Australian Government
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Building a New Life in Australia

The Longitudinal Study of Humanitarian Migrants

Building a New Life in Australia: Non-response

Data Issues Paper No. 1

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Australian Institute of Family Studies

The Australian Institute of Family Studies acknowledges the Traditional Owners of Country throughout Australia and recognises their continuing connection to lands and waters. We pay our respects to Aboriginal and Torres Strait Islander cultures, and to Elders past and present.

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Summary

This paper provides an overview of different aspects of non-response in the BNLA study. These include at the time of study recruitment and between interview waves, by interview mode, and by survey item. The paper also summarises the development of the survey weights used to adjust for non-response at the time of recruitment and between waves.

Key messages

There were differences between the BNLA sample recruited at Wave 1 and the eligible population based on respondents' country of birth and visa subclass. Population weights are provided in the BNLA dataset to adjust for these differences. We note that given the study design, the BNLA sample is not representative of all humanitarian migrants.

Participation across waves differed by respondents' country of birth, level of education and visa subclass. Longitudinal weights are provided in the BNLA dataset to adjust for attrition between waves.

Participants who only responded to telephone waves after Wave 1 (Waves 2 and 4) differed from the rest of the BNLA sample in terms of migration pathway, paid work and location.

Item non-response was low across items up to Wave 5, except for questions on traumatic events and trust. This indicates that the relevance of these questions for some participants or the way these questions were administered may have affected the non-response.

There was higher item non-response at Wave 6 compared with previous waves. Item non-response was more frequent among those who completed the interview online compared to those who responded face-to-face.

Introduction

The Building a New Life in Australia (BNLA) study was commissioned by the Australian Government to provide information on the settlement outcomes of recently arrived humanitarian migrants.

The BNLA study is a longitudinal study with 6 waves of data collection. The study commenced in 2013, with 2,399 individuals from 1,509 migrating units[1] who had been granted permanent humanitarian visas and were living in communities around Australia taking part. Data collection for the first 5 waves took place between 2013 and 2018, with alternating waves of home visits (Waves 1,3 and 5) and telephone interviews (Waves 2 and 4). Wave 6 data collection took place in 2023. Respondents were offered a computer assisted web interview (CAWI) initially and a home visit was offered if the respondent preferred. In Waves 1, 3, 5 and 6, during the home visit, the survey was administered using a computer assisted self interview (CASI) on a computer tablet. A computer assisted personal interview (CAPI) was also offered to participants who preferred to complete the survey with an interviewer.

To accommodate the diverse cultural and linguistic backgrounds of the individuals in the study, the survey and participant materials were translated into 14 languages for Wave 1.[2] Participants could also be assisted by an accredited interpreter over the phone or in person. For further details about the conceptualisation and design of the study, sample recruitment, study methodology and translation processes see De Maio et al., 2014.

The purpose of this paper is to raise awareness among data users about different sources of non-response in the BNLA study and the possible bias that non-response can potentially introduce to the analysis of the BNLA data. In particular, the paper focuses on 3 different sources of non-response. Firstly, the paper briefly describes unit non-response at the time of recruitment and at each interview wave and the survey weighting processes used to adjust for this type of non-response. Secondly, the paper examines non-response by interview mode through a

1 A migrating unit is a group of people, generally family members, who were in the same visa application.

2 In Wave 1, the survey and participant materials were translated into 14 languages: Amharic, **Arabic**, **Burmese**, **Chin Haka**, **Dari**, **Hazaragi**, **Nepali**, Oromo, Pashto, **Persian**, Somali, **Swahili**, **Tamil**, Tigrinya. From Wave 2 to 5 onwards, the survey and participant materials were translated into the languages listed in bold. In Wave 6, the survey and participant materials were translated into **Arabic, Burmese, Dari, Hazaragi and Persian.**

comparison of the characteristics of participants who only responded to telephone interviews (Waves 2 and 4) compared to the BNLA sample who completed at least one home interview after Wave 1 (and up to Wave 5). Finally, the paper presents a descriptive analysis of item non-response.

Unit non-response

Surveys frequently use probability samples to allow inferences about the wider population to be drawn. How well the sample represents the population from which it is drawn can be affected by non-response of those chosen in the original random selection (Norton & Monahan, 2015).

In a longitudinal study such as BNLA, participants can refuse to take part in the study at various stages. The 2 main time points at which unit non-response can occur are:

- the initial contact and recruitment stage – participants eligible for selection into the study may not be contactable or if contact is made, choose not to participate
- post recruitment – non-participation can occur during later waves of data collection. This can be through inability to contact participants, participants choosing to refuse or withdraw, death or movement outside the scope of the study (e.g. participants could be travelling overseas during the fieldwork period).

This section describes the BNLA study population and key differences from the BNLA recruited sample at Wave 1 as well as reasons for non-response at later waves. We also briefly discuss the weighting processes employed to adjust for non-response at recruitment and between waves. Details about factors associated with non-response at each wave and the weighting approach are in the BNLA Data Users Guide – Release 6.0 (2024).

BNLA study population

The BNLA study population comprised individuals or families who were granted their permanent visa through Australia's humanitarian migrant program. Information from the Settlement Database (SDB) was used to identify potential study participants.[3] The SDB contains records dating back to January 1991 of people who have been granted a permanent or temporary visa. Both offshore and onshore humanitarian programs were in scope for the study (see Box 1 for details).

Box 1: Humanitarian visa types at the time of study recruitment

The offshore resettlement stream included 2 categories of visas for people who were outside of Australia at the time of applying for a visa.

- Firstly, the Refugee category (visa subclass 200, 201, 203 and 204) is for people who are experiencing persecution in their home country, are typically outside of that country and need resettlement. The Woman at Risk category (visa subclass 204) is for women who do not have the protection of a male relative and are in danger of victimisation, harassment or serious abuse because of their gender.
- Secondly, the Special Humanitarian Programme category (visa subclass 202) is for people who are subject to substantial discrimination amounting to gross violation of their human rights in their home country, and who are proposed for entry by an Australian citizen, Australian permanent resident, eligible New Zealand citizen or an organisation operating in Australia.

The onshore stream (866 visa subclasses) covers individuals who arrive in Australia before applying for a humanitarian visa. They may have arrived by boat without a visa (Unauthorised Maritime Arrivals*; UMA), or by other means on another type of visa (e.g. tourist, student visa).

Note: *This is the term contained in the *Migration Act 1958* (section 5AA), which describes persons that enter Australia by sea and because of that entry become an unlawful non-citizen.

3 The Department of Home Affairs is currently responsible for the Settlement Database.

Selection into the study was based on the 'migrating unit' (or MU) of an individual or group of people named on the same visa application. The adult 'Principal Applicant' (PA) on the application (the person for whom approval of the visa was based) was designated as the lead participant for the study. 'Secondary Applicant' (SA) adults and adolescents comprised other members of the migrating unit (including e.g. spouse, children) and had to be aged 15 years or older to participate. Secondary adolescents were aged 15–17 years at the time of the first interview, and the adolescent's parent/guardian was a PA or an SA Adult in the study. A sample size of 1,500 Principal Applicants was the target in Wave 1, with no constraints on the number of Secondary Applicants per migrating unit who could be recruited.

To be eligible for the study, humanitarian migrants had to have arrived in Australia or been granted their permanent visa 3–6 months (between May and December 2013) before the Wave 1 interview. A total of 4,035 migrating units (comprising individuals or families) met the eligibility requirements and were eligible to be approached to participate in an interview. However, only 2,769 migrating units were required to be approached for contact to achieve the sample target.

The study recruited the largest sample of humanitarian migrants to date in Australia, with 33% of the eligible humanitarian migrants arriving in Australia during the sampling period being recruited into the study and completing a Wave 1 interview (for further details, see Edwards et al., 2018). Participants were recruited from 11 sites around Australia. Most participants were living in Melbourne and Sydney but others came from another 9 sites, including smaller centres as well as rural and regional areas. The humanitarian migrants recruited to the study had diverse backgrounds and experiences, arrived from 35 different countries and spoke close to 50 different languages at home. It is also worth noting that analysis of the SDB data (over the period of 3 months from May to July 2013) that was undertaken to inform study site selection indicated that the 11 BNLA study sites accounted for almost 92% of all humanitarian arrivals in Australia during that period. This indicates that the vast majority of all potential humanitarian migrants arriving in that time period also would have been in one of the 11 selected study sites and thus eligible for participation.

Non-response in Wave 1

The eligible sample in Wave 1 was intended to be representative of humanitarian migrants arriving in Australia or being granted a permanent visa 3–6 months prior to their first interview and having settled in one of the 11 selected study sites.

Table 1 presents a comparison of the characteristics of the recruited sample and the eligible population based on analysis of the SDB dataset. This analysis is limited to factors such as country of birth, age group and gender as there were only a limited number of demographic/administrative variables available in the SDB at the time.

Almost three-quarters of the eligible population were born in 4 countries: Iraq (33%), Afghanistan (19%), Myanmar (12%) and Iran (10%). The eligible population were also young, with 76% aged 44 years or less, and were roughly evenly distributed by gender (54% were male). The majority of those who were eligible held a 200 Refugee visa class (65%), with a further 12% holding an 866 Unauthorised Maritime Arrival visa and 10% holding a 204 Woman at Risk visa.

A comparison of the eligible population with those who were recruited at Wave 1 indicates that the characteristics of both were closely matched in terms of gender, with no difference in the proportion of males and females. The main difference between the eligible population and the recruited sample was in participants' country of birth. Those born in Iraq were over-represented in the recruited sample (39% of Wave 1 participants compared to 32% of the eligible population in the SDB). There was also a higher proportion of Wave 1 participants born in Afghanistan (26%) compared to the proportion in the eligible population (19%). Conversely, those born in Myanmar were under-represented in the study (6% of Wave 1 participants compared to 12% of the eligible population).

There were also differences in the distribution of visa types between the eligible population and recruited sample. Differences between the eligible and recruited sample for humanitarian migrants holding an 866 non-UMA visa were expected as there was a quota in place for this population as part of the Wave 1 study design. Apart from that, there were 68% of Wave 1 participants with a 200 visa type, compared to 65% in the eligible population. There were also differences in the proportions holding a 204 Woman at Risk visa and 866 UMA visa between the population and recruited sample. As described below, the use of survey weights is one approach that can adjust for the differential pattern in responses based on participants' characteristics between the eligible population and recruited sample.

