Attrition in the Austrian Generations and Gender Survey

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Abstract

BACKGROUND

In longitudinal research, the loss of sample members between waves is a possible source of bias. It is therefore crucial to analyse attrition.

OBJECTIVE

The current paper analyses attrition in a longitudinal study on family and fertility, by distinguishing between attrition due to non-contact and attrition due to cooperation.

METHODS

Based on the first two waves of the Austrian Generations and Gender Survey, the two components of attrition are studied separately by using bivariate as well as multivariate methods. Moreover, overall dropout – the combination of both components – is analysed. Apart from various socio-economic characteristics and data collection information, the study focuses on fertility relevant variables such as fecundity, fertility intentions, sexual orientation and traditional attitudes.

RESULTS

Fecundity, fertility intentions and homosexual relationship are associated with higher attrition due to cooperation in bivariate analyses but have no explanatory power in the multivariate model. Pregnancy and traditional attitudes towards marriage are associated with significantly lower attrition due to cooperation in the multivariate context. Overal dropout is significantly lower among persons with traditional attitudes towards marriage only. Moreover, various individual and regional characteristics are significantly associated with dropout, with differences between attrition due to non-contact und attrition due to cooperation.

CONCLUSIONS

Detailed insights in attrition are important when using longitudinal data and interpreting results. Analyses based on the first two waves of the Austrian Generations and Gender survey have to take into consideration a bias towards family oriented persons as well as lower educated respondents and persons with migration background.

Keywords

Attrition, dropout, response rate, Generations and Gender Survey, longitudinal data, Austria

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1. Introduction

In longitudinal research, the loss of sample members between waves – known as attrition – is a common problem and substantial in most panel studies. Attrition may not only decrease the sample size but also may lead to biased estimates if cases are not dropping out randomly from the original sample (Miller and Wright 1995). Nonresponse is a source of bias in survey estimates if those who respond are different from those who do not with respect to characteristics of interest (Groves 2006). It is therefore crucial to analyse attrition and to find out who left a panel study. As detailed information is available from the first wave - and information is increasing with each wave - research of the response rate in second and later waves of a panel can take into account a variety of possible determinants and therefore differs from studying response rates in the initial wave (Lepkowski and Couper 2002).

Nonresponse may be the consequence of failure to locate a previously interviewed person, failure to contact a person once located, or refusal by a respondent that has been contacted (Lepkowski and Couper 2002). These different types of nonresponse have different causes (N. Watson and Wooden 2009). As the distinction between location and contact is often empirically difficult, the response process is usually modelled as the outcome of two sequential events, namely contact and cooperation (e.g. Abraham, Maitland and Bianchi 2006; Nicoletti and Peracchi 2005; N. Watson and Wooden 2009). Others study attrition in general, without this differentiation (e.g. Abraham et al. 2006; Behr et al. 2005).

The current paper analyses attrition between wave 1 and wave 2 of the Austrian Generations and Gender Survey (GGS). We distinguish between attrition due to unsuccessful contact and due to cooperation. The two components of attrition are studied separately by

using bivariate as well as multivariate methods. Moreover, overall dropout – the combination of both components – is analysed.

Apart from socio-economic characteristics and data collection information, the study focuses on fertility relevant variables. Therefore, fecundity, fertility intentions, sexual orientation and traditional attitudes are related to attrition. As the GGS focuses on family formation and fertility, it is crucial to find out if data are possibly biased in this respect, which would have an impact for analyses related to the core questions of the GGS.

2. Determinants of Attrition

Possible candidates for predicting contact and cooperation in longitudinal surveys are characteristics of individuals and households as well as field phase related characteristics (Fitzgerald, Gottschalk and Moffitt 1998; Lepkowski and Couper 2002). Numerous studies analysed the associations between respondents' characteristics and sample attrition (Becketti et al. 1988; Behr, Bellgardt and Rendtel 2005; Fitzgerald et al. 1998; D. Watson 2003). The major demographic and socio-economic variables that are addressed for explaining attrition are sex, age, ethnicity, marital status, number of children, household size and composition, education, home ownership, labour force status, income, socio-economic group, tenure status and regional aspects (Vandecasteele and Debels 2007; N. Watson and Wooden 2009). Others focused on the data collection process, survey design features and interview situation (Nicoletti and Peracchi 2005; Riandey 1988; N. Watson and Wooden 2009). Furthermore, the sensibility of the subject plays a role when interviewing respondents (Razafindratsima, Kishimba and l'équipe Cocon 2004).

Most empirical evidence is based on the Panel Study of Income Dynamics (PSID), the British Household Panel Study (BHPS), the European Community Household Panel (ECHP), the German Socio-Economic Panel (GSEOP), the Dutch Socioeconomic Panel, the National

Longitudinal Study of Youth (NLSY), the US Time Use Survey (ATUS), the US Longitudinal Study on Generations, the Australian Household, Income and Labour Dynamics Survey (HILDA). Moreover, studies based on the French Generations and Gender Surveys (GGS) and a French longitudinal survey on contraception (CONCON) reveal valuable insights on family and fertility surveys.

Contacting sample members has been associated with residential mobility, socio-demographic characteristics hypothesized to be associated with the likelihood of finding someone at home (like age, household size and household composition), regional characteristics and measures of community attachment. More specifically, the number of children in the household, home ownership and length of residence at the current address have been positively related to the probability of future contact, living in large cities and living in a single household are associated with lower rate of follow-up (Haisken-DeNew and Frick 2005; Nicoletti and Peracchi 2005). In addition, interviewer workloads, interviewer continuity, interview mode and length of fieldwork turned out to be relevant (Nicoletti and Peracchi 2005; N. Watson and Wooden 2009). The length of fieldwork and the duration of the household interview are positively related, whereas item nonresponse on central variables is negatively related to the probability of future contact with the household (Nicoletti and Peracchi 2005).

The factors affecting response once a contact has been made include characteristics of respondents, their identification with the study, the survey topic, the interview experience in prior waves and survey design (Groves and Peytcheva 2008; N. Watson and Wooden 2009). "A lack of cooperation is mainly the result of a personal decision that reflects personal characteristics, related to the perceived cost of completing the interview and a person's past experience with the survey" (Nicoletti and Peracchi 2005, p. 774).

The findings on demographic and socio-economic characteristics regarding cooperation can be summarized as following: Being female, being married or having children is positively

related to the probability of future cooperation, whereas being widowed or divorced, not living in a couple and being a lone parent is negatively related to cooperation. Response rates are low for separated or never married, for people who are out of the labour force, for renters (as compared to home owners) and for those who live in metropolitan areas – characteristics regarded as proxies for social integration (Abraham et al. 2006). Moreover, cooperation is low among those being on welfare, non-white, low educated and individuals with few working hours or low income - indicators for belonging to the lower proportion of the socioeconomic distribution (Haisken-DeNew and Frick 2005; Moffitt, Fitzgerald and Gottschalk 1999). In addition, health and religiosity are significant predictors of panel response (Miller and Wright 1995; Razafindratsima et al. 2004).

An overview of the literature suggests that also the field phase situation is an important predictor of cooperation (Vandecasteele and Debels 2007). The interviewer-respondent interaction is crucial, with persons contacted by the same interviewer as in the previous wave being more willing to cooperate again (Behr, Bellgardt and Rendtel 2003; Groves and Couper 1998; Hox and de Leeuw 2002) and a correlation between educational level of interviewer and response rate (Albacete et al. 2012). Sponsorship of survey, incentives, mode of data collection, topic of the survey and questions perceived as intrusive or offensive are further aspects influencing nonresponse (Groves and Peytcheva 2008; Régnier-Loilier, Saboni and Valdes 2011). Moreover, item non-response on crucial variables is related to dropout in subsequent waves (Loosveldt, Pickery and Billiet 2002; D. Watson 2003). It is regarded as an indicator of low co-operation, lack of interest in the survey, unpleasant or negative experience (Loosveldt et al. 2002; Rendtel 2002).

