, Va.: Office of People Analytics, U. S. Department of Defense, Note No. 2019-020, 2019.
- Brosnan, Kylie, Astrid Kemperman, and Sara Dolnicar, “Maximizing Participation from Online Survey Panel Members,” *International Journal of Market Research*, Vol. 63, No. 4, 2019, pp. 416–435.
- Callegaro, Mario, Ana Villar, David Yeager, and Jon A. Krosnick, “A Critical Review of Studies Investigating the Quality of Data Obtained with Online Panels Based on Probability and Nonprobability Samples,” in Mario Callegaro, Reginald P. Baker, Jelke Bethlehem, Anja S. Göritz, Jon A. Krosnick, and Paul J. Lavrakas, eds., *Online Panel Research: A Data Quality Perspective*, Hoboken, N.J.: Wiley, 2014, pp. 23–53.
- Cohen, Sheldon, and Gail M. Williamson, “Perceived Stress in a Probability Sample of the United States,” in Shirlynn Spacapan, and Stuart Oskamp, eds., *The Social Psychology of Health: The Claremont Symposium on Applied Social Psychology*, Newbury Park, Calif.: Sage Publications, 1988.
- Creighton Kathleen P., Karen E. King, and Elizabeth A. Martin, “The Use of Monetary Incentives in Census Bureau Longitudinal Surveys,” *Survey Methodology Research Report Series No. 2007-2*, Washington, D.C.: U.S. Census Bureau, 2007.
- Dillman, Don A., Jolene D. Smyth, and Leah Melani Christian, *Internet, Phone, Mail, and Mixed-Mode Surveys: The Tailored Design Method*, 4th ed., Hoboken, N.J.: Wiley, 2014.
- Gutman, Leslie Morrison, and Jacquelynne S. Eccles, “Financial Strain, Parenting Behaviors, and Adolescents’ Achievement: Testing Model Equivalence Between African American and European American Single- and Two-Parent Families,” *Child Development*, Vol. 70, No. 6, 1999, pp. 1464–1476.
- Hsiao, Cheng, “Panel Data Analysis: Advantages and Challenges,” *Test*, Vol. 16, No. 1, 2007, pp. 1–22.
- Kurdek, Lawrence A., “Conflict Resolution Styles in Gay, Lesbian, Heterosexual Nonparent, and Heterosexual Parent Couples,” *Journal of Marriage and Family*, Vol. 56, No. 3, August 1994, pp. 705–722.

- Mack, Stephen, Vicki Huggins, Donald Keathley, and Mahdi Sundukchi, “Do Monetary Incentives Improve Response Rates in the Survey of Income and Program Participation?” *Proceedings of the Section of Survey Research Methods*, American Statistical Association, 1998.
- Martinsson, Johan, Delia Dumitrescu, and Karolina Riedel, “Recruiting an Online Panel from Another Online Survey: Consequences of Framing and Placement of the Recruitment Question,” *International Journal of Public Opinion Research*, Vol. 29, No. 2, Summer 2017, pp. 339–351.
- Maynard, Douglas C., Todd Allen Joseph, and Amanda M. Maynard, “Underemployment, Job Attitudes, and Turnover Intentions,” *Journal of Organizational Behavior*, Vol. 27, No. 4, June 2006, pp. 509–536.
- Military Family Advisory Network, *Military Family Support Programming: 2019 Survey Results*, Shawnee, Kan., 2019. As of January 21, 2021:  
<https://militaryfamilyadvisorynetwork.org/2019-military-family-support-programming-survey-full-report/>
- Office of People Analytics, *2017 Survey of Active Duty Spouses: Tabulations of Responses*, Alexandria, Va.: U.S. Department of Defense, Report 2018-006, 2018.
- Pittman, Joe F., Jennifer L. Kerpelman, and Jennifer M. McFadyen, “Internal and External Adaptation in Army Families: Lessons from Operations Desert Shield and Desert Storm,” *Family Relations: An Interdisciplinary Journal of Applied Family Studies*, Vol. 53, No. 3, 2004, pp. 249–260.
- Scherpenzeel, Annette, and Marcel Das, “True Longitudinal and Probability-Based Internet Panels: Evidence from the Netherlands,” in Marcel Das, Peter Ester, and Lars Kaczmirek, eds., *Social and Behavioral Research and the Internet: Advances in Applied Methods and Research Strategies*, Boca Raton, Fla.: Taylor & Francis, 2010.
- Schoeni, Robert F., Frank Stafford, Katherine A. McGonagle, and Patricia Andreski, “Response Rates in National Panel Surveys,” *Annals of the American Academy of Political and Social Science*, Vol. 645, No. 1, 2013, pp. 60–87.
- Sherin, Kevin M., James M. Sinacore, Xiao-Qiang Li, Robert E. Zitter, and Amer Shakil, “HITS: A Short Domestic Violence Screening Tool for Use in a Family Practice Setting,” *Family Medicine*, Vol. 30, No. 7, 1998, pp. 508–512.
- Sikkel, Dirk, and Adriaan Hoogendoorn, “Panel Surveys,” in Edith D. de Leeuw, Joop J. Hox, and Don A. Dillman, eds., *International Handbook of Survey Methodology*, New York: Routledge, 2008, pp. 479–499.

- Singer, Eleanor, and Richard A. Kulka, "Paying Respondents for Survey Participation," in Michele Ver Ploeg, Robert A. Moffitt, and Constance F. Citro, eds., *Studies of Welfare Populations: Data Collection and Research Issues*, Washington, D.C.: National Academy Press, 2001, pp. 105–128.
- Sonethavilay, Hisako, Rosalinda V. Maury, Jennifer L. Hurwitz, Rachel Linsner Uveges, Jennifer L. Akin, Jamie Lynn De Coster, and Jessica D. Strong, *2018 Blue Star Families Military Family Lifestyle Survey: Comprehensive Report*, Encinitas, Calif.: Blue Star Families, 2018.
- Sun, Hanyu, Roger Tourangeau, and Stanley Presser, "Panel Effects: Do the Reports of Panel Respondents Get Better or Worse over Time?" *Journal of Survey Statistics and Methodology*, Vol. 7, No. 4, 2019, pp. 572–588.
- Tanielian, Terri, Benjamin Karney, Anita Chandra, and Sarah O. Meadows, *The Deployment Life Study: Methodological Overview and Baseline Sample Description*, Santa Monica, Calif.: RAND Corporation, RR-209-A/OSD, 2014. As of September 29, 2021: [https://www.rand.org/pubs/research\\_reports/RR209.html](https://www.rand.org/pubs/research_reports/RR209.html)
- Trail, Thomas E., Carra S. Sims, and Margaret Tankard, *Today's Army Spouse Survey: How Army Families Address Life's Challenges*, Santa Monica, Calif.: RAND Corporation, RR-3224-A, 2019. As of September 15, 2021: [https://www.rand.org/pubs/research\\_reports/RR3224.html](https://www.rand.org/pubs/research_reports/RR3224.html)