Table 1: Characteristics of the eligible population and recruited BNLA sample

Characteristic	Eligible population, % *N* = 7,362	Wave 1 sample, % [95% CI] *n* = 2,399	
Country of birth			
Iraq	32.3	39.4	[37.4, 41.3]
Afghanistan	18.7	25.5	[23.8, 27.3]
Myanmar	12.0	5.6	[4.7, 6.5]
Iran	10.2	12.0	[10.7, 13.3]
Pakistan	3.5	2.8	[2.2, 3.5]
Bhutan	2.7	3.5	[2.8, 4.3]
Ethiopia	1.8	0.9	[0.6, 1.3]
Democratic Republic of Congo	1.8	1.7	[1.2, 2.3]
Syrian Arab Republic	1.4	1.3	[0.9, 1.8]
Eritrea	1.2	0.6	[0.4, 1.0]
Nepal	0.9	0.9	[0.6, 1.3]
Rest of Africa	7.5	3.3	[2.7, 4.2]
Rest of Asia	4.5	2.1	[1.7, 2.8]
Rest of Middle East/Europe/America/Oceania/ Stateless/Unknown	1.7	0.7	[0.3, 0.9]
Total	**100.0**	**100.0**	
Age group (years)			
15–18 years	11.3	7.1	[6.1, 8.2]
19–24 years	17.2	17.3	[15.8, 18.8]
25–34 years	27.2	27.5	[25.7, 29.3]
35–44 years	20.2	22.6	[20.9, 24.3]
45–54 years	12.6	14.5	[13.1, 15.9]
55–64 years	6.5	7.4	[6.4, 8.5]
65 years or more	5.0	3.7	[3.0, 4.5]
Total	**100.0**	**100.0**	
Gender			
Female	46.1	45.6	[43.6, 47.6]
Male	53.9	54.4	[52.4, 56.4]
Total	**100.0**	**100.0**	
Visa subclass			
Offshore resettlement visas			
200 Refugee	64.9	67.9	[66.0, 69.7]
201 In country Special Humanitarian Programme/ 202 Global Special Humanitarian Programme	4.5	4.1	[3.4, 5.0]
203 Emergency rescue	0.0	0.0	Not applicable
204 Woman at Risk	10.2	12.2	[10.9, 13.5]
Onshore resettlement visas			
866 non-Unauthorised Maritime Arrivals	11.9	5.0	[4.2, 6.0]
866 Unauthorised Maritime Arrivals	8.4	10.8	[9.6, 12.1]
Total	**100.0**	**100.0**	

Non-response in Waves 2 to 6

Table 2 provides further information on non-response in BNLA from Wave 2 onwards analysed by applicant type (as per the initial study design). The reported proportions are based on the eligible sample at each wave and account for some participants dropping out of the study at each wave (e.g. due to study withdrawal or passing away between waves). The table data highlight that the greatest challenge in achieving survey completion in the BNLA is locating and contacting participants. At each wave, most of the non-response was due to non-contact, with a greater rate of non-contact among Principal Applicants (12%–18%) compared to Secondary Applicants (10%–12%) up to Wave 5. The 5-year gap between Wave 5 and Wave 6 had a significant impact on rates of non-contact. At Wave 6, 26% of the eligible sample was not contacted. Rates of refusal and withdrawal across waves were less than 5%, with the highest refusal rate being at Wave 6 (4.6%).

Table 2: Non-response in the BNLA, by applicant and wave

	Principal Applicant	Secondary Applicant	All applicants
Wave 2 Eligible sample	***n* = 1,509**	***n* = 890**	***n* = 2,399**
Non-contact, %	11.2	12.9	11.8
Refusal, %	2.1	1.5	1.8
Withdrawal, %	<1.0	<1.0	<1.0
Other,[a] %	2.1	1.8	2.0
Total non-response, %	**16.0**	**16.7**	**16.3**
Wave 3 eligible sample	***n* = 1,498**	***n* = 866**	***n* = 2,384**
Non-contact, %	17.8	12.3	15.7
Refusal, %	3.7	2.6	3.4
Withdrawal, %	1.5	1.4	1.4
Other,[b] %	0.0	<1.0	<1.0
Total non-response, %	**22.9**	**16.3**	**20.6**
Wave 4 eligible sample	***n* = 1,475**	***n* = 874**	***n* = 2,349**
Non-contact, %	16.4	11.6	14.6
Refusal, %	1.8	2.1	1.9
Withdrawal, %	<1.0	<1.0	<1.0
Other,[c] %	<1.0	<1.0	<1.0
Total non-response, %	**19.6**	**15.0**	**17.9**
Wave 5 eligible sample	***n* = 1,466**	***n* = 867**	***n* = 2,333**
Non-contact, %	17.1	10.4	14.6
Refusal, %	4.2	3.8	4.0
Withdrawal, %	<1.0	<1.0	<1.0
Total non-response, %	**22.0**	**15.0**	**19.4**
Wave 6 eligible sample	***n* = 1,416**	***n* = 840**	***n* = 2,256**
Non-contact, %	26.8	25.1	26.2
Refusal, %	5.2	3.5	4.6
Withdrawal, %	3.0	1.9	2.6
Total non-response, %[d]	35.0	30.5	33.3

Notes: Applicant type is determined at time of Wave 1 survey. Secondary applicants include adolescents aged 15–17 years at time of Wave 1 survey.
(a) Other category in Wave 2 includes, out of scope (including not available during fieldwork period), deceased, partial interview or appointment/contact was made with participant but interview was not resolved.
(b) Other category in Wave 3 includes out of scope (including not available during fieldwork period).
(c) Other category in Wave 4 includes out of scope (including not available during fieldwork period) and deceased participants.
(d) Other category in Wave 6 has not been included in Table 2. Out of scope total for Wave 6 is 2.3%.

Analysis of the BNLA responding sample shows that there is a relationship between humanitarian migrants' characteristics (such as gender and/or country of birth) and the probability of their participation in the study. Table 3 summarises the factors associated with participation across all waves (based on logistic regression modelling of characteristics predicting survey participation). For example, the Wave 5 column shows characteristics of participants who were interviewed in Waves 1 to 4 that were statistically significant in predicting participation in Wave 5. The Data Users Guide Release 6.0 (2024) provides a fuller description of the range of factors significantly associated with survey participation.

The results summarised here show that participants' country or region of birth,[4] age, pre-migration education and visa subclass are all factors significantly associated with non-response. The general pattern of results across all waves was that, compared to those born in Afghanistan, participants born in Iraq (the largest group in the study) were more likely to participate, while those born in Africa were less likely to complete all survey waves. In terms of visa subclass, compared to those with a 200 Refugee visa, those who arrived with an 866-UMA visa were less likely to participate. Participants with higher levels of pre-migration education were more likely to continue their participation in BNLA across time, as evidenced by this group being more likely to complete all surveys at each interview wave. For those who participated in the first 3 waves, an interesting finding was that those with lower levels of understanding of spoken English were also more likely to participate in Wave 4.

Table 3: Characteristics predicting participation in all BNLA waves, at each interview wave (summary of logistic regression models)

Characteristic	Wave 2	Wave 3	Wave 4	Wave 5	Wave 6
Country or region of birth	✓	✓	✓	✓	✓
Older participants		✓	✓	✓	✓
Visa subclass		✓	✓	✓	✓
Migrating unit structure (at Wave 1)		✓			✓
Living in major cities (at Wave 1) compared to inner regional areas	✓				
Higher levels of pre-migration education	✓	✓	✓	✓	
Lower understanding of spoken English (at Wave 1)			✓		

The implication of this differential pattern in likelihood of participation is that the composition of the sample recruited differs from the population from which it is drawn. This affects our ability to make inferences using the study sample and can lead to biased inferences about population outcomes if these differences in survey response patterns are not adjusted for.

Survey weighting processes

The use of survey weighting is one technique to adjust for the differential pattern in survey participation of BNLA respondents. Currently, 2 types of survey weights are calculated and available on the BNLA datasets:

- a set of 'population' weights – that adjusts BNLA estimates to population totals (in this case, the population of humanitarian migrants who were granted a permanent visa or arrived in Australia between May and December 2013)[5]
- a set of 'longitudinal weights' that adjusts for sample attrition between data collection waves.

A brief overview of survey weighting procedures in BNLA is provided below (for a comprehensive description of the survey weighting processes in the BNLA refer to the BNLA Data Users Guide Release 6.0, 2024):

4 Some countries were grouped into regions due to small sample size.

5 Offshore visa holders had to have arrived in Australia holding a permanent visa, while onshore visa holders had to have received their protection visa in this time period to be eligible for participation in the BNLA.

1. Analysis of non-response

Analysis is undertaken to identify if the characteristics of participants are different to the characteristics of non-participants. This is done by identifying the statistically significant factors associated with survey participation using multivariate logistic models.

Separate statistical models are estimated to identify the characteristics associated with participation by Principal Applicants and Secondary Applicants and survey completion by all participants.

Two sets of analysis are undertaken. The first models the probability of participation in a particular wave for all participants who were eligible to be recruited at the time of the Wave 1 interview. This analysis compares the characteristics of those who participated in each wave relative to all of the humanitarian migrants in the SDB that were eligible to participate in the study at the time of initial recruitment; thus, helping to inform the appropriateness of calculating a 'population' survey weight (see the discussion in the previous section).

For some studies, this type of non-response analysis can be challenging because little is known about non-respondents (e.g. see Solof, Lawrence, Misson, & Johnson, 2006). This was less of an issue in the BNLA study as the SDB contains information on a range of demographic and other characteristics. The availability of this information allowed an exploration of the association of certain characteristics with survey participation, including variables such as age, gender, marital status, country of birth, location (at the time of settlement) and migrating unit structure.

The second set of analyses models the probability of participation in a particular wave for all participants at Wave 1. This analysis informs the generation of 'longitudinal' survey weights. In this case, analysis is undertaken that compares the characteristics of all Wave 1 participants with non-participants in later waves. As comprehensive information was collected as part of the BNLA study at each wave, we can examine the role that many characteristics may have in explaining survey participation in later waves. The following factors have been tested to determine if they were significantly associated with later survey participation:

- Visa subclass
- Age
- Gender
- Residing in a capital city
- Migrating Unit size
- Marital status
- Pre-migration education level
- SEIFA and remoteness index
- Country of birth
- English language proficiency
- Employment
- Housing tenure
- Psychological distress and post-traumatic stress
- Whether waiting for family to migrate to Australia
- Number of times moved home (since arrival at Wave 1, or since last interview from Wave 2)
- Financial hardship and main source of income
- Physical health.

2. Calculation of survey weights

The non-response analysis found that participants' characteristics were significantly associated with differences in survey participation rates. To adjust for the different pattern in non-response, survey weights were calculated using the 'ipfweight' algorithm (also known as raking) in Stata.6 The 'ipfweight' procedure adjusts survey sample weights to achieve population totals. For the 'population' survey weights, this is the population of humanitarian migrants who were granted a permanent visa between May and December 2013. For the 'longitudinal' survey

6 This program was authored by Michael Bergmann. See fmwww.bc.edu/repec/bocode/i/ipfweight.html for further details. Accessed on 29/4/2014.

weights, this is the recruited Wave 1 sample of 2,399 participants comprising 1,509 Principal Applicants and 890 Secondary Applicants.

