

HACETTEPE UNIVERSITY  
INSTITUTE OF POPULATION STUDIES

**TACKLING WITH ITEM-LEVEL MISSINGNESS  
AMONG OLDER RESPONDENTS:  
EVIDENCE FROM WORLD VALUES  
SURVEY/EUROPEAN VALUES STUDY JOINT 2017**

Şule CEYLAN

Department of Social Research Methodology  
Master's Thesis

Ankara  
August 2025

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INSTITUTE OF POPULATION STUDIES

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Supervisor Assist. Prof. Dr. Melike SARAÇ

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August 2025

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Tackling with Item-level Missingness among Older Respondents: Evidence from  
World Values Survey/European Values Study Joint 2017  
Şule Ceylan

This is to certify that we have read and examined this thesis and, in our opinion, it fulfills the requirements in scope and quality of a thesis for the degree of Master of Arts in Social Research Methodology.

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## ABSTRACT

The thesis examines item nonresponse, one of the data quality indicators, by focusing on individuals aged 50 and over. It shows how item nonresponse varies by age, socio-demographic characteristics, country affiliation, and survey design variables, specifically for religiosity/religious values, institutional confidence, and retrospective questions, using binary and multinomial logistic regression analyses separately for individuals under 50 and those aged 50 and over. In this study, the EVS/WVS Joint 2017 data set, which is obtained by combining the World Values Survey and the European Values Study data sets, including data from Turkey, Zimbabwe, Italy and Switzerland, is used.

The findings indicate that the occurrence of item nonresponse varies by country, age group, and question group. Additionally, independent variables such as sex, education level, subjective health status, marital status, region, immigration status and remaining variables are also statistically significant. Women, those with lower education levels, and those reporting poor health are more likely to leave these question items unanswered. Among individuals over 50 and those under 50, women are more likely than men to leave confidence questions unanswered. The same pattern is observed among individuals with lower education levels. In Switzerland, immigrants aged 50 and over are more likely to leave both confidence and retrospective questions, while immigrants under 50 are more likely to leave retrospective question unanswered. Furthermore, item nonresponse is less likely in self-administered surveys in Switzerland.

The thesis results indicate that item nonresponse varies by country, age group, and question type. For older respondents, additional survey modules, supplementary qualitative interviews, and conversational interviewing are presented as survey research methods, and detailed studies on these methods are recommended. Rather than offering general methodological recommendations covering all countries, age groups and question groups, it is emphasized that these methods should be tested in different contexts and survey settings.

**Keywords:** item nonresponse, older respondents, total survey error (TSE)

## ÖZET

Bu tez veri kalitesi göstergelerinden biri olan madde cevapsızlığını 50 yaş ve üzeri kişilere odaklanarak incelemektedir. Bu çalışmada, madde cevapsızlığının yaşa, sosyo-demografik özelliklere, ülkeye bağlılık ve anket tasarımı değişkenlerine göre nasıl değiştiği; dindarlık/dini değer, kurumsal güven ve geriye dönük soru grupları özelinde, 50 yaş altı ve 50 yaş ve üzeri kişiler için ayrı ayrı ikili ve çokterimli lojistik regresyon analizleri yapılarak gösterilmiştir. Çalışmada Türkiye, Zimbabve, İtalya ve İsviçre veri setleri kullanılmış olup, Dünya Değerler Araştırması ve Avrupa Değerler Çalışması'nın veri setlerinin birleştirildiği EVS/WVS Joint 2017 veri seti kullanılmıştır.

Bulgular, madde düzeyinde cevapsızlık ihtimalinin ülkeye, yaş grubuna ve soru grubuna göre farklılaştığını göstermektedir. Buna ek olarak, cinsiyet, eğitim düzeyi, öznel sağlık durumu, medeni durum, bölge, göçmenlik durumu ve kalan bağımsız değişkenler de istatistiksel olarak anlamlı çıkmıştır. Kadınlar, eğitim seviyesi düşük olanlar ve sağlık durumunu kötü olarak beyan eden kişiler daha yüksek ihtimalle madde cevapsızlığı göstermektedir. 50 yaş üzeri kişilerde ve 50 yaş altı kişilerde, kadınlar erkeklere kıyasla daha yüksek ihtimalle güven sorularını cevapsız bırakmaktadır. Eğitim seviyesi düşük olan kişilerde de aynı durum gözlemlenmiştir. İsviçre'de 50 yaş ve üzerinde olan göçmenler hem güven hem de geçmişe dönük soruları daha yüksek ihtimalle cevapsız bırakırken, 50 yaş altındaki göçmenler ise geçmişe dönük soruyu daha yüksek ihtimalle cevapsız bırakmaktadır. Ayrıca, İsviçre'de madde cevapsızlığı, cevaplayıcı tarafından doldurulan anketlerde daha düşük ihtimalle gerçekleşmektedir.

Tez sonuçlarına bakıldığında, madde cevapsızlığının ülkeye, yaş grubuna ve soru grubuna göre değiştiği belirlenmiştir. Yaşlılara yönelik ek anket modülleri, destekleyici nitel görüşmeler ve “conversational interviewing” anket araştırma yöntemleri olarak sunulmakta ve bu yöntemler ile ilgili detaylı çalışmaların yapılması önerilmektedir. Tüm ülkeleri, yaş gruplarını ve soru gruplarını kapsayan genelleyici metodolojik öneriler sunmaktan ziyade, bu yöntemlerin farklı bağlamlarda ve anket çalışmalarında test edilmesi gerektiği vurgulanmaktadır.

**Anahtar Kelimeler:** madde cevapsızlığı, yaşlı cevaplayıcılar, toplam anket hatası

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## CHAPTER 1. INTRODUCTION

Total Survey Error (TSE) theory has dominated survey research since the 1990s. TSE according to Biemer and Lyberg (2003), is the difference among the population mean, total and other population parameters, and the parameter estimates based upon sampling. TSE includes a variety of error components, the most important of which is statistically calculable sampling error (Weisberg, 2005). Weisberg (2005) refers to sampling error as a tip of the iceberg because it can be calculated mathematically. Nonsampling error, on the other hand, is difficult to assess (Weisberg, 2005). The only source of sampling error is choosing a sample rather than the entire population. Nonsampling error can arise at any point during the research process (Biemer & Lyberg, 2003; Weisberg, 2005), which includes the errors in data collection, data processing, and estimation processes that can be caused by respondents, interviewers, refusals to participate, and data entry (Biemer & Lyberg, 2003).

The connection between TSE and age is a subject of important debate in the literature, studied from multiple perspectives. The ages of both respondents and interviewers can impact the data quality. The age of the respondent is analyzed concerning subjects such as representativeness, institutionalization, survey response duration, mode selection, social desirability, and recall error, with an emphasis on its influence on data quality from the TSE perspective (Dormagen & Michel, 2018; Kaspar et al., 2023; Yan & Tourangeau, 2008; Herzog et al., 1983; Rodgers & Herzog, 1987; Korbmacher, 2014). Furthermore, incompatibility in age between the interviewer and the respondent may result in an interviewer effect, affecting data quality negatively (Życzyńska-Ciołek & Kołczyńska, 2021).

Many studies on measurement error, which is a component of nonsampling error, have been conducted in the survey research literature. The basic sources of measurement error are information system, environment or setting, mode, respondent, and interview instrument (Biemer & Lyberg, 2003). In addition, studies on questionnaire design, question wording effect, mode effects, recall error, proxy response, and interviewer-related errors have been handled within the scope of measurement error (Biemer et al., 2013). In addition to this, the literature discusses the

impact of measurement error on data quality in relation to respondent characteristics and age (Cernat & Toepoel, 2024; Thompson & Tamborini, 2023).

Another important component of Total Survey Error is nonresponse error. Nonresponse error is mostly evaluated in terms of two major constituents: unit nonresponse and item nonresponse. Biemer and Lyberg (2003), on the other hand, identified four types of nonresponse error: whole unit, within unit, item, and incomplete information. According to Biemer (2011), unit nonresponse error occurs at the unit level when the sampling unit (household, establishment, etc.) does not answer to any section of the questionnaire. Item-level nonresponse arises when some sections of the questionnaire are completed but others are not. Lynn (2012) assesses the reasons for unit-level nonresponse from the perspectives of the interviewer's inability to recognize the sampling unit, failure to reach the sampling unit, the unwillingness of the sampling unit to participate in the survey, communication issues between the interviewer and the sampling unit (such as a language barrier), and data loss.

However, according to Lynn (2012), nonresponse error levels vary between surveys due to a variety of reasons, including the characteristics of the sample units, the method of data collection, the fieldwork procedures, and societal and cultural contexts. These ingredients vary from country to country. The concepts of "don't know," "item refusals," and "not ascertained" were used by Weisberg (2005) to assess item nonresponse, whereas the concepts of contactability, panel studies, and callback were used to evaluate unit nonresponse. The literature has also examined nonresponse error in a variety of contexts, including paradata, permission, comparisons between respondents and nonrespondents, missing data, sociodemography, ethnicity, and others.

There are some reasons that can contribute to item nonresponse. According to the research of Shoemaker et al. (2002), respondents are more inclined to provide a "refusal" response when faced with sensitive questions, while they tend to select "don't know" when confronted with cognitively demanding questions. The characteristics of the questions (Silber et al., 2021), the difficulty of the task (Jabkowski & Piekut, 2024), a neutral response category and topic familiarity (Zhu, 1996) are all relevant reasons. Additionally, sensitive topics such as violence, income, immigrants, and sexual orientation (Skafida et al., 2022; Jabkowski & Piekut, 2024; Piekut, 2021; Kim &

Fredriksen-Goldsen, 2013), as well as the socio-demographic characteristics of respondents (Kim & Fredriksen-Goldsen, 2013) and the language proficiency of immigrants (Wenz et al., 2021; Jacobsen, 2022) have been discussed in the literature as contributing reasons.

National and cross-national survey studies are being conducted that focus on various population subgroups. These subgroups include women, youth/children, migrants, and the elderly. An analysis of surveys related to women reveals the use of both mixed methods and solely quantitative approaches. Examples of mixed-method research include the OSCE-led Survey on the Well-being and Safety of Women and the 2014 Research on Domestic Violence against Women in Turkey. Both studies investigate violence against women, with the first being a regional study and the latter a national one. Both employ surveys, in-depth interviews, and focus group discussions (Organization for Security and Co-operation in Europe [OSCE], 2019; Hacettepe University Institute of Population Studies, 2015). Additionally, there are studies that rely exclusively on survey methods, such as The Violence against Women: An EU-wide survey and 2018 Turkey Demographic and Health Survey. The former is a regional study conducted using CAPI/PAPI modes, while the latter is a national study also utilizing CAPI/PAPI modes (European Union Agency for Fundamental Rights [FRA], 2014; Hacettepe University Institute of Population Studies, 2019).

When examining studies related to children, the 2023 National Survey of Children's Health stands out for its comprehensive assessments aimed at identifying families with children, particularly focusing on those with special needs and children aged 0-5. Additionally, it is noteworthy that different questionnaires are developed based on 0-5, 6-11, and 12-17 aged groups (U.S. Census Bureau, 2024a). Another significant study is the longitudinal cohort research known as Growing Up in Ireland. This study includes three cohorts: Cohort'98, Cohort'08, and Cohort'24 which of the pilot study was conducted in 2023. It investigates the well-being and developmental processes of children, providing essential evidence for effective policy and service delivery (Department of Children, Disability and Equality, n.d.).

The research titled "The EU Survey on Immigrants and Descendants of Immigrants," which focuses on immigrants, is a regional research initiative conducted through face-to-face and online interviews in 2022. Additionally, due to the varying

registration systems of different countries and the diverse characteristics of immigrant groups, the data collection methods employed by these nations differ. These methods include multi-stage clustered samples, unclustered single-stage samples, location sampling, quota sampling, and online surveys conducted via social media (FRA, 2024).

In survey studies involving older individuals, longitudinal panel research is predominant. These studies aim to understand the alterations that occur over time as people age, with the goal of influencing policy across various domains. For instance, the University of Michigan Health and Retirement Study (HRS) is a longitudinal panel study conducted with individuals aged 50 and older, along with their spouses. A significant aspect of this study is to conduct interviews with proxy respondents when sampled respondents can no longer participate due to various reasons, such as physical or cognitive impairments; these proxy respondents are often the spouses of the respondents. Furthermore, interviews continue with spouses even after the respondents have passed away. While individuals residing in institutions are not included as sampled respondents, interviews are conducted with those who later enter care facilities, often utilizing proxy respondents if direct interviews are not feasible. Weighting is applied to ensure the representation of individuals in institutions. Additionally, Black and Hispanic individuals are often overrepresented in certain cohorts. Physical measurements, psychosocial data, genetic information, and biomarkers are collected from the respondents (Health and Retirement Study [HRS] Staff, 2011).

Another significant study is the English Longitudinal Study of Ageing (ELSA), which is a longitudinal panel study that began in 2002, focusing on people aged 50 and above, along with their spouses. Similar to the Health and Retirement Study (HRS), this research allows proxy respondents to answer questions when the sampled respondents are unable to do so. In this study, interviews continue with core samples as they move from private households to institutions, while interviews with refreshed respondents who have moved to institutions are not conducted. Additionally, the study includes physical, cognitive, and psychosocial assessments, along with nurse visits. A salient aspect of this research is the use of a feeding forward data technique to help respondents recall their answers from previous waves (NatCen Social Research, 2020).

Different and specific methodological approaches have been implemented for each population group. In studies involving immigrants, flexibility was introduced in sample-selection process and mode of data collection to enhance the representativeness of the sample. For research focused on children and adolescents, special questionnaires were developed to account for the developmental differences across age groups. In the case of women, due to the sensitive nature of questions regarding violence, a mixed-method approach was employed to facilitate an in-depth analysis of their experiences with violence. For the elderly, longitudinal panel studies were conducted to understand age-related changes, and the health conditions of respondents, which vary with age, were also analyzed.

The examination of disadvantaged and vulnerable subpopulations, with regard to survey design, survey instrument, data collection mode, and data collection process, is integral at each phase of the research process and consequently addressed thoroughly. The present investigation scrutinized certain segments of society that are at a disadvantage, specifically, the elderly people, immigrants, religious affiliations, economically underprivileged individuals, disabled communities, sexual minorities, and ethnic groups. Piekut's (2021) investigation focused on the utilization of "don't know" and "refuse to answer" responses among immigrants in Europe. Feskens et al. (2006) examined minority definitions and mode-related perspectives. Lee et al. (2018) employed the proxy nonresponse method, which consists of contact effort and reluctance from contact history, to study same-sex marriages. Meanwhile, Brick and Williams (2013) conducted cross-sectional studies with the aim of analyzing disadvantaged groups to improve response quality.

Older adults are among the groups that face disadvantages, as stated earlier. Numerous studies have been carried out on the older population, covering a variety of topics including mode of data collection, item nonresponse, representation, cognitive skills, proxy respondents, incentives for respondents, questionnaire design, recall errors, sensitive questions, interviewer effect, factual information, closed-ended questions, time-related and chronological aspects, the telescoping effect, retrospective data, and institutionalized populations.

Gaskell et al. (2000) conducted a study investigating telescoping effect among older respondents. The issue of survey data reliability being compromised by temporal

estimation has been deliberated. The telescoping phenomenon refers to the occurrence of an event being recollected as having happened more recently than its actual timeline. Older people tend to experience this phenomenon more frequently. Schanze (2021) conducts a contrast between the older adults residing in institutional facilities and those living in private households. The data and response behavior exhibited by older adults within institutional settings is of inferior quality. The discrepancy between the two groups becomes negligible when adjustments are made for sociodemographic and health-related factors.

When examining data quality with regards to older adults, it is essential to concentrate on key concerns such as nonresponse and measurement error. To tackle the issue of nonresponse, it is imperative to lay down the underpinnings of the investigation by considering elements such as "don't know" and "item refusal" in the questionnaire. "Not ascertained" and other missing data types are not included in the thesis because they are relevant to the design of survey not to respondents. The effectiveness of questionnaire design, content selection, the incorporation of retrospective questions, and addressing sensitive questions all play a vital role in comprehending nonresponse and measurement error among older adults who consist of a part of the target population in surveys.

### **1.1. Motivation And Study Objectives**

Item nonresponse, an crucial component of data quality, has been discussed in many aspects in literature. Although there are modes of data collection, survey design, questionnaire design, cross-national surveys, culture, research topics, interviewer characteristics, respondent characteristics and different sub-topics, item nonresponse has been evaluated in many ways. When we look at the literature, it has been seen that "don't know" and "item refusal" are mostly at the center of research designs in item nonresponse studies. Moreover, it is seen that research is carried out with different statistical methods in accordance with the research design. A factor analysis through using varimax rotation (Shoemaker et al., 2002), multinomial logistic regression model (Silber et al., 2021) and propensity score matching (Schanze, 2021) are some of these statistical methods.

The global population is experiencing rapid aging. The proportion of individuals aged 65 and older in the world population has increased from 5.5% in 1974 to 10.3% in 2024. Projections for 2074 suggest that this figure could rise to 20.7%. This trend is attributed to increased life expectancy and declining total fertility rates. Approximately 60% of the global population has a total fertility rate below the replacement level (2.1). Consequently, the aging population poses challenges for economic sustainability, particularly concerning health and pension systems. However, this situation can be mitigated through new policies and a proactive approach, allowing older individuals to be integrated into the workforce (United Nations Population Fund, 2024).

As the aging population grows, the representation of older respondents in surveys becomes increasingly significant. Raising awareness about this issue and the resulting improvement in data quality can enhance the representation of this subgroup in the policymaking process. Therefore, changes in age-related data quality are central to this research, with older respondents and item nonresponse serving as the two fundamental components. The thesis will use datasets from the World Values Survey and the European Values Studies, focusing on Turkey, Zimbabwe, Italy, and Switzerland. In other words, the research may give some clues in understanding the data quality for the older people in Turkey.

In the light of all these, the research aim of the thesis is to evaluate the item-level missingness by age, focusing on the older respondents.

From this point of view, three research questions in the thesis are:

1. How does the item nonresponse, which is an indicator of the data quality, change according to age?
2. How does the item nonresponse change according to sociodemographic characteristics?
3. Which methodological strategies can be given to obtain better data quality for older respondents?

