

# Background Quality Report

## Statistical Series 6 – Other

### Bulletin 6.04 - Tri-Service Families

### Continuous Attitude Survey (FAMCAS)

## 1. Introduction

### 1.1 Overview

The Families Continuous Attitude Survey (FAMCAS) is a set of Tri-Service questions distributed in the single Service Families Surveys. The aim of FAMCAS is to assess and monitor the views of spouses and civil partners of Service personnel in a number of areas: childcare, deployment, education, training and employment, healthcare, family life, housing and the Armed Forces Covenant.

### 1.2 Background and Context

The Armed Forces Act 2011 created a statutory requirement for an annual Armed Forces Covenant Report to Parliament each year. The report is required to set out how the Government is supporting the Armed Forces, their families and veterans in key areas such as healthcare, housing and education. The FAMCAS questions cover these same topics and are therefore an important means to provide an understanding of the views of UK Armed Forces families on the effectiveness of the Armed Forces Covenant. They provide statistics to strengthen the evidence-base for Covenant initiatives and help the Ministry of Defence better understand the views and needs of Service families.

In 2014, this survey was conducted at a time that included the drawing down of the campaign in Afghanistan, the implementation of changes to the shape of the Armed Forces and also changes to the terms and conditions under which personnel serve. A consultation on the development of new terms and conditions of service was made with Service personnel and their families as part of the New Employment Model (NEM) programme. The recent introduction of the 'Forces Help to Buy Scheme' to assist Service personnel with house purchase is an element resulting from the programme.

Major decisions in Defence taking place both before and while FAMCAS 2014 was in the field may also have contributed to Service personnel families' views of Service life. These include:

- the planned return of combat troops from Afghanistan by 2015;
- the future shape of the Armed Forces (Future Forces 2020) and the role of the Reserves (Future Reserves 2020), where Reservists will form a greater part of the Armed Forces, particularly in the Army;
- the Armed Forces redundancy programme. This continued with the fourth and final set of redundancies announced in January 2014, after the Review in 2010. There were 1,505 redundancies announced, with the vast majority coming from the Army.
- the return of all Army personnel from Germany to the UK by 2020;
- future pension arrangements (AFPS 2015).

On a wider UK perspective, the survey was conducted at a time of public sector pay restraint.

### 1.3 Methodology and Production

#### Stage 1: Questionnaire Design

Tri-Service questions were reviewed by the FAMCAS Working Group (WG) over a period of 4 months in the autumn/winter of 2013 for inclusion in the existing single Service Families Surveys. Consultations were held with in-house stakeholders in Chief of Defence Personnel's department and in the single Services to create a set of tri-Service questions. The final FAMCAS has over 180 items asked in approximately 90 questions and requested information about a number of areas including accommodation, healthcare, education and childcare, and deployment.

Additional questions around spousal employment were added in 2014 to further inform policy work on this area. Other than these few changes were made to the questions this year as a full review is planned for FAMCAS 2015.

## Stage 2: Sample

The target population is all spouses or civil partners of regular trained Service personnel. The sample is stratified by:

- Service (Royal Navy, Royal Marines, Army and RAF)
- The serving persons rank group (Officers, Senior Ranks [OR6-9] and Junior Ranks [OR1-4])
- Location (England, Northern Ireland, Scotland, Wales, Germany\*, Cyprus\* and other Non UK).

\*Army only.

As the regional distribution of Service personnel's families is not known the sample was selected based on stationed location (regional) as the proxy for the family's location.

The personal status field on JPA (Joint Personnel Administration) was used as a proxy for marital status. Those Service personnel identified as married or in a civil partnership were included in the target population from which the sample was selected.

The sample size and sampling methodology were designed to give an overall maximum margin of error of 1.5% for a hypothetical binary response question with a 50/50 response split in the tri-Service population. However, the margin of error for responses from small sub-populations is and was expected to be considerably larger so care should be taken when considering the point estimate response proportions of small subsets of the population. For example when considering the impact of mobility on Service families the results are often subset to the 35% who moved in the last 12 months. Margins of error here increase to around 3% (tri-Service), and for the single Services to around 6%. Other subsets may be as small as 2% of the population and will have even larger margins of error

## Stage 3: Distribution

The three single Service questionnaires were distributed in February 2014. Responses were collected until the surveys closed at the end of May 2014.

Typically the questionnaires were sent by mail to Service personnel, who were asked to pass these on to their spouses/civil partners for completion. The MOD neither has the consent, nor holds sufficient contact details for spouses to contact them directly for research.