Also calculated as part of the 'longitudinal' survey weights is a 'balanced panel' survey weight. This weight involves analysis of the group who responded to all waves. An example, using the Wave 5 data, is the group of participants who were interviewed in Wave 1 and responded in each subsequent wave up to and including Wave 5.

3. Survey weights available in the BNLA dataset

The 2 types of survey weights calculated are made available in the BNLA dataset:

1. population survey weights for Waves 1, 2, 3, 4, 5 and 6 with separate weights calculated in each wave for Principal Applicants, Secondary Applicants and all participants
2. a set of longitudinal weights that adjust for attrition between the various waves. This includes the set of 'balanced panel' weights. As with population weights, these longitudinal weights are calculated separately for Principal Applicants, Secondary Applicants and all participants.

Appendix 1 summarises all survey weights that are available in the dataset and their variable naming convention.

When to use each survey weight

Data users need to carefully consider when and what weights to use. In using population weights, it is worth noting that the population of interest in the BNLA study – humanitarian migrant arrivals – is not static, and the composition of Australia's migration program changes over time. Therefore, the characteristics of humanitarian migrants arriving in Australia at other times may be different from those who were recruited at the time of Wave 1 in 2013. Data users need to make a decision on how important it is to weight back to the original study population (Table 1, presented earlier, described the characteristics of the eligible population at the time of recruitment).

Use of the population weights is most appropriate for analyses using only one wave of data when the focus is on humanitarian migrants who had been granted a permanent visa or arrived in Australia between May and December 2013 and were living in one of the 11 study sites. For Wave 6, and after 10 years, the changing composition of the migration program would be a more relevant consideration when deciding to use population weights.

Longitudinal weights are most suitable for analysis that makes use of data across multiple waves. As noted above, in longitudinal studies non-participation can occur during later waves of data collection through attrition by inability to make contact with participants, participants choosing to refuse or withdraw, or movement outside the scope of the study (e.g. participants could be travelling overseas during the fieldwork period). Attrition becomes a critical issue when the characteristics of those who do not participate across waves are different to those who continue to participate in the study.

Longitudinal weights account for these differences. Without use of the longitudinal weights or a balanced panel to adjust for the differential pattern in response for these characteristics, results could be biased. For example, as the study is retaining participants with higher levels of education, outcomes could be improving at a greater rate, in part, because of the loss of participants with lower levels of education who may have poorer outcomes, rather than the effect of real changes in outcomes over time.

Mode non-response

In terms of survey design, the mode of data collection can influence the probability of response. This may be due to preference or because certain modes of data collection can be more or less accessible to some populations. In general, studies have found higher response rates in face-to-face interviews compared with other modes of data collection, although the biases introduced by different modes of data collection are less clear (e.g. Ekholm, Gundgaard, Rasmussen, & Hansen, 2010; Klausch, Hox, & Schouten, 2016).

As per the study design of BNLA, data were collected face-to-face in Waves 1, 3 and 5, and over the telephone in Waves 2 and 4. In Wave 6, respondents were offered a web interview initially, and a home visit if they preferred. It is important to note that there were a number of interviews in the BNLA conducted over the telephone in face-to-face waves: n = 55 in Wave 3, n = 93 in Wave 5 and n = 68 for Wave 6. This was due to respondents having moved to a different site or requesting a telephone interview due to time commitments. In Wave 2 (one of the telephone interview waves), 12 participants completed a face-to-face interview – this was either requested by the

participant or offered by the interviewer to encourage participation. The analysis presented here is based on the interview mode by design (face-to-face in Waves 1, 3 and 5 and telephone in Waves 2 and 4).

This section investigates whether participants who responded to telephone survey waves only after Wave 1 (Waves 2 and/or 4) differ from those who responded to face-to-face only or to both telephone and face-to-face waves of data collection. The factors examined are demographic characteristics measured before migration and at the time of the last completed interview. Wave 6 was not included in the analysis of mode non-response for a number of reasons. First, there was a 5-year gap between Wave 5 and Wave 6, which is likely to have impacted non-response regardless of the mode of data collection offered to participants. Second, between Waves 1 and 5, 51 cases completed face-to-face waves only after Wave 1, while 145 cases completed telephone waves only after Wave 1. These samples would be further reduced if Wave 6 data were included. Finally, Wave 6 did not align with the face-to-face – telephone – face-to-face pattern, which is the focus of this analysis of non-response by mode.

Non-response by mode

Table 4 provides information on the sample approached, those contacted, and those interviewed at each wave of data collection after Wave 1. The proportion of the sample approached and successfully contacted was higher at Wave 2 (88%) and remained stable at around 84%–85% for Waves 2–5. In Wave 6 it dropped to 74%. The proportion of respondents who were contacted but did not agree to participate was around 5%–6% in most waves, except for Wave 4, where the proportion was lower at 3%, and Wave 6 where it was 12%.

Table 4: Sample eligible, contacted and interviewed at each wave of data collection

	Wave 2 Telephone		Wave 3 Face-to-face		Wave 4 Telephone		Wave 5 Face-to-face		Wave 6 Web interview	
	n	%	*n*	%	*n*	%	*n*	%	*n*	%
Approached for contact (% of Wave 1 sample)	2,399	100.0	2,384	99.4	2,349	97.9	2,333	97.2	2,256	94.0
Contacted (% of approached for contact)	2,114	88.1	2,008	84.2	1,989	84.7	1,992	85.4	1,665	73.8
Interviewed (% of eligible sample)	2,009	83.7	1,894	79.4	1,929	82.1	1,881	80.6	1,223[a]	54.2
Non-response (% of contacted)	105	5.0	114	5.7	60	3.0	111	5.6	194	11.7

Notes: Eligible sample excludes participants who were reported as deceased or who withdrew in previous waves and, therefore, were not approached for contact (out of scope).
(a) Wave 6 interviewed number includes 1,188 fully and 35 partially completed interviews.
Source: BNLA contact data Waves 1–6

Table 5 provides further information on the number of respondents who completed interviews by mode of data collection. The majority of the BNLA sample (86%) completed a combination of face-to-face and telephone interviews, while a small proportion (2%) only participated in face-to-face waves of data collection. It is important to note that participation is conditional on successful contact; Table 5 does not account for differences in contact rates by mode of data collection.

Table 5: Number of respondents by mode of data collection after Wave 1

Interview mode	Participation, *n*	Participation %
Wave 1 only	141	5.9
Face-to-face waves only after Wave 1 (Waves 3 and/or 5)	51	2.1
Telephone waves only after Wave 1 (Waves 2 and/or 4)	145	6.0
Waves with either mode	2,062	86.0
Total	**2,399**	**100.0**

Notes: Either mode includes any combination of face-to-face and telephone interviews. Based on the mode of data collection by design. One respondent completed F2F only waves and Wave 6. No respondents completed telephone only waves and Wave 6. The Wave 6 responding sample completed a combination of modes in previous waves.
Source: BNLA Waves 1–6

Logistic regressions were conducted to identify associations between participants' characteristics and the probability of responding to telephone waves only versus face-to-face or both modes, after Wave 1. First bivariate associations were examined. Then, all relevant variables were included in the same multivariate model.

For this analysis, respondents were classified into 2 groups:

- participated in telephone waves only after Wave 1 (*n* = 145).
- participated in face-to-face or both modes of data collection (*n* = 2,254).

Cases that were out of scope at any wave after Wave 1 (*n* = 6 telephone-only sample; *n* = 18 either-mode sample) and cases with missing data in the relevant variables (*n* = 1 telephone-only sample; *n* = 47 either-mode sample) were excluded from the analysis (see Table 24 in Appendix 2 for sample characteristics). Both models adjusted for the clustered nature of the data (individuals within migrating units).

Factors associated with mode non-response

Results from the logistic regression models are presented in Table 6. The results are presented as an 'odds ratio' (OR). For the binary outcome, the 'odds' of having a particular outcome is a ratio of the probability of responding via telephone only after Wave 1 with the probability of this not being the case. The OR is a relative measure of risk that shows how much more likely it is that someone exposed to the factor under study will develop the outcome compared with someone not exposed. An OR of greater than 1 suggests that the outcome is more likely for those exposed to the factor than for those who were not. An OR of 1 suggests that there is no difference in the outcome between the 2 groups. An OR of less than 1 suggests the outcome is less likely for those exposed to the factor than for those who were not.

Bivariate models show that a number of socio-demographic characteristics were associated with the odds of participating in telephone waves only after Wave 1. Being older (OR 0.98), female (OR 0.72), from an offshore migration pathway[7] (OR 0.27), not having done paid work before migration (OR 0.58) and completing a Secondary Respondent[8] questionnaire[9] in the last interview (OR 0.53) were all associated with lower odds of responding to telephone waves only compared with those in the respective reference categories (and younger respondents in the case of age).

The odds of responding to telephone waves only were lower among those with poorer English skills pre-migration (versus those who could speak well or very well, OR 0.52), even where respondents had improved their English skills since arrival or since the last interview (OR 0.62). Partnered respondents were less likely to respond to telephone waves only compared with those without a partner (OR 0.50). In terms of respondents' country of birth, those born in Iran, Afghanistan, Africa and Other countries were at least twice as likely to respond to telephone waves only, compared with respondents born in Iraq or Syria. Lastly, respondents located in South Australia (OR 1.93) or Victoria (OR 2.06) in their last interview were more likely to respond to telephone waves only, compared with respondents located in New South Wales.[10]

The multivariate model, which incorporated all the variables examined in the bivariate model, found that several variables remained significantly associated with mode non-response. Older participants were less likely to respond to telephone waves only compared with younger participants (OR 0.97), as were those who arrived via an onshore migration pathway versus those who obtained their visa offshore (OR 0.36). Not having done paid work before migration (OR 0.62), completing a Secondary Respondent questionnaire in their last interview (OR 0.57) and having a partner (OR 0.53) were also associated with lower odds of responding to telephone waves only.

English proficiency and country of birth were no longer statistically significant in the multivariate model. State remained significant but the only differences were observed between respondents located in Victoria (OR 1.89) and those living in New South Wales.

7 See Box 1 for more information on migration pathways and visa types.

8 A secondary respondent is a BNLA study participant who is a member of a household where another person is the principal respondent for the same BNLA wave.

9 The type of survey completed was included in the regression models to control for length of survey questionnaire. Principal Applicants completed a longer survey questionnaire as they answered additional questions about their family and housing that is only collected once for each household (e.g. household demographics). The BNLA data users guide has further information on the average length of Principal Applicant and Secondary Applicant surveys for each wave.