## **CHAPTER 2. THEORETICAL FRAMEWORK**

### **2.1. Total Survey Error (TSE)**

The notion of Total Survey Error (TSE) has been the subject of considerable examination within academic literature, with numerous scholars contributing to its discourse and ongoing debates (Biemer, 2010; Biemer & Lyberg, 2003; Groves & Lyberg, 2010; Biemer, 2011; Weisberg, 2005; Groves et al., 2009; Biemer, 2016; Groves, 2005; Smith, 2011). Groves and Lyberg (2010) highlight the significance of Deming's 1944 publication, "On Errors in Surveys," as a foundational text in the development of the total survey error framework. This research investigates the various sources of error inherent in survey methodologies (Deming, 1944). Since that time, the total survey error concept has undergone substantial development, leading to its present-day understanding.

The total survey error concept defines the aggregation of all errors that occur while creating survey data. These errors can arise from the design of survey, stage of data collection, data processing process and analysis of these data. These errors occurring during the research process cause the survey responses to deviate from the underlying true value (Biemer, 2010). In other words, TSE shows the difference between the "population mean" and other population parameters and the estimates from the sample survey (Biemer & Lyberg, 2003).

The notion of total survey error is also used by survey designers as a planning criterion in survey research. In this case, within a fixed budget and time, the research design should yield the lowest level of total survey error (Groves & Lyberg, 2010). In this setting, the notion of "fitness for use" becomes relevant. Survey quality and fitness for use are two closely related concepts. The concept of quality has two different meanings. One is freedom from deficiencies, the other is responsiveness to customers' needs (Juran & Gryna, 1980, as cited in Biemer, 2010). In other words, the concepts of data quality or data accuracy and survey quality are not identical concepts even though they are interrelated. High quality survey means optimally balancing all quality features and determining this balance according to those who will use the data (Biemer,

2011). These quality dimensions are accuracy, credibility, comparability, usability, relevance, accessibility, timeliness, completeness and coherence (Biemer, 2010).

Naturally, total survey error conveys its own concepts such as mean squared error, sampling error, nonsampling error, variance, bias and so on. Mean squared error (MSE) is one of the most common metrics used in TSE calculations in surveys. Each estimate is calculated from the survey data, and it has a MSE value. This MSE shows the effects of all error sources on the estimate. If the MSE has a small value, the TSE is also small and controllable. If the MSE has a large value, it means that some sources of error affect the estimate significantly. If required to define it with statistical terms, the expected squared difference between an estimate and the parameter gives the value of MSE (Biemer, 2010). To put it shortly, mean squared error is a measurement tool for the accuracy of the survey estimate (Biemer, 2011). The purposes of using MSE can be listed as follows:

To compare the precision of data through different data collection modes

To determine the distribution of resources in the research design and to make the most appropriate distribution

To reduce non-sampling errors that occur in the survey process

To give information related to quality of data to data users (Biemer, 2011)

MSE decomposes into two important constituents: Variance and Bias. By conducting the survey process multiple times under identical conditions, survey estimates are obtained. Thereafter, the average of these estimates is calculated, and this value is subtracted from the true value of the population parameter. The result gives the Bias. Variance is the average of the squared differences between each survey estimate and the average of an estimate. In this case, MSE is the total of the squared bias and variance. The biases include specification bias, frame bias, measurement bias, nonresponse bias and data-processing bias. Variance includes measurement variance, sampling variance, and data-processing variance (Biemer & Lyberg, 2003).

As can be understood, Mean Squared Error enables interpretation on total survey error using survey estimates. At this point, it is essential to discuss the error types in TSE in detail. The error sources that include the total survey error concept are split into two as nonsampling error and sampling error. Sampling error, the constituent of total survey error, occurs because a sample is drawn from this population rather than

reaching the whole population (Biemer & Lyberg, 2003). Although the scientific committee can focus more on a sampling error, TSE is more than sampling error. The reason for focusing on sampling is that sampling can be explained with certain formulas. However, it is difficult to calculate a nonsampling error. Whereas increasing the sample size can decrease the level of sampling error, minimising the nonsampling error level is far more challenging (Weisberg, 2005).

Nonsampling error encompasses five error types, which are specification error, measurement error, frame error or coverage error, nonresponse error and data processing error (Biemer, 2011; Biemer & Lyberg, 2003; Biemer, 2010). A specification error occurs when there is a mismatch between the concept suggested in the research question and the concept that is intended to be measured. Naturally, this situation leads to the production of incorrect parameters and inferences. This is usually caused by insufficient communication between the researcher and the questionnaire designer (Biemer, 2011). The types of error in specification error can be listed as follows: concepts, research objectives and data elements (Biemer & Lyberg, 2003).

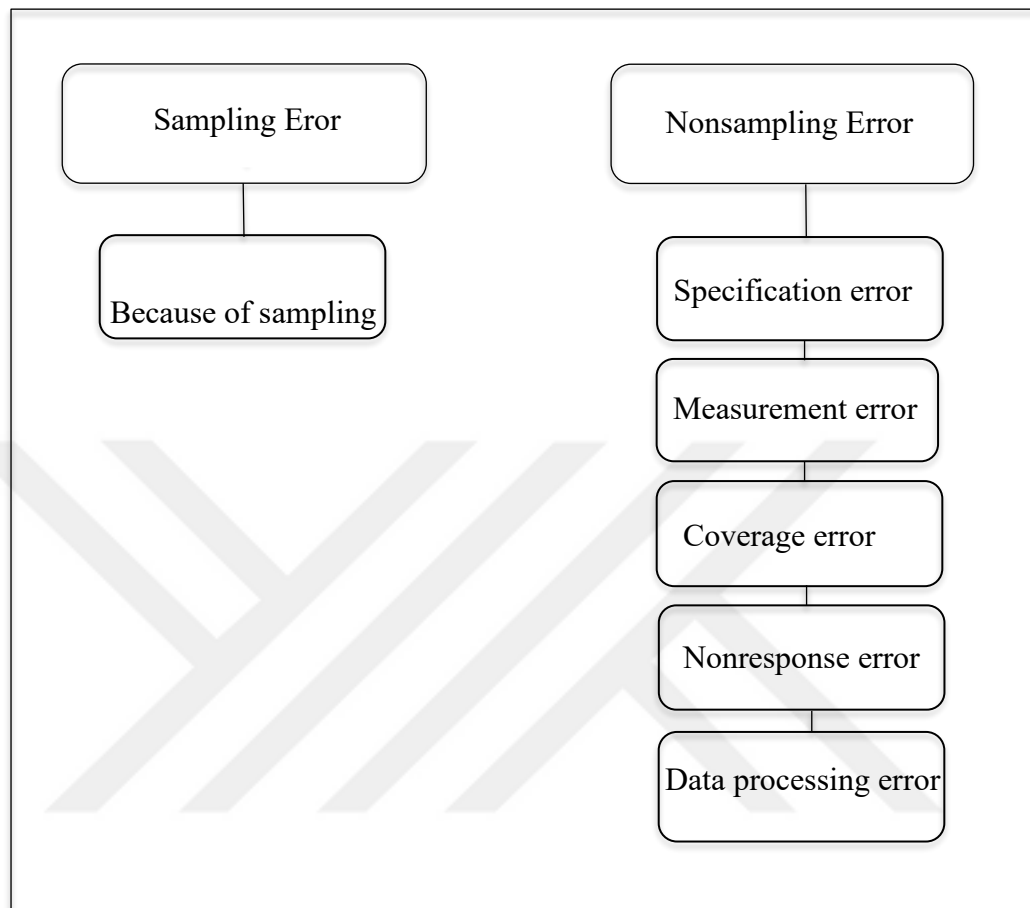
Measurement error arises when the difference between the true value of the measurement applied to the sample unit and the value found is seen (Groves et al., 2009). This error type originates from respondents, interviewers (Biemer, 2011; Biemer & Lyberg, 2003; Weisberg, 2005) and survey questions (Biemer, 2011; Biemer & Lyberg, 2003). Interviewer-related measurement error is explained by interviewer-induced effects causing inaccurate measurements. Measurement error related to respondents is associated with the accuracy of their responses to the questions. Naturally, this situation is also related to the interviewer (Weisberg, 2005). Interviewers' appearance or comments can influence the answers, they can fill the questionnaire incorrectly, they can fail to follow expected survey procedures, or they can knowingly mislead the data (Biemer, 2011). Measurement error regarding respondents is discussed in the literature with concepts such as survey response process (Tourangeau et al., 2000; Tourangeau, 2018), the process of recalling (Eckman & Kreuter, 2018; Kjellsson et al., 2014), respondent motivation (Tourangeau et al., 2010; Hox et al., 2012), social desirability effect (Johnson & Van de Vijver, 2003) and telescoping (Gaskell et al., 2000; Abate et al., 2022). Along with errors related to the interviewer and respondent, inadequately designed questionnaire items can also

contribute significantly to measurement errors. Ambiguous questions, confusing instructions, and unclear terms cause measurement errors (Biemer, 2011). In fact, as can be seen, respondent, interviewer, and questionnaire error sources are intertwined and difficult to separate from each other. One source might trigger another, resulting in compounding errors.

Frame error occurs when some people are members of population but are not part of the frame (Groves, 2005). In other words, it occurs during the construction, maintenance, and use of the sampling frame(s) when choosing the survey sample. The sampling frame contains the list of population members or other mechanisms used to draw samples. Indeed, the ideal sampling frame should contain all population members without any duplicates (Biemer, 2011).

Nonresponse error is a sort of error that consists of the error sources of unit nonresponse, item nonresponse and incomplete response. A unit nonresponse arises if the sampling unit does not answer to any section in the questionnaire. An item nonresponse occurs if the sampling unit partially fills in the questionnaire. An incomplete response is a type of nonresponse error that arises due to the responses given to open-ended questions. Although the respondent answers the questions, these answers are short and insufficient (Biemer & Lyberg, 2003). According to Weisberg (2005), item nonresponse consists of three types: “don’t know,” “item refusal” and “not ascertained,” which are the key concepts for this study.

**Figure 1** Survey Error Types in TSE Framework



(Source: Groves, 2005)

## 2.2. Total Survey Error Paradigm and Age

The relationship between total survey error and age has been examined from various perspectives in research. Both the interviewer age and the respondent age have been assessed in terms of data quality across different contexts.

Numerous studies have examined the effect of the interviewer's age on survey responses. The phenomenon known as the interviewer effect is particularly relevant when considering older respondents. In their 2021 article, Życzyńska-Ciołek and Kołczyńska investigated how both the age of the respondent and the interviewer impact the comprehension of survey questions. Their findings indicate that older respondents typically struggle to understand the questions, but this difficulty increases threefold when they are interviewed by younger interviewers. The research delves into

themes such as age-related stereotypes and intergenerational communication, highlighting the communication challenges that arise between oldest respondents and youngest interviewers.

In terms of the age of the respondent; contextual information usage by older people (Park, 1999, as cited in Schwarz et al., 2012), sampling or representation of older respondents (Dormagen & Michel, 2018; Oris et al., 2016), mode comparisons (Herzog et al., 1983; Kroh et al., 2016), institutionalization (Kaspar et al., 2023; Schanze, 2023), item nonresponse (Colsher & Wallace, 1989; Grauenhorst et al., 2016), ethnic minorities (Zsembik, 1994), proxy respondents (Zsembik, 1994), data ageism (Fernández-Ardèvol & Grenier, 2024), survey response time (Yan & Tourangeau, 2008), coverage error (Schanze, 2023), accuracy of information given by respondents (Rodgers & Herzog, 1987), social desirability (Rodgers & Herzog, 1987), recall error (Korbmacher, 2014), nonresponse (Oris et al., 2016), respondent incentives (Grauenhorst et al., 2016), etc. have been discussed in the context of respondent's age-related topics.

Grauenhorst et al. (2016) examined the impact of respondent incentives on response quality by comparing varying aged individuals who received incentives with those who did not. Response quality indicators are straight lining, similarity, extreme and middle categories, item nonresponse, item nonresponse in income questions, length of answers given to open-ended questions, rounding of numerical values, and consistency of answers. The findings indicated that older respondents exhibited a higher level of response quality, as measured by item nonresponse, when they received incentives. Conversely, when they do not receive an incentive, they have lower response quality than younger participants. Nevertheless, the study found no systematic differences in the quality of response between those who received incentives and those who did not.

### **2.3. Theories And Concepts Related to Item Nonresponse and Older**

#### **Respondents**

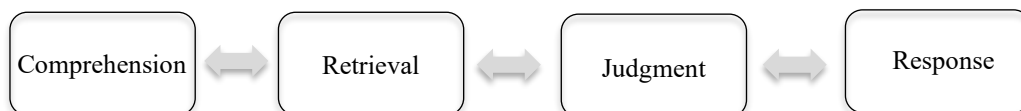
The connection between age, item nonresponse, and data quality has been explored in various studies through the lens of multiple theoretical frameworks. There

are several theories in the literature that may be directly or indirectly related to item nonresponse and older respondents. Among these are the cognitive perspective, satisficing theory, telescoping theory, item response theory, social exchange theory, and liking theory.

### 2.3.1. Cognitive Perspective

The survey response process model, initially developed by Cannel, underwent further refinement by various survey methodologists as its components were noticed (Olson et al., 2020). According to Tourangeau (1984) and Tourangeau and Rasinski (1988), this response process can be delineated into four distinct phases: comprehension, retrieval, judgment, and response. Focusing on instructions and questions, comprehending their logical structure, determining the question's primary goal or the information being sought, and making connections between important terms and pertinent ideas are all important components of comprehension (Tourangeau et al., 2000).

**Figure 2.** Constituents of Response Process



Tourangeau et al. (2000) highlighted that numerous reporting issues arise from respondents' misunderstanding of the questions posed to them. Such problems can result from various reasons, including distractions of respondents, failure to grasp all components of a question, neglecting the provided instructions in self-administered surveys, and a lack of engagement that results in boredom while reading. Additionally, questions may be structured in a double-barreled manner, presenting two questions simultaneously and they may include the use of unfamiliar terminology or terms that may be interpreted differently by respondents. Furthermore, complex and detailed questions can hinder respondents' ability to comprehend what is being asked (Tourangeau et al., 2000).

In the retrieval phase, individuals access information stored in long-term memory. Using a retrieval strategy, creating particular retrieval cues to elicit memory, retrieving specific memories, and using inference to fill in incomplete memories are all included in this component (Tourangeau et al., 2000).

The way information processed is closely tied to how it is encoded into memory. Memories are formed through this encoding process, and encoding process can be described in different ways. One perspective suggests that related memories are organized within a cognitive structure known as a schema. Rather than being stored in their entirety, memories exist in memory as a mental map or an abstract version and interpreted form. By integrating new information into an established schema, a single cognitive representation can emerge. Utilizing the schema associated with the encoded information enhances memory recall. Another method of encoding involves the storage of commonly repeated experiences as scripts. In both cases, since information cannot be fully captured in memory, individuals often struggle to retrieve details comprehensively (Weisberg, 2005).

Tourangeau et al. (2000) provides variables affecting recall and their implications for survey design. They suggest that shorter reference periods are preferable, as recalling past events can be challenging. Events marked by significant temporal boundaries or notable events are generally easier to remember. This recall can be further supported by incorporating personal landmarks and life event calendars, or by modifying the length of the reference period. It is also easier to remember emotionally significant events, which emphasizes how crucial it is to modify the reference period according to the features of the event. While backward memory may facilitate more comprehensive recollection in relation to question characteristics, its effectiveness in surveys remains uncertain. The use of multiple cues, particularly those that focus on the type of event rather than its timing or location, enhance memory. Additionally, the advantages of longer introductions and a slower interview speed are emphasized because of improving the recall.

Judgment encompasses the assessment of the exactness and relation of memories, deriving conclusions from the information at hand, synthesizing retrieved material, and making predictions based on partial recollections (Tourangeau et al., 2000).

In the response stage, the judgment is mapped onto a suitable response category, and the response is refined. Because response options are ambiguous and people perceive them differently, respondents may find it challenging to choose and report their replies. These difficulties may cause respondents to approach answering questions differently; some respondents might put a lot of effort into selecting the best possible response, while others may choose the first acceptable option (Tourangeau et al., 2000).

Cognitive perspective plays a significant role in understanding both item nonresponse error and measurement error. Holbrook et al. (2006) explored the challenges of comprehension and mapping in relation to the characteristics of respondents and questions. Utilizing behavior coding techniques, they analyzed how comprehension and mapping are influenced by these characteristics. Their findings indicated that question characteristics are more impactful on comprehension than the respondents. While factors such as age and education do not significantly hinder comprehension, race appears to negatively influence the understanding of questions due to language or conceptual barriers. Mapping difficulty arises while keeping the question in mind and placing the relevant judgment into response categories. Both question characteristics and respondent characteristics (e.g. due to age and multitasking difficulty) are related to mapping difficulty. Silber et al. (2021) examined how the characteristics of questions, respondents, and interviewers affect item non-responses, particularly focusing on "don't know" and "item refusals" in face-to-face surveys. Their study revealed that while both survey questions and respondent characteristics influence these nonresponse types, the interviewer plays an essential role in the prevalence of "don't know" responses. Older respondents and those with lower educational attainment were more inclined to select this option, and the age of the interviewer, along with a significant age gap between the interviewer and respondent, further increased the likelihood of "don't know" answers. In contrast, when analyzing "item refusals," age and education did not appear to affect the likelihood of item refusal, although reluctant respondents were more prone to provide item refusal answer. In addition to them, Rettig and Struminskaya (2023) examine the recall processes of respondents in panel studies to remember their answers from the previous wave and discuss the measurement error that this situation may cause in their research.

In addition to them, methods such as concurrent verbal reports or retrospective reports, which are employed to understand cognitive processes, are discussed in the literature (Ericsson, 2017; Ericsson and Simon, 2003; Smagorinsky, 1998). Midanik and Hines (1991) investigate respondents' recall strategies and the techniques they utilize while answering in survey related to alcohol consumption through this method.

The primary objective of this research is to understand whether data quality varies with age, placing the cognitive processes of respondents at the forefront of the analysis. In this context, item nonresponse categories are utilized as a tool to help measurement in studies. There is a significant relationship between item nonresponse and measurement error, and additionally, the socio-demographic characteristics of the respondent and the interviewer can influence the entire process.