The delivery is the responsibility of the single Services and hence distribution methods may differ slightly. For example, Royal Navy used Harris, a research organisation, to post questionnaires to Royal Navy and Royal Marine Service personnel along with an accompanying letter which asked them to pass the survey onto their spouses. Details of how to complete the survey online were also included for those preferring to use this method. At the moment neither the Army nor the RAF host an on-line survey.

This year, in an effort to improve response rates, e-mail reminders were sent to the Service person. For the Royal Navy / Royal Marines this e-mail included an invite to the online survey which could be forwarded on to their spouse/civil partner. For the Army and RAF these e-mails were used to check service personnel had received the questionnaires and to encourage them to pass them on to their spouse/civil partner.

Of the questionnaires that were returned, only those which included responses to the questions on location and rank were included in the overall dataset.

The overall response rate in 2014 was 25%.

## Stage 4: Analysis

SPSS Complex Samples were used to analyse the data as the sampling method employed (disproportionate stratified sampling) necessitates the application of weights to grouped ranks (i.e. Officers, Senior ranks and Junior ranks) per region per Service to correct for the sampling and non-response biases.

The sample design and the differences in levels of non-response between the Service, rank (grouped) and location strata, meant that the distribution of characteristics of the respondents' spouses did not reflect their

distribution in the Armed Forces married and civil partnership population. This means that some types of personnel were overrepresented and others underrepresented. To correct for this, as well as for sampling and non-response bias, the survey data were weighted by Service, grouped rank and regional location. The unadjusted weights were calculated simply by:

$$\text{Unadjusted weight} = \frac{\text{Population size within weighting class (p)}}{\text{Number of responses within weighting class (r)}}$$

Weighting in this way assumes missing data are missing at random (MAR) only within weighting classes. This means that we assume that within a single weighting class the views of non-respondents do not differ (on average) to the views of respondents. Unadjusted weights are only suitable for significance testing within statistical programmes that can process complex samples.

## Contact details

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Defence Statistics welcome feedback on this Background Quality Report or any of the statistics mentioned. Statistical outputs produced by Defence Statistics can now be found on the [Statistics at MOD page](#)<sup>1</sup> of GOV.UK.

## 2. Relevance

The main users of the tri-Service FAMCAS publication are the Chief of Defence Personnel's department and single Service policy makers, and strategy development teams. The statistics generated from the FAMCAS questions are used to aid the development and tracking of military personnel policies, informing Defence personnel programmes such as the New Employment Model and are used to understand a wide spectrum of issues affecting families of Service personnel. Furthermore, FAMCAS is a key statistic for the Armed Forces Covenant in helping to understand emerging issues, keeping track of commitments, and helping to shape personnel welfare policies to ensure that spouses and partners of Service personnel are not at a disadvantage from being linked to the Armed Forces.

Standard FAMCAS questions have been included in the single Service Families Surveys since 2010. The inclusion of these standard questions allows for comparisons across the single Services and regions, whereas up until 2010 such comparisons could not be made. During this time, some FAMCAS questions have been adjusted to improve understanding and maintain relevance, particularly taking into account any recent developments within the MOD and the Armed Forces which may affect the responses to FAMCAS questions. Such changes may impact on time series, where applicable these are noted in the tables in the report.

FAMCAS 2014 asked questions on a number of key policy areas:

- Housing
- Healthcare
- Education & Childcare
- Family Life
- Training and Employment
- Deployment
- Armed Forces Covenant

The FAMCAS questions are reviewed annually by the FAMCAS WG in consultation with in-house stakeholders. In addition a more comprehensive review is scheduled every five years. A comprehensive review is currently taking place to inform FAMCAS 2015.

### 3. Accuracy

The main sampling error associated with FAMCAS is due to the disproportionate stratified sampling method. Some strata have very small populations and as such a census of these groups is selected for the sample. Other strata such as Army Junior Ranks based in England are much larger and hence a sample is sufficient. Also response rates are known to differ between strata and as such the samples for some strata are greatly increased to account for lower response rates. As a result the final sample selected is not representative of the population as a whole. Some groups are sampled proportionally more than others.

The overall response rate for 2014 was 25%. Levels of non response differ by strata greatly. As such the final responses for the survey are also disproportionate by strata.

To ensure that the results are representative, Defence Statistics weight the responses to correct for biases, introduced by the sampling and non-sampling errors described above. Weighting classes are defined by:

- Service (Royal Navy, Royal Marines, Army and RAF)
- The serving persons rank group (Officers, Senior Ranks [OR6-9] and Junior Ranks [OR1-4])
- Location (England, Northern Ireland, Scotland, Wales, Germany\*, Cyprus\* and other Non UK).

\*Army only.

As with the selection of the strata population data for weighting the data use proxy data; Personal Status for marital status and the Service person's stationed location for spouse/civil partner's location.