10 Note that the distribution of humanitarian migrants from different countries of birth differs by state. For example, over 70% of those from Iraq/Syria were located in NSW at Wave 1, compared with 8.5% of respondents from Afghanistan.

It is important to note that, by definition, respondents who only participated in Wave 1 could not be classified as the 'telephone waves' group. To investigate the presence of sample selectivity effects, the multivariate model was also run excluding these participants. The results were largely similar; therefore, the model using the full sample was presented. The only difference was that in the model using the restricted sample, those who improved their English skills since the last interview were less likely to respond to telephone waves only (see Table 25 in Appendix 2 for details).

Table 6: Factors associated with responding to telephone only versus other modes of data collection (odds ratios)

Variables	Bivariate models[a] Odds ratio [95% CI]		Multivariate model (*n* = 2,339) Odds ratio [95% CI]	
Age (cont.)	0.98***	[0.96, 0.99]	0.97**	[0.96, 0.99]
Gender				
Male (ref.)				
Female	0.72*	[0.53, 0.99]	1.25	[0.89, 1.76]
Migration pathway				
Onshore (ref.)				
Offshore	0.27***	[0.18, 0.41]	0.36***	[0.22, 0.60]
Paid work before migration				
Yes (ref.)				
No	0.58**	[0.41, 0.83]	0.61*	[0.39, 0.96]
Pre-migration education				
Never attended school (ref.)				
Less than 9 years school	0.99	[0.57, 1.71]	0.8	[0.44, 1.44]
10 or more years school	1.30	[0.76, 2.21]	0.79	[0.41, 1.55]
Post-school qualification	1.56	[0.84, 2.92]	0.85	[0.37, 1.94]
Survey type (last interview)				
Principal applicant (ref.)				
Secondary applicant	0.53**	[0.37, 0.78]	0.57*	[0.36, 0.89]
Remoteness (last interview)				
Capital city (ref.)				
Regional/remote	1.38	[0.66, 2.90]	0.92	[0.39, 2.18]
English pre-migration (speaks English; self-assessed)				
Well/very well (ref.)				
Not well	0.66	[0.42, 1.04]	0.89	[0.54, 1.48]
Not at all	0.52**	[0.32, 0.83]	0.74	[0.40, 1.36]
Refused	1.27	[0.47, 3.45]	2.31	[0.80, 6.66]
English improved since arrival/last interview				
No (ref.)				
Yes	0.62*	[0.42, 0.91]	0.71	[0.46, 1.10]
Partnered (last interview)				
No (ref.)				
Yes	0.50***	[0.35, 0.72]	0.53**	[0.36, 0.80]
Country of birth				
Iraq/Syria (ref.)				
Iran	3.72***	[2.03, 6.83]	1.72	[0.87, 3.39]
Afghanistan	2.02*	[1.15, 3.53]	0.99	[0.47, 2.05]
Africa	2.53*	[1.12, 5.71]	1.46	[0.61, 3.49]
Other	2.03*	[1.11, 3.70]	0.88	[0.44, 1.74]
State (last interview)				
NSW (ref.)				

Variables	Bivariate models[a] Odds ratio [95% CI]		Multivariate model (*n* = 2,339) Odds ratio [95% CI]	
Qld	1.20	[0.57, 2.53]	0.93	[0.41, 2.16]
SA	1.93*	[1.02, 3.68]	1.97	[0.93, 4.17]
NT/ACT/Tas	0.55	[0.13, 2.41]	0.49	[0.10, 2.33]
Vic	2.06**	[1.27, 3.34]	1.89*	[1.17, 3.07]
WA	0.71	[0.21, 2.37]	0.49	[0.14, 1.67]
Constant	**-**		**0.67**	**[0.14, 3.07]**

Notes: Telephone waves of data collection include participants who responded to Wave 2 and/or Wave 4 only (after Wave 1). Other modes of data collection include participants who responded to any other combination of face-to-face and/or telephone waves. CI = Confidence interval. Ref.= reference category. PA = Principal Applicant; SA = Secondary Applicant. (a) *n* ranges from 2,352 and 2,375 due to missing data. Survey type was based on the questionnaire that was completed at each wave and did not always reflect the applicant status in the visa application. Iraq and Syria were grouped due to geographic proximity and cultural similarities (Iraq *n* = 925, Syria *n* = 30 in analytical sample). Whether working in last interview was included in preliminary models but the direction of the odds ratio was opposite in bivariate and multivariate models; therefore, it was excluded from the analysis. ***$p < .001$, **$p < .01$ and *$p < .05$.
Source: BNLA Waves 1–5

Mode non-response summary

The BNLA study design involved 3 waves of face-to-face data collection (Waves 1, 3 and 5) and 2 waves of telephone interviews (Waves 2 and 4), followed by one wave of web interview and face-to-face data collection (Wave 6). This section examined non-response by interview mode to understand whether socio-demographic characteristics – pre-migration and at the last completed interview – were associated with participation at telephone waves only versus face-to-face or both modes of data collection, between Wave 1 and Wave 5.

We found that the rates of non-response were low (under 6%) once successful contact was established, and slightly lower in waves where data were collected over the phone. The majority of respondents completed face-to-face and telephone interviews between Wave 1 and Wave 5 (94%), with just 145 participants responding to telephone waves only and 51 participating in face-to-face interviews only.

The analysis shows that respondents who participated in telephone interviews only after Wave 1 were different from those who responded to face-to-face or both modes of data collection on a number of characteristics. Participants who had done paid work before migration and arrived via an onshore pathway were more likely to respond to telephone waves. A limitation of this analysis is that there was no distinction between non-contact and non-response. However, as the initial method of contact was similar in telephone and face-to-face waves of data collection this may not play a major role. A further limitation is that telephone interviews were, by design, significantly shorter than face-to-face interviews, which could influence willingness to participate. Nevertheless, it is important to consider the mode of data collection for this population, and the potential bias in data analysis from the differential non-response by participant groups.

Item non-response

Item non-response occurs when participants who were successfully contacted and agreed to complete an interview do not give valid answers to a specific question to which they were eligible to respond. The BNLA survey instrument did not allow participants to move on to the next question without providing an answer (if eligible to respond) but most items gave participants the opportunity to respond 'does not apply', 'I don't know', or 'prefer not to say'[11] if they wished. Only open-ended questions could be left blank, and these responses were later coded as 'not stated'.

Item non-response is an important consideration in survey research as it can introduce bias to estimates. Whether item non-response introduces bias and what type of bias it introduces will depend on the reasons for item non-response. Item non-response occurs mainly where the content is too sensitive for participants to share or when participants do not understand the question and therefore are not sure how to respond.

11 Life satisfaction and SF-8 (general health) questions did not provide any of these options.

Sensitive or difficult questions are likely to generate higher levels of item non-response, and this can be different by subgroup. For example, research focused on income questions has shown that people in the lowest and highest ends of income distribution are more reluctant to report their income (Riphahn & Serfling, 2002). Wilks and colleagues, in turn, found high levels of non-response for questions on sexual partners and income (Wilks et al., 2007). However, little research has investigated item non-response in other survey questions. It is important for data users to be aware of the different types of non-response and how non-response is distributed across respondent types, as this is a possible source of bias.

In this section, we examine the types of item non-response in BNLA and the frequency of these by respondent type. The 3 types of item non-response are: 'does not apply', 'I don't know', and 'prefer not to say'.[12] The respondent types are: Principal Respondents[13] (PRs), Secondary Respondent adults and Secondary Respondent adolescents (SRs),[14] noting that in Wave 6 all respondents were offered the same questionnaire (so results are presented by mode instead). The presented analysis provides some useful insights regarding item non-response and how different groups are responding to questions in BNLA. Data users will need to consider how to deal with these different types of item non-response in their analysis, depending on factors such as the type of analysis and their research questions.

Several areas covered by the survey instrument are analysed here, including the following modules:

- Employment and income
- Immigration experience
- Health
- Self-sufficiency
- Community support
- Life satisfaction
- Childcare and gender roles.

The items to be analysed were selected based on feedback from the interviewers on items that were considered difficult or sensitive by respondents. Most items were analysed at Wave 1 – where we have the largest sample of respondents – but new items were analysed at the first wave they were introduced.

Participants can have different experiences based on their migration pathway (onshore or offshore). This can influence the way they understand and respond to certain questions, or which questions are more or less relevant to them.

Table 7 shows the percentage of respondents who arrived via each migration pathway, by respondent type.[15] Although the vast majority of the BNLA sample arrived via an offshore pathway, which was part of the study design, a higher proportion of Principal Applicants arrived via an onshore pathway. As respondents who arrived via an onshore pathway had generally spent longer time in Australia before the first interview, some of the questions may be less relevant to their personal experiences compared to those who had been in Australia for only 3–6 months before the first interview.

Table 7: Migration pathway of BNLA respondents, by respondent type

	Principal applicant, %	Secondary applicant adults, %	Secondary applicant: adolescents, %	Total, %
Onshore	22.1	5.7	2.2	15.8
Offshore	77.9	94.3	97.8	84.2
Total, *n*	**1,509.0**	**755.0**	**135.0**	**2,399.0**

Source: BNLA Wave 1

Another characteristic of respondents that can be relevant for item non-response is level of education. Level of education can be related to respondents' capacity to understand questions and therefore their ability to provide answers. In the BNLA sample, a lower proportion of adolescents had never attended school pre-arrival (8%),

12 Note that some items only provided two possible types of non-responses.

13 A principal respondent is a BNLA study participant who is the lead participant for the household.

14 Although the distinction between respondent types is defined solely by the person's status on the visa application, it is also associated with certain characteristics, such as gender, age and language proficiency.

15 Note that the distribution of onshore and offshore arrivals varies by other characteristics such as country of birth, family structure and gender. For example, 57% of onshore participants were a single person in the visa application, and over 70% were male.

compared with PAs (18%) and SA adults (14%). On the other hand, a higher percentage of PAs completed post-school qualifications before migration, compared with SAs.

Although adolescents have not completed more years of education than PAs and SA adults because of their younger age, adolescents participate in the Australian educational system on arrival, which facilitates their development of English skills and understanding of Australian society. This is something to keep in mind when analysing non-response in the BNLA.

Item non-response by respondent type – Waves 1–5

Most items in the BNLA had low levels of non-response. The items with the highest frequency of non-response were items related to trust in people or institutions in Australia (Wave 1, 13%–33%), barriers to accessing government services (Wave 1, 10%–15%) and potentially sensitive questions, such as personally experiencing traumatic events (Wave 3, 24%), which was collected as part of the Immigration Experience module.