### **2.3.2. Satisficing Theory**

Krosnick (1991) suggested that providing optimal responses to questions demands significant cognitive effort, which can lead some respondents to give satisfactory answers. This optimization process involves respondent engaging in four cognitive stages: comprehension, retrieval, judgment, and response. Satisficing has two distinct forms. Weak satisficing occurs when a respondent readily accepts any claim made by the interviewer and opts for the first response that seems reasonable. In contrast, strong satisficing arises when respondents skip the retrieval and judgment stages, choosing the simpler strategies. These strategies may include favoring the status quo over social change, responding with "don't know," failing to differentiate among response categories, or randomly selecting an answer.

Difficulty of tasks, respondent ability and motivation of respondents affect the possibility of satisficing. Questions that are tough to interpret (e.g., very long questions or questions that use rarely used words), questions that make it difficult to recall memories (e.g., retrospective recall questions, use of more than one object in a question), comparative judgment task, response selection process (such as response alternatives containing ambiguous or rarely used words), speed of interviewer and distraction (interruption of interviews by family members) cause task difficulty and increase the possibility of satisficing (Krosnick, 1991). In this regard, Pickery and

Loosveldt (2001) examined the satisficing effect related to item response options, focusing on both respondent and interviewer influences by assessing the rates of item nonresponse. They separated the questions as threatening or not, easy or complex, separated nonresponse from missing values, “don’t know” or “no opinion” answers and also evaluated whether there was a filter. Their findings indicate that the difficulty of questions and the interviewer tasks are key factors in explaining the interviewer effect on item nonresponse.

High cognitive sophistication (the respondent's capacity to recall relevant information from memory and apply this information to verbally expressed summary judgments), sufficient prior thought of question topics by the respondent, and prior knowledge or ideas about the topic in the question are associated with respondent ability and reduce satisficing (Krosnick, 1991).

Respondent motivation is shaped by various factors, such as their cognitive needs, the importance of the questions enquired, the social benefits of the survey, the attitude of the interviewer, the need for accountability (which entails encouraging respondents to provide more detailed responses to their earlier answers), and the duration of the interview (where motivation is typically strongest at the beginning and decreases as the interview continues). These factors collectively influence the degree of satisficing behavior exhibited by respondents (Krosnick, 1991). The data quality may vary according to age, and the motivation of respondents can also play a crucial role in this situation. The reasons for participation in surveys, as well as the motivation and relationship with the questions, may differ among groups that are socio-demographically, economically, and culturally distinct.

Additionally, research design can also contribute to the satisficing. For example, in the context of panel conditioning, Kartsounidou et al. (2024) analyze the learning effect on rapid response times in longitudinal panel surveys, discussing how an accelerated learning effect may lead to satisficing. Additionally, the article addresses the positive implications of the learning effect in terms of time efficiency.

Satisficing can lead to an increase in item nonresponse in survey research, and specific strategies can be implemented to prevent this issue. In this context, Grönemann's (2024) study focuses on developing and assessing techniques aimed at minimizing item nonresponse in face-to-face surveys. The concept of satisficing serves

as the theoretical framework for this research, positing that respondents may opt for satisfactory rather than optimal answers due to factors such as cognitive overload or lack of motivation. The study employs regression analysis to explore various strategies for reducing item nonresponse, utilizing data from the European Social Survey (ESS). Findings indicate that the most effective methods include the use of display cards and conducting interviews in the respondent's native language. Conversely, demographic compatibility between interviewers and participants is not an effective method. The research highlights how important it is to reduce cognitive load during survey design to improve data quality. Another study conducted by Saraç and West (2024) focuses on the impact of showcard usage on item nonresponse and middle point response categories. The European Social Survey Round 9 (ESS9) dataset was used and interviews were conducted face-to-face with respondents aged 15 and over. Although there are differences in sampling procedures between countries, ESS countries use probability sampling design in survey studies. In addition to the answer categories of scale-type satisfaction questions and middle point answer categories in the ESS main questionnaire, it also adds the answer categories “don’t know” and “refuse”, and showcards are frequently used in these questions. Interviewers respond to the questions that assess the extent of showcard usage in the interviewer questionnaire. The degree of showcard use is also divided into three categories: use of all showcards, use of some showcards, and refused/unable to use. Dependent variables are the binary used item nonresponse and middle point selection. The independent variables are: showcard use, gender of the respondent, age of the respondent, years of education of the respondent, the presence of any individual who disrupted the interview, age of the interviewer and gender of the interviewer. According to the research results, use of showcard increases the data quality. Participants not using showcards or using only some showcards exhibit a strong possibility of item nonresponse. Those who do not utilize showcards are 50% more likely to select middle-scale responses compared to those who do. Older respondents are more inclined to choose middle-scale responses, while their likelihood of item nonresponse is lower. Additionally, the probability of both item nonresponse and middle-scale responses is higher among women compared to men. Moreover, as educational attainment rises, the likelihood of item nonresponse and the inclination to choose middle points decreases. The presence of anyone who interferes with the

interview is linked to a higher probability of item nonresponse. This research also conducts comparisons across countries. In Switzerland, Germany, Belgium, Finland, the United Kingdom, Iceland, Italy, Portugal, Spain, Sweden, the Netherlands and Slovenia, the use of showcards reduces item nonresponse. In Switzerland, Germany, Estonia, Belgium, Croatia, Lithuania, Montenegro, Ireland and Slovakia, the absence of showcards or the use of only some showcards increases the tendency for middle-scale selection compared to the use of all showcards. In summary, both item nonresponse and middle-point selection are found to be related to the use of showcards as well as the respondent's and interviewer's characteristics.

### **2.3.3. Telescoping**

Recall errors can arise during the retrieval of information from memory, and the two main causes of recall errors are forgetting and telescoping. Forgetting occurs when information is not retrieved from long-term memory, while in telescoping errors, the event is recalled but the date is incorrect (Biemer & Lyberg, 2003). Forgetting may lead to underreporting bias, whereas telescoping can result in overreporting bias (Bradburn, 1983). While the concept of forward telescoping occurs when a date close to the interview time is reported, backward telescoping is the reverse. Another concept, external telescoping errors, occurs when the time the event occurred is outside the reference period stated by the respondent. Conversely, internal telescoping errors arise when an event that actually took place within the reference period is inaccurately reported as occurring either before or after that period (Biemer & Lyberg, 2003).

Eisenhower et al. (2004) discusses in their study bounded recall strategies, the use of landmarks that coincide with reference periods, and the use of maps, calendars, or journals to aid recall as methods to reduce telescoping errors. Furthermore, the use of records and aided recall may not necessarily yield beneficial effects on memory. While the use of records can help minimize the overreporting associated with telescoping, it does not eliminate the risk of omitting events. Although aided recall might not reduce the telescoping, it could positively influence the recollection of events (Sudman & Bradburn, 1974, as cited in Bradburn, 1983).

Gaskell et al. (2000) analyzed the landmark events to understand the level at which forward and backward telescoping errors occur and their relations with the socio-demographic factors. Two important landmarks nationally which are Margaret Thatcher's resignation and the Hillsborough disaster used as events to be recalled on their dates. The percentage of don't know, forward and backward responses differed by age, gender and social class. For two landmark events, women, older adults and lower level social class respondents were significantly more inclined to respond "don't know". Males and older respondents tend to backward telescoping, whereas women and younger respondents are prone to telescoping forward. Consequently, this study raises several important and critical considerations concerning the use of landmark events to found temporal reference periods for retrospective survey questions.

#### **2.3.4. Social Exchange Theory**

The social exchange theory offers that people are more inclined to fulfill another person's request when they believe that the benefits of compliance will predominate the associated costs. In this case, the likelihood of compliance increases. Social exchanges encompass not only economic advantages but also social, psychological, and immediate benefits (Dillman et al., 2014). From the viewpoint of social exchange, Weisberg (2005) suggests that respondents perceive incentives as a sign of kindness, which indicates a sense of reciprocity, provided that the survey is not regarded as overly burdensome.

Literature regarding the use of incentives encompasses a range of discussions about their impacts. Issues such as the ineffectiveness of incentives on item nonresponse (Medway & Tourangeau, 2015), the fact that incentives do not influence item nonresponse overall but do affect the nonresponse levels among older respondents (Grauenhorst et al., 2016), the gender-specific effect of incentives (Boulianne, 2013), and the use of sequential pre-paid incentives (Dykema et al., 2021; Chang et al., 2024) are discussed in literature.

### **2.3.5. Liking**

Liking occurs when a person conforms to the demands of the person they like. Various elements can influence the degree of liking for an unfamiliar person during an assessment of an interviewer's requests. Shared attitudes, backgrounds, and styles of dress are among these elements, which can either enhance or decrease degree of liking. In the context of survey design, matching race or gender can elicit liking because it increases similarity (Groves & Couper, 1998).

Liking theory is examined within the context of survey methodology, particularly regarding the (mis)matching between interviewers and respondents (Bittmann, 2020; Cunha et al., 2022; Vercruyssen et al., 2017). In the study focusing on the effect of sociodemographic (mis)matches on item and unit nonresponse, Bittmann (2020) concluded that women tend to answer more missing items than men and refuse to answer more questions regardless of interviewer characteristics. Furthermore, gender matching between the interviewer and respondent results in an increase in missing responses among women and a decrease among men. When considering age matching, women tend to provide more responses, while men exhibit the opposite trend. The findings indicate that beyond mere matching, broader factors such as a country's economic status, welfare regime, multicultural dynamics, and psychosocial characteristics should also be considered in understanding the interviewer-respondent interaction.

## CHAPTER 3. LITERATURE

### 3.1. Social Research

Social research enables us to comprehend the social world. It also poses new questions and alters our perspective on that world. By employing scientific methods, social research differs from causal observation, common-sense reasoning, and pure logical-rational reasoning (Lawrence Neuman, 2014). Sarantakos (2017) outlines the objectives of social research, which include the exploration and explanation of social realities through the provision of reliable, valid, and thoroughly documented information. Social research evaluates social issues and their impacts on society, while also enabling predictions and the development or testing of theories. The overarching goal is to comprehend human behavior and actions, critique social reality, and propose solutions to social challenges, ultimately aiming to empower and liberate people (Sarantakos, 2017).

There are two types of data in social research: quantitative and qualitative data. Quantitative data refers to the collection of information in numerical form, while qualitative data refers to the creation of information in the form of words or images. Methods for collecting quantitative data include experiments, surveys, and nonreactive research (content analysis, existing statistics, and secondary data analysis). In contrast, qualitative data collection methods involve field research, such as ethnography, participant observation, and depth interviewing, as well as historical comparative research (Lawrence Neuman, 2014). While these techniques can be used separately, they can also be combined together, and this is discussed in literature as a mixed methods technique.

By inquiring systematically selected samples of individuals, sample surveys collect information from individuals, households and large organisations using systematic and standardised methods (Rossi et al., 1983). According to Groves et al. (2009), surveys have some characteristics. Firstly, data collection in surveys is conducted through the process of inquiring individuals. Secondly, interviewers can gather this information by posing questions and documenting the responses, or

respondents can read or hear the questions and offer their own replies. Lastly, surveys operate on the concept of collecting data from a representative sample of the population, rather than attempting to survey every individual within the entire population. The concept of conversational interviewing is addressed in the literature across various topics, including the accuracy of responses, the duration of interviews, the standardization of question meanings (Conrad & Schober, 1999), the reliability of coding responses (Mockovak, 2016), and the phenomenon of acquiescence (Davis et al., 2024).

### **3.2. Social Research And Research Methodology For Subgroups Of Population**

There are diverse subgroups in society and naturally several and huge literature related to these groups. Some of these groups are gender groups, age groups, ethnic groups, education groups, economic groups, migrants and religious groups. There exists a range of qualitative and quantitative research concerning these groups. Nonetheless, this section will focus specifically on surveys.

Research studies concerning women can be conducted using both mixed methods and quantitative methods. The OSCE-led Survey on the Well-being and Safety of Women, implemented in 2018, is a research project that focuses on the various forms of violence experienced by women throughout their childhood and across their lives. This study examines the violence encountered by women in both conflict and non-conflict settings. It employs a multistage, stratified, random probability sampling design. The representative sample consists of 15,179 women aged between 18 and 74, residing in Albania, Bosnia and Herzegovina, Montenegro, Moldova, North Macedonia, Serbia, Ukraine, and Kosovo. Focus group discussions with women have been conducted, along with in-depth interviews with women from disabled and ethnic minority backgrounds. The definitions included in the questionnaire are based on the Council of Europe Convention on Preventing and Combating Violence against Women and Domestic Violence (Istanbul Convention) (OSCE, 2019). The 2014 Research on Domestic Violence against Women in Turkey is a mixed-method study. The research employs various data collection techniques,

including surveys, in-depth interviews, and focus group discussions. Surveys were conducted with women aged 15 to 59. A weighted, stratified, and multi-staged cluster sampling method was utilized to design the sample. In the households surveyed, a total of 13,310 women were identified, and their basic demographic information was collected. Of these, 8,960 women were selected using the Kish method. A total of 7,462 women completed the women's questionnaire, with interviews conducted face-to-face. Only one woman was selected from each household, ensuring that the same questions were not posed to multiple women within the same household. During the fieldwork, the term violence was not used; instead, the study was referred to as the "Turkey Women and Family Survey." Terms such as abuse, rape, or violence were avoided in the questions. The questionnaire was developed based on the WHO's "Multi-country Study on Women's Health and Domestic Violence against Women," with additional questions tailored to the country's specific needs. In the qualitative research component, in-depth interviews were conducted with 10 women aged 20 to 56 who had experienced violence, men aged 32 to 84 who had perpetrated violence, and 21 experts. The women were those who had sought institutional support, while the men were identified as offenders. Semi-structured interview guidelines were employed during these discussions. Additionally, eight focus group discussions were held with men aged 25 to 35. Content analysis was also utilized as qualitative data collection technique, incorporating 31 documents related to women's applications to Ankara ŞÖNİM (Hacettepe University Institute of Population Studies, 2015).

In studies related to women, there are studies that utilize not only mixed methods but also those that rely solely on survey research. The "Violence against Women: An EU-wide survey" is a survey conducted in 2012, which involved interviews with over 42,000 women aged 18 to 74 across EU Member States, focusing on the issue of violence against women. A sample of 1,500 women was selected from each country, with 900 respondents from Luxembourg participating in the study. A nationally representative sample of women is used in the survey for each member state. Respondents were chosen using random sampling methods. Population registers were utilized for sampling, allowing interviewers to directly contact women from the selected sample. In countries without a population register, a sample of households was first drawn, and then interviewers randomly selected an eligible woman from each

household for the interviews. In each country, women interviewers conducted the interviews with women. To facilitate comparisons between countries, a pilot study was conducted in 2010-2011 involving six member states: Germany, Finland, Hungary, Poland, Italy and Spain. The survey was administered face-to-face using either CAPI or PAPI methods (FRA, 2014). The 2018 Turkey Demographic and Health Survey is a research study focused solely on survey data, aimed at estimating fundamental demographic and health indicators. It comprises a nationally representative sample of 15,834 households. Interviews were conducted using the Household Questionnaire with members of the household aged 15 and older, while the Woman's Questionnaire was utilized for interviews with women aged 15 to 49 or women visitors who are present in the household the night before the survey. The sample was prepared using a multi-stage, stratified cluster sampling method. Sample selection was carried out through the Address Based Population Registration System (ABPRS), with the sampling frame derived from The National Address Database. The questionnaires were based on The DHS Program's Model Questionnaires, with adaptations made to include health and demographic issues pertinent to Turkey. Data collection was conducted by the method of CAPI for 20 households in each cluster, while data from 1 household was collected using Paper and Pencil Interviewing (PAPI) (Hacettepe University Institute of Population Studies, 2019).

Research involving surveys conducted with children and adolescents indicates that a comprehensive survey is necessary to increase the number of households with children and to ensure appropriate representation. The 2023 National Survey of Children's Health, which provides estimates at both national and state levels, examines the health and well-being of children, their families, and their environments, as well as the prevalence and impact of specific healthcare needs. This study utilized the Census Bureau's Master Address File (MAF) to create an address-based sample. By employing administrative records, the sampling framework was stratified. Stratum 1 is associated with child records, either directly or via a parent record. Notably, Stratum 1a was identified as having the highest probability of containing young children aged 0 to 5. To improve the representation of young children in the National Survey of Children's Health (NSCH), a larger sample was drawn from stratum 1A compared to stratum 1B. The likelihood of having children was evaluated for all addresses within

Stratum 2, taking into account local geographic features and administrative data. Addresses with a high probability of child presence were assigned to Stratum 2a, while those with a lower probability were designated to Stratum 2b. Stratum 1 and 2a collectively account for 95% of households in each state. The research sample prioritizes efficiency by oversampling Stratum 1a compared to Stratum 1b, while Stratum 2a is sampled at a lower rate. Stratum 2b is excluded from the sampling process. Children with special health needs and those aged 0-5 are included in greater numbers through oversampling. The data collection process consists of two phases. The first phase involves identifying the presence of children in the household, along with gathering socio-demographic information and details regarding special health needs. The second phase entails the completion of a substantive topical questionnaire by a parent or caregiver. The data collection tools include a web instrument (available in English and Spanish), a paper instrument (also in English and Spanish), telephone questionnaire assistance (TQA), and email questionnaire assistance (EQA). This method aims to reduce the rate of nonresponse. In addition to these methods, questionnaires are specifically designed based on the age groups and special health needs of children. Questionnaires NSCH-T1, NSCH-T2, and NSCH-T3 have been developed for children aged 0-5, 6-11, and 12-17 years, respectively (U.S. Census Bureau, 2024-a). According to the Nonresponse Analysis report of the study (2024-b), it is found that there is no significant level of nonresponse bias when survey weighting is applied. It is noted that nonresponse primarily originates from areas with a high population of non-white individuals, regions with low household income, areas with low homeownership, and individuals with lower educational attainment, indicating a potential income-related bias. The percentage of income bias, as well as the bias percentage arising from the sampling frame, is relatively small (U.S. Census Bureau, 2024b).