Attrition – the combination of loss of contact and refusal to answer – is inhomogeneous across countries. The extent and the determinants of panel attrition vary substantially across countries and waves (Behr et al. 2003, 2005). For example, findings on age diverge: Whereas some studies report lower response rate among younger persons in a multivariate framework

(Behr et al. 2005), others find no explanatory power of age after controlling for other variables (Nicoletti and Peracchi 2005). Also results on employment status are diverging: On the one hand, being out of labour force is associated with low response rates (Abraham et al. 2006). On the other hand, in some European countries unemployed have an increased response probability in multivariate models, although descriptive findings indicate lower rates among unemployed (Behr et al. 2005). Diverging results across Europe are evident also for level of education (Behr et al. 2005; D. Watson 2003). For example, in Northern European countries, higher educated people are less likely to drop out, but this effect is reversed in Southern European countries where higher educated are more likely to be lost (D. Watson 2003). Regarding respondents' gender, studies on survey response mostly find higher response rates among women than among men. The main reason usually cited for this observation is the fact that women are more often at home (N. Watson and Wooden 2009). Nevertheless, there is limited evidence that – even conditional on contact – men may be slightly more likely to discontinue survey participation (Nicoletti and Buck 2004; N. Watson and Wooden 2009). Income distribution turned out to be relevant for attrition, with opposite trends in Southern and Northern European countries (D. Watson 2003).

Bartus and Speder (2013) studied the relationship between the respondent's characteristics and panel continuation in five GGS countries (Bulgaria, France, Georgia, Germany and Hungary). Whereas dropout is high among men and low among owners across all countries, findings for family characteristics and income diverge: In bivariate analyses, they find that childless persons are underrepresented, while married, educated and persons with relatively more income are overrepresented in the second wave sample. Bulgaria and Georgia constitute notable exceptions: In Bulgaria, parents of young children and the highly educated are less likely to continue. Moreover, the relationship between drop-out and perceived income becomes reversed in Bulgaria and Georgia, where those reporting economic constraints, more often participated in the second wave. Evidence from multivariate

regression analyses is more mixed. Moreover, detailed studies on attrition in the French GGS (both between waves 1 and 2 and waves 1 and 3), including longitudinal weights based on these analyses constitute valuable contributions to the literature (Régnier-Loilier and Lincot 2010; Régnier-Loilier 2012; Régnier-Loilier and Guisse 2012).

Behr and colleagues (2005) suggested to include three groups of variables in attrition analyses: (1) variables related to field work, (2) variables related to the respondents' attitude towards survey and (3) important analysis variables. They argued that social stratification variables like age, sex, marital status and level of education are used to measure the attitude towards surveys. As a third group, they explicitly mentioned variables that are important in the specific context. In line, in the French survey on fertility intentions the method of contraception, unplanned pregnancy, abortion and desire for a child were included as variables of interest for the specific survey and it turned out that the method of contraception has an effect on attrition (Razafindratsima et al. 2004).

Following the proposed distinction, it is crucial to study in the GGS attrition by family and fertility related variables, like fertility intentions, pregnancy, perceived problems for conceiving a child or homosexual partnership. We want to find out if item non-response on crucial variables in the GGS is related to attrition in the GGS.

3. Data and Method

The current study is based on the Austrian GGS. The first wave was carried out in 2008/9 and includes 5,000 respondents aged 18 to 45 years. Response rate in wave 1 was 60.7 percent (Statistik Austria 2009). The second wave was carried out four years later[1], between September 2012 and May 2013. For further information on data validation we refer to Buber

[1] According to the international guidelines, the interval between waves is three years (UN 2005). Due to financial constraints, in Austria the interval between wave 1 and wave 2 is four years.

(2013). If respondents had moved between wave 1 and wave 2 and if they had – according to Austrian laws - registered their residential move, the contact address was updated by Statistics Austria. At the end of the interview in wave 1, respondents were asked whether they agreed to be contacted for another interview three years later. Thereafter, 96 percent agreed to be contacted again, indicating a high willingness to continue. Nevertheless - and regardless of the given answer - a letter was sent out to all respondents in spring 2012 asking if they agree to be contacted and interviewed for a second wave. This letter was also important for further updating the address list of interviewees. It turned out that geographical mobility was substantial, as 800 out of the 5,000 respondents of wave 1 had changed address between wave 1 and wave 2 (information provided by Statistics Austria). Due to the access to the central register, the loss of respondents due to unknown address was expected to be comparable low.

We first provide a description of the small subgroups of respondents no longer in the central register, not living at the given address, unable to reach and unable to be interviewed. In a second step, we focus on attrition due to non-contact and in a third step we concentrate on attrition due to cooperation.[2] Finally, overall attrition is presented. Descriptive as well as multivariate methods are used to characterize the two broad groups of dropouts as well as overall dropout.

According to Behr et al. (2005) it is important to analyse attrition with respect to survey relevant characteristics. In the GGS, these are – besides e.g. marital status and parity – fertility related variables like fecundity, fertility intentions or traditional attitudes. The GGS includes questions on fecundity. Both, respondent's problems and – if cohabiting with a partner or livening in a living apart together relationship - partner's problems with conceiving a child

[2] For a study on locating, contact and successful interview we refer to Abraham, Maitland and Bianchi (2006) who distinguish different types of noncontact and model them separately. The current paper focuses on unsuccessful contact and refusal and does not further elaborate on unsuccessful locating sample members, which is associated with mobility and tracking procedures (N. Watson and Wooden 2009) and mainly addressed by research on survey methodology.

were captured[3]. The GGS includes different dimensions of fertility intentions, namely the intention to have a child (1) now, (2) within three years and (3) ever. Due to the filter structure of the survey, not all respondents were asked these questions. According to international guidelines, women aged 50 years and more, male respondents with a female partner aged 50 years and more and respondents with same-sex partners were not asked all questions on pregnancy, fecundity and fertility intentions. Moreover, fertility intentions within the next three years were skipped in case of pregnancy. Respondents intending a child within the next three years were not asked any further childbearing plans. Therefore, we combined the information on pregnancy, age of female partner, type of sexual relationship on the one hand and fecundity as well as fertility intentions on the other hand. Moreover, traditional attitudes might be relevant for family and fertility behaviour. The GGS includes the attitude towards marriage captured by the statement "Marriage is an outdated institution". This item was incorporated in the current study on attrition.

Various socio-demographic, economic and data collection characteristics were taken into consideration. Apart from the standard variables on marital status, partner status, parity and household, a combination of these variables was generated to characterize the living arrangements of respondents, distinguishing between (1) child in family, (2) married couple without children, (3) non-married couple without children, (4) married couple with children, (5), non-married couple with children, (6) single mother, (7) single father, (8) living alone and (9) other living arrangements. Information on the relation to the household members revealed that the latter group comprised shared accommodations, either with relatives (siblings, grandparents) or with non-relatives that are typically shared student flats.[4]

[3] The exact wording of the question for own fecundity was: "Some people are not physically able to have children. As far as you know, is it possible for you, yourself, to have a/another baby?" Possible answers were: (1) Definitely not, (2), probably not, (3) probably yes, (4) definitely yes, (5) don't know. The question on partner's fecundity was: "Do you think it would be physically possible for your current partner/spouse to have a child of his/her own if he/she wanted to?" Possible answers were: (1) Definitely not, (2), probably not, (3) probably yes, (4) definitely yes, (5) don't know.

[4] Shared living arrangements with relatives were more common (57%) than flat-sharing with non-relatives (43%).

For capturing migration background not only nationality at birth and current nationality, but also mother tongue and first language usually spoken at home were taken into consideration. For residential mobility, the data include information on intended residential move in wave 1 and degree of certainty (definitely no, probably no, yes), as well as the planned destination for those intending to move (e.g. abroad, within province). The combination of both turned out to be a valuable source of information on drop out.

Different indicators are included in the data to capture regional characteristics and housing. According to the OECD regional typology we distinguished between predominantly urban (share of population living in rural local units is below 15 percent), intermediate (share of the population living in rural units is between 15 and 50 percent) and predominantly rural areas (OECD 2010). In addition, the Austrian nine provinces and housing conditions (home-ownership, tenant, rent-free accommodation and other type of housing) were taken into account.