The use of weighting assumes data are missing at random (MAR) within these weighting classes. This means that we assume that within a single weighting class the views of non-respondents do not differ (on average) to the views of respondents.

This is a strong assumption particularly within the Junior ranks weighting group where response rates differ between individual ranks. For example the response rates of spouses/civil partners of Army OR1/2's in England is 9% compared to 17% for spouses/civil partners of OR3's and OR4's. This means that spouses/civil partners of OR1/2's are being underrepresented, even in the weighted data. As part of the FAMCAS 15 review the working group will be considering methods to improve response rates and alternative weighting classes.

As with dealing with any large data set derived largely from paper surveys there is the possibility of coding errors. Furthermore, each Service asks its own questions within its Families survey as well as the harmonised tri-Service FAMCAS questions. Therefore, Defence Statistics are required to combine data from each of the three Services into a single tri-Service data set

The FAMCAS tri-Service data is passed through a range of automatic and manual validation and editing processes carried out by Defence Statistics and occupational psychologists within the FAMCAS WG.

Defence Statistics analyse the data using SPSS Complex Samples, which produces weighted estimates and corresponding standard errors. In order to minimise the risk of error, many aspects of the analysis process have been automated and where possible, existing source code is used. Where year on year comparisons are possible, Z-tests at 1% significance level are carried out. This level is used in order to minimise the possibility of finding false positive differences that can be expected when performing a large number of significance tests.

All statistical tables and charts are checked by at least three statisticians, who follow a clear checking process. Each section is further checked by occupational psychologists within the WG. In order to prevent the publication of unreliable statistical information and to prevent the disclosure of information about specific individuals, statistics are not shown where the responding group size is less than 30.

It is important to note that there are some methodological limitations which may affect the accuracy of the results. For example, the surveys were distributed via Service personnel, so receipt of the survey is not guaranteed. Although there is a considerable overlap between the Service person's stationed location and their family's location especially at the regional level used in these analyses, there are likely to be some discrepancies. The use of administrative proxy data for marital status will yield some over and under coverage within the sample. These discrepancies may reduce the accuracy of the regional statistics and may also affect how the data is weighted. Furthermore, there is no certainty that the person who completes the survey is the Service person's spouse or civil partner.

#### **4. Timeliness and Punctuality**

As an Official Statistic, the release date for FAMCAS 2014 was pre-announced on GOV.UK. All future releases are now pre-announced on the [MOD Calendar of Upcoming Releases](#)<sup>2</sup> on GOV.UK in accordance with the guidance set out in the Code of Practice for Official Statistics. The publication was released on the pre-announced day at 9:30am.

The FAMCAS timeline is driven by the timing of the annual Armed Forces Covenant Report to Parliament each year. Overall, the FAMCAS takes approximately 8-9 months to complete, from agreeing the questionnaires to publishing the report.

- 2-3 months - Agree questions, print and distribute questionnaires
- 3 months - Survey in field
- 2 weeks - Raw single Service data provided to Defence Statistics by the single Services
- 3 weeks - Clean and validate tri-Service data
- 3 weeks - Produce report tables
- 1 week - Report tables validated by working group
- 1 week - Complete draft report
- 1 week - Draft report checked by working group
- 1 week - Finalise report and prepare for publication.

The FAMCAS is designed to give an up-to-date snapshot of the perceptions and attitudes of the spouses/civil partners of Armed Forces personnel. Although FAMCAS is published on an annual basis, it is important to note that the responses given in the survey are liable to change within the calendar year, for example, as a result of events or due to the time of year in which the responses were collected. In part, this is due to the 12 weeks delay from when the survey closes to the final report being published, thus reducing the timeliness of the results.

The timeliness of the 2014 report has improved since last year, being published a month earlier than in 2013.

#### **5. Accessibility and Clarity**

The FAMCAS report was published on the [Tri-Service FAMCAS page](#)<sup>3</sup> on GOV.UK as a PDF, accompanied by Excel tables for each report section. These Excel tables provide additional breakdowns for each question by location (which are not included in the PDF report), as well as by Service.

A brief introduction to the report is provided on the front page, which also informs the user that the 2014 data is presented alongside data from 2010 to 2013 for comparison, where this information is available. A summary of key points and trends, a link to the Background Quality Report and the contact details of the responsible statistician are also presented on the front page.

The report contains a key findings section which gives further detail about the key points from each FAMCAS section, an introduction providing contextual background information, and a methodology section which informs users about the questionnaire design, sampling method and weighting. An example table with notations is also provided in the report at the end of the introduction and methodology section to help users interpret the results tables.