Growing Up in Ireland represents a significant distinction from the previously mentioned studies as a longitudinal cohort study. This research examines the factors influencing the well-being of children living in Ireland and their developmental processes. The survey focuses on two separate cohorts: Cohort'98 and Cohort'08. Cohort'08 includes children who were nine months old during the first wave, while Cohort'98 refers to children who were nine years old at that time. In terms of research

methodology for Cohort'08, the Child Benefit Register is utilized for sample selection, and variations in the modes of data collection are observed across the research waves. Data is collected through face-to-face interviews using CAPI and CASI methods in the first three waves, while the fourth wave employs postal surveys. The fifth wave returns to face-to-face interviews with CAPI and CASI, and the sixth wave incorporates CATI and online interviews. Interviews are conducted with primary caregivers, secondary caregivers, babysitters, teachers, and school principals, with children participating as respondents as they grow older (Thornton et al., 2013a; Thornton et al., 2013b; Thornton et al., 2019; McNamara et al., 2019; McNamara et al., 2020; Murray et al., 2023). For Cohort'98, the National School System is used for sample selection, and interviews are conducted with students. Data collection in the first wave is solely through CAPI, while waves two, three, and four utilize both CAPI and CASI methods. Interviews are held with children, primary caregivers, secondary caregivers, childminders, teachers, and school principals. To minimize non-response rates in both cohorts, small gifts are provided to respondents (Murray et al., 2010; Thornton et al., 2016; Murphy et al., 2019; McNamara et al., 2021).

When looking at studies related to migrants and ethnic groups, it becomes evident that the EU Survey on Immigrants and Descendants of Immigrants, which focuses on the EU region, highlights how the socio-demographic characteristics of migrants and national registration systems influence methodological aspects such as the sampling methods and data collection techniques. This survey gathers data from immigrants residing in 15 EU member states, namely Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Poland, Portugal, Spain, and Sweden, with the origins of these immigrants primarily being Turkey, sub-Saharan Africa, North Africa, and Syria. The research emphasizes fundamental rights in the context of discrimination, police stops, victimization, awareness of rights, and integration. Conducted in 2022, the study incorporates both face-to-face interviews and online surveys. The sampling methods vary by country, including multi-stage clustered samples (Belgium, Greece, Ireland, France, Italy, Poland, Spain and Portugal), unclustered single-stage samples (Austria, Denmark, Finland, and Luxembourg), location sampling (in parts of the Netherlands and Poland, as well as for the entire sample in Sweden), quota sampling (Belgium, Greece, and

Ireland), and social media online surveys (the Netherlands). Different sampling techniques are employed to enhance representativeness due to the characteristics of target migrant groups and the registration systems of states. Incentives are utilized to improve response rates, with their type, quantity, and value varying according to the data collection methods and countries. However, in face-to-face surveys, the motivation for participation is more significantly derived from the social value of the research rather than the incentives offered (FRA, 2024).

When analysing these groups, the research methodology varies according to group-specific characteristics. The use of mixed methods in studies on violence against women, the preparation of questionnaires tailored to the developmental stages and ages of children, or the selection of samples based on the socio-demographic characteristics of immigrants are examples of how these group-specific traits can influence research methodology.

### **3.3. Social Research And Research Methodology For Older Respondents**

When analyzing survey studies related to older respondents, the prevalence of longitudinal panel studies is noticeable. The primary objective is to notice, comprehend, analyze, report, and ultimately create policies regarding the social, economic, psychological, cognitive, and health-related changes that occur with age. These studies, which predominantly target individuals aged 50 and above, gain significance in light of the aging populations in various countries. A review of the following survey studies reveals that panel studies continuously update themselves over time. For instance, in subsequent waves, certain surveys incorporate new modules or biomarkers into their research. Additionally, although not in every survey study, the immigrant cohort is also included in the sample design process.

The University of Michigan Health and Retirement Study (HRS) is a longitudinal panel study that has been investigating the difficulties and prospects associated with aging since 1992. The target demographic for the biannual surveys consists of individuals aged 50 and older. Interviews are conducted with participants alongside their partners. The study focuses on cohorts, with the initial cohort from 1992 being those born between 1931 and 1941. Two of the five samples (The original

HRS sample 1931-1941 and AHEAD sample born before 1923) and the majority of the third sample (The War Baby sample 1942-47) were scanned from a survey of 69,337 households in 1992, and a multi-stage, clustered area probability frame was applied. In subsequent years, household surveys are predominantly conducted for the cohorts that were previously incomplete and are subsequently incorporated into the study. Due to physical or cognitive limitations, as well as advancing age, there have been instances where interviews with sampled individuals could not be conducted. In such cases, proxy informants, typically spouses, provide responses to the questions. If the respondents pass away, interviews with their spouses continue. The institutionalized population has not been included in the sample frame. However, individuals from the sample who enter nursing homes are retained in the study, and interviews are conducted whenever feasible. During this process, interviews are often carried out with proxy respondents. Weighting adjustments are made to represent respondents living in nursing homes accurately. Additionally, the Health and Retirement Study (HRS) tends to over-represent Black and Hispanic populations in certain cohorts. Black and Hispanic individuals are sampled at nearly double the rate compared to their actual representation in the corresponding age groups within the original HRS, AHEAD, and EBB cohorts. Regarding data collection methods, half of the core sample participates in face-to-face interviews, which encompass both physical and biological assessments, along with a psychosocial questionnaire that is returned by mail. The other half of the sample engages in telephone interviews during that wave. All sampled individuals complete the core survey questionnaire either via telephone or in person, while physical measures, biomarkers, genetics, and psychosocial data are collected from half of the sample (HRS Staff, 2011).

The English Longitudinal Study of Ageing (ELSA) is a panel study that commenced in 2002, targeting respondents aged 50 and above living in private households in England, along with their spouses. The sample is taken from households that were involved in the Health Survey for England (HSE) carried out in 1998, 1999, and 2001, thereby guaranteeing its national representation. The sample is refreshed during the 3rd, 4th, 6th, 7th, and 9th waves. Survey data is collected biennially from the same respondents. In cases where a suitable respondent is unable to provide answers due to physical or cognitive limitations, hospitalization, or temporary care, a

proxy interview may be conducted. Proxy respondents must be individuals aged 16 or older. Institution interviews are carried out with core sample members of first wave who have transitioned from private households to institutions, or with proxy informants. These interviews do not occur when the spouses of core members or refreshed respondents are moved to institutions. Data collection methods include Computer-Assisted Personal Interviewing (CAPI) and self-completion questionnaires. To maintain consistency in responses across waves, a feeding forward data technique is employed, which aids respondents in recalling and ensuring the accuracy of their previous answers. Responses from earlier waves are presented to respondents prior to answering new questions (Proactive Dependent Interviewing). While modules are typically presented in the same order, flexibility is sometimes allowed during interviews. Private modules, including Cognitive Function, Expectations, Effort and Reward, Psychosocial Health, and Final Questions, are conducted face-to-face. However, if interviews occur simultaneously, one respondent may answer private module questions while another respondent completes self-completion questions in a separate room. Follow-up nurse visits have taken place during the 2nd, 4th, 6th, 8th, and 9th waves (NatCen Social Research, 2020).

The Survey of Health, Ageing and Retirement in Europe (SHARE) aims to understand, identify, and address the opportunities and difficulties related to the process of aging. This research targets individuals aged 50 and older in Europe and employs probability-based sampling procedures. Spouses or partners of respondents aged 50 and above are included in the study, regardless of their age. For Waves 1 and 2, the methodology of SHARE selected the Computer-Assisted Personal Interviewing (CAPI) technique to ensure comparability with the Health and Retirement Study (HRS) and the English Longitudinal Study of Ageing (ELSA), as well as to facilitate physical testing (Das et al., 2005). In Wave 3, CAPI was utilized (Das et al., 2012), followed by CAPI in Wave 4 (Wijnant et al., 2013), and again in Wave 5 (Börsch-Supan & Malter, 2015). In Wave 6, while CAPI was employed in countries outside the Netherlands, the Netherlands utilized financial budget-based Computer-Assisted Telephone Interviewing (CATI) and Computer-Assisted Web Interviewing (CAWI) (Das et al., 2017). During Wave 7, CAWI was used in the Netherlands, while other countries continued with CAPI (Bergmann et al., 2019). Wave 8, coinciding with the

Covid-19 pandemic, employed both CAPI and CATI (Bergmann & Börsch-Supan, 2021), and in Wave 9, CATI was used during the pandemic, followed by CAPI in subsequent phases (Bergmann et al., 2024). Additionally, SHARELIFE (Wave 3) collected retrospective data from older individuals, utilizing the Event History Calendar (EHC) presented through a graphical interface. EHC CAPI facilitates the inclusion of country-specific events—ranging from social, political, and economic to sports and natural occurrences—into the application, thereby enabling respondents to utilize landmark anchoring. The EHC also features key events categorized under children, partners, accommodation, job, and health to aid in memory recall (Das et al., 2012). In Wave 4, a social network module (SN) is incorporated into the research, employing a direct approach to analyze social networks. While the indirect approach represents social networks through social roles, the direct approach concentrates on individuals deemed significant by the respondents (Litwin, 2013). In the SHARELIFE sample selection, participants from Wave 1 or Wave 2 are chosen, resulting in the availability of retrospective life history data for these individuals, whereas those added later lack such data. To address this gap, Wave 5 introduces a mini childhood module, which includes questions referencing ages 10 and 0-15 (Börsch-Supan & Malter, 2015). SHARE Wave 6 employs dried blood spot biomarkers to comprehend pre-illness and physical processes. Previous waves have also conducted physical measurements, including grip strength, peak flow, chair stand, and assessments of cognitive health and depression (Malter & Börsch-Supan, 2017). Over time, modifications are made to the questionnaire design. For instance, to mitigate the likelihood of recall errors associated with lengthy reference periods for alcohol consumption questions, Wave 6 reduces the reference period from three months to seven days. Additionally, show cards are utilized to standardize the reporting of alcohol consumption amounts (Malter & Börsch-Supan, 2017).

The Longitudinal Aging Study Amsterdam (LASA) is a longitudinal cohort study that commenced in 1992. This research focuses on significant themes such as caregiving, social interactions, daily functioning, and the evaluation of functioning among older people. The components of functioning include physical, cognitive, emotional, and social aspects. The study utilizes a nationally representative sample derived from administrative records of 11 municipalities across three culturally distinct

regions. Individuals aged between 55 and 85 were included in the initial sample conducted in 1992-93, forming the core cohort, which has been followed until 2021-22. In the 2002-03 study, a new cohort was introduced, comprising older adults aged 55 to 65, utilizing the same sampling framework. During the data collection process in 2012-2013, Cohort 3, which also included respondents aged 55 to 65, was added to the study using the same sampling frame. In the latter half of 2024, data collection for Cohort 4, consisting of individuals aged 60 to 86, will be initiated (The Longitudinal Aging Study Amsterdam [LASA], n.d.-b). Additionally, a migration cohort has been established, focusing on the most prevalent immigrant groups in the Netherlands, specifically Turkish and Moroccan immigrants, who were studied in 2013-14 (Hoogendijk et al., 2020). LASA is conducted through face-to-face interviews (LASA, n.d.-a). If respondents do not wish to participate in face-to-face interviews, they have the option of participating in telephone interviews, and proxy respondents can also participate in these interviews. Those participating in telephone interviews tend to be individuals residing in care facilities and are generally less healthy compared to those involved in face-to-face interviews (Hoogendijk et al., 2020). In addition to the main interview, a medical interview is conducted that encompasses clinical assessments. Respondents also complete a self-administered questionnaire (LASA, n.d.-a). The medical interviews typically last approximately one and a half hours, and individuals with high scores for depression and anxiety are invited for additional psychiatric evaluations. Blood samples have also been collected during some waves of the medical interviews (Hoogendijk et al., 2020). Furthermore, the study includes nine additional monthly measurements specifically targeting the oldest population. The demographic experiences change in functioning more rapidly and destructively compared to younger individuals. Consequently, these measurements were implemented between the waves conducted from 2015-16 to 2018-19, allowing for grasping the changes and underlying causes in the components of functioning. The survey also creates genetic data for candidate gene studies and genome-wide association studies, facilitating the construction of polygenic risk scores for complex traits. Another aspect of data creation involves environmental data, which aims to apprehend the health-environment relationship through two cohort consortia. Lastly, qualitative studies are also being conducted within the LASA framework (Hoogendijk et al., 2020).

The Healthy Ageing in Scotland (HAGIS) pilot study was conducted between 2016 and 2017, focusing on individuals aged 50 and above. The sampling design consists of two phases. The first phase employs a proportionally stratified and clustered sampling method utilizing the National Records of Scotland (NRS). Additionally, a neighbour approach is implemented to engage alternative respondents from the same data area if a participant declines to take part in the survey, if there are no participants aged 50 or older in the household, or if responses cannot be obtained despite contact attempts. Out of 1,057 respondents, 442 reside in neighbouring households. The study includes both a main questionnaire and a self-completion questionnaire. The main questionnaire is administered using the CAPI data collection method, while the self-completion questionnaire allows respondents to choose from various methods, including CAPI, CAWI, and Paper and Pencil (Douglas et al., 2017).

The Korean Longitudinal Study of Aging (KLoSA) has been collecting data since 2006, examining the aging process of individuals aged 45 and older. The study aims to understand the social and economic conditions of older adults and to develop appropriate policies (KLoSA, n.d.-a). For sampling, data from the 2005 census conducted by the Korean National Statistical Office is utilized, excluding Jeju Island. A stratified sampling method is applied, considering both the type of area and type of housing. In the initial wave, only households are selected as the sample unit, while subsequent waves include institutionalized individuals as well. Face-to-face interviews are conducted using the CAPI method (The Korean Longitudinal Study of Aging [KLoSA], n.d.-b).

### **3.4. Item Nonresponse**

#### **3.4.1. Don't Know**

The response of "don't know" may imply that respondents lack knowledge or sufficient information regarding the posed question; however, this is not always the case in everyday situations. In this case, the focus shifts to the interpretation of "don't know." Tourangeau's four-stage model of the survey response process illustrates the psychological factors involved when respondents provide a "don't know" answer (Weisberg, 2005). The stages of this model, as outlined by Tourangeau et al. (2000),

can be described sequentially as follows: comprehension, retrieval, judgment, and response. Respondents are not necessarily required to navigate through all these stages. Their willingness to answer questions, the time taken to respond, and various other factors may influence whether they proceed through these stages or not. Furthermore, this four-stage process does not have to be mutually exclusive. During the comprehension stage, respondents may occasionally misinterpret the questions.

Respondents may become distracted, miss parts of the questions, or simply not pay attention to instructions, especially in self-administered surveys. Additionally, questions may be double-barreled, meaning they contain multiple inquiries within a single question. Furthermore, the questions may include terms that respondents are unfamiliar with, or different respondents may interpret these terms in various ways (Tourangeau et al., 2000). During the comprehension phase, if respondents do not understand a question, they may respond with "don't know" (Weisberg, 2005).

The retrieval stage involves the extraction of relevant information from long-term memory, allowing individuals to recall this information. The retrieval process is facilitated by adopting specific strategies, utilizing retrieval cues, recollecting memories, and integrating partial recollections through inference. Factors such as the clarity of events, the quality or quantity of cues in the questions, whether the information is derived from direct or second-hand experiences, and the elapsed time since the event can influence the retrieval of information (Tourangeau et al., 2000). During the retrieval stage, some respondents may be unable to locate the relevant information in their memories and may respond with "don't know." This difficulty may arise from challenges in recalling or may have never thought about the question before (Weisberg, 2005). The judgment process represents the phase in which respondents complete or synthesize the information they have retrieved (Tourangeau et al., 2000).

In the judgment process, respondents may struggle to determine how to formulate their responses after recalling relevant information on the topic. For certain questions, they might respond with "it depends," indicating uncertainty about which position is more suitable for them. In such instances, they may opt to answer with "don't know." However, a "don't know" answer may reassure respondents because it will challenge them to reflect intensively on the question (Weisberg, 2005).

The response phase involves the selection and reporting of answers. This section comprises two critical components: first, identifying the suitable response scale or option, and second, organizing the chosen answer based on criteria such as consistency and acceptability (Tourangeau et al., 2000). Within this phase, respondents may provide a 'don't know' answer, often motivated by a desire to please the interviewer. When their own responses are perceived as socially undesirable, respondents may resort to the 'don't know' option as a means of refusal (Weisberg, 2005). The cognitive processes of respondents represent just one aspect of the broader item nonresponse. Given that this study aims to explore variations in data quality across different age groups, understanding the cognitive processes of respondents is a significant consideration for the integrity of the thesis.

The category of "don't know" responses is discussed in literature not only in relation to the cognitive processes of respondents but also concerning their socio-economic status or their circumstances of being socially vulnerable (Chen & Garand, 2018; Montagni et al., 2019).

### **3.4.2. Item Refusal**

Item refusals represent a response category that is less frequently chosen by respondents compared to the "don't know" category. Even in sensitive topics, instances of item refusals are quite rare. Questions about income often lead to a refusal to answer. People, whether they are in low-income or high-income groups, may hesitate to share their income information (Weisberg, 2005).

In their research, Shoemaker et al. (2002) utilized the concepts of question sensitivity and cognitive effort to differentiate between "don't know" and "item refusal" responses. They concluded that sensitive questions tend to receive a higher frequency of "item refusals," while questions that require cognitive effort are more likely to elicit "don't know" responses. Furthermore, cognitive effort questions are correlated significantly with "item refusals."

### **3.4.3. Not Ascertained**

“Not ascertained” arises when respondents or interviewers skip certain questions. When questions are presented from a written document, navigational errors can lead to missigness. Conversely, in computer-assisted questionnaires, the scenario is different, as only one question is displayed on the main screen at a time. The order and complexity of the questions can contribute to this issue; for instance, short questions should ideally not be positioned at the bottom of a page, and complex branching questions require clear guidance. The order and complexity of the questions can contribute to this issue; for instance, short questions should ideally not be positioned at the bottom of a page, and complex branching questions require clear guidance. Additionally, there are examples where questions are intentionally omitted. This may occur when respondents feel uncomfortable with a question, when interviewers leave answers blank due to their clarity from prior responses, or when respondents choose not to answer certain questions in self-administered or mail surveys. While computer-assisted interviews may mitigate the frequency of "not ascertained" responses, intentional omissions may still occur. For instance, in Computer-Assisted Telephone Interviews (CATI), interviewers might present questions in a non-standard manner when they are embarrassed by the question, or in voluntary online surveys, participants may abandon the questionnaire midway despite being required to respond to all questions. To address this latter issue, some online surveys incorporate a feature that allows respondents to skip questions. Furthermore, certain studies may ask skipped questions at the conclusion of the survey, categorizing any unanswered questions during this second attempt as refusals (Weisberg, 2005).