Results for the analysis of item non-response are presented in the tables below. Items are discussed by module.

In relation to the Immigration Experience module, Table 8 shows that the question on traumatic events experienced or witnessed by respondents (collected in Wave 3) had high levels of non-response. In particular, many respondents answered 'does not apply' to this question. It is important to note that the questions on traumatic events consisted of a list of potentially traumatic events and respondents were asked whether they had experienced or witnessed any of these events or not (answering 'yes' or 'no' to each event). Respondents also had the option of answering 'prefer not to say', 'I don't know' or 'does not apply' once for the overall question (not for each item). The data in Table 8 suggest that many respondents chose to answer 'does not apply' instead of answering 'no' for each event that they may have not experienced. Another 8% of respondents selected 'prefer not to say' for this question. A lower percentage of PRs provided various non-responses to this question, while 38% of adolescents chose a non-response option (although the sample size is small, n = 27. Results are not shown in Table 8).

When looking at the question on traumatic events experienced by self or family, the percentages of non-response are much lower and are similar across respondent types. This could be due to the difference in the question wording (experiences by self or family). However, there are 2 other key differences between questions. The question in Wave 1 provided an option 'none', which was not present in the Wave 3 question. In addition, the list of traumatic events was different in both waves, as the Wave 3 question included personally experiencing or witnessing potentially traumatic events, including murder and kidnapping, which were not included in the Wave 1 list of items.

Table 8: Non-response for items in Immigration Experience module Wave 1 and Wave 3

Items	Non-response, %				Eligible sample, *N*
	Prefer not to say	I don't know	Does not apply	Total	
Traumatic events experienced/witnessed (Wave 3)					
Principal applicant	7.0	3.0	10.4	20.5	1,181
Secondary applicant: adults & adolescents	8.7	5.6	14.9	29.2	713
Total	**7.7**	**4.0**	**12.1**	**23.8**	**1,894**
Traumatic events experienced by self or family (Wave 1)					
Principal applicant	2.3	1.2	0.7	4.2	1,509
Secondary applicant: adults & adolescents	2.5	3.0	1.1	6.6	890
Total	**2.3**	**1.9**	**0.9**	**5.1**	**2,399**

Notes: Secondary applicants include responses by adults and adolescents due to a small number of adolescents (cell counts less or equal 10) who reported 'prefer not to say', 'I don't know', or 'does not apply'.
Source: BNLA Waves 1 and 3

Items in the health module had low levels of non-response (less than 6%). However, given that these items could potentially be sensitive for some respondents, Wave 1 health items with 50 or more non-responses were

examined. Table 9 shows that the largest number of non-responses for the PTSD (post-traumatic stress disorder) scale and the question on sources of stress was 'prefer not to say', followed by 'I don't know'.

Table 9: Non-response for items in Health module at Wave 1

Items	Non-response, %				Eligible sample, *N*
	Prefer not to say	I don't know	Does not apply	Total	
PTSD (Wave 1)					
Principal applicant	2.2	1.5	0.7	4.3	1,509
Secondary applicant: adults & adolescents	2.1	2.1	1.0	5.3	890
Total	**2.2**	**1.7**	**0.8**	**4.7**	**2,399**
Sources of stress (Wave 1)					
Principal applicant	1.0	0.9	0.7	3.0	1,509
Secondary applicant: adults & adolescents	2.0	2.1	1.0	5.2	890
Total	**1.7**	**1.3**	**0.8**	**3.8**	**2,399**

Notes: Secondary applicants include responses by adults and adolescents due to a small number of adolescents (cell counts less or equal10) who reported 'prefer not to say', 'I don't know', or 'does not apply'.
Source: BNLA Waves 1

At Wave 1, items in the Employment and Income module also had low levels of non-response compared with the question on traumatic events but higher non-response than the items in the health module. The highest frequency of non-response in this module was for the question on the amount of money respondents received from government payments (Table 10). These questions can be sensitive for participants and difficult to respond to. This is reflected in the large number of responses 'prefer not to say' and 'I don't know' shown in Table 10, with 7% of respondents not stating whether they received government payments (most responding 'I don't know').

Table 10: Non-response for items in the Employment and Income module at Wave 1

Items	Non-response, %				Eligible sample, *N*
	Prefer not to say	I don't know	Does not apply	Total	
Whether receives government payments					
Principal applicant	0.7	5.6	0.5	6.7	1,509
Secondary applicant: adults & adolescents	1.6	4.9	0.4	7.0	755
Total	**1.0**	**5.3**	**0.5**	**6.8**	**2,399**
Amount of government payments					
Principal applicant	6.1	4.0	0.6	10.6	1260
Secondary applicant: adults & adolescents	7.1	7.2	1.6	16.0	678
Total	**6.5**	**5.2**	**1.0**	**12.7**	**2,048**

Notes: Secondary applicants include responses by adults and adolescents due to a small number of adolescents (cell counts less or equal 10) who reported 'prefer not to say' or 'does not apply'. Among adolescents around 12% did not know whether they received government payments and around 22% did not know the amount.
Source: BNLA Wave 1.

Item non-response was relatively high for items related to barriers in accessing government services, in the Self-Sufficiency module (between 10% and 15%, see Table 11). Respondents were asked to indicate if any of these items were a barrier to getting help from government services, and could select 'prefer not to say' or 'I don't know' separately for each item. Qualitative feedback from the interviewers indicated that respondents found this question difficult to answer, which is reflected in the high proportions of 'I don't know' for each item. A much smaller number of respondents responded 'prefer not to say' across these items with a higher proportion of adolescents responding 'I don't know' in these questions. It is important to note that the sequencing of the

questionnaire did not filter out those who had not used or tried to use government services (introduced in Wave 5), which could partly explain the high frequency of non-responses.

Table 11: Non-response for items on barriers to using government services (Self-Sufficiency module) at Wave 1

Barriers to using government services	Non-response, %			Eligible sample, *N*
	Prefer not to say	I don't know	Total	
Worried about privacy				
Principal applicant	3.2	10.6	13.9	1,509
Secondary applicant: adults	3.2	11.4	14.6	755
Secondary applicant: adolescents	3.7#	17.8	21.5	135
Total	**3.3**	**11.3**	**14.5**	**2,399**
Didn't know where				
Principal applicant	3.4	8.5	11.9	1,509
Secondary applicant: adults	2.6	12.1	14.7	755
Secondary applicant: adolescents	4.4#	17.0	21.5	135
Total	**3.2**	**10.1**	**13.3**	**2,399**
Asked for help but didn't get it				
Principal applicant	2.8	8.5	11.3	1,509
Secondary applicant: adults	2.3	10.3	12.6	755
Secondary applicant: adolescents	5.2#	16.3	21.5	135
Total	**2.8**	**9.5**	**12.3**	**2,399**
Long waiting time				
Principal applicant	2.5	7.2	9.6	1,509
Secondary applicant: adults	1.7	8.7	10.5	755
Secondary applicant: adolescents	2.2#	17.0	19.3	135
Total	**2.2**	**8.2**	**10.4**	**2,399**
Transport				
Principal applicant	2.4	6.6	8.9	1,509
Secondary applicant: adults	2.0	7.7	9.7	755
Secondary applicant: adolescents	3.0#	13.3	16.3	135
Total	**2.3**	**7.3**	**9.6**	**2,399**
Language				
Principal applicant	2.8	8.5	11.3	1,509
Secondary applicant: adults	2.3	10.3	12.6	755
Secondary applicant: adolescents	5.2#	16.3	21.5	135
Total	**2.8**	**9.5**	**12.3**	**2,399**
Haven't used government services				
Principal applicant	3.2	10.3	13.6	1,509
Secondary applicant: adults	2.4	11.9	14.3	755
Secondary applicant: adolescents	4.4#	19.3	23.7	135
Total	**3.0**	**11.3**	**14.4**	**2,399**

Notes: 'Does not apply' option was not available for these survey items. # cell counts less than or equal to 10.
Source: BNLA Wave 1

In the Community Support module, respondents were asked whether they felt they had been given support/comfort from different communities in Australia, including their own national or ethnic community, their own religious community (if applicable) and other community groups (Table 12). Non-response was relatively low for these items, with 'support from other community groups' having the highest non-response overall (8%). The

high frequency of 'I don't know' suggests that many respondents may not have understood the question, and particularly what was meant by 'other community groups'. Interviewers also reported this in qualitative feedback.

Table 12: Non-response for items on community support (Community Support module) at Wave 1

Community support	Non-response, %			Eligible sample, *N*
	Prefer not to say	I don't know	Total	
Support from other community groups				
Principal applicant	1.6	4.5	6.1	1,509
Secondary applicant: adults	2.0	7.7	9.7	754
Secondary applicant: adolescents	2.2#	13.3	15.6	135
Total	**1.8**	**6.0**	**7.8**	**2,398**
Support from your national or ethnic community				
Principal applicant	1.5	2.8	4.3	1,509
Secondary applicant: adults	2.0	4.8	6.8	754
Secondary applicant: adolescents	1.5#	8.9	10.4	135
Total	**1.7**	**3.8**	**5.4**	**2,398**
Support from your religious community				
Principal applicant	1.3	2.9	4.2	1,465
Secondary applicant: adults	1.9	5.2	7.0	754
Secondary applicant: adolescents	2.2#	8.1	10.4	135
Total	**1.5**	**3.9**	**5.4**	**2,354**

Notes: 'Does not apply' option was not available for these survey items. There was one case with missing data in each of the items above. This case has been excluded from the analysis. The item on support from religious groups was only asked of those who stated having a religion. # cell counts less than or equal to 10.
Source: BNLA Wave 1.

Questions on trust in the Life Satisfaction module had high levels of non-response. The non-response per item ranged from 13% for trust in the police to 33% for trust in the media. Results in Table 13 suggest that respondents did not understand how to respond to these questions; there are large numbers of 'I don't know' and small numbers of 'prefer not to say'. As the majority of respondents were relatively new to Australia, it is not surprising that these questions may have been difficult to understand, particularly the question on 'media' – given the possible language barriers. Notably, adolescents show the lowest percentage of non-response across these items.