## **6. Coherence and Comparability**

FAMCAS is the definitive source of attitudinal data about the perceptions and opinions of spouses or partners of tri-Service personnel. There are no other tri-Service data sources that collect the same attitudinal information with which to ensure coherence. As part of the comprehensive review of FAMCAS 2015, comparability with the Armed Forces Continuous Attitude Survey (AFCAS) is being investigated.

The introductory material and footnotes explain the impact on the statistics of any factors that affect coherence over time. Relevant footnotes are also shown below the tables to indicate any filters that have been applied to the data or any other issues, such as changes to the wording of questions that may affect time series comparison.

Since 2010, when FAMCAS questions were first included in the single Service Families surveys, there have been a number of changes to the questionnaires to reflect changing policy requirements and to refine questions to increase validity, reliability and relevancy. Ultimately, this can impact on the comparability of results over time. Where the comparability of responses over time may be impacted, significance tests are not carried out and a footnote is included beneath the relevant table in the published report, to explain the issue(s). Despite this, the FAMCAS results are considered to be broadly comparable over time, particularly where questions have remained consistent since 2010.

## **7. Trade-offs between Output Quality Components**

The main trade-off of FAMCAS is between timeliness and quality. Although the FAMCAS report consists mainly of statistical tables and charts, which do not provide additional breakdowns of questions such as by rank or age group, or cross-tabulations with other FAMCAS questions. This is to ensure that the basic statistical information can be made available to the public as soon as the publication is in a clear, accessible format.

The effects of this trade-off have been reduced in 2014 due to improvements made to the key findings section and the results tables. The Key Findings now includes a one-page summary for each section of FAMCAS which draws out the main messages of the report supported by key figures and commentary. Additional commentary boxes within the results tables also provide further information to aid users' interpretation of the results.

Additional analysis for internal users is available on request and external requests would be considered under the Freedom of Information Act.

## **8. Assessment of User Needs and Perceptions**

Defence Statistics work closely with the main customer, stakeholders, and other occupational psychologists and researchers from each of the single Services to ensure that FAMCAS questions are still relevant to policy requirements. When major changes are made to a survey, a public consultation will be held.

## **9. Performance, Cost and Respondent Burden**

Response to FAMCAS is voluntary. Participant information is provided within the questionnaires to encourage informed consent. The FAMCAS questionnaire is currently estimated to take about 30 minutes for respondents to complete.

## **10. Confidentiality, Transparency and Security**

Confidentiality protocols are adhered to, as set out the Defence Statistics Disclosure and Confidentiality Policy – Identifiable Survey Data. All staff involved in the FAMCAS production process adhere to the MOD and Civil Service data protection regulations. Additionally, members of the working group have to follow the relevant codes of practice for their professional groups; the Government Statistical Service (GSS) and the

Government Social Research (GSR) Service. All data is stored, accessed and analysed using MOD's restricted network and IT system.

The production process is considered to be transparent. Each questionnaire is distributed with a participant information sheet to ensure that respondents make an informed decision before completing the survey. The FAMCAS report is published with details of the methodology and footnotes beneath the results tables so that users are aware of potential data issues. Any significant errors identified in publication will result in revisions along with explanations as to the cause of the revisions.

We adhere to the principles and protocols laid out in the [Code of Practice for Official Statistics](#)<sup>4</sup> and comply with pre-release access arrangements. The [Defence Statistics Pre-Release Access lists](#)<sup>5</sup> are available on the GOV.UK.

## 11. References

|   | Reference  | Website Location  |
|---|--|---|
| 1 | Statistics at MOD Homepage   | <a href="https://www.gov.uk/government/organisations/ministry-of-defence/about/statistics">https://www.gov.uk/government/organisations/ministry-of-defence/about/statistics</a>   |
| 2 | MOD's Timetable of Future Releases of National and Official Statistics | <a href="https://www.gov.uk/government/publications/mod-timetable-for-future-releases-of-national-and-official-statistics">https://www.gov.uk/government/publications/mod-timetable-for-future-releases-of-national-and-official-statistics</a> |
| 3 | Tri-Service Families Continuous Attitude Survey page on GOV.UK         | <a href="https://www.gov.uk/government/collections/tri-service-families-continuous-attitude-survey-index">https://www.gov.uk/government/collections/tri-service-families-continuous-attitude-survey-index</a>                                   |
| 4 | Code of Practice for Official Statistics                               | <a href="http://www.statisticsauthority.gov.uk/assessment/code-of-practice/code-of-practice-for-official-statistics.pdf">http://www.statisticsauthority.gov.uk/assessment/code-of-practice/code-of-practice-for-official-statistics.pdf</a>     |
| 5 | Defence Statistics Pre-release Access lists                            | <a href="https://www.gov.uk/government/publications/defence-statistics-pre-release-access-list">https://www.gov.uk/government/publications/defence-statistics-pre-release-access-list</a>   |

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