### **3.4.4. Survey Error Types Related to Item Nonresponse**

According to Biemer (2010), measurement error arises from various sources, including respondents, interviewers, survey questions, among others, leading to the provision of incorrect information to the survey questions. For example, questionnaires have the potential to become one of the causes of measurement error if their design is inadequate. Measurement error and item nonresponse error are interconnected. In this regard, focusing on questionnaire design would be beneficial for data quality in

surveys. According to Dykema et al. (2020), during standardized measurement, the designers of questionnaires prioritize certain characteristics of the questions. Some aspects to consider are the size of the questions (measured in words and clauses), the level of complexity of the questions (measured in readability), and the way in which answers are provided (through yes-no options, rating scales, or discrete values). Research into survey questions and response categories reveals a variety of topics reflected in the literature. These include edit check questions (Lugtig & Jäckle, 2014), filter questions (Kreuter et al., 2011), incomplete question stems (Hernandez et al., 2023), evaluations of burdensome of factual and social network questions (Phillips & Stenger, 2022), comparison of plain questions with standardized questions (Bauer et al., 2023), income questions (Lugtig & Jäckle, 2014; Moore et al., 2000), gender question (Garbarski et al., 2025) and assessment of question formats (Kmetty & Stefkovics, 2022). The clarity of the questions can diminish the occurrence of item-level nonresponse. In this respect, the quality of the questions can be evaluated through probing inquiries. Additionally, the effectiveness of probing questions is also crucial. In their study, Neuert et al. (2024) examine the efficacy of both single-item and multi-item comprehensibility probes designed to evaluate the comprehensibility of survey questions. Their research analyzes these probes by examining the distribution of responses, mean comprehensibility scores, level of item nonresponse, and response durations. The focus on nonresponse and response times aims to understand the respondent's interest and effort.

Measurement error can be seen from the question as well as from the interviewer and respondent. According to Lessler et al. (2012), if the interviewer is not able to conduct the interview properly or if the interviewer cannot adequately control the response quality, measurement error is observed at this point. Interviewers are trained to deal with questions and concepts that respondents do not understand, and to control data quality, diminishing measurement error. At this point, at the point of checking data, computerized interviews are very effective for finding inconsistent answers. However, respondents may accidentally or intentionally give incorrect answers to questions (Biemer, 2011). Cernat and Toepoel (2024) discuss in their research that data quality may vary according to social and economic characteristics (unemployment, low income and older age). In this manner, respondent-based

measurement error is studied around topics such as retrospective recall, response process (Eisenhower et al., 2004; Gaskell et al., 2000; Havari & Mazzonna, 2015; Rettig & Struminskaya, 2023) and proxy responses (Blair et al., 2004; Schanze, 2021; Moore, 1988).

### **3.4.5. Reasons and Measurement of Item Nonresponse**

Several factors have been explored in the literature on item nonresponse, which include the mode of data collection, characteristics of the questionnaire, cultural influences, research topics, sensitive questions, respondent motivation and interviewer effect. There are various reasons for the occurrence of item nonresponse. Several studies have endeavored to comprehend the rationale behind item nonresponse and utilized diverse techniques for this objective.

Shoemaker et al. (2002) evaluates the item response in relation to the responses of “refusal” and “don’t know.” “The study revealed that sensitive questions tended to elicit more refusals, whereas questions resulting in “don’t know” answers were categorized as more cognitively demanding. Silber et al. (2021) focus on “don’t know” and “item refusal” with a specific emphasis on political questions. The study examined various aspects of the questions, such as their level of difficulty due to long and complex language, format (less burdensome close-ended questions compared to open-ended questions, more burdensome (closed) multiple-choice questions), and sensitivity (confidentiality and socially desirability), and the location of the question on the questionnaire. The study centered on various attributes of the respondents, including their cognitive capabilities such as mental sophistication and memory capacity, their level of interest in politics and affiliation with political parties, and observations made by interviewers on factors like cooperation difficulty, disinterest, difficulty in understanding questions and distraction. The study findings reveal that factual questions have an impact on “don’t know” answers and item refusals. The use of word count, semi-closed questions, and multiple-choice questions has an impact on the likelihood of “item refusal”. The presence of hypothetical questions, questions related to behavior, behavioral intentions, and recalls significantly impact “don’t know” responses. The probability of “item refusal” or “don’t know” in this study is

not influenced by the respondent's age or level of education. The act of disinterest is linked to both "item refusal" and "don't know" responses, while comprehension difficulty is related with "don't know" responses.

A study conducted by Skafida et al. (2022) analyses whether item nonresponse among mothers with young children may indicate experiences of domestic violence. This research examines the patterns, causes, and consequences of item nonresponse to sensitive questions, utilizing data from the Growing Up in Scotland longitudinal study, with a focus on the domestic violence and abuse module. Respondents answer this module through self-administration. The questions within this module are categorized into three groups: coercive control questions, threat questions, and questions regarding physical and sexual violence. While some women completely refuse to answer this module, others provide no response to certain questions (indicating refusal or don't know). The study also analyzes whether item nonresponse serves as an indicator of domestic violence by utilizing questions posed to mothers about their partners in previous waves (Waves 2 and 4). These questions assess whether mothers and their partners maintain a healthy relationship. Additionally, the research explores how item nonresponse varies according to socioeconomic and family characteristics, including maternal education, maternal social class, household income, and the age of the mother. The research ultimately compares conservative prevalence estimates (those who answered "yes" to any abuse question, as well as mothers who answered "yes" to at least one abuse question but either refused to answer or forgot to respond to the remaining questions) with generous prevalence estimates (mothers who have experienced any form of abuse and those who left the module completely unanswered). It means leaving the domestic violence module unanswered also implies an assumption of violence indicators. The findings indicate that young mothers with low educational attainment, low-income or unemployed mothers, and those with low household income tend to leave these questions unanswered. Additionally, mothers who reported having an unhealthy relationship with their partner in the 2nd and 4th waves also left more questions unanswered. Finally, there is no significant difference between the conservative and generous measures, as they yield similar results. The research also discusses the ethical implications of item nonresponse, critically examining both data imputation methods and the assignment of data to unanswered questions from previous

waves, while questioning whether respondents who leave sensitive questions unanswered would prefer to have answers assigned to those questions.

Income questions are categorized as sensitive questions and are discussed in the literature within the framework of item nonresponse. Jabkowski and Piekut (2024) examine item nonresponse related to income questions, focusing on the complexity of the task and the sensitivity of the questions. The calculation of income questions may require cognitive effort, which can lead to nonresponse. Additionally, the personal nature of these questions may also contribute to the lack of responses. In this context, the research addresses both of these issues at the individual and country levels. The study utilizes data from the European Social Survey (ESS) spanning rounds 4 to 9 and includes 17 countries. Earlier rounds are excluded due to missing age and gender information. Sweden is not included in the study due to inconsistencies in age data. Furthermore, data from certain countries' rounds are also omitted; specifically, the data from Portugal in round 5, Estonia in round 7, and Lithuania in round 4 are not part of the analysis. Respondents answer questions regarding household total net income, which reflects income after taxes and mandatory deductions, by selecting one of ten response categories. Responses are presented not only on the questionnaire but also on showcards, which can enhance the respondent's sense of privacy. Interviewers are trained not to read the "don't know" and "refuse to say" response options aloud. Multilevel cross-classified regression models are employed in the analysis. The findings indicate that both task difficulty and question sensitivity contribute to increased item nonresponse. At the individual level, the response of "don't know" is more prevalent in larger households and in those where household income lacks stability. At the national level, this response is less frequent in countries that prioritize the avoidance of uncertainty. Furthermore, nations characterized by frequent income misreporting tend to exhibit elevated levels of masculinity and a significant shadow economy, with the response "refuse to say" being more widespread.

In the study conducted by Zhu (1996) which investigated item nonresponse issues in 14 national surveys carried out in China, the variable equivocality of wording is used unlike in other related research studies. To put it differently, the consideration of whether there were neutral or middle positions in the answers to the questions was factored in. Furthermore, topic familiarity was also considered by distinguishing the

questions as either topic from other countries or topic from the domestic. Additionally, as 14 national surveys were scrutinized, emphasis was placed on questions concerning the timing and location of the research, the research environment and sponsor, as well as the socio-economic status, referring their potential impacts on the level of item-nonresponse. In addition to these independent variables and other independent variables in the article, item nonresponse was considered as a binary outcome variable to use it in a logistic regression model. In addition to all these studies, the literature addresses item nonresponse through various lenses, including the mode of data collection (Lipps & Monsch, 2022; Cernat et al., 2024), the motivation of respondents (Hibben et al., 2022; Saraç, 2024), and cultural factors (Klíma et al., 2024).

#### **3.4.6. Item Nonresponse for Subgroups of the Population**

The process of evaluating disadvantaged groups in society has been examined in detail with respect to survey design, data collection methods, survey questions and overall data collection procedures. This is essential to inform policy makers using representative survey data for such groups. The main subject of research related to these people revolves around immigrants, older people, sexual minorities, and ethnic groups. Studies focusing on these particular groups have been evaluated with regard to both unit nonresponse and item nonresponse levels which are important indicators for data quality. Numerous methodological studies have been conducted to comprehend the extent of item nonresponse to survey questions and its causative factors, utilizing diverse methods to gain insight so far.

Regarding research concerned with ethnic groups, Feskens et al. (2006) discuss two main concerns: the availability of comparison of cross-national survey data, and how contrasting definitions of ethnic identity can influence this analysis. The chosen nations under analysis possess explicit and different official ethnic identity descriptions. Although different definitions have been used, there are doubts regarding the legitimacy of comparing response rates, as an indicator for response quality, among various countries.

Ahlmark and colleagues conducted a study in 2015, analyzing nonresponse rates among various ethnic groups participating in the Danish National Health Survey.

To ensure consistency, which is a dimension of data quality, the definitions provided by the national authority for immigrants, Danes, and descendants were employed. The study was devised utilizing a combination of qualitative and quantitative methods. Moreover, demographics including age, gender, education, and marital status were accessible for the unit nonresponders, allowing to reach information about non-response bias. This section underwent statistical analysis using the technique of multiple logistic regression in which dependent variable is the status of unit nonresponse rate. The study involved qualitative research that entailed conducting focus group and cognitive interviews with people. The interviewees who were immigrants showed a significant tendency to withhold information when asked about health issues, work absences, smoking and drinking habits, medical consultation, and social and demographic factors.

Meanwhile, Piekut's (2021) research centered on item nonresponse about immigrant-related questions, which differed depending on certain factors like the respondents' attributes and experiences, the interviewer's attributes, and the country context. The study by Kim and Fredriksen-Goldsen (2013) examined how race and ethnicity impact on the item nonresponse relating to the self-identified sexual orientation question. The question covered various sexual orientation categories such as "heterosexual," "lesbian, gay, or bisexual," "other," "not sure or don't know," and "refusing to respond." The focus was on sexual orientation as the outcome variable, with ethnicity as the main predictor variable. The group used as a point of comparison, or reference group, was made up of respondents who identified as Non-Hispanic White, Other groups, including African American, Asian American, American Indian or Alaskan Native, and Hispanic, were compared to this reference group. The relationship between the two variables was analyzed using an adjusted multinomial logistic regression technique. In addition to these studies, the issue of citizenship is also discussed in the context of item nonresponse by Baum et al. (2019). The research indicates that the citizenship question will be included in the 2020 U.S. Census, yet its impact on the census remains uncertain. To address this, a large survey experiment resembling the census format is designed, which includes a sample of 9,035 respondents. According to the results of the survey experiment, Hispanic respondents tend to leave these questions unanswered more frequently and are less likely to report

Hispanic individuals within their households. This phenomenon may lead to an underrepresentation of the Hispanic population in the census. Furthermore, sensitive questions regarding gun ownership may also contribute to item nonresponse. LeCount (2022) concludes that racially conservative White respondents are less likely to answer such questions.

Language can pose challenges for immigrants and ethnic groups in their interactions with survey questionnaires, and this topic is discussed in the literature concerning data quality. Wenz and colleagues (2021) examine the language proficiency of immigrant respondents and those from various ethnic backgrounds, who possess differing levels of proficiency in the native language of the host country. The article utilizes data from Wave 1 and Wave 2 of the Understanding Society: The United Kingdom Household Longitudinal Study (UKHLS). Due to the limited translation of questionnaires into certain languages, very few respondents were able to answer questions in their native language. Consequently, only immigrants who completed the survey in English were included in the study. However, Welsh individuals who are fluent in English were excluded from participation. Respondents are asked questions regarding their English language skills. Additionally, five indicators are employed to measure data quality: "don't know," primacy effects, straightlining, nonresponse to the self-completion section of the survey, and changes in responses to survey questions. Furthermore, to understand and analyze the "don't know" responses and variations in answers, questions are coded according to specific criteria. In the coding of complex questions, emphasis is placed on lengthy and complex question stems, additional information provided in the questionnaire, and questions that involve cognitive computations. In addition to the characteristics of the questions, they are also coded according to the response categories. The characteristics of answer categories chosen during coding include whether consecutive questions within specific groups consistently utilize the same answer scale (known as a battery of scalars), whether the questions incorporate a rating scale, and whether there are more than five available answer options. Furthermore, sensitive questions, such as those addressing illegal behaviors, questions that elicit socially desirable responses, and those that include showcards are also coded. The classification of questions as attitudinal or factual is incorporated into this coding process. Given the potential impact of both respondents

and interviewers on data quality, a cross-classified multilevel model is employed, and analysis is conducted using multilevel logistic regression methods. The study compares both native and non-native English speakers, as well as non-native speakers among themselves based on their language proficiency. The findings indicate that for immigrants and ethnic groups (including non-native speakers), data quality is low in four out of five indicators. These indicators include primacy effects, straightlining, nonresponse to the self-completion section of the survey, and variations in responses to survey questions. The fact that non-native speakers did not tend to the “don’t know” response category is related to the mode of data collection. The study was conducted through face-to-face interviews. In contrast to telephone surveys, it is emphasized that respondents may have been given time to consider their answers during face-to-face surveys. Jacobsen (2022) also discusses the issue of item nonresponse in relation to the mismatch between the respondent's native language and the language of the survey. Despite the dataset used in the research (The IAB-BAMF-SOEP Survey of Refugees) being translated into seven different languages, 40% of respondents were unable to answer the questions in their native language. The findings suggest that both language discrepancies and the use of audio recordings contribute to an increase in item nonresponse.

#### **3.4.7. Item Nonresponse for Older Respondents**

Prior to focusing on item nonresponse among older people, some research studies on unit nonresponse in this subgroup are first discussed. The research conducted by Kaspar et al. (2023) utilizes data from a survey titled "Quality of Life and Subjective Well-Being of the Very Old in North Rhine-Westphalia (NRW80+)," which involved interviews with individuals aged 80 and above residing in Germany. The interviews were conducted face-to-face. For respondents who were unable to participate in the interviews, proxy respondents provided answers to the questions. The survey notably over-represented individuals aged 85 and older, as well as male participants. The findings indicate that the response rate increases from 15.3% to 23.2% when difficult-to-survey groups are included in the research. Furthermore, the socio-economic status of institutionalized individuals, those with cognitive

impairments, and respondents requiring proxy reports is found to be worse compared to the remaining participants. The study shows the importance of representativeness of hard-to-survey groups because by including these groups, more accurate information about the quality of life of the older population can be obtained. Representation of older people is discussed in the literature from the different concepts such as panel study, oldest population (80+) and response rates (Dormagen & Michel, 2018; Watson & Nesa, 2025; Herzog & Rodgers; 1988).

With regard to existing research on item nonresponse about older people, Fredriksen-Goldsen and colleagues (2015) focus on item nonresponse on sexual orientation but of older respondents. They divide the age as 18-49, 50-64, and 65 and older to make comparisons between age groups. The categories of “don’t know/not sure” and “refuse to answer” were chosen as options for respondents who did not provide a response. The statistical method of adjusted logistic regression was applied to ascertain the link between age and the nonresponse to the question about sexual orientation and income, which are sensitive issues especially for certain nations/respondents. The variables of gender, income, education, and race/ethnicity were selected for the purpose of control, considering their potential effects on the outcome. Study findings suggested that respondents aged 65 and above are less likely to not answer the sexual orientation question compared to the income question. In comparison to their younger respondents, older adults have a higher nonresponse on the sexual orientation question, referring to need for exploring methodological suggestions for older respondents in surveys.

In addition to questions regarding sexual orientation, questions about income may also be associated with item nonresponse. The study conducted by Herold et al. (2023) utilizes the dataset from the SHARE Wave 8 survey, which involved participants aged 50 and older, to examine instances of nonresponse or incomplete responses to income questions, as well as the unwillingness to consent to record linkage for administrative data. The findings indicate that respondents with a favorable income status exhibit lower levels of consent regarding record linkage. Conversely, substantive responses to the income question and participation in social activities are statistically positively correlated with consent. Although not always statistically

significant, trust in surveys shows a positive correlation with both consent and income responses, whereas anxiety related to surveys tends to have a negative impact.

Koyama et al. (2014) investigate the implications of item nonresponse on a self-assessment depression screening survey, specifically among community dwelling older people. This study, aimed to examine if item nonresponse is influenced by depression. The study utilized a questionnaire administered to a segment of a Japanese countryside and involved solely respondents who were 65 years old and beyond. A survey conducted via traditional postal mail was completed by 66.1% of the target respondents. The nonrespondents were unable to take part in the study due to various factors such as hospitalization, residency in a nursing home, suffering from the medical condition of dementia, or other similar circumstances. The study also controlled other factors such as gender, age, number of hospital visits, sleeping issues, living alone, appetite, significant concerns regarding finances, and thoughts of suicide. The researchers categorized participants who did not answer certain items as the item non-response group, and those who answered all items were classified as the full-response group. Moreover, a comparison was made between these two groups about their sociodemographic features, physical and mental symptoms, and the item nonresponse. The researchers' objective was to comprehend the probability of respondents with depression avoiding certain questions. The study found that respondents experiencing depression and thoughts of suicide were found to have a 1.6 times higher likelihood of showing an item nonresponse.