Table 13: Non-response for items on trust (Life Satisfaction module) at Wave 1

Items	Non-response, %			Eligible sample, *N*
	Prefer not to say	I don't know	Total	
Trust – media				
Principal applicant	1.6	32.9	34.5	1,509
Secondary applicant: adults	1.5	31.1	32.6	755
Secondary applicant: adolescents	2.2#	20.0	22.2	135
Total	**1.6**	**31.6**	**33.2**	**2,399**
Trust – people at work or school				
Principal applicant	1.3	20.3	21.5	1,509
Secondary applicant: adults	1.7	22.1	23.8	755
Secondary applicant: adolescents	1.5#	8.1	9.6	135
Total	**1.4**	**20.2**	**21.6**	**2,399**
Trust – people in neighbourhood				
Principal applicant	0.9	20.5	21.4	1,509

Items	Non-response, %			Eligible sample, *N*
	Prefer not to say	I don't know	Total	
Secondary applicant: adults	1.3	19.7	21.1	755
Secondary applicant: adolescents	0.7#	13.3	14.1	135
Total	**1.0**	**19.9**	**20.9**	**2,399**
Trust – people in wider Australian community				
Principal applicant	1.2	18.1	19.3	1,509
Secondary applicant: adults	1.3	20.8	22.1	755
Secondary applicant: adolescents	1.5#	12.6	14.1	135
Total	**1.3**	**18.6**	**19.9**	**2,399**
Trust – police				
Principal applicant	1.2	11.3	12.5	1,509
Secondary applicant: adults	0.8	12.6	13.4	755
Secondary applicant: adolescents	1.5#	6.7	8.1	135
Total	**1.1**	**11.4**	**12.5**	**2,399**

Notes: 'Does not apply' option was not available for these survey items. # cell counts less than or equal to 10.
Source: BNLA Wave 1

The Wave 3 interview contained questions on respondents' relationship with their partner in the Life Satisfaction module. One of these questions – analysed here – presented 3 items and asked respondents to report how often each of these items applied to their relationship with their partner (Table 14). The percentage of non-response was relatively low compared with most other modules in the questionnaire, and the non-response patterns were similar between Principal and Secondary adult respondents. Notably, there was, overall, a similar number of responses for 'prefer not to say' and 'I don't know' for these items (within 1 percentage point), which was not observed in the modules examined above.

Table 14: Non-response for items on relationship with partner (Life Satisfaction module) at Wave 3

Items	Non-response, %			Eligible sample, *N*
	Prefer not to say	I don't know	Total	
Considering divorce or separation				
Principal applicant	2.7	3.8	6.5	734
Secondary applicant: adults	2.6	1.6	4.2	395
Total	**5.3**	**5.4**	**10.8**	**1,129**
Confides in partner				
Principal applicant	2.5	3.1	5.6	733
Secondary applicant: adults	2.3	1.9	4.2	395
Total	**4.8**	**5.0**	**9.8**	**1,128**
Things going well				
Principal applicant	2.5	2.9	5.3	734
Secondary applicant: adults	2.0	1.2	3.3	395
Total	**4.5**	**4.1**	**8.6**	**1,129**

Notes: 'Does not apply' option was not available for these survey items. There were 23 cases incorrectly coded as -4 'not specified' in all 3 items. These cases should have been coded -8 'missing' as there were no data recorded. One additional case was missing in the item 'confides in partner'. These cases have been excluded from the analysis. Partnership questions were not asked of adolescents.
Source: BNLA Wave 3, partnered adult applicant

In Wave 5, BNLA respondents were asked about their attitudes towards gender roles, with response options ranging from 'strongly disagree' to 'strongly agree'. Between 1% and 2% responded 'prefer not to say' across these items, whereas 4% to 6% responded 'I don't know' (Table 15). The item related to husband and wife sharing

the housework and childcare had slightly lower non-response compared with the other 3 items. The higher proportion of responses 'I don't know' compared to 'prefer not to say' indicates that this question may have been difficult for respondents to understand. It is possible that, given the different cultural backgrounds of the BNLA sample, some respondents were not familiar with these concepts, common in Western cultures. This response pattern was similar for PAs and SAs, despite the difference in distribution by gender across respondent types; two-thirds of PAs (66%) are men while the majority of SAs are women (72%).

Table 15: Non-response for items on gender roles (Childcare and Gender Roles module) at Wave 5

Items	Non-response, %			Eligible sample, *N*
	Prefer not to say	I don't know	Total	
Husband breadwinner, wife home and children				
Principal applicant	1.6	5.4	7.0	1,229
Secondary applicant: adults	1.5	4.8	6.3	652
Total	**1.6**	**5.2**	**6.8**	**1,881**
Husband wife share housework and childcare				
Principal applicant	1.4	4.2	5.6	1,229
Secondary applicant: adults	1.1	3.8	4.9	652
Total	**1.3**	**4.1**	**5.4**	**1,881**
As many women as men in important positions				
Principal applicant	1.5	5.5	6.9	1,229
Secondary applicant: adults	1.4	5.8	7.2	652
Total	**1.4**	**5.6**	**7.0**	**1,881**
Satisfactory childcare so women can take jobs				
Principal applicant	1.5	5.1	6.6	1,229
Secondary applicant: adults	1.5	5.4	6.9	652
Total	**1.5**	**5.2**	**6.7**	**1,881**

Notes: 'Does not apply' option was not available for these survey items.
Source: BNLA Wave 5

All of the items analysed here for non-response for Wave 1 to Wave 5 were also examined by country of birth. Statistically significant differences in overall non-response by country of birth were observed for several items but no systematic pattern of non-response was identified (data not shown).

For details on the total number of non-responses for all items examined see Table 26 in Appendix 3.

Item non-response by mode – Wave 6

In general, relatively high non-response was observed for Wave 6 compared to earlier waves. This can be attributed to many factors, including the introduction of the online form and, with increased digital threats, respondents being cautious about giving sensitive and personal information to others.

Items previously identified as high non-response (see the section Item Non-Response by Respondent Type) have been analysed again for Wave 6, where applicable. In this analysis, we explore the impacts of non-response by mode. Results for the analysis of item non-response are presented in the tables below.

Relatively high non-response was observed across the Health module, and respondents who completed the survey online had a higher non-response than those completing face-to-face. The items explored within the Health module are the PTSD scales and sources of stress.

In past waves, respondents could select a negative value (-1 'does not apply', -2 'don't know', -3 'prefer not to say') for the full PTSD scale but not for individual items. For Wave 6, a respondent could select a negative value for each individual item. To manage the change in data collection, we introduced the -14 'could not be derived' category for the PTSD derive. For details on the method used for Wave 6, refer to the Data Users Guide section – Treatment of Negative Codes in PTSD-8 Data Items for Wave 6 (page 33).

Table 16: Non-response for items in Health module by mode at Wave 6

Items	Non-response, % Could not be derived	Eligible sample, *N*
PTSD – in the past week		
Online	19.3	637
Face-to-face	11.2	518
Total	**15.7**	**1,155**
PTSD – since the event (new Wave 6 item)		
Online	17.9	637
Face-to-face	10.6	518
Total	**14.6**	**1,155**

Source: BNLA Wave 6

Relatively high non-response is observed across all sources of stress items. There was higher non-response among those completing online (around 20%) compared to face-to-face (around 9%).

Table 17: Non-response for items in the Health module by mode at Wave 6

Sources of stress	Non-response, %				Eligible sample, *N*
	Prefer not to say	I don't know	Does not apply	Total	
Sources of stress – all other items[a]					
Online	9.5	5.0	4.2	18.8	618
Face-to-face	3.1	4.4	1.7#	9.3	518
Total	**6.6**	**4.8**	**3.1**	**14.4**	**1136**
Sources of stress – conflict with children					
Online	10.9	5.3	4.0	20.2	376
Face-to-face	2.7#	4.8	2.4#	9.9	372
Total	**6.8**	**5.1**	**3.2**	**15.1**	**748**

Notes: (a) All other items include work situation, house situation, financial situation, school/study, caring for family/your family's health, you or someone in the family living with you suffered a serious illness, injury or assault, some in the family not living with you suffered a serious illness, injury or assault, family's safety (including family members in your homeland or elsewhere), conflict tension with spouse/partner, conflict/tension with friends or neighbours, loneliness, COVID-19 pandemic, language barriers, discrimination, getting used to life in Australia, you or someone in the family had an alcohol or drug problem, you or someone in the family had problems with the police or a court appearance, death of a close relative, death or other relative or close friend, other or nothing in particular.
cell counts less than or equal to 10
Source: BNLA Wave 6

One of the highest frequencies of non-response in the Employment and Income module was for the question on the amount of money respondents received from government payments (Table 18). These questions can be sensitive for participants and difficult to respond to. The biggest contributors were the 'prefer not to say' and 'don't know' categories across both modes. Nearly half of respondents (57% online and 42% face-to-face) did not state the amount of government payments received.

Table 18: Non-response for items in the Employment and Income module by mode at Wave 6

Items	Non-response, %				Eligible sample, *N*
	Prefer not to say	I don't know	Does not apply	Total	
Amount of government payments					
Online	33.9	21.0	1.7#	56.6	286
Face-to-face	25.7	15.4	0.8#	41.9	382
Total	**29.2**	**17.8**	**1.2#**	**48.2**	**668**

Note: # cell counts less than or equal to 10

Source: BNLA Wave 6

Item non-response was lower for items related to barriers in accessing government services in the self-sufficiency module (between 4% and 12%, see Table 19) relative to previous modules. Across all items, non-response for online was higher than face-to-face.

Table 19: Non-response for items on barriers to using government services (Self-sufficiency module) by mode at Wave 6

Barriers to using government services	Non-response, %				Eligible sample, *N*
	Prefer not to say	I don't know	Does not apply	Total	
Worried about privacy					
Online	3.7	7.9	1.3#	12.9	380
Face-to-face	2.7	4.9	0.0	7.6	409
Total	**3.2**	**6.3**	**0.6#**	**10.1**	**789**
Didn't know where					
Online	3.9	8.9	1.8#	14.7	380
Face-to-face	2.9	4.4	1.2#	8.6	409
Total	**3.4**	**6.6**	**1.5**	**11.5**	**789**
Asked for help but didn't get it					
Online	4.7	6.6	1.6#	12.9	380
Face-to-face	2.9	2.9	0.2#	6.1	409
Total	**3.8**	**4.7**	**0.9#**	**9.4**	**789**
Long waiting time					
Online	2.6	5.0	0.5#	8.2	380
Face-to-face	2.2#	2.2#	0.0	4.4	409
Total	**2.4**	**3.5**	**0.3#**	**6.2**	**789**
Transport					
Online	1.6#	2.9	1.1#	5.5	380
Face-to-face	2.0#	1.5#	1.0#	4.4	409
Total	**1.8**	**2.2**	**1.0#**	**4.9**	**789**
Language					
Online	1.6#	2.6	0.5#	4.7	380
Face-to-face	1.2#	1.2#	1.0#	3.4	409
Total	**1.4**	**1.9**	**0.8#**	**4.1**	**789**
Used government services					
Online	6.5	5.2	0.8#	12.5	615
Face-to-face	1.2#	2.9	0.6#	4.6	518
Total	**4.1**	**4.1**	**0.7#**	**8.9**	**1,133**

Note: # cell counts less than or equal to 10
Source: BNLA Wave 6

Non-response was relatively high for community support items, with 'support from other community groups' having the highest overall non-response (13%). Across all of the items, the online mode had a higher non-response than face-to-face.