To capture health problems, self-perceived health and limitations in activities of daily living because of physical or mental health problems or disability were taken into consideration. Moreover, the provision of regular personal care to others (not including small children) was included as a further aspect of health and wellbeing.

4. Attrition in the Austrian Generations and Gender Survey

In total, 116 wave 1 respondents could not be found in the central register, thus reducing the gross sample for wave 2 to 4,884 respondents (Table 1). In total 3,907 interviews could be realized in wave 2, which responds to a panel stability of 78 percent. The response rate takes into account non eligible cases (persons no longer included in the central register) and amounts to 80 percent (Table 1). Refusing to participate and not living at the given address were the main reasons for dropout. Death, institutionalisation, not being able to reach and

being unable to be interviewed were further reasons for dropout, although small in size (Table 1). Panel stability was 65 percent in the French GGS (Régnier-Loilier & Lincot 2010), 73% in the Bulgarian, 79% in the Hungarian and 83 percent in the Georgian GGS whereas Germany constituted an exceptional situation with panel continuation of only 32 percent (Bartus & Speder 2014). Therefore, in an international comparison, panel stability in Austria is comparably high.

Table 1: Panel stability and response rate for the Austrian GGS

	N	Panel stability	Response rate
RESPONDENTS in wave 1 (2008/9)	**5,000**	**100%**	
No longer in central register	116	2%	
Wave 2	**4,884**		**100%**
Respondent deceased	1	0%	0%
Respondent institutionalised	3	0%	0%
Respondent not living at given address	179	4%	4%
Respondent refused to answer	707	14%	14%
Unable to reach respondent	57	1%	1%
Respondent unable to be interviewed	25	1%	1%
Completed interviews in wave 2	**3,907**	**78%**	**80%**

Comparing the distribution of numerous socio-economic characteristics of respondents participation in wave 1 and the total of respondents interviewed in wave 1 reveals that for all included variables differences are 2 percent point or less (see detailed tables in Buber-Ennser 2013), indicating at first glance that panel respondents do not substantially differ from wave 1 respondents and that bias due to attrition in the Austrian GGS is not too large.

We briefly describe the the small subgroups of respondents no longer in the central register, not living at the given address, unable to reach and unable to be interviewed: Respondents who were no longer in the central register and who were not living at the given address can be characterized as young, intended movers, highly educated individuals, to a large extent with migration background. Persons unable to reach were more often Austrian nationals, almost half of them were residents of Tyrol, a province in the West of Austria. The specific situation for conducting the second wave of the survey in Tyrol is the main reason for

relatively high proportion of women not being able to reach.[5] The small proportion of respondents unable to be interviewed were rather low educated, more often female, non-Austrian nationals at birth, had other than German as mother tongue or first language spoken at home and had on average longer interviews at wave 1 (possibly indicating language problems). Moreover, health problems were more often reported in this group, either via limitations in activities of daily living or via fair or bad self-perceived health. For further characterisatio of these small dropout groups we refer to Buber-Ennser (Buber-Ennser 2013).

4.1.Attrition Due to Non-Contact

Individuals known to be outside of the scope of a survey (those who died, moved to an institution, or moved outside the country) are excluded in the analyses of panel attrition (Behr et al. 2005; Nicoletti and Peracchi 2005; D. Watson 2003). Only one respondent deceased and three were institutionalized. As we are not able to identify individuals who moved abroad, we exclude for the analysis of attrition only deceased or institutionalized persons, reducing the sample to 4,996 wave 1 respondents. Attrition due to non-contact which was either because the respondent was no longer in the central register, not living at the given address or unable to reach, summing up to 357 persons, which corresponds to a proportion of 7 percent.

Descriptive results reveal minor variations in the attrition due to non-contact for fecundity (Table 2, column 2). The small group (nine persons) answering the question on own fecundity problems with “don’t know” had higher dropout due to unsuccessful follow-up (11 percent). The same holds for the small group of seven men and women answering in wave 1 the question on partner’s fecundity problems with “don’t know”: Attrition in this group was 29 percent (results available on request). Given the small number of these groups, the

[5] During fieldwork no female interviewer trained by Statistics Austria was available in this province. Female respondents were assigned either to male interviewers in or to female interviewers from other Austrian provinces. In Tyrol to a high proportion of (female) respondents were unable to reach leading to high attrition due to non-contact.

comparable high attrition has to be interpreted with caution. The type of sexual relationship was related with attrition: It turned out that respondents living in a homosexual relationship had higher attrition (23 percent) due to unsuccessful follow-up. Again, this group was rather small in wave 1 (13 respondents), indicating that neither wave 1 nor wave 2 data allow specific analyses on men and women living in a homosexual relationship. Fertility intentions, a central variable in the GGS, were not associated with attrition due to unsuccessful follow-up in bivariate analyses. But attitudes towards marriage were associated with dropout in the sense that those strongly agreeing that marriage is an outdated institution had higher attrition due to unsuccessful follow-up (12 percent), and those strongly disagreeing with this statement had lower attrition (5 percent).

Table 2: Attrition due to fertility relevant aspects, descriptive results

	Non-contact		**Cooperation**		**Overall dropout**	
		N		N		N
Total	7%	4,996	16%	4,644	22%	4,996
Indicator for fecundity						
No problems reported	7%	4,313	16%	4,003	22%	4,313
Respondent or partner have problems to conceive a child	6%	503	17%	474	21%	503
Pregnant	7%	149	10%	139	16%	149
Female partner 50+	0%	18	11%	18	11%	18
Homosexual relationship	23%	13	20%	10	38%	13
Fertility intentions						
Wants a child now	6%	549	14%	518	18%	549
Intends a child within 3 years	10%	757	18%	685	26%	757
Intends a child later	9%	1,134	15%	1,029	23%	1,134
Intends no further child(ren)	6%	2,362	16%	2,232	21%	2,362
Don’t know	10%	10	11%	9	20%	10
Refusal	0%	4	0%	4	0%	4
Marriage is outdated institution						
Strongly agree	12%	185	19%	162	29%	185
Agree	9%	667	18%	607	26%	667
Neither agree nor disagree	7%	1,091	18%	1,018	23%	1,091
Disagree	7%	1,990	15%	1,846	22%	1,990
Strongly disagree	5%	855	12%	809	17%	855
Does not apply	3%	204	13%	198	16%	204
Don’t know or refusal	0%	4	25%	4	25%	4

Regarding socio-demographic, economic, regional and field work related characteristics, descriptive analyses revealed that attrition due to unsuccessful follow-up was higher among young respondents, respondents with other than Austrian nationality at birth, with non-German mother tongue, with other than German as first language spoken at home, in the lowest (ISCED 1+2) and highest (ISCED 5+6) educational groups, among unemployed, students, retired and those permanently ill, among childless, single, divorced and widowed, among non-married couples without children, single mothers and fathers, among persons living in shared accommodations (either with relatives or other non-relatives), in one-person households, in urban areas, in certain Austrian provinces (Vienna and Tyrol[6]), among those intending a move at wave 1 and those not willing to participate in a second wave (Table A1).

Economic constraints indicated by difficulties in making ends meet and receiving social welfare payments as well as bad health were associated with higher attrition due to non-contact. Moreover, personal characteristics like religious affiliation and level of religiosity were related with attrition: It turned out that respondents with other than Roman Catholic or protestant affiliation and respondents stating to be not at all religious had higher attrition due to non-contact. In addition, missing length of interview at wave 1 (most probably due to interruptions during the interview) was a fieldwork characteristic associated with higher attrition.