Schanze (2021) conducted a study about item nonresponse among individuals in institutionalized settings relative to those who are not institutionalized. The study utilized data from the 5th, 6th, and 7th waves of the Survey of Health, Aging, and Retirement in Europe (SHARE) dataset, which targets individuals aged 50 and above. SHARE, which is a cross-national panel study, made use of the latest recorded observation of the respondents, thereby creating a larger pool of individuals who were institutionalized. The research analyzed the proportion of interviewees responding through a substitute individual (proxy respondents) and the rate of interviewer about respondents' willingness to participate in a survey. In cases where older respondents are not able to respond to questions in some parts, interviewers recorded such questions as item nonresponse. To analyze the variations in data quality among respondents who

are institutionalized and those who are not, the researcher made use of the response category that is situated in the middle response option in rate-scaling questions. In addition to analyzing the middle group, they also inspected the end points (response choices referring to strong agreement or disagreement). The application of propensity score matching technique was utilized to control the influence of confounding variables and determine respondents living in private households who shared similar traits with those living in institutions. The research analysis revealed that the level of data quality in institutions was comparatively lower than that in the other group. Once the sociodemographic and health variables were controlled, the contrast between the two groups was considerably lessened. Thus, this inequality cannot be attributed solely to differences in housing circumstances.

## **CHAPTER 4. METHODOLOGY**

### **4.1. Data Sources**

This thesis uses the joint wave of the World Values Survey and European Values Study as a main data sources. The World Values Survey (WVS 7) and European Values Study (EVS) of 2017 have been integrated into a single entity known as the World Values Survey/European Values Study Joint 2017. At the WVS/EVS Joint 2017, a collection of data from multiple countries was presented, which had been gathered through two distinct studies. Following a discussion on the surveys, we will delve into the methodologies from Turkey, Zimbabwe, Switzerland, and Italy, which were selected as countries to be compared within the study.

#### **4.1.1. World Values Survey 2017**

The WVS is an international research initiative that aims to gain insight into the social, political, economic, religious, and cultural values of individuals through scholarly means. The goal of the initiative is to assess the impact of the persistence or evolution of values over time on social, political, and economic development within countries and societies. The project emerging from the European Values Study was initiated in 1981 by Professor Ronald Inglehart and his team at the University of Michigan. A representative cross-national investigation has been conducted in over 120 nations as the cornerstone of this research program. This study is conducted globally once every five years. As a non-commercial and cross-national time series survey research, it focuses on people's belief, norm, custom and value. Moreover, WVS is the study that covers countries across the world with different socio-economic levels (World Values Survey Association [WVSA], n.d.-d).

The most recent of the World Values Survey, which has been conducted since 1981, is the 8th Wave. WVS Wave 8 commenced in January 2024 and will continue throughout the period from 2024 to 2026. The 7<sup>th</sup> wave is the last wave having a dataset available for the researchers, which is the reason this dataset is used. In the 7th wave (2017-2022), prior to the onset of the Covid-19 pandemic, most countries completed

their surveys between 2018 and 2020. The most recently concluded survey was conducted in India in July 2023. 7<sup>th</sup> wave includes 66 countries or regions. Some of these countries are the USA, Mexico, Brazil, Argentina, Chile, Ecuador, Peru, Andorra, Greece, Serbia, Romania, Turkey, Zimbabwe and so on (WVSA, n.d.-d).

#### **4.1.1.1. Survey Design of the WVS 7**

An analysis of the sampling design used in WVS Wave 7 indicates that it utilizes either full probability sampling or a mix of probability and stratified sampling for individuals aged 18 to 85. The study includes residents of private households across various countries, regardless of their nationality, citizenship, or language. Whether countries choose full or partial probability sampling methods, the World Values Survey Association (WVSA) encourages national teams to maximize the number of Primary Sampling Units (PSUs) in the sample to enhance representativeness of the estimates. However, it is crucial that no more than ten individuals are included in each PSU, as a rule of thumb, and multiple PSUs can be located within a single settlement, provided they are adequately spaced apart. Furthermore, the WVSA requests that countries outline their proposed sampling procedures before fieldwork begins. The minimum acceptable sample size is established at 1,200 individuals (WVSA, n.d.-d)

The questionnaire for each wave is prepared in English through the evaluation of social scientists from around the globe. These English questionnaires are subsequently translated into multiple languages, and to ensure the accuracy of these translations, they are independently translated back into English. In addition to English, Wave 7 includes questionnaires in Spanish, Arabic, and Russian. Furthermore, each national team is responsible for translating languages that are spoken as a mother tongue by at least 15% of the country's population. Wave 7 retains questions from previous waves to measure inter-wave changes over time while also incorporating questions specifically designed for this wave. Additionally, questions proposed by social and political scientists worldwide are included in the questionnaire. The WVS requires that the common questionnaire be fully utilized by countries, allowing for the removal of a maximum of 12 questions. The Wave 7 questionnaire comprises 290 questions designed to evaluate cultural values, attitudes, and beliefs

concerning gender, family, and religion. It further explores individuals' experiences and viewpoints on issues such as poverty, education, health, and security. Additionally, the questionnaire assesses trust, social tolerance, and perspectives on multilateral institutions, thereby highlighting both the cultural differences and similarities across diverse regions and societies. Alongside topics from previous waves, this wave introduces new topics, including justice, ethical standards, corruption, responsibility and risk, migration, national security, and global governance which are the hot topics in recent times (WVSA, n.d.-d).

In addition to the methodological information, when it comes to the mode of data collection, it is seen that the main data collection mode is face to face interview. These interviews take place in respondent's homes or place of residences. These answers are recorded with CAPI or PAPI depending on the use of technology (WVSA, n.d.-d).

Survey countries are expected to develop strategies based on sampling methods to reduce nonresponse rates. In surveys utilizing full probability sampling, the practice of replacement is not permitted. This means that individuals who are unreachable or who decline to participate cannot be substituted with new respondents in order to avoid biased results. Instead, if the survey budget allows, call-backs/re-visits are recommended. In some cases where quota sampling methods are employed, it is essential to conduct the survey with the first contact made (WVSA, n.d.-d).

#### **4.1.2. European Values Study 2017**

In addition to the WVS Wave 7, the dataset to be used in the thesis also includes the European Values Study Wave 5/2017 dataset. While the European Values Study (EVS) coordinated the survey processes in European countries and collected data, the World Values Survey Association conducted survey processes both in some European countries and non-European countries. Countries included in both surveys are Armenia, Czechia, Germany, Great Britain, Netherlands, Romania, Russia, Serbia, Slovakia, and Ukraine. Countries other than those mentioned in the European Values Study are: Albania, Austria, Azerbaijan, Bosnia and Herzegovina, Bulgaria, Belarus, Switzerland, Denmark, Estonia, Spain, Finland, France, Georgia, Croatia, Hungary,

Iceland, Italy, Latvia, Lithuania, Montenegro, North Macedonia, Norway, Poland, Portugal, Sweden and Slovenia. The WVS Wave 7 encompasses 66 countries, while the EVS Wave 5 includes 36 countries. The joint EVS/WVS comprises a total of 92 countries (European Values Study [EVS], n.d.).

#### **4.1.2.1. Survey Design of the EVS 2017**

When the EVS 2017 methodology guideline (2020) is examined, it is seen that the target population is 18 years old and above and has the address of residence recorded in countries' national address system. There is no upper-level age limit for these people living in private households which is considered as a useful property to answer research questions of the thesis. Inclusion of ethnic groups, territorial communities, social groups and also individuals having a distinct legal status to the survey is an important consideration. If the populations are registered in the systems of the countries, its use is supported. As for the sampling strategy, it is recommended to depend on probabilistic samples to produce generalisable results. If single stage sampling is appropriate, probabilistic sampling method should be used. Since there is no effect of cluster, it is less complicated and more statistically precise. If not, multistage sampling is adopted following the sequential sample selection procedures. However, research design errors need to be calculated. If the population is over 2 million people, the sample size is set to 1,200 individuals. If less than 2 million people, the sample size is set at 1,000 individuals to ensure standardisation across countries (EVS, 2020).

The European Values Study (EVS) examines various topics such as religion, family, work, life, politics, society, and the environment through its survey. The translation of the Master Questionnaire is conducted by the participating countries, ensuring that the questionnaire is translated into the languages spoken by at least 5% of the population. Collaborative efforts were made for a unified translation in countries where the same languages are spoken. In some instances, certain countries have worked together throughout the entire translation process, while in other cases, the translation from one country has been utilized by others. Another important aspect concerning the content of the questionnaire is that countries utilize the Translation

Management Tool (TMT) to translate the master questionnaire by using web. The translation process follows the TRAPD method, which involves creating different and more than two translations of the questionnaire. Subsequently, translators and reviewers compare these draft translations. Typically, an adjudicator, who is often a reviewer, compares the revised questionnaires with the master version and approves the questions for the pretest or fieldwork phase. The adjudicated questionnaire is then subjected to the pretest process, and ultimately, all these procedures are documented. Since very few new questions are added between waves of the questionnaire, this process is specifically applied to those newly included questions. In addition to translation, another significant issue related to the questionnaires is classification. Respondents are asked about topics such as education, religion, political parties, income, and region using pre-coded variables. Open-ended questions are posed regarding occupation, language, and nationality, employing pre-classified codes to facilitate cross-country comparisons (EVS, n.d.).

During the data collection phase, the primary method employed for the EVS 2017 was face-to-face interviews, which typically lasted for approximately one hour. In each participating country, interviews were predominantly conducted using either computer-assisted personal interviewing or paper and pencil interviewing. Notably, in Germany, the Netherlands, Iceland, Switzerland, Finland, Denmark, and Latvia, a combination of face-to-face and self-administered methods (such as CAWI or mail) was utilized due to both methodological concerns and cost minimisation. It is also convenient to use the mixed mode (EVS, n.d.). However, when employing a mixed-mode strategy, respondents do not have the option to choose their preferred method, it means that the mode is assigned to them prior to data collection. It is recommended to supplement face-to-face interviews with web or mail options in a mixed-mode format, while telephone interviews are not permitted. Both web and mail formats should adhere to a similar structure across countries. To facilitate comparisons between modes by not affecting from potential nonresponse rates, it is essential that the sample size for face-to-face interviews constitutes half of the total sample, while the web or mail formats should have a sample size exceeding the required minimum. Additionally, due to the potentially lengthy duration of survey completion, the use of a matrix design is advised in web survey (EVS, 2020).

Interviewers should receive training related to both the questionnaire and interview techniques. The EVS aims for high response rates and low non-contact levels. However, if individuals do not have lists available and a random-route procedure must be employed for sampling, the sample should be selected prior to the interview process, and it should be done by sampling coordinators other than the interviewer. The EVS requires that interviewers visit individuals at least four times, with one visit occurring on a weekend and another after 6 PM to increase cooperation particularly for individuals in the employment. The initial contact should be made face-to-face, while subsequent communications can be conducted via telephone. Contact details are included in the contact forms (EVS, 2020).

## **4.2. Survey Designs in the Selected Countries**

### **4.2.1. Turkey**

The World Values Survey Wave 7 was conducted in Turkey by BINOM, a company that is a member of ESOMAR. Target population is Turkish citizens who are over 18 years old, staying in households. Institutionalized population (hospitals, prisons and so on) was excluded from the target population (World Values Survey Association [WVSA], n.d.-a). A total of 2,415 individuals were interviewed (World Values Survey Association [WVSA], n.d.-b). All regions and subregions in Turkey were included in the research design to provide geographical distribution of the sample. At this point, within the scope of NUTS2<sup>4</sup> level territorial units defined by Eurostat, Turkey has 26 regions, and these all units are covered in this survey to be estimation domains. To minimize sample design effect and reduce cost, cities and

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<sup>4</sup> According to Eurostat (n.d.), NUTS 2 level territorial units for Turkey are: İstanbul (TR10); Tekirdağ, Edirne, Kırklareli (TR21); Balıkesir, Çanakkale (TR22); İzmir (TR31); Aydın Denizli, Muğla (TR32); Manisa, Afyon Karahisar, Kütahya, Uşak (TR33); Bursa, Eskişehir, Bilecik (TR41); Kocaeli, Sakarya, Düzce, Bolu, Yalova (TR42); Ankara (TR51); Konya, Karaman (TR52); Antalya, Isparta, Burdur (TR61); Adana, Mersin (TR62); Hatay, Kahramanmaraş, Osmaniye (TR63); Kırıkkale, Aksaray, Niğde, Nevşehir, Kırşehir (TR71); Kayseri, Sivas, Yozgat (TR72); Zonguldak, Karabük, Bartın (TR81); Kastamonu, Çankırı, Sinop (TR82); Samsun, Tokat, Çorum, Amasya (TR83); Trabzon, Ordu, Giresun, Rize, Artvin, Gümüşhane (TR90); Erzurum, Erzincan, Bayburt (TRA1); Ağrı, Kars, Iğdır, Ardahan (TRA2); Malatya, Elazığ, Bingöl, Tunceli (TRB1); Van, Muş, Bitlis, Hakkari (TRB2); Gaziantep, Adıyaman, Kilis (TRC1); Şanlıurfa, Diyarbakır (TRC2); Mardin, Batman, Şırnak, Siirt (TRC3).

towns are not selected in the first place in accordance with the cluster sampling approach. A considerable quantity of small-sized PSUs (Primary Sample Unit) was utilized instead. TURKSTAT (Turkish Statistical Institute) randomly selected 180 clusters and these clusters contain approximately 100 households. Afterwards, in the second stage, 12 households from each cluster were randomly selected. The method used to select individuals inside the household is the Kish Grid method <sup>5</sup>which provides random selection of respondents. Paper-based face to face interviews were carried out within the residence of respondents. Interviews are conducted every day of the week, including holidays. Weekends are preferred for households that are working, and interviewers continue their efforts in the field until 9 pm. The quality of the data is meticulously verified through a comprehensive five-level control process, which includes oversight by a field supervisor, office checks following the submission of completed interviews, random telephone verifications, additional calls to respondents, and final assessments by a project team. Since the sample is self-weighting due to proportional allocation, there is no need for additional weighting calculation. Furthermore, due to the implementation of a completely random probability sampling method, the sample population is well-represented, provided that sampling error is not introduced or is quite small (if any) (WVSA, n.d.-a).

#### **4.2.2. Switzerland**

The European Values Study 2017 was carried out in Switzerland by the Swiss National Science Foundation. Switzerland sample includes 3,174 cases (EVS, n.d.). Households are chosen through a simple random sampling technique. To prevent the selection of multiple individuals from the same household, a Poisson procedure was implemented. The sampling frame was constructed using records from municipalities and cantons, as well as federal registries that included lists of immigrants. No specific region or community was excluded from the sampling frame (Leibniz-Institut für Sozialwissenschaften [GESIS] & European Values Study [EVS], 2022). The data collection phase commenced on September 11, 2017, and concluded on February 22,

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<sup>5</sup> The method for selecting one adult in the household by using “face sheets” and “tables” (Kish, 1949).

2018. Various data collection methods, including CAPI, CAWI, and mail, were utilized for data collection (EVS, n.d.-a). Prior to the data collection, 30 face-to-face pre-test interviews were conducted to evaluate the CAPI system (GESIS & EVS, 2022). A minimum of five visits to the respondents/sample units is required, with one visit occurring in the evening and another on the weekend (GESIS & EVS, 2022). Interviews were conducted in French, German, and Italian depending on the mother tongue of respondents (EVS, n.d.). The TMT method was not fully implemented; the final translation is uploaded to the platform used. The questionnaire is translated by professional translators, and double translation and team evaluations are conducted in accordance with the TRAPD guidelines. Respondents receive postal reminders approximately every 15 days with the aim of keeping response rates at the high level. An incentive of 10 Swiss Francs (CHF) is provided to respondents, presented as a postal check in the invitation letter. To reduce non-response in online surveys, matrix design and mini panel CAWI are employed. There are 33 experienced survey interviewers who receive specialized training, which includes refusal conversion techniques in addition to interviewing process. Interviewers are compensated for each completed survey and are also eligible for bonus payments. For refusal conversion, face-to-face interview attempts are conducted by a different interviewer, except in very remote areas. In cases where no one in the household responds, a minimum of three contact attempts must be made (GESIS & EVS, 2022).

#### **4.2.3. Italy**

European Values Study 2017 in Italy was carried out by Doxa S.P.A. It is also funded and supported by the Italian Ministry of Education, University and Research (MIUR), Cariplo Foundation, Intercultura Foundation and Episcopal Italian Conference (CEI). The data collection process started on September 24, 2018 and ended on January 30, 2019. This study, which has a sample size of 2,277, collected data using the CAPI method (EVS, n.d.). Prior to the data collection process, the projected gross sample comprises 5,000 respondents, while the projected net sample includes 2,250 respondents. The total number of sample units distributed to interviewers is 5,002. The target population consists of 50,678,735 individuals. Since

the sampling frame utilizes electoral lists, individuals who are Italian citizens and eligible to vote are included in the sampling frame. There are no specific regions or communities excluded from the sampling frame. In the sampling process within Italy, distinct methodologies are applied to six cities with populations exceeding 500,000, to provincial capital cities separately, and finally to all remaining cities. For cities with populations greater than 500,000, there are two sampling stages: the first involves electoral sections, and the second consists of individuals selected from these sections. In the case of provincial capital cities, three stages are implemented in the sampling process. Municipalities are selected based on population size, followed by the selection of two electoral area from these municipalities. From each electoral section, 12 individuals are randomly chosen. For the remaining municipalities, they are selected according to their population sizes, and one electoral section is chosen from each selected municipality. From these electoral sections, 10 individuals are included in the sample (GESIS & EVS, 2022).

The translation process of the questionnaire employs TMT entirely, with the translations carried out by professional translators. In accordance with the TRAPD guidelines, a double translation method is utilized, and teams review the translations. Following the preparation of the questionnaire, 32 pre-test interviews are conducted between July 24, 2018, and July 29, 2018. During this pretest phase, CAPI system is tested, and interviewer training sessions are also conducted. A total of 137 interviewers receive specialized training, although they do not undergo training for refusal conversion. The interviewers work on a freelance basis and are compensated for each complete interview. Each respondent is expected to receive five visits, with one visit occurring at night and another on the weekend. As an incentive, conditional monetary rewards are provided to respondents, which are distributed upon the completion of the survey. Interviewers have the option to select the incentive amount, choosing from 5 Euro, 10 Euro, or 15 Euro, or opting not to provide any incentive at all (GESIS & EVS, 2022).