Table 20: Non-response for items on community support (Community Support module) by mode at Wave 6

Barriers to using government services	Non-response, %				Eligible sample, *N*
	Prefer not to say	I don't know	Does not apply	Total	
Support from other community groups					
Online	6.2	6.5	1.8	14.5	613
Face-to-face	2.7	6.2	1.5#	10.4	518
Total	**4.6**	**6.4**	**1.7**	**12.6**	**1,131**
Support from your ethnic community					
Online	6.0	6.4	2.0	14.4	613
Face-to-face	2.3	5.4	1.2#	8.9	518
Total	**4.3**	**5.9**	**1.6**	**11.8**	**1,131**
Support from your religious community					
Online	6.2	4.7	2.1	13.1	613
Face-to-face	2.1	4.2	1.4#	7.7	518
Total	**4.3**	**4.5**	**1.8**	**10.6**	**1,131**

Note: # cell counts less than or equal to 10
Source: BNLA Wave 6

High levels of non-response were observed across the trust items, with non-response ranging from 11% for trust in the police to 22% for trust in the media. Across all items, there was higher non-response with online compared to face-to-face.

Table 21: Non-response for items on trust (Life Satisfaction module) by mode at Wave 6

Trust	Non-response, %				Eligible sample, *N*
	Prefer not to say	I don't know	Does not apply	Total	
Trust – media					
Online	7.9	12.0	2.6	22.6	607
Face-to-face	2.3	14.3	4.2	20.8	518
Total	**5.3**	**13.1**	**3.4**	**21.8**	**1,125**
Trust – people in neighbourhood					
Online	7.9	10.9	1.5#	20.3	607
Face-to-face	1.7#	9.3	0.6#	11.6	518
Total	**5.1**	**10.1**	**1.1**	**16.3**	**1,125**
Trust – people in wider Australian Community					
Online	7.7	10.9	1.6#	20.3	607
Face-to-face	2.1	10.4	0.8#	13.3	518
Total	**5.2**	**10.7**	**1.2**	**17.1**	**1,125**
Trust – police					
Online	7.9	5.6	1.2#	14.7	607
Face-to-face	1.9#	6.6	0.6#	9.1	518
Total	**5.2**	**6.0**	**0.9#**	**12.1**	**1,125**

Note: # cell counts less than or equal to 10
Source: BNLA Wave 6

BNLA respondents were asked about their attitudes towards gender roles, with response options ranging from 'strongly disagree' to 'strongly agree'. Non-response ranged from 17% to 21% across all gender items. Higher non-response was observed when completing online compared to face-to-face.

Table 22: Non-response for items on gender roles (Childcare and Gender Roles module) by mode at Wave 6

Gender roles	Non-response, %				Eligible sample, *N*
	Prefer not to say	I don't know	Does not apply	Total	
Husband breadwinner, wife home and children					
Online	9.6	10.3	5.6	25.5	604
Face-to-face	3.1	6.8	5.2	15.1	518
Total	**6.6**	**8.6**	**5.4**	**20.7**	**1,122**
Husband wife share housework and childcare					
Online	7.9	7.1	5.3	20.4	604
Face-to-face	2.3	6.0	5.4	13.7	518
Total	**5.3**	**6.6**	**5.3**	**17.3**	**1,122**
As many women as men in important positions					
Online	9.9	8.6	4.3	22.8	604
Face-to-face	2.3	8.1	4.2	14.7	518
Total	**6.4**	**8.4**	**4.3**	**19.1**	**1,122**
Satisfactory childcare so women can take jobs					
Online	9.6	9.3	5.1	24.0	604
Face-to-face	2.9	6.0	5.2	14.1	518
Total	**6.5**	**7.8**	**5.2**	**19.4**	**1,122**

Source: BNLA Wave 6

Item non-response summary

This section examined item non-response across modules in the BNLA questionnaire and presented the frequencies by respondent type for those items with high non-response in Waves 1–5. We then presented analysis of item non-response by mode of data collection at Wave 6, comparing online completion to face-to-face. The BNLA survey instrument did not allow respondents to leave questions blank where they were eligible to respond except for in open-ended questions. However, participants had the option to respond 'prefer not to say', 'I don't know' or 'does not apply' for most items.

Interviewers reported that certain questions were sensitive or difficult for some participants. These included health scales, employment and income, and government services, among others. These questions formed the basis of the analyses presented in this section.

The main findings from this section include:

- There were high levels of non-response in the question on traumatic events personally experienced or witnessed. The high frequency of 'does not apply' responses suggests that this question was not relevant to some participants. Based on the lower levels of non-response in the Wave 1 question on potentially traumatic events, it is possible that providing the alternative response 'did not experience any traumatic events' could partly reduce non-response in this type of question.
- Adolescents showed the highest proportions of non-response (especially reporting 'I don't know') in questions related to government payments. This is not surprising as it is likely that adolescents were not directly involved with government services regarding these payments.
- Items on trust had the highest proportion of non-response in the BNLA questionnaire. Interestingly, trust in media had the highest proportion of non-response of all items examined, including a high frequency of 'I don't know'. Given that most BNLA respondents were relatively new to Australia at Wave 1, the large number of 'I don't know' responses may reflect that respondents did not understand the question or they had not formed an opinion on whether they trust the people or institutions listed in this question. Notably, adolescents had lower percentages of non-response in the items on trust compared with adults in the sample. We know that adolescents have higher English proficiency and, by virtue of participating in the Australian school system, may be more familiar with the concepts used in this question.

- Item non-response was higher in Wave 6 than previous waves for most items and differed by mode of data collection. Item non-response was higher among those who completed the survey online, compared to those who responded face-to-face.

The findings above suggest that, up to Wave 5, item non-response in the BNLA is mainly related to the relevance of the question for participants and the difficulty in understanding concepts and scale measurements when responding to certain questions.

The higher frequency of non-response in Wave 6 may indicate decreased trust in the privacy of the survey, particularly for those responding online. This could be related to the multiple data breaches that occurred in the months preceding the Wave 6 fieldwork.

Conclusion

This issues paper has examined 4 sources of non-response in the BNLA study: unit non-response at recruitment, unit non-response between waves, non-response by mode of data collection and item non-response. Survey research faces the challenge of the selection bias that can be introduced at the time of recruitment, if the recruited sample differs from the eligible population. Longitudinal studies also face the challenge of participant attrition between waves when the respondents who continue to participate differ significantly from those who drop out of the study. The BNLA study has the added complexity of different modes of data collection, as well as having a culturally diverse study population and different respondent types[16] (based on their status in the original visa application). The purpose of this paper was to raise awareness among data users about different sources of non-response in the BNLA study.

Overall, this paper has shown that non-response in BNLA is associated with several participant characteristics. For example, the sample recruited in the BNLA study differed from the eligible population in terms of their country of birth. Similarly, after sample members were recruited at Wave 1, participation in later waves was associated mainly with country of birth, level of education and visa subclass. Furthermore, the probability of responding to telephone waves only (after Wave 1) was higher for those who had done paid work before migration and arrived via an onshore pathway. Finally, total non-response was different for adolescents, and the distribution of the type of item non-response ('does not apply', 'I don't know' and 'prefer not to say') varied across items. We also noted a higher frequency of item non-response in Wave 6, particularly among those responding online.

As discussed in this paper, we developed population weights and longitudinal weights to adjust for the different probability of response associated with personal characteristics at the time of recruitment and between waves. However, having two different modes of data collection – face-to-face and telephone interviews – and different respondent types can potentially introduce more sources of bias, as we have shown in this paper.

Taken together, findings in this paper show that non-response in BNLA is associated with a number of important factors and this needs to be taken into account when making inferences about the BNLA sample. Data analysts need to consider the issues raised in this paper and decide how to address them, informed by their analytical approach and research questions.

16 Even though respondent type is an artificial distinction, it is related to some aspects of the migration process. In addition, the questionnaire was shorter for secondary respondents in Waves 1–5.

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Appendix 1: BNLA survey weights supplementary tables

Table 23: Summary of survey weights available on the BNLA dataset, Waves 1–6

Variable name	Applicant type	Survey weight type	Waves participants responded to
apawgt	PA	Population	1
asawgt	SA	Population	1
awgt	All	Population	1
bpawgt	PA	Population	2
abpawgt	PA	Longitudinal	1 & 2
bsawgt	SA	Population	2
absawgt	SA	Longitudinal	1 & 2
bwgt	All	Population	2
abwgt	All	Longitudinal	1 & 2
cpawgt	PA	Population	3
acpawgt	PA	Longitudinal	1 & 3
bcpawgt	PA	Longitudinal	2 & 3
a_cpawgt	PA	Longitudinal	1,2 & 3
csawgt	SA	Population	3
acsawgt	SA	Longitudinal	1 & 3
bcsawgt	SA	Longitudinal	2 & 3
a_csawgt	SA	Longitudinal	1,2 & 3
cwgt	All	Population	3
acwgt	All	Longitudinal	1 & 3
bcwgt	All	Longitudinal	2 & 3
a_cwgt	All	Longitudinal	1,2 & 3
dpawgt	PA	Population	4
adpawgt	PA	Longitudinal	1 & 4
a_dpawgt	PA	Longitudinal	1,2,3 & 4
dsawgt	SA	Population	4
adsawgt	SA	Longitudinal	1 & 4
a_dsawgt	SA	Longitudinal	1,2,3 & 4
dwgt	All	Population	4
adwgt	All	Longitudinal	1 & 4
a_dwgt	All	Longitudinal	1,2,3 & 4
epawgt	PA	Population	5
aepawgt	PA	Longitudinal	1 & 5
acepawgt	PA	Longitudinal	1,3 & 5
a_epawgt	PA	Longitudinal	1,2,3,4 & 5
esawgt	SA	Population	5

Variable name	Applicant type	Survey weight type	Waves participants responded to
aesawgt	SA	Longitudinal	1 & 5
acesawgt	SA	Longitudinal	1,3 & 5
a_esawgt	SA	Longitudinal	1,2,3,4 & 5
ewgt	All	Population	5
aewgt	All	Longitudinal	1 & 5
acewgt	All	Longitudinal	1,3 & 5
a_ewgt	All	Longitudinal	1,2,3,4 & 5
fwgt	All	Population	6
fpawgt	PA	Population	6
fsawgt	SA	Population	6
a_fwgt	All	Longitudinal	1,2,3,4,5 & 6
a_fpawgt	PA	Longitudinal	1,2,3,4,5 & 6
a_fsawgt	SA	Longitudinal	1,2,3,4,5 & 6
afwgt	All	Longitudinal	1 & 6
afpawgt	PA	Longitudinal	1 & 6
afsawgt	SA	Longitudinal	1 & 6
acefwgt	All	Longitudinal	1, 3, 5 & 6
acefpawgt	PA	Longitudinal	1, 3, 5 & 6
acefsawgt	SA	Longitudinal	1, 3, 5 & 6