We ran logit regressions to estimate the probability of non-contact (Table 3, column 2). In the multivariate framework attitudes towards marriage were significantly associated with attrition: Persons strongly agreeing that marriage is an outdated institution had significantly higher attrition due to non-contact. In addition, cohorts born 1985-1989 (thus aged 19-23 at

[6] Attrition by province and gender clearly revealed female respondents in Tyrol as the group with highest attrition due to non-contact (15 percent). Fieldwork conditions described earlier are the main reason therefore. When excluding Tyrol, attrition due to non-contact was slightly lower among women than among men (6 and 7 percent respectively).

wave 1 and 22-27 at wave 2), respondents with other than Austrian nationality[7] (particularly German nationals[8]), self-employed, married couples without children, persons sharing accommodation with others (relatives or non-relatives), urban population, citizens of certain Austrian provinces (Burgenland, Carinthia and Tyrol), individuals who planned a move in wave 1 (particularly if planning to move abroad) and even persons considering a move, those not willing to be contacted again, persons with other than catholic or protestant or without religious affiliation, recipients of social welfare payments at wave 1 and those with rather short interviews in wave 1 (less than 45 minutes) or without coded interview duration in wave 1 had significantly higher attrition due to non-contact. Respondents on parental leave in wave 1 had significantly lower attrition (as compared to employed individuals). The remaining individual and fieldwork related indicators had no explanatory power in the multivariate logit model; some indicators were dropped due to collinearity.

[7] For taking into consideration migration background, we ran different models, including indicators for nationality, mother tongue and first language spoken within the family. It turned out that a detailed differentiation for nationality since birth had best model fit.

[8] At this point, we briefly refer to migrants in Austria: Germans constitute the largest migration group and the share of German students at Austrian universities is high. These circumstances partly explain the characteristics of respondents who are no longer in the Austrian central register. We assume that part of respondents with German nationality have left Austria between waves 1 and 2 and are therefore no longer in the central register.

Table 3: Estimated coefficients of logit regressions for attrition

	Non-contact	Cooperation	Overall dropout
Indicator for fecundity			
No problems reported	0	0	0
Respondent or partner have problems to conceive a child	0.06	0.11	0.13
Pregnant	0.02	-0.53+	-0.38
Female partner 50+	.	-0.94	-1.12
Homosexual relationship	0.02	0.39	0.53
Fertility intentions			
Wants a child now	-0.26	-0.21	-0.21
Intends a child within 3 years	0.27	0.15	0.18
Intends a child later	0.03	-0.12	-0.08
Intends no further child(ren)	0	0	0
Don't know	-0.05	-1.18	-0.56
Marriage is outdated institution			
Strongly agree	0.56*	0.15	0.12
Agree	0.12	0.01	0.02
Neither agree nor disagree	0	0	0
Disagree	0.28+	-0.03	0.00
Strongly disagree	-0.03	-0.32*	-0.26*
Does not apply	-0.71	-0.22	-0.33
Don't know or refusal	.	-0.22	-0.53
Gender			
Male	0	0	0
Female	0.03	0.24*	0.23**
Cohorts			
1960-1964	0	0	0
1965-1969	0.00	0.03	0.09
1970-1974	0.12	-0.01	0.07
1975-1979	0.02	-0.25	-0.19
1980-1984	0.35	-0.11	0.00
1985-1989	0.87*	0.19	0.31
1990-1992	0.80	-0.02	0.12
Nationality			
Austrian nationality since birth	0	0	0
Austrian nationality, received later	0.30	0.34*	0.43**
German nationality	2.28***	0.49	1.32***
Other nationality	0.86***	0.23	0.48**
Highest educational level			
ISCED 1+2	0	0	0
ISCED 3	-0.15	-0.24*	-0.26*
ISCED 4	-0.01	-0.30*	-0.32*
ISCED 5+6	0.31	-0.26+	-0.24+

Table 3 (continued**): Estimated coefficients of logit regressions for attrition**

	Non-contact	Cooperation	Overall dropout
Employment status at wave 1			
Employed	0	0	0
Self-employed	0.52*	0.01	0.06
Willingness to participate in wave 2			
Yes	0.19	0.21	0.22
No	-0.09	-0.17	-0.16
Don't know	0.84**	0.53**	0.62**
Panel leave	-0.84*	-1.31+	-1.41+
Religious affiliation			
Roman catholic	0.07	-0.02	0.22
Protestant	-0.08	-0.18	-0.09
Christian service	-0.24	-0.11	-0.09
Other religious affiliation	0.39*	0.01	0.14
No religious affiliation	0.44*	0.17	0.22+
Living arrangement			
Child in family	-0.01	-0.53	-0.20
Receiving social welfare payment			
Yes	0.80+	-0.04	0.21
No	0.42*	-0.05	0.11
Household type			
Married couple without children	0	0	0
Non-married couple without children	-0.02	-0.36	-0.08
Married couple with children	0	0	0
Non-married couple with children	-0.02	-0.36	-0.08
Single mother	-0.21	-0.52	-0.20
Single father	1.41	0.25	0.83
Living alone	0.32	-0.34	0.06
Other (shared accommodation)	1.21+	-0.72	0.03
Household size			
1 person	0	0	0
2 persons	-0.34	0.05	0.02
3 persons	0.25	0.30*	0.31**
4+ persons	.	.	.
Regional type			
Predominantly urban	0.63**	0.08	0.14
Intermediate	0.16	-0.07	0.00
Predominantly rural	0	0	0
Provinces			
Burgenland	0.79*	0.08	0.32
Lower Austria	0	0	0
Vienna	-0.02	-0.08	0.03
Carinthia	0.69*	0.32+	0.28+
Styria	0.26	-0.39*	-0.31*
Upper Austria	-0.03	-0.08	-0.04
Salzburg	0.12	-0.21	-0.25
Tyrol	1.14***	0.26+	0.28+
Vorarlberg	0.32	-0.07	0.09
Planned residential move in wave 1			
Definitely no	0		
Probably no	0.52**	0.13	0.14
Abroad	1.46***	0.61+	0.89**
Within Austria	0.39*	0.23*	0.22*
Unsure for move or don't know where to move	0.77	0.62	0.65

Length of interview in wave 1			
Less than 45min	0.50**	0.28**	0.29**
45min to 1h59min	0	0	0
2h and longer	0.28	0.27	0.30
Missing duration	1.36**	0.33	0.01
Number of addresses of corresponding interviewer			
7-29		-0.25+	
30-39		0.11	
40-49		0	
50-59		-0.14	
60-69		0.29*	
70-79		-0.08	
80-95		-0.11	
150		-0.51+	
Constant	-5.30***	-1.76***	-2.25***
R^2	0.1620	0.0524	0.0617
N	4,947	4,870	4,986

Significance levels: + p<0.10; * p<0.05; ** p<0.01; *** p<0.001.
Remark: Further individual charactersitics had no explanatory power. For the entire model we refer to Table A3 in the Appendix.

4.2. Attrition Due to Cooperation

In this chapter we focus on 4,644 successfully contacted respondents and evaluate whether or not they participated in the wave 2 survey. As mentioned above, in total 3,907 were interviewed, which corresponds to a proportion of 84 percent. For analysing the determinants of attrition due to cooperation, we did not further distinguish between the different reasons for dropout at this stage (i.e. refusal or unable to be interviewed).

As mentioned earlier, persons were asked at the end of wave 1 interview if they agreed to be contacted again[9]. All respondents interviewed at wave 1 – regardless of their answer on being interviewed in a second wave – were politely invited to consider participating in wave 2. It turned out that this attempt was successful as 61 percent of those not willing to continue the panel survey could be interviewed in wave 2 (Table 4). Our findings indicate that it is – at least in Austria – worth contacting respondents again and asking them to consider

[9] The exact German wording of the question was: „Vieles in einem Menschenleben ist heute so und morgen anders. Das Generations and Gender Programm erarbeitet derartige Veränderungen. Dürfen wir Sie in drei Jahren wieder kontaktieren?"

participating in the panel, even if they stated at the initial interview that they do not want to be contacted again.