#### **4.2.4. Zimbabwe**

The target population of Zimbabwe at World Values Survey 2017 is people who are 18 years old and older, stay in private households in the country and speak one of the mother tongues of the country. Individuals residing in the institutions are excluded from the research. A household member who is 18 years old and above is regarded as the head of the household, and the household members must have lived together for a minimum of six months. In this survey, in which random sampling techniques are used, it aims to reach 95% population coverage (if there are no security threats in the country). A portion of 5%, where the population density in the country is low, has been removed because of efficiency in the data collection process. The research was designed with the multi-stage clustered sampling method, namely complex sampling design. It is stratified by region/province and residence. Sample selection is through probability proportional to estimated size (PPeS). Area maps provided by the Zimbabwe National Statistics Agency (ZimStats) were used for secondary sampling units (SSU). There are no individual and address frames available for sample frame. Census administrative units/enumeration areas are used as primary sampling units (PSU) and households are used as SSU. This section draws upon data obtained from the Zimbabwe Statistical Office. Households are selected using the random route walk method, ensuring that the sample at the household level is self-weighting. In instances where multiple eligible respondents are present within a household, a respondent is randomly chosen from among the household members (World Values Survey Association [WVSA], n.d.-c). Furthermore, the sample size comprises 1,215 participants (WVSA, n.d.-d). The data collection employs computer-assisted personal interviewing (CAPI), and the languages utilized in the field include English, Shona, and Ndebele (EVS, n.d.-a).

The methodologies of countries (e.g., questionnaire design and sampling design) are as nearly as similar and standardized in accordance with the research design of the EVS/WVS. Therefore, the comparison of the countries through this dataset and conclusions from the statistical analyses are used for this thesis.

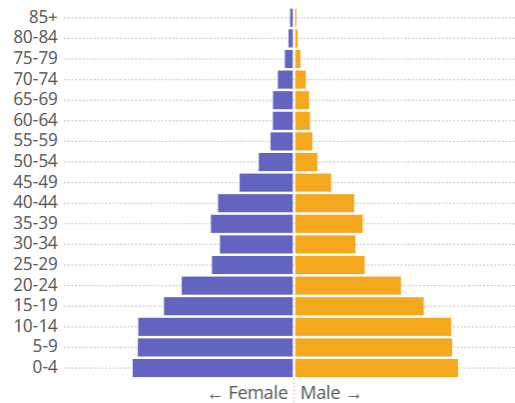
### **4.3. Demographic Characteristics of Selected Countries**

In this section, the demographic structure of the population (i.e., age and gender) in selected countries will be introduced using external data sources. This would be useful when interpreting thesis findings that mainly focus on the elderly population (50 and older).

#### **4.3.1. Zimbabwe**

As of 2022, the population of Zimbabwe is recorded at 15,178,957 in total. Females constitute 52% of this population, while males make up 48%. The youth and child population, comprising individuals under the age of 17, accounts for 49.6% of the total population. The total fertility rate in Zimbabwe stands at 3.7, indicating that a woman of reproductive age gives birth to 3.7 children on average. The gross reproduction rate is 1.8, representing the average number of daughters a woman has over her lifetime. At the national level, the life expectancy at birth averages 64.7 years, varying by gender and urban/rural status. For women, the average life expectancy is 68 years, while for men, it is 61.2 years. Individuals living in rural areas have a life expectancy of 63.3 years, whereas those in urban settings have a higher life expectancy of 65.5 years. In the twelve months preceding the last census, there were a total of 121,070 recorded deaths, resulting in a crude death rate of 8.0 per 1,000 individuals. This rate also varies between urban and rural populations (Zimbabwe National Statistics Agency [ZIMSTAT], 2023). The leading cause of death for both males and females is HIV/AIDS (World Health Organization [WHO], 2025a).

**Figure 3.** Population Pyramid of Zimbabwe by Age and Sex, 2023



(Source: WHO, 2025a)

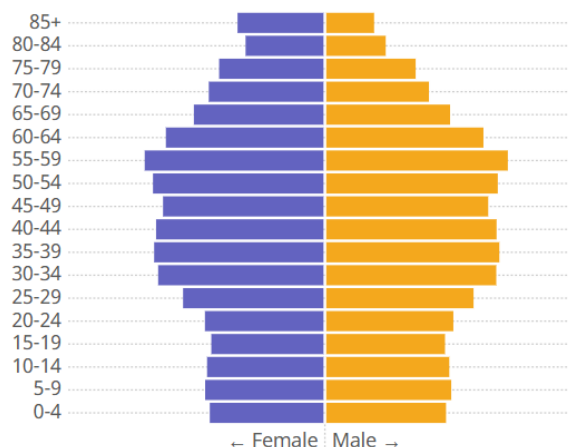
According to projections for the population of Zimbabwe, it is anticipated that the population will reach 21.2 million by the year 2042. Furthermore, the fertility rate in Zimbabwe has been on a declining trend for the past 40 years, and it is expected that this trend will continue, resulting in a total fertility rate of 3.2 by 2042. The life expectancy at birth is estimated to be an average of 69.1 years for males and 78.2 years for females. The age composition of Zimbabwe's population is not expected to change significantly until 2042. The number of children and adolescents aged 5-14 is projected to decrease only slightly by 2042, while the populations aged 0-4 and 65 and older are expected to remain stable. The population within the age group of 15-64 is projected to increase from 8.4 million to 12.8 million (ZIMSTAT, 2024).

In addition to this information, it is important to briefly discuss the economic conditions of the countries. The GDP in Zimbabwe stands at 35.23 billion dollars in 2023. An increase in GDP levels has been observed since the year 2000. In 2017, it reached its highest point in the last 25 years at 51.07 billion dollars. However, in 2018, it declined to 34.6 billion dollars, and further decreased to 25.72 billion dollars in 2019. Subsequently, there has been a gradual recovery. The GDP per capita was recorded at 2,040 dollars in 2022 and 2,156 dollars in 2023. The inflation rate for 2022 was 104.7% (World Bank, 2025a). In 2021, Zimbabwe allocated 2.79% of its GDP of 27.24 billion to health expenditure (WHO, 2025a; World Bank, 2025a).

#### 4.3.2. Switzerland

The population of Switzerland in 2023 is 8,870,561. Individuals aged 0-14 years account for 6.5% of the total population, while those aged 65 and older represent 21.6% (WHO, 2025b). From 1900 to 2022, the population of Switzerland has increased 2.7 times. In recent years, the annual population growth rate has averaged 0.7%. The average number of children per woman is 1.5, with women typically giving birth to their first child after the age of 30 (Swiss Federal Department of Foreign Affairs, 2023). According to 2021 population outcomes, life expectancy at birth is 85.1 years for women and 81.5 years for men, resulting in a total life expectancy of 83.3 years. In 2000, this total was 79.7 years. The average life expectancy in Europe is 76.3 years, indicating that Switzerland's figure is above the European average. Non-communicable diseases account for 82.1% of the causes of death (WHO, 2025b). The foreign population exceeds 2 million, constituting a quarter of the total population. Additionally, in the rapidly aging Switzerland, one-fifth of the population is of retirement age (Swiss Federal Department of Foreign Affairs, 2023).

**Figure 4.** Population Pyramid of Switzerland by Age and Sex, 2023



(Data Source: WHO, 2025b)

According to the population projection for Switzerland in 2050, the total population is expected to reach approximately 10,440,000 individuals. The population

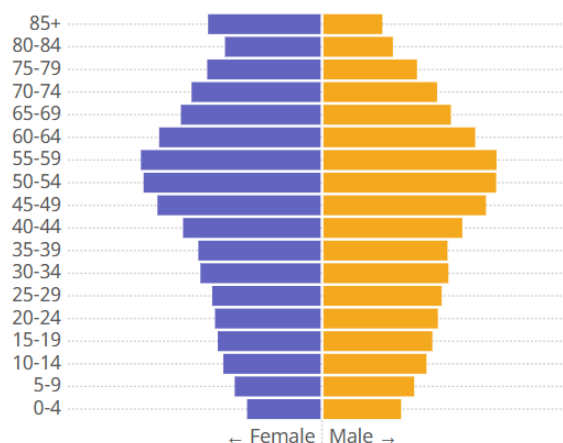
under the age of 20 is projected to be around 2,015,000, while the number of individuals aged between 20 and 64 is estimated to be about 5,752,000 people. The older population will surpass that of the youth, with the number of individuals aged 65 and over anticipated to rise to approximately 2,672,000. Consequently, it is expected that the youth dependency ratio will increase from 32.6% in 2020 to 35% by 2050, while the old-age dependency ratio is projected to rise significantly from 30.9% to 46.5% (Federal Statistical Office [FSO], 2025).

In examining Switzerland's economic situation in 2023, GDP stands at 884.94 billion dollars. The GDP per capita is approximately 99,564.7 dollars (World Bank, 2025b). 11.8% of the 813.41 billion dollars GDP in 2021 was spent on health (World Bank, 2025b; WHO, 2025b). The inflation rate, based on the consumer price index, is recorded at 2.1% (World Bank, 2025b).

#### **4.3.3. Italy**

The total population of Italy in 2023 is recorded at 59,499,453 individuals. However, projections indicate that this number may decline to 51,891,099 by the year 2050, representing a decrease of approximately 13%. An analysis of the age distribution in Italy for 2023 reveals that individuals aged 0-14 constitute 5.7% of the total population, while those aged 65 and older account for 26%. The life expectancy at birth is 84.3 years for women and 80 years for men, resulting in an overall life expectancy of 82.2 years for the population. Italy's life expectancy exceeds the European average of 76.3 years by 5.9 years. Regarding causes of death, non-communicable diseases, such as heart disease and cancer, are responsible for 81.5% of fatalities (WHO, 2025c).

**Figure 5.** Population Pyramid of Italy by Age and Sex, 2023



(Data Source: WHO, 2025c)

When examining the population projections, it is anticipated that the number of individuals aged 15-64, who are at working age, will be approximately equal to the combined total of those aged 0-14 and aged 65 and older. By the year 2050, it is expected that the proportion of the older population, defined as those aged 65 and above, will rise to 34.5% of the total population, while the aged 85 and over is projected to constitute 7.2%. Conversely, the percentage of youth and children aged 0-14 is expected to decline to 11.2% of the overall population. The fertility rate for 2023 is estimated at 1.20 children per woman, with projections indicating an increase to 1.46 by 2080. The average life expectancy at birth is projected to reach 86.1 years for men and 89.7 years for women by 2080 (Istituto Nazionale di Statistica, 2024).

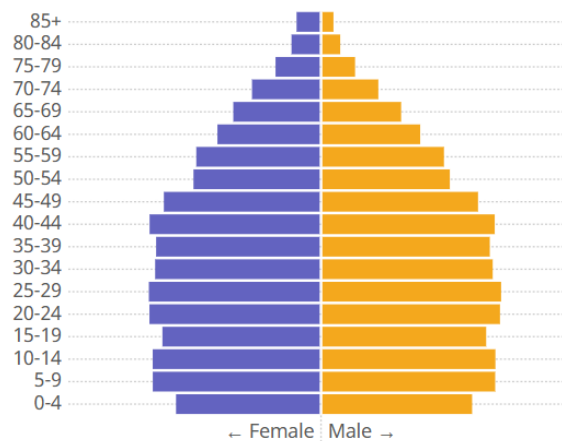
Italy's GDP for 2023 stands at \$2.3 trillion, resulting in a per capita GDP of \$39,003.3. The inflation rate, based on consumer prices, has been recorded at 5.6%. In 2021, the GDP, which was \$2.18 trillion, allocated 9.38% of its total to healthcare expenditures (World Bank, 2025c; WHO, 2025c).

#### 4.3.4. Turkey

The population of Turkey in 2023 is recorded at 87,270,501 individuals. Compared to 2022, there has been a decrease of 0.19 points, resulting in an annual population growth rate of 0.24%. An analysis of the age distribution reveals that 78.3%

of the population falls within the working age group of 15 to 64 years. The proportion of children aged 0 to 14 years is 10.2%, while the older population, defined as those aged 65 and over, constitutes 11.5%. Projections for demographic changes between 2023 and 2050 indicate a continued aging of Turkey's population, with a notable increase in the percentage of older people. The life expectancy at birth is estimated to be 75.3 years, with women expected to live an average of 78.1 years and men 72.5 years. The average life expectancy in Europe is 76.3 years, indicating that Turkey's life expectancy at birth is comparable to the European average. The primary cause of death is attributed to non-communicable diseases, accounting for 68.9% of deaths (WHO, 2025d).

**Figure 6. Population Pyramid of Turkey by Age and Sex, 2023**



(Data Source: WHO, 2025d)

According to population projections for Turkey, it is anticipated that the population will reach 93,774,618 by the year 2050. However, a decline in population is expected thereafter, with estimates suggesting that it will fall below 77 million by 2100. The total fertility rate, which was 2.38 in 2001, has decreased over time, reaching 1.51 in 2023. When examining age groups, the proportion of the population aged 0-14 years is 21.4% of the total population in 2023, with predictions indicating that this figure will decrease to 11.8% by 2100. Conversely, the proportion of the elderly population aged 65 and over is projected to rise from 10% in 2023 to 33.6% by 2100 (Turkish Statistical Institute [TURKSTAT], 2024).

In terms of Turkey's economic situation in 2023, GDP is recorded at 1.12 trillion dollars, with a per capita GDP of 13,105.7 dollars. The annual inflation rate for consumer prices in Turkey for 2023 stands at 53.9% (World Bank, 2025d). In 2021, health expenditures accounted for 4.57% of the GDP, which was 819.87 billion dollars at that time (World Bank, 2025d; WHO, 2025d).

#### **4.4. Variables**

##### **4.4.1. Dependent Variables**

These questions in Table 1 are used for the construction of dependent variables. As will be discussed in the later sections, there are five dependent variables for the statistical analysis in this thesis. The item nonresponse variables are created separately firstly from confidence questions, then from religiosity questions and lastly from the retrospective question.

Before passing the descriptive analysis, binary and multinomial logistic regression part, the variables created for dependent variables are introduced. Firstly, confidence questions which include 14 variables are related to trust in institutions. These variables are: churches, armed forces, the press, labor unions, the police, parliament, the civil services, major regional organization (combined from country-specific), the government, the political parties, major companies, the environmental protection movement, justice system/courts and the United Nations. For these confidence group variables, their categories are the same and lining up as follows: “a great deal,” “quite a lot,” “not very much,” “none at all,” “don’t know” and “no answer” in the questionnaire. In the SPSS software, the missing categories which are “not applicable”, “not asked in survey” and “missing: other” are added as a category. This item nonresponse variables (don’t know, no answer, not applicable, not asked in survey and missing: other) are also included in the all other group variables selected in the thesis. For that reason, when introducing variables after this, this item nonresponse variables will not be mentioned.

Besides, the second set of variables chosen is related to religiosity variables in countries and include 11 questions. These variables are “religion as an importance level in life,” “religious faith as an important child qualities,” “membership of religious

organization,” “trusting people of another religion,” “attendance of religious services,” “religious person,” “believing in god,” “believing in life after death,” “believing in hell,” “believing in heaven” and “importance of god in life.” For “religion as an importance level in life” variable, its categories are “very important,” “rather important,” “not very important,” and “not at all important.” For “important child qualities: religious faith” variable, its categories are “mentioned” and “non-mentioned.” for “membership of religious organization” variable, its categories are “mentioned” and “non-mentioned.” For “trusting people of another religion” variable, its categories are “trust completely,” “trust somewhat,” “do not trust very much” and “do not trust at all.” For “attendance of religious services” variable, its categories are “more than once a week,” “once a week,” “once a month,” “only on special holy days/christmas/easter days,” “once a year,” “less often” and “never, practically never.” For “religious person” variable, common categories in EVS 2017 and WVS 2017 are “a religious person” and “not a religious person.” In EVS 2017 third option is “a convinced atheist.” whereas “an atheist” is used as a third category in WVS 2017. For “believe in” questions, their categories are same, which are lining up as follow: “yes” and “no.” For “importance of god in life” variable, its categories are ranged between 1 and 10, which is that category 1 is defined as “not at all important” when 10 is defined as “very important.”