Appendix 2: Mode non-response supplementary tables

Table 24: Frequencies and means independent variables in logistic regression model, by mode

Variable	Face-to-face and/or telephone (*n* = 2,236) *N*/mean (SD)	Telephone only (*n* = 139) *N*/mean (SD)	Total (*n* = 2,375) *N*/mean (SD)
Age	35.7 (14.0)	31.4 (11.8)	35.5 (13.9)
Gender			
Male	1,208	86	1,294
Female	1,028	53	1,081
Migration pathway			
Onshore	320	53	373
Offshore	1,916	86	2,002
Paid work before migration			
Yes	1,174	91	1,265
No	1,046	47	1,093
Non-response	16	1	17
Pre-migration education			
Never attended school	357	19	376
Less than 9 years school	856	45	901
10 or more years school	652	45	697
Post-school qualification	349	29	378
Non-response	22	1	23
Survey type (last interview)			
Principal Applicant	1,476	109	1,585
Secondary Applicant	760	30	790
Remoteness (last interview)			
Capital city	2,062	131	2,193
Regional/remote	174	8	182
English pre-migration (self-assessed)			
Well/very well	385	36	421
Not well	794	49	843
Not at all	1,015	49	1,064
Non-response	42	5	47
English improved			
No	1,426	103	1,529
Yes	810	36	846
Partnered (last interview)			
No	782	72	854
Yes	1,454	67	1,521
Country of birth			
Iraq/Syria	934	32	966
Iran	251	32	283
Afghanistan	564	39	603

Variable	Face-to-face and/or telephone (*n* = 2,236) *N*/mean (SD)	Telephone only (*n* = 139) *N*/mean (SD)	Total (*n* = 2,375) *N*/mean (SD)
Africa	127	11	138
Other	360	25	385
State (last interview)			
NSW	891	39	930
Qld	228	12	240
SA	260	22	282
NT/ACT/Tas	83	2	85
Vic	677	61	738
WA	97	3	100

Notes: *N* excludes respondents who were out of scope at any wave.
Source: BNLA Waves 1–5

Table 25: Factors associated with responding to telephone only versus other modes of data collection (odds ratios – excluding those responding to Wave 1 only)

Variables	Multivariate model (*n* = 2,205)	
	Odds Ratio	95% CI
Age (cont.)	0.97**	[0.95, 0.99]
Gender		
Male (ref.)		
Female	1.23	[0.87, 1.74]
Migration pathway		
Onshore (ref.)		
Offshore	0.35***	[0.21, 0.58]
Paid work before migration		
Yes (ref.)		
No	0.64^	[0.40, 1.00]
Pre-migration education		
Never attended school (ref.)		
Less than 9 years school	0.74	[0.41, 1.33]
10 or more years school	0.75	[0.38, 1.46]
Post-school qualification	0.85	[0.37, 1.94]
Survey type (last interview)		
PA (ref.)		
SA	0.56*	[0.36, 0.88]
Remoteness (last interview)		
Capital city (ref.)		
Regional/remote	0.91	[0.38, 2.16]
English pre-migration (speaks English; self-assessed)		
Well/very well (ref.)		
Not well	0.91	[0.55, 1.53]
Not at all	0.81	[0.43, 1.52]
Refused	2.53	[0.86, 7.41]
English improved since arrival/ last interview		
No (ref.)		

Variables	Multivariate model (*n* = 2,205)	
	Odds Ratio	95% CI
Yes	0.61*	[0.39, 0.96]
Partnered (last interview)		
No (ref.)		
Yes	0.51**	[0.34, 0.77]
Country of birth		
Iraq/Syria (ref.)		
Iran	1.82	[0.92, 3.58]
Afghanistan	1.04	[0.50, 2.16]
Africa	1.73	[0.73, 4.14]
Other	0.91	[0.46, 1.82]
State (last interview)		
NSW (ref.)		
Qld	0.87	[0.37, 2.01]
SA	1.85	[0.87, 3.95]
NT/ACT/Tas	0.44	[0.09, 2.07]
Vic	1.83*	[1.13, 2.95]
WA	0.49	[0.14, 1.70]
Constant	**0.85**	**[0.18, 3.98]**

Notes: Telephone waves of data collection include participants who responded to Wave 2 and/or Wave 4 only (after Wave 1). Other modes of data collection include participants who responded to any other combination of face-to-face and/or telephone waves. CI = Confidence interval. Ref. = reference category. PA = Principal Applicant; SA = Secondary Applicant. Survey type was based on the questionnaire that was completed at each wave and did not always reflect the applicant status in the visa application. Iraq and Syria were grouped due to geographic proximity and cultural similarities (Iraq *n* = 894, Syria *n* = 28 in analytical sample). Whether working in last interview was included in preliminary models but the direction of the odds ratio was opposite in bivariate and multivariate models, therefore it was excluded from the analysis. ***$p < .001$, **$p < .01$, and *$p < .05$.
Source: BNLA Waves 1–5

Appendix 3: Item non-response supplementary tables

Table 26: Number of non-responses per item for total sample

	Number non-responses (total sample)
Language Proficiency – Module C	
English language proficiency (speaking)	29
Employment and Income – Module E	
Whether employed	24
Whether receives government payments	163
Amount government payments	260
Main source of income	50
Remittances	
Received money from overseas family	51
Received money from overseas government	50
Received money from Australian family	53
Received money from Australian community organisation	53
Sent money to family/friends overseas (PR report)	33
Gave money to family/friends in Australia (PR report)	33
Financial hardship (PR report)	73
Immigration Experience – Module F	
Potentially traumatic events family or self	122
Whether had to pay to come (PA only)	51
Still have family waiting to come to Australia	48
Whether spent time in refugee camp	43
Whether spent time in immigration detention	35
Whether spent time in community detention	58
Whether spent time on bridging visa	74
Traumatic events experienced or witnessed by self (Wave 3)	450
Health – Module G	
Current health compared with 6 months before arrived	18
Received medication for physical health	10
Received medication for emotional health	19
Kessler 6 – psychological distress	76
PTSD scale	112
Disability	32
Sources of stress	91
Received help for emotional problems (Wave 3)	38
Sudden attacks of anger (primary caregivers) (Wave 3)	23
Someone died (primary caregivers) (Wave 3)	37
Feels safe at home (Wave 5)	6
Frequency family members yell at each other (Wave 5)	63
Self-Sufficiency – Module H	
Difficulties accessing government services	

	Number non-responses (total sample)
Didn't know where	333
Transport	250
Language barriers	230
Worried about privacy	348
Long waiting times	295
Asked for help but couldn't get it	319
Haven't used government services	345
Community Support – Module I	
Religion	32
Support from ethnic communities	130
Support from religious groups (among those who stated religion)	128
Support from other communities	186
Place of worship	43
Importance of religion	31
Importance of staying connected with cultural values	23
Contact with family overseas	32
Social support (people) (Wave 5)	70
Frequency social support available (type of support) (Wave 5)	
Someone to listen when you need to talk	59
Someone to confide/talk to about yourself/problem	65
Someone to share private worries/fear	71
Someone for suggestions to deal with problem	67
Someone to help if confined to bed	54
Someone to take you to the doctor	51
Someone to prepare meals if you were unable	56
Life Satisfaction – Module J	
Discrimination	36
Trust people in neighbourhood	501
Trust Australian community	477
Trust police	300
Trust people at school/work	518
Trust media	796
Intends to apply for citizenship	8
Treatment by police (Wave 3)	69
Stopped by police (Wave 3)	53
Happiness relationship with partner (Wave 3)	47
Relationship with partner – things going well (Wave 3)	63
Relationship with partner – confides in partner (Wave 3)	72
Relationship with partner – considering divorce/separation (Wave 3)	79
Victim of crime (Wave 5)	23
Childcare and Gender Roles – Module L (Wave 5)	
Childcare (primary caregivers only)	4
Gender roles – husband breadwinner, wife home and children	127
Gender roles – husband wife share housework and childcare	101

	Number non-responses (total sample)
Gender roles – as many women as men in important positions	132
Gender roles – satisfactory childcare so women can take jobs	126
Child module (child 1, *n* = 426 primary caregivers) – Module X (Wave 3)	
SDQ	17
Child's health	1
Child enrolled in school	2
Grade child enrolled in school	13
Overall achievement in school	6
Child uses English to communicate	13
Child uses caregiver's language to communicate	13
Days absent from school (open-ended)	104
Days child has done physical activities in last 7 days (open-ended)	90
Child experienced or witnessed potentially traumatic events	22
Life or safety was threatened	14
Parenting style (frequency of)	
Has warm close times with child	12
Enjoys doing things with and listening to child	16
Has been angry with child	20
Talk about what is going on in child's life	23
Has raised voice or shouted to child	20
Is good at getting child to do what told	23
Gets on my nerves when child cries	27
Has lost temper with child	19
Has left child alone in bedroom when upset	19
Feels close to child when child is happy and upset	21
Amount government benefits (Wave 6)	322
Difficulties accessing government services (Wave 6)	
Didn't know where (Wave 6)	91
Transport (Wave 6)	39
Language barriers (Wave 6)	32
Worried about privacy (Wave 6)	80
Long waiting times (Wave 6)	49
Asked for help but couldn't get it (Wave 6)	74
Whether used government services (Wave 6)	101
Support from ethnic communities (Wave 6)	134
Support from religious community (Wave 6)	120
Support from other communities (Wave 6)	143
Trust people in neighbourhood (Wave 6)	183
Trust Australian community (Wave 6)	192
Trust police (Wave 6)	136
Trust media (Wave 6)	245
Gender roles – husband breadwinner, wife home and children (Wave 6)	232
Gender roles – husband wife share housework and childcare (Wave 6)	194
Gender roles – as many women as men in important positions (Wave 6)	214

	Number non-responses (total sample)
Gender roles – satisfactory childcare so women can take jobs (Wave 6)	218
PTSD scale – in the past week (Wave 6)	181
PTSD scale – since the event (Wave 6)	169
Sources of stress – conflict with children (Wave 6)	113
Sources of stress – all other items (Wave 6)	164

Notes: PA = Principal Applicant. PTSD = post-traumatic stress disorder. SDQ = Strengths and difficulties questionnaire. Non-response includes 'Does not apply', 'I don't know' and 'prefer not to say'. Data from Wave 1 unless otherwise stated.
Source: BNLA Waves 1, 3, 5 and 6