Table 4: Willingness in wave 1 to participate in wave 2 and completed interviews in wave 2

	Proportion of completed interviews	N
Yes	79%	4,799
No	61%	197
Don't know	50%	4
Total	78%	5,000

First, fertility related aspects were analysed for attrition due to cooperation. Compared to the mean attrition due cooperation of 16 percent, attrition was substantially lower in case of pregnancy at wave 1, with a share of 10 percent (Table 2, column 4). The small group of persons living in a homosexual relationship more often refused to participate in wave 2 (20 percent). Several specifications for problems with conceiving a child were considered (Table A2). Both, respondent's problems with conceiving a child and partner's problems with conceiving a child were associated with slightly higher attrition due to cooperation in bivariate analyses: It was 15 percent among respondents stating that they were for sure able to conceive a child, 17 percent among respondents answering that they were probably able to conceive a child, 18 percent among respondents who stated that they were probably not able to conceive a child and 17 percent among those stating that they were for sure not able to conceive a child. Moreover, the group of respondents refusing to answer the question on problems conceiving a child had high attrition, but due to the small size of this group (only three respondents), this result has to be regarded with caution, although possibly indicating a link between refusal to answer this rather sensitive question and refusal to participate in wave 2. Partner's problems to conceive a child were associated with slightly higher attrition. Also, answering with "don't know" on partner's fecundity problems was related with higher attrition, although again this group was very small (only five respondents).

Regarding fertility intentions, descriptive analyses showed somewhat lower attrition among those wanting a child at the time of wave 1 interview (14 percent), and a higher one if intending a child within the next three years (18 percent), but no further differences for the other categories (Table 2, column 4). Attrition due to cooperation varied substantially by attitudes towards marriage, captured via "Marriage is an outdated institution": Agreement towards this statement was associated with higher dropout (19 and 18 percent respectively), strong disapproval with lower dropout (12 percent). Dropout among those who refused to answer this question was high (25 percent), but this group was very small (including four persons only).

Second, individual, regional and field phase characteristics were taken into consideration. According to descriptive analyses, various socio-demographic characteristics were associated with attrition due to cooperation (Appendix Table A1, column 4). Higher non-response rates were observed among women as compared to men (17 versus 14 percent), in younger cohorts (1985-1989, thus aged 18-23 at wave 1 interview), among non-Austrian nationals at birth, among respondents with other than German as mother tongue or first language spoken at home, among lower educated, unemployed and those who were permanently ill, among divorced, single, non-married couples, single parents and those without a partner, among men and women living alone, among persons with limitations in daily activities and/or in bad health and among residents of certain Austrian provinces (Vienna and Carinthia). Moreover, persons who were undecided regarding a residential move had a large refusal rate, those not willing to participate in wave 2, respondents with comparable short or long interview time at wave 1, persons who had difficulties to make ends meet, respondents who did not talk with someone about their own personal experiences or feelings over the past twelve months and persons with no religious affiliation more often refused an interview. Furthermore, stepfamilies had higher attrition due to cooperation in descriptive analyses: Both, respondents with children from a previous partner living in the

household and respondents with a stepchild living in the household had higher shares of refusal or non-response.

Although bivariate analyses indicated differences in attrition by fecundity, multivariate analyses revealed no significant higher attrition in case of problems with conceiving a child[10]. Pregnancy, on the contrary and very traditional attitudes[11] were associated with significantly lower attrition due to cooperation (Table 3, column 3).

Regarding individual, regional and field phase characteristics, the following subgroups had higher nonresponse rates (Table 3, column 3): women, Austrian nationals who received Austrian nationality not at birth but later in life, lower educated, persons who planned a residential move or who were unclear about a residential move and those who did not want to be contacted again. Persons sharing an accommodation and residents of a specific Austrian provinces (Styria), showed significantly higher response rates. Moreover, interviewer workload was significantly associated with attrition: Interviewers with the largest workload (150 addresses) had significantly lower attrition. In fact, this group consisted of one single interviewer and evidently this interviewer was very successful in achieving cooperation by the respondents in wave 2.

4.3. Overall Dropout

Finally, we focus on 4,996 respondents and distinguish between dropout and successful interview only. With this distinction, overall dropout is 22 percent. Whereas separate analyses on attrition due to contact and due to refusal allows to get insight at which point of the panel

[10] Different specifications and combinations of the two questions on conception were incorporated in multivariate models to find out best model fit. Finally fecundity was captured via an indicator for either own or partner's problems with conceiving a child. The same applies for different specifications of fertility intentions (see Buber-Ennser 2013 for more details).

[11] i.e. strong disagreement towards the statement that marriage is an outdated institution.

study respondents were lost, analyses of general dropout reveals valuable information for data users regarding possible bias in the data. Also, for generating longitudinal weights often both types of attrition are combined. This was for example the strategy in the German DemoDiff study.

Overall dropout – the combination of dropout due to non-contact and dropout due to cooperation – was relatively high among those intending a child within the next three years (26 percent), among persons with liberal attitudes towards marriage (29 and 29 percent), among respondents living in a homosexual relationship at wave 1 (38 percent) (Table 2, column 6). Overall dropout was relatively low in case of pregnancy at wave 1 (16 percent) and among respondents with traditional attitudes towards marriage (17 percent). Dropout was of same size among respondents with and without fecundity problems (21 and 22 percent). Apart from these survey relevant variables, various individual characteristics were associated with high dropout in bivariate analyses: being young (cohorts born 1985 to 1992 and thus aged 18 to 23 at wave 1 interview), migration background, low education, unemployment, health problems, single, living as couple without children, single parents, stepfamilies, economic problems, without religious affiliation or other that Roman Catholic or protestant religious affiliation, urban environment, planned residential move and not willing to participate in a second wave.

Multivariate logit regressions revealed that fecundity and fertility intentions were not significantly associated with dropout, whereas respondents with traditional attitudes towards marriage and those expecting a child at wave 1 had significantly lower dropout (Table 3, column 4). In addition, women, persons with migration background, lower educated (ISCED 1 and 2), residents of specific Austrian provinces (Carinthia and Tyrol), persons without religious affiliation, persons planning a move and those not willing to be contacted for another interview had significantly higher attrition. Moreover, comparably short interview duration at wave 1 was associated with higher attrition.

Gender specific analyses revealed that pregnant women had significantly lower dropt whereas men whose partner expected a child had no significant lower attrition (results available on request). Traditional attitudes towards marriage were associated with higher dropout among women, not among men. Educational differences were stronger among women than men (the estimated coefficients were statistically significant among women only). Regional variations also differed among women and men: Dropout was highest among women living in Carinthia and in Tyrol. Whereas dropout was high in Tyrol due to the specific field phase situation, the high dropout in Carinthia might reflect a political difficult situation in this part of Austria around the time of the second wave of the survey (personal communication by Statistics Austria). Several cases of mismanagement in the Federal government of Carinthia got public at that time and have led to a general disappointment and distrust in political institution. As the GGS was financed by the Ministry, thus a political institution, the high dropout might be interpreted as a reaction towards the political situation in this part of Austria at the time around GGS wave 2.

In our analyses, MacFadden's pseudo R^2 - a measure for model fit - increased with the stepwise inclusion of survey related, individual, regional and field phase characteristic, but remained rather low (attrition due to non-contact: $R^2 = 0.1620$; attrition due to cooperation: $R^2 = 0.0524$; overall dropout: $R^2 = 0.1617$). Regarding the low explanatory power of models Watson and colleagues (2009, p. 179) conclude: "While there is undoubtedly (and thankfully) a large random component to survey nonresponse, it is nevertheless clear that there are strong associations between many observable characteristics of both respondents and interview process and experience that are predictive of nonresponse [….]. Such information […] can provide variables for inclusion in attrition models used in the construction of population weights or as instruments at the analysis stage". They conclude that poor explanatory power is a desired outcome in the sense that it reflects the large random component in survey nonresponse (N. Watson and Wooden 2009, p. 171). Following their argument, the

comparably low model fit in the current study indicates a large random component in survey nonresponse in the current data.

5. Discussion

Behr and colleagues (2005) suggested to include in analyses on attrition, not only individual characteristics and variables related to field work, but also important analysis variables. It is therefore crucial to study in the GGS attrition by family and fertility related variables, like fertility intentions, pregnancy, perceived problems for conceiving a child or homosexual partnership. In line, in a French survey on fertility intentions it turned out that the method of contraception had an effect on attrition (Razafindratsima et al. 2004). To our knowledge, the GGS – a main source for fertility and family formation processes – has not been analysed with regard to survey related characteristics, and papers examining comprehensively attrition in the GGS are rare (e.g. Régnier-Loilier & Lincot 2010; Régnier-Loilier 2012; Bartus & Speder 2013). For the Austrian GGS, apart from wave 1 characteristics, detailed information on field phase in waves 1 and 2 were available and allowed a comprehensive investigation on causes and determinants of attrition.

The current study on attrition in the Austrian GGS revealed that certain fertility related aspects were associated with panel dropout. On the one hand, pregnant women and persons with traditional attitudes had lower dropout, indicating that the second wave of the Austrian GGS is biased towards family oriented persons. Although the estimated coefficients in the overall model on overall dropout were significant at a 10 percent and at a 5 percent level only, these results have to be taken into consideration when analysing and interpreting results based on the longitudinal panel. Distinguishing between attrition due to non-contact and attrition due to cooperation revealed that women pregnant at wave 1 and thus mothers of toddlers significantly less often refused an interview. We might assume that these young mothers were

more often interested in the topic of the survey. Fertility intentions at wave 1, on the other hand, are not associated with dropout in wave 2, which is important for studying the realization of fertility intentions.

Descriptive analyses showed that some groups had comparably high dropout, namely persons living in a homosexual relationship, and the group of respondents refusing to answer the question on problems conceiving a child and those persons answering with "don't know" on partner's fecundity problems. Nevertheless, multivariate analyses revealed no statistically significant association. Due to the small size of these groups, results have to be regarded with caution, although possibly indicating a link between refusal to answer rather sensitive question and refusal to participate in wave 2. These questions might have been perceived as intrusive or offensive, thus leading to higher nonresponse in the second wave (Groves and Peytcheva 2008; Régnier-Loilier et al. 2011). Item non-response on crucial variables is regarded as an indicator of low co-operation, lack of interest in the survey and unpleasant or negative experience (Loosveldt et al. 2002; Rendtel 2002). To add, "don't know" on willingness to participate in a second wave was related to higher dropout and might be an indicator for not being interested in a second interview. Overall dropout was comparably high if wave 1 interviews were very short. One the one hand, this was the case, if respondents had no children and no partner and thus did not had to answer the corresponding questions. Typically young men and women had short interviews at wave 1. The fact that the length of interview at wave 1 remained significant when controlling for age, family status, household situation and various other characteristics might indicate that very short interview time is related with no interest in the topic and the tendency to answer questions quickly without further reflections.

Various individual and regional characteristics turned out to be significantly associated with dropout, with differences between attrition due to non-contact und attrition due to cooperation. On the one hand, young adults, respondents with other than Austrian nationality,

self-employed, married couples without children and urban population had significantly higher attrition due to non-contact. These characteristics were also related with higher overall dropout in the French GGS (Régnier-Loilier 2012). In addition, individuals who planned a move in wave 1 (particularly if planning to move abroad), those not willing to be contacted again, persons with other than catholic or protestant or without religious affiliation, recipients of social welfare payments at wave 1 and those with rather short interviews in wave 1 had significantly higher attrition due to non-contact. Regional variation in dropout due to non-contact was due to specific field phase situation in one province. On the other hand, attrition due to cooperation was significantly higher among women, Austrian nationals who received Austrian nationality not at birth but later in life, lower educated, among persons who planned a residential move or who were unclear about a residential move and those who did not want to be contacted again. These results stress the importance of including detailed information on residential move and migration background.

Regarding respondents' gender, studies on survey response mostly find higher response rates among women than among men. The main reason usually cited for this observation is the fact that women are more often at home (N. Watson and Wooden 2009). Nevertheless, there is limited evidence that – even conditional on contact – men may be slightly more likely to discontinue survey participation (Nicoletti and Buck 2004; N. Watson and Wooden 2009). The fact that women more often refused to participate in wave 2, was interpreted by interviewers at Statistics Austria with the following assumption or observation: If men agree to participate in a survey, they are to some extent more convinced about survey participation and thus more likely to answer in a second wave. Women, on the other hand, reflect about panel participation later, i.e. after the first interview has taken place. They are therefore more likely to refuse participation in a second wave. This explanation is based on experiences and reflections of interviewers of the Austrian GGS wave 1 and wave 2, and is not based on empirical material. Nevertheless, we are convinced that interviewers acquire a lot of

knowledge during their work - some of the Austrian interviewers have survey experiences of twenty years and more – and it might be worth conducting qualitative interviews to gain further insight in the interview process.

Comparing the current results based on the Austrian GGS with work by Bartus and Speder (2013) on panel continuation in the GGS in Bulgarian, French, Georgian, German and Hungarian GGS underlines differences by countries. Whereas dropout was high among men in the study by Bartus and Speder (2013), it was comparably high among women in Austria, as mentioned earlier. Also, differences by educational level and economic situation become once more evident. With this regard, Austria is in line with countries like France, Germany and Hungary, where educated and persons with relatively more income have lower dropout. The opposite is the case in Bulgaria and Georgia: In Bulgaria, highly educated were less likely to continue, in Bulgaria and Georgia, those reporting economic constraints, more often participated in the second wave (Bartus and Speder 2013). At this point it is important to state that results on education differed in Austria by attrition due to non-contact and attrition due to cooperation: Compared to lower educated (ISCED 1 and 2), highly educated (ISCED 5 and 6) had comparable high attrition due to non-contact on the one side, and significantly lower attrition due to cooperation on the other. This result indicates the importance of distinguishing – if possible – different types of attrition.

Finally, a remark on respondent's willingness to continue in a panel survey has to be stressed again: As mentioned earlier, persons were asked at the end of wave 1 interview if they agreed to be contacted again. In Austria, all respondents interviewed at wave 1 – regardless of their answer on being interviewed in a second wave – were politely invited to consider participating in wave 2. It turned out that this attempt was successful in Austria, as 61 percent of those not willing to continue the panel survey could be interviewed in wave 2.

6.Acknowledgements

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Appendix

Table A1: Attrition due to non-contact, cooperation and overall dropout, descriptive results

	Non-contact		Cooperation		Overall dropout	
		N		N		N
Total	7%	4,996	16%	4,644	22%	4,996
Indicator for fecundity						
No problems reported	7%	4,313	16%	4,003	22%	4,313
Respondent or partner have problems to conceive a child	6%	503	17%	474	21%	503
Pregnant	7%	149	10%	139	16%	149
Female partner 50+	0%	18	11%	18	11%	18
Homosexual relationship	23%	13	20%	10	38%	13
Fertility intentions						
Wants a child now	6%	549	14%	518	18%	549
Intends a child within 3 years	10%	757	18%	685	26%	757
Intends a child later	9%	1,134	15%	1,029	23%	1,134
Intends no further child(ren)	6%	2,362	16%	2,232	21%	2,362
Don't know	10%	10	11%	9	20%	10
Refusal	0%	4	0%	4	0%	4
Marriage is outdated institution						
Strongly agree	12%	185	19%	162	29%	185
Agree	9%	667	18%	607	26%	667
Neither agree nor disagree	7%	1,091	18%	1,018	23%	1,091
Disagree	7%	1,990	15%	1,846	22%	1,990
Strongly disagree	5%	855	12%	809	17%	855
Does not apply	3%	204	13%	198	16%	204
Don't know or refusal	0%	4	25%	4	25%	4
Gender						
Male	7%	1,996	14%	1,852	20%	1,996
Female	7%	3,000	17%	2,792	23%	3,000
Cohorts						
1960-1964	6%	346	15%	328	19%	346
1965-1969	5%	1,173	17%	1,111	21%	1,173
1970-1974	6%	964	16%	908	21%	964
1975-1979	6%	842	13%	794	18%	842
1980-1984	9%	851	16%	773	23%	851
1985-1989	11%	745	18%	664	27%	745
1990-1992	12%	75	15%	66	25%	75
Nationality						
Austrian nationality since birth	5%	4,175	15%	3,935	20%	4,175
Austrian nationality, received later	9%	345	22%	315	28%	345
German nationality	34%	94	19%	62	47%	94
Other nationality	17%	400	17%	332	31%	400
Highest educational level						
ISCED 1+2	10%	640	21%	579	28%	640
ISCED 3	6%	2,706	16%	2,534	21%	2,706
ISCED 4	6%	771	14%	727	19%	771
ISCED 5+6	9%	879	14%	804	21%	879
Employment status at wave 1						
Employed	6%	3,109	16%	3,113	21%	3,109
Self-employed	8%	314	13%	315	19%	314
Unemployed	12%	201	20%	201	30%	201
Student	11%	378	13%	378	23%	378
Retired	16%	21	10%	21	24%	21
Parental leave	4%	322	17%	322	20%	322
Permanently ill	13%	14	29%	14	38%	14
Housekeeping	6%	200	15%	200	20%	200
Civil service	3%	31	16%	31	19%	31
Other	13%	49	20%	49	30%	49

Table A1 (continued): Attrition due to non-contact, cooperation and overall dropout, descriptive results

	Non-contact		Cooperation		Overall dropout	
		N		N		N
Total	7%	4,996	16%	4,644	22%	4,996
Parity						
Childless	9%	2,273	16%	2,071	24%	2,273
1 child	7%	929	17%	863	23%	929
2 children	5%	1,228	15%	1,171	19%	1,228
3+ children	5%	566	13%	539	17%	566
Marital status						
Married	5%	2,179	13%	2,082	17%	2,179
Divorced	9%	303	20%	276	27%	303
Widowed	11%	18	6%	16	17%	18
Single	9%	2,496	18%	2,270	25%	2,496
Living arrangement						
Child in family	7%	884	16%	821	22%	884
Married couple without children	6%	306	12%	288	17%	306
Non-married couple without children	9%	522	18%	477	25%	522
Married couple with children	4%	1,835	13%	1,761	17%	1,835
Non-married couple with children	8%	402	20%	371	27%	402
Single mother	7%	264	21%	246	27%	264
Single father	20%	10	25%	8	40%	10
Living alone	11%	644	18%	573	27%	644
Other (shared accommodation)	23%	129	7%	99	29%	129
Household size						
1 person	11%	644	18%	573	27%	644
2 persons	8%	1,013	16%	934	23%	1,013
3 persons	8%	1,164	18%	1,073	24%	1,164
4+ persons	5%	2,175	14%	2,064	18%	2,175
Children with previous partner living in the household						
No	7%	4,585	15%	4,261	21%	4,585
Yes	7%	411	20%	383	26%	411
Stepchildren living in the household						
No	7%	4,915	16%	4,570	22%	4,915
Yes	9%	81	18%	74	25%	81
Has stepchildren not living in the household						
No	7%	4,775	16%	4,439	22%	4,775
Yes	7%	221	17%	205	23%	221
Self-perceived health						
Very good	7%	2,826	16%	2,626	22%	2,826
Good or fair	7%	2,101	16%	1,962	21%	2,101
(Very) bad	19%	69	23%	56	38%	69
Providing care						
No	7%	4,688	16%	4,354	22%	4,688
Yes	6%	308	14%	290	19%	308
Regional type						
Predominantly urban	11%	1,666	17%	1,488	26%	1,666
Intermediate	6%	1,319	15%	1,240	20%	1,319
Predominantly rural	5%	2,011	15%	1,916	19%	2,011
Provinces						
Burgenland	7%	150	17%	139	23%	150
Lower Austria	4%	935	16%	898	19%	935
Vienna	11%	951	19%	849	28%	951
Carinthia	7%	323	19%	299	25%	323
Styria	6%	699	11%	659	16%	699
Upper Austria	5%	912	16%	868	20%	912
Salzburg	7%	335	12%	313	18%	335
Tyrol	12%	454	16%	401	26%	454
Vorarlberg	8%	237	17%	219	23%	237

Table A1 (continued): Attrition due to non-contact, cooperation and overall dropout, descriptive results

	Non-contact		Cooperation		Overall dropout	
		N		N		N
Total	7%	4,996	16%	4,639	22%	4,996
Tenant						
Owner	5%	2,726	15%	2,602	19%	2,726
Tenant	11%	1,933	17%	1,727	26%	1,933
Rent-free accommodation	7%	294	13%	274	19%	294
Other	5%	39	19%	37	23%	39
Don't know	0%	1	100%	1	100%	1
Refusal	0%	3	0%	3	0%	3
Planned residential move in wave 1						
Definitely no	4%	2,840	15%	2,718	19%	2,840
Probably no	10%	728	15%	654	24%	728
Abroad	32%	62	19%	42	45%	62
Within Austria	10%	1,336	17%	1204	25%	1,336
Unsure for move or don't know where to move	13%	30	27%	26	37%	30
Willingness to participate in wave 2						
Yes	7%	4,795	15%	4,467	21%	4,795
No	13%	197	30%	173	39%	197
Don't know	0%	4	50%	4	50%	4
Religious affiliation						
Roman catholic	5%	3,582	15%	3,396	19%	3,582
Protestant	10%	179	13%	161	22%	179
Other religious affiliation	14%	499	18%	430	29%	499
No religious affiliation	11%	730	19%	651	27%	730
Don't know	0%	1	100%	1	100%	1
Refusal	0%	5	20%	5	20%	5
Religiosity						
Not at all religious	11%	579	18%	516	27%	579
1-2	8%	518	16%	475	23%	518
3-4	6%	648	15%	607	21%	648
5	6%	1,112	17%	1,042	22%	1,112
6-7	7%	1,061	14%	992	19%	1,061
8-9	6%	714	15%	675	20%	714
Very religious (10)	8%	357	17%	330	23%	357
Don't know	0%	3	33%	3	33%	3
Refusal	0%	4	25%	4	25%	4
Make ends meet						
With great difficulty	14%	147	21%	126	32%	147
With difficulty	12%	303	17%	268	27%	303
With some difficulty	7%	864	16%	804	22%	864
Fairly easily	6%	1,640	15%	1,569	20%	1,640
Easily	7%	1,221	17%	1,138	23%	1,221
Very easily	7%	787	13%	735	18%	787
Don't know	4%	0	25%	4	25%	0
Receiving social welfare payment						
No	7%	4,895	16%	4,562	21%	4,895
Yes	19%	100	16%	81	32%	100
Don't know	0%	1	100%	1	100%	1
Talked with someone about own personal experiences/feeling						
Yes	7%	4,324	15%	4,022	21%	4,324
No	8%	672	18%	622	24%	672
Talked with someone about his/her personal experiences/feeling						
Yes	7%	4,248	16%	3,952	22%	4,248
No	8%	748	16%	692	23%	748
Length of interview in wave 1						
Less than 45min	9%	674	18%	614	25%	674
45min to 1h59min	7%	4,212	15%	3,933	21%	4,212
2h and longer	8%	77	20%	71	26%	77
Missing duration	21%	33	4%	26	24%	33

Table A1 (continued): Attrition due to non-contact, cooperation and overall dropout, descriptive results

	Non-contact	Cooperation		Overall dropout	
			N		N
Total	16%		4,639	22%	4,996
Number of addresses of corresponding interviewer					
7-29	12%		887	16%	
30-39	17%		387	21%	
40-49	15%		839	19%	
50-59	14%		638	19%	
60-69	20%		580	27%	
70-79	18%		700	20%	
80-95	17%		469	20%	
150	10%		144	13%	

Table A2: Attrition due to cooperation by survey relevant aspects

	Attrition	N
Total	16%	4,644
Pregnancy		
Yes	10%	139
No	16%	4,459
Perhaps	17%	18
Female partner 50+	11%	18
Homosexual relationship	20%	10
Respondent able to conceive		
No for sure	17%	223
Probably no	18%	71
Probably yes	17%	812
Yes for sure	15%	3,360
Pregnant	10%	139
Don’t know	13%	8
Refusal	67%	3
Partner able to conceive		
No for sure	17%	178
Probably no	17%	36
Probably yes	15%	600
Yes for sure	15%	2,664
Pregnant	10%	136
No partner	18%	996
Don’t know	20%	5
Refusal	100%	1
Indicator for fecundity		
No problems reported	16%	4,003
Respondent or partner have problems to conceive a child	17%	474
Fertility intentions		
Wants a child now	14%	518
Intends a child within 3 years	18%	685
Intends a child later	15%	1,029
Wants no further child(ren)	16%	2,232
Don’t know	11%	9
Refusal	0%	4
Marriage is outdated institution		
Strongly agree	19%	162
Agree	18%	606
Neither agree nor disagree	18%	1,017
Disagree	15%	1,844
Strongly disagree	12%	808
Does not apply	13%	198
Don’t know or refusal	25%	4

Table A3: Estimated coefficients of logit regression due to non-contact, cooperation and overall dropout

	Non-contact	Cooperation	Overall dropout
Indicator for fecundity			
No problems reported	0	0	0
Respondent or partner have problems to conceive a child	0.06	0.11	0.13
Pregnant	0.02	-0.53+	-0.38
Female partner 50+	.	-0.94	-1.12
Homosexual relationship	0.02	0.39	0.53
Fertility intentions			
Wants a child now	-0.26	-0.21	-0.21
Intends a child within 3 years	0.27	0.15	0.18
Intends a child later	0.03	-0.12	-0.08
Intends no further child(ren)	0	0	0
Don't know	-0.05	-1.18	-0.56
Marriage is outdated institution			
Strongly agree	0.56*	0.15	0.12
Agree	0.12	0.01	0.02
Neither agree nor disagree	0	0	0
Disagree	0.28+	-0.03	0.00
Strongly disagree	-0.03	-0.32*	-0.26*
Does not apply	-0.71	-0.22	-0.33
Don't know or refusal	.	-0.22	-0.53
Gender			
Male	0	0	0
Female	0.03	0.24*	0.23**
Cohorts			
1960-1964	0	0	0
1965-1969	0.00	0.03	0.09
1970-1974	0.12	-0.01	0.07
1975-1979	0.02	-0.25	-0.19
1980-1984	0.35	-0.11	0.00
1985-1989	0.87*	0.19	0.31
1990-1992	0.80	-0.02	0.12
Nationality			
Austrian nationality since birth	0	0	0
Austrian nationality, received later	0.30	0.34*	0.43**
German nationality	2.28***	0.49	1.32***
Other nationality	0.86***	0.23	0.48**
Highest educational level			
ISCED 1+2	0	0	0
ISCED 3	-0.15	-0.24*	-0.26*
ISCED 4	-0.01	-0.30*	-0.32*
ISCED 5+6	0.31	-0.26+	-0.24+
Employment status at wave 1			
Employed	0	0	0
Self-employed	0.52*	0.01	0.06
Unemployed	0.19	0.21	0.22
Student	-0.09	-0.17	-0.16
Retired	0.64	-0.53	-0.24
Parental leave	-0.84*	-0.13	-0.17
Permanently ill	0.07	-0.02	0.22
Housekeeping	-0.08	-0.18	-0.09
Civil service	-0.70	-0.11	-0.12
Other	0.38	0.31	0.41

Table A3 (continued): Estimated coefficients of logit regression due to non-contact, cooperation and overall dropout

	Non-contact	Cooperation	Overall dropout
Parity			
Childless	0	0	0
1 child	0.46	0.01	0.15
2 children	0.55	0.09	0.26
3+ children	0.53	-0.12	0.06
Marital status			
Married	0	0	0
Divorced	0.67	0.74	0.44
Widowed	1.21	0.03	-0.32
Single	0.61	0.85	0.61
Living arrangement			
Child in family	-0.01	-0.53	-0.20
Married couple without children	0.80+	-0.04	0.21
Non-married couple without children	0.42	-0.35	0.11
Married couple with children	0	0	0
Non-married couple with children	-0.02	-0.36	-0.08
Single mother	-0.21	-0.52	-0.20
Single father	1.41	0.25	0.83
Living alone	0.32	-0.34	0.06
Other (shared accommodation)	1.21+	-0.72	0.03
Household size			
1 person	0	0	0
2 persons	-0.34	0.05	0.02
3 persons	0.25	0.30*	0.31**
4+ persons	.	.	.
Children with previous partner living in the household			
No	0	0	0
Yes	-0.04	0.12	0.10
Stepchildren living in the household			
No	0	0	0
Yes	0.34	0.28	0.30
Has stepchildren not living in the household			
No	0	0	0
Yes	0.19	0.02	0.02
Health			
Very good	0	0	0
Good or fair	-0.14	-0.10	-0.09
(Very) bad	0.54	0.36	0.43
Providing care			
No	0	0	0
Yes	0.07	0.17	0.19
Regional type			
Predominantly urban	0.63**	0.08	0.14
Intermediate	0.16	-0.07	0.00
Predominantly rural	0	0	0
Provinces			
Burgenland	0.79*	0.08	0.32
Lower Austria	0	0	0
Vienna	-0.02	-0.08	0.03
Carinthia	0.69*	0.32+	0.28+
Styria	0.26	-0.39*	-0.31*
Upper Austria	-0.03	-0.08	-0.04
Salzburg	0.12	-0.21	-0.25
Tyrol	1.14***	0.26+	0.28+
Vorarlberg	0.32	-0.07	0.09

Table A3 (continued): Estimated coefficients of logit regression due to non-contact, cooperation and overall dropout

	Non-contact	Cooperation	Overall dropout
Tenant			
Owner	0	0	0
Tenant	0.19	-0.04	-0.02
Rent-free accommodation	0.24	-0.18	-0.13
Other	0.16	0.27	0.21
Planned residential move in wave 1			
Definitely no	0		
Probably no	0.52**	0.13	0.14
Abroad	1.46***	0.61+	0.89**
Within Austria	0.39*	0.23*	0.22*
Unsure for move or don't know where to move	0.77	0.62	0.65
Willingness to participate in wave 2			
Yes	0	0	0
No	0.81**	0.85***	0.86***
Don't know	.	1.73+	1.84+
Religious affiliation			
Roman catholic	0	0	0
Protestant	0.24	-0.11	-0.09
Other religious affiliation	0.49*	0.08	0.13
No religious affiliation	0.44*	0.17	0.22+
Refusal	.	-0.68	-0.56
Religiosity			
Not at all religious	0.14	-0.04	-0.03
1-2	-0.07	-0.08	-0.12
3-4	-0.18	-0.17	-0.18
5	0	0	0
6-7	0.11	-0.13	-0.11
8-9	-0.11	-0.13	-0.09
Very religious (10)	-0.04	0.03	-0.02
Don't know	.	0.17	-0.07
Refusal	.	0.61	0.35
Make ends meet			
With great difficulty	0.22	0.17	0.19
With difficulty	0.27	0.10	0.07
With some difficulty	-0.02	0.06	0.05
Fairly easily	0	0	0
Easily	0.16	0.11	0.14
Very easily	0.13	-0.12	-0.11
Don't know	.	-0.00	0.00
Receiving social welfare payment			
Yes	0.73*	-0.06	0.10
No	0	0	0
Talked with someone about own personal experiences/feeling			
Yes	0	0	0
No	-0.23	0.06	0.05
Talked with someone about his/her personal experiences/feeling			
Yes	0	0	0
No	-0.12	-0.03	0.03
Length of interview in wave 1			
Less than 45min	0.50**	0.28**	0.29**
45min to 1h59min	0	0	0
2h and longer	0.28	0.27	0.30
Missing duration	1.36**	0.33	0.01

Table A3 (continued): Estimated coefficients of logit regression due to non-contact, cooperation and overall dropout

	Non-contact	Cooperation	Overall dropout
Number of addresses of corresponding interviewer			
7-29		-0.25+	
30-39		0.11	
40-49		0	
50-59		-0.14	
60-69		0.29*	
70-79		-0.08	
80-95		-0.11	
150		-0.51+	
Constant	-5.30***	-1.76***	-2.25***
R^2	0.1620	0.0524	0.0617
N	4,947	4,870	4,986

Significance levels: + p<0.10; * p<0.05; ** p<0.01; *** p<0.001.

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