**Table 1.** Description of Dependent Variables

| Question Group        | Variable Codes/Names/Measures       | Questions                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-----------------------|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Confidence Questions* | Confidence: Churches<br>E069_01     | EVS 2017 (Q38A): "Please look at this card and tell me, for each item listed, how much confidence you have in them, is it a great deal, quite a lot, not very much or none at all?" (by the use of show card 38)<br><br>WVS 7 (Q64): "I am going to name a number of organizations. For each one, could you tell me how much confidence you have in them: is it a great deal of confidence, quite a lot of confidence, not very much confidence or none at all?" |
| Confidence Questions  | Confidence: Armed Forces<br>E069_02 | EVS 2017 (Q38B)<br>WVS 7 (Q65)                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Confidence Questions  | Confidence: The Press<br>E069_04    | EVS 2017 (Q38D)<br>WVS 7 (Q66)                                                                                                                                                                                                                                                                                                                                                                                                                                   |

|                      |                                                                                         |                                |
|----------------------|-----------------------------------------------------------------------------------------|--------------------------------|
| Confidence Questions | Confidence: Labour Unions<br>E069_05                                                    | EVS 2017 (Q38E)<br>WVS 7 (Q68) |
| Confidence Questions | Confidence: The Police<br>E069_06                                                       | EVS 2017 (Q38F)<br>WVS 7 (Q69) |
| Confidence Questions | Confidence: Parliament<br>E069_07                                                       | EVS 2017 (Q38G)<br>WVS 7 (Q73) |
| Confidence Questions | Confidence: The Civil Services<br>E069_08                                               | EVS 2017 (Q38H)<br>WVS 7 (Q74) |
| Confidence Questions | Confidence: Major regional organization<br>(combined from country-specific)<br>E069_18A | EVS 2017 (Q38J)<br>WVS 7 (Q82) |
| Confidence Questions | Confidence: The Government<br>E069_11                                                   | EVS 2017 (Q38Q)<br>WVS 7 (Q71) |

|                      |                                                              |                                |
|----------------------|--------------------------------------------------------------|--------------------------------|
| Confidence Questions | Confidence: The Political Parties<br>E069_12                 | EVS 2017 (Q38P)<br>WVS 7 (Q72) |
| Confidence Questions | Confidence: Major Companies<br>E069_13                       | EVS 2017 (Q38N)<br>WVS 7 (Q77) |
| Confidence Questions | Confidence: The Environmental Protection Movement<br>E069_14 | EVS 2017 (Q38O)<br>WVS 7 (Q79) |
| Confidence Questions | Confidence: Justice System/Courts<br>E069_17                 | EVS 2017 (Q38M)<br>WVS 7 (Q70) |
| Confidence Questions | Confidence: The United Nations<br>E069_20                    | EVS 2017 (Q38K)<br>WVS 7 (Q83) |

|                          |                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--------------------------|----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Religiosity<br>Questions | Important in life: Religion<br>A006                | <p>EVS 2017 (Q1F): "Please say, for each of the following, how important it is in your life." (by the use of show card 1)</p> <p>WVS 7 (Q6): "For each of the following, indicate how important it is in your life. Would you say it is" (by the use of show card 1)</p>                                                                                                                                                                                            |
| Religiosity<br>Questions | Trust: People of another religion (B)<br>G007_35_B | <p>EVS 2017 (Q8E): Q8 I would like to ask you how much you trust people from various groups. Could you tell me for each whether you trust people from this group completely, somewhat, not very much or not at all? (by the use of show card 8)</p> <p>WVS 7 (Q62): "I'd like to ask you how much you trust people from various groups. Could you tell me for each whether you trust people from this group completely, somewhat, not very much or not at all?"</p> |

|                          |                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------------------|-----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Religiosity<br>Questions | Important child qualities: religious faith<br>A040  | <p>EVS 2017 (Q28I): "Here is a list of qualities which children can be encouraged to learn At home. Which five would you say are the most desirable for a child to have? Please choose up to five! " (by the use of show card 28)</p> <p>WVS 7 (Q15): Here is a list of qualities that children can be encouraged to learn at home. Which, if any, do you consider to be especially important? Please choose up to five! (by the use of show card 2)</p> |
| Religiosity<br>Questions | Member: Belong to religious<br>organization<br>A065 | <p>EVS 2017 (Q4A): "Please look carefully at the following list of voluntary organisations and say which, if any, do you belong to?" (by the use of show card 4)</p> <p>WVS 7 (Q94R): "Now I am going to read off a list of voluntary organizations. For each organization, could you tell me whether you are an active member, an inactive member or not a member of that type of organization?"</p>                                                    |

|                          |                                                    |                                                                                                                                                                                                                                                                                                                     |
|--------------------------|----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Religiosity<br>Questions | How often do you attend religious services<br>F028 | <p>EVS 2017 (Q15): "Apart from weddings, funerals and christenings, about how often do you attend religious services these days?" (by the use of show card 15)</p> <p>WVS 7 (Q171): Apart from weddings and funerals, about how often do you attend religious services these days? (by the use of show card 18)</p> |
| Religiosity<br>Questions | Religious person<br>F034                           | <p>EVS 2017 (Q17): "Independently of whether you go to church or not, would you say you are ..."</p> <p>WVS 7 (Q173): "Independently of whether you attend religious services or not, would you say you are...?"</p>                                                                                                |
| Religiosity<br>Questions | Believe in: God<br>F050                            | <p>EVS 2017 (Q18A): "Which, if any, of the following do you believe in?"</p> <p>WVS 7 (Q165): "Which, if any, of the following do you believe in?"</p>                                                                                                                                                              |
| Religiosity<br>Questions | Believe in: life after death<br>F051               | <p>EVS 2017 (Q18B): "Which, if any, of the following do you believe in?"</p> <p>WVS 7 (Q166): "Which, if any, of the following do you believe in?"</p>                                                                                                                                                              |

|                        |                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                             |
|------------------------|---------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Religiosity Questions  | Believe in: hell<br>F053                                                                          | EVS 2017 (Q18C): "Which, if any, of the following do you believe in?"<br><br>WVS 7 (Q167): "Which, if any, of the following do you believe in?"                                                                                                                                                                                                                             |
| Religiosity Questions  | Believe in: heaven<br>F054                                                                        | EVS 2017 (Q18D): "Which, if any, of the following do you believe in?"<br><br>WVS 7 (Q168): "Which, if any, of the following do you believe in?"                                                                                                                                                                                                                             |
| Religiosity Questions  | How important is God in your life<br>F063                                                         | EVS 2017 (Q21): "And how important is God in your life? Please use this card to indicate - 10 means very important and 1 means not at all important." (by the use of show card 21)<br><br>WVS 7 (Q164): "How important is God in your life? Please use this scale to indicate. 10 means 'very important' and 1 means 'not at all important.' " (by the use of show card 17) |
| Retrospective Question | Occupational group - respondent's father (EVS5 - main earner) (respondent 14 years old)<br>V097EF | EVS 2017 (Q103): "When you were 14, which of the following groups did your parent who was the main earner belong to?"<br><br>WVS 7 (Q283): "When you were 14, to which of the following occupational groups did your father belong?"                                                                                                                                        |

\*Confidence questions have identical wording.

The third group includes a retrospective variable in the dataset and has only 1 question because there are no questions in reference to the distant past. For “occupational group of respondent’s father when respondent was 14 aged” variable, common categories of EVS 2017 and WVS 7 are “professional and technical (e.g.: doctor, teacher),” “higher administrative (e.g.: banker),” “clerical (e.g.: secretary, clerk, office manager),” “sales (e.g.: sales manager, shop owner),” “service (e.g.: restaurant owner, police officer),” “skilled worker (e.g.: foreman, motor mechanic),” “semi-skilled worker (e.g.: bricklayer, bus driver),” “unskilled worker (e.g.: labourer, porter),” “farm worker (e.g.: farm labourer, tractor driver),” “farm owner, farm manager,” “other” and “never had a job.” In EVS 2017, “does not apply to me” category is provided as a missing. Additionally, WVS 7 includes the “never had a job” option and it is assigned as missing.

**Table 2.** Response Categories of the Dependent Variables Used in Binary Logistic Regression Models

|                                |                                                     |
|--------------------------------|-----------------------------------------------------|
| Religiosity Item Nonresponse   | No nonresponse (0)<br>Item nonresponse occurred (1) |
| Confidence Item Nonresponse    | No nonresponse (0)<br>Item nonresponse occurred (1) |
| Retrospective Item Nonresponse | No nonresponse (0)<br>Item nonresponse occurred (1) |

Item-missing variables for religiosity, confidence and retrospective question groups is created for each case and these variables are the dependent variables of the research. These are named as: religiosity item nonresponse, confidence item nonresponse and retrospective item nonresponse. To create the dependent variables; firstly, “confidence item nonresponse” variable is created from the 14 confidence group questions. Dummy variables are created for these 14 questions. In this process, dummy variables are created for both "don't know" and "no answer" categories of each question. For example, those who answered "don't know" are coded as "1" and those who did not are coded as "0". The same situation is created for each question for the "no answer" response category. Then, these dummies are collected for “don’t know”

and “no answer” dummies separately. That is, “don’t know” answers for the confidence questions are collected. This variable shows how many of these 14 questions a respondent answered “don’t know”. The same applies to the “no answer” dummies and the variable is created. These two variables are added and the confidence total item nonresponse variable is created. This variable includes both the value/category of "0", i.e. those who answered all the questions, and the categories 1 and greater than 1. In other words, it includes those who left the questions unanswered. Finally, the last variable "confidence item nonresponse" was created. Those with "0" are coded as "no nonresponse", and those with "1" and greater than "1" are coded as "1", i.e. "item nonresponse occurred". The same method was used for religiosity question group and retrospective question. Table 2. shows the response categories of the dependent variables used in binary logistic regression models.

**Table 3.** Response Categories of the Dependent Variables Used in Multinomial Logistic Regression Models

|                                                  |                                                                                                                  |
|--------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Categorical Religiosity Item<br>Nonresponse Rate | No item nonresponse (1)<br>Low level item nonresponse rate (2)<br>Middle or high level item nonresponse rate (3) |
| Categorical Confidence<br>Item Nonresponse Rate  | No item nonresponse (1)<br>Low level item nonresponse rate (2)<br>Middle or high level item nonresponse rate (3) |

Table 3. shows the response categories of the dependent variables used in multinomial logistic regression models. In the variable creation process, the total number of "don't know" and "no answer" responses is divided by the total number of questions. The rate formula is as follows:

**Equation 1.** Item Nonresponse Rate Formula for Question Groups

$$\text{Item Nonresponse Rate}_{\text{Question Group}} = \frac{\text{Number of "Don't know"} + \text{Number of "No answer"}}{\text{Total number of items in Question Group}}$$

The religiosity and confidence item nonresponse rate variables created during the analysis are transformed into ordinal categorical dependent variables (with three categories). Respondents who answered all questions are labeled as having no item nonresponse (rate for religiosity and confidence = 0) and coded as “1.” Those who left only one question unanswered are categorized as having low level item nonresponse rate (rate for religiosity = 0.001–0.091; rate for confidence = 0.001–0.071) and coded as “2.” Respondents who left more than one question unanswered are classified as having middle or high-level item nonresponse rate (rate for religiosity = 0.092 and above; rate for confidence = 0.072 and above) and coded as “3.”

#### **4.4.2. Independent Variables**

Apart from the main independent variables, original version of independent variables are also presented in Table 4. Some of them will be recoded for the analysis. The independent variables are highest educational level attained - respondent: ISCED-code one digit, sex, mode of data collection, respondent immigrant/born in country, respondent interested during the interview, total length of interview, marital status, how close do you feel: to country, state of health (subjective), age, region where the interview was conducted (NUTS-1), region where the interview was conducted (NUTS-2), region where the interview was conducted (ISO), language of interview (WVS/EVS list of languages), and willingness to fight for country.

**Table 4.** Description of Original Independent Variables

| Variable Code | Variable Name                                                         | Questions                                                                                                                | Categories in Dataset           |
|---------------|-----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| X025A_01      | Highest educational level attained - Respondent: ISCED-code one digit | EVS 2017 (Q81): "What is the highest educational level that you have attained?" (the use of show card 81)                | Less than primary (0)           |
|               |                                                                       |                                                                                                                          | Primary (1)                     |
|               |                                                                       |                                                                                                                          | Lower secondary (2)             |
|               |                                                                       | WVS 7 (Q275R): "What is the highest educational level that you, your spouse, your mother and your father have attained?" | Upper secondary (3)             |
|               |                                                                       |                                                                                                                          | Post-secondary non tertiary (4) |
|               |                                                                       |                                                                                                                          | Short-cycle tertiary (5)        |
|               |                                                                       |                                                                                                                          | Bachelor or equivalent (6)      |
|               |                                                                       |                                                                                                                          | Master or equivalent (7)        |
|               |                                                                       |                                                                                                                          | Doctoral or equivalent (8)      |
| X001          | Sex                                                                   | EVS 2017 (Q63): "Sex of respondent"                                                                                      | Male (1)                        |
|               |                                                                       | WVS 7 (Q260): filled in by interviewer                                                                                   | Female (2)                      |
| ivlength      | Total length of interview                                             | EVS 2017 (Q108): filled by interviewer                                                                                   | 0                               |
|               |                                                                       | WVS 7 (K): filled by interviewer                                                                                         | ...                             |
| X007          | Marital status                                                        |                                                                                                                          | 1365                            |

|      |                                   |                                                                                                                                                                                              |                                                                                                                           |
|------|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
|      |                                   | EVS 2017 (Q72): "What is your current legal marital status?"                                                                                                                                 | Married (1)<br>Living together as married (2)<br>Divorced (3)<br>Separated (4)<br>Widowed (5)<br>Single/Never married (6) |
|      |                                   | WVS 7 (Q273): "Are you currently..."                                                                                                                                                         |                                                                                                                           |
| G257 | How close do you feel: to country | EVS 2017 (Q45): "People have different views about themselves and how they relate to the world. Using this card, would you tell me how close do you feel to..." (by the use of show card 45) | Very close (1)<br>Close (2)<br>Not very close (3)<br>Not close at all (4)                                                 |
|      |                                   | WVS 7 (Q257): "People have different views about themselves and how they relate to the world. Using this card, would you tell me how close do you feel to..." (by the use of show card 29)   |                                                                                                                           |
| A009 | State of health (subjective)      | EVS 2017 (Q3): "All in all, how would you describe your state of health these days? Would you say it is..." (by the use of showcard 3)                                                       | Very good (1)<br>Good (2)<br>Fair (3)                                                                                     |

|         |                                            |                                                                                                                                             |                                                                                                                                                                                                                                                                                 |
|---------|--------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|         |                                            | WVS 7 (Q47): "All in all, how would you describe your state of health these days? Would you say it is..."                                   | Poor (4)<br>Very Poor (5)                                                                                                                                                                                                                                                       |
|         |                                            |                                                                                                                                             | Computer-Assisted Personal Interviewing (CAPI) (1)<br>Paper-and-Pencil Interviewing (PAPI) (2)<br>Computer-Assisted Web Interviewing (CAWI) (3)<br>Self-administered questionnaire: Paper (4)<br>Computer-Assisted Telephone Interviewing (CATI) (5)<br>Web-based interview (6) |
| mode    | Mode of data collection                    |                                                                                                                                             |                                                                                                                                                                                                                                                                                 |
| G027A   | Respondent immigrant / born in country     | EVS 2017 (Q65): "Were you born in [COUNTRY]?"<br><br>WVS 7 (Q263): "Were you born in this country or are you an immigrant to this country?" | I am born in this country (1)<br>I am an immigrant to this country (2)                                                                                                                                                                                                          |
| respint | Respondent interested during the interview | EVS 2017 (Q109): filled by interviewer<br><br>WVS 7 (E): filled by interviewer                                                              | Very interested (1)<br>Somewhat interested (2)<br>Not very interested (3)                                                                                                                                                                                                       |



reg\_nuts1\*      Region where the interview  
                         was conducted (NUTS-1)      EVS 2017 (Q105): filled by interviewer

---

|     |                       |       |
|-----|-----------------------|-------|
| IT: | NORD OVEST            | (ITC) |
| IT: | SUD                   | (ITF) |
| IT: | ISOLE                 | (ITG) |
| IT: | NORD EST              | (ITH) |
| IT: | CENTRO                | (ITI) |
| TR: | İstanbul              | (TR1) |
| TR: | West Marmara          | (TR2) |
| TR: | Aegean                | (TR3) |
| TR: | East Marmara          | (TR4) |
| TR: | West Anatolia         | (TR5) |
| TR: | Mediterranean         | (TR6) |
| TR: | Central Anatolia      | (TR7) |
| TR: | West Black Sea        | (TR8) |
| TR: | East Black Sea        | (TR9) |
| TR: | Northeasth Anatolia   | (TRA) |
| TR: | Central East Anatolia | (TRB) |
| TR: | Southeast Anatolia    | (TRC) |

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reg\_nuts2\* Region where the interview  
was conducted (NUTS-2) EVS 2017 (Q105): filled by interviewer

---

CH: Switzerland - Region  
Lemanique (CH01)  
CH: Switzerland - Espace  
Mittelland (CH02)  
CH: Switzerland -  
Nordwestschweiz (CH03)  
CH: Switzerland - Zürich  
(CH04)  
CH: Switzerland - Ostschweiz  
(CH05)  
CH: Switzerland -  
Zentralschweiz (CH06)  
CH: Switzerland - Ticino  
(CH07)

---

|           |                                                |                                                         |                                                              |                                    |
|-----------|------------------------------------------------|---------------------------------------------------------|--------------------------------------------------------------|------------------------------------|
|           |                                                |                                                         |                                                              | ZW-BU Bulawayo (716001)            |
|           |                                                |                                                         |                                                              | ZW-HA Harare (716002)              |
|           |                                                |                                                         |                                                              | ZW-MA Manicaland (716003)          |
|           |                                                |                                                         |                                                              | ZW-MC Mashonaland Central (716004) |
|           |                                                |                                                         |                                                              | ZW-ME Mashonaland East (716005)    |
|           |                                                |                                                         |                                                              | ZW-MW Mashonaland West (716006)    |
|           |                                                |                                                         |                                                              | ZW-MV Masvingo (716007)            |
|           |                                                |                                                         |                                                              | ZW-MN Matabeleland North (716008)  |
|           |                                                |                                                         |                                                              | ZW-MS Matabeleland South (716009)  |
|           |                                                |                                                         |                                                              | ZW-MI Midlands (716010)            |
| reg_iso*  | Region where the interview was conducted (ISO) | WVS 7 (N): filled by interviewer                        | Language of interview EVS 2017 (Q110): filled by interviewer | French (144)                       |
|           |                                                |                                                         |                                                              | German (158)                       |
|           |                                                |                                                         |                                                              | Italian (207)                      |
|           |                                                |                                                         |                                                              | English (128)                      |
| lnge_num* | (WVS/EVS list of languages)                    | WVS 7: no question or information in main questionnaire |                                                              |                                    |

|  |  |                      |       |
|--|--|----------------------|-------|
|  |  | Shona                | (405) |
|  |  | North Ndebele (1112) |       |

|      |                                  |                                                                                                                                                                                                                                                                                                                                         |                              |
|------|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| E012 | Willingness to fight for country | <p>EVS 2017 (Q36): " Of course, we all hope that there will not be another war, but if it were to come to that, would you be willing to fight for your country?"</p> <p>WVS 7 (Q151): " Of course, we all hope that there will not be another war, but if it were to come to that, would you be willing to fight for your country?"</p> | <p>No (0)</p> <p>Yes (1)</p> |
|------|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|

\*Variable categories include region categories for various countries. However, only region categories for selected countries are presented here.

#### 4.4.2.1. Recoded Independent Variables

Variables including age, state of health (subjective), how close do you feel: to country, marital status, highest educational level attained - respondent: ISCED-code one digit, total length of interview, mode of data collection, respondent interested during the interview, region where the interview was conducted (NUTS-1), region where the interview was conducted (NUTS-2), region where the interview was conducted (ISO) and language of interview (WVS/EVS list of languages) are recoded and prepared by decreasing the number of categories for binary and multinomial logistic regression analysis.

**Table 5.** Description of Recoded Independent Variables

| Original Variable Names | Variable Name                    | Recoded Categories                                                                           |
|-------------------------|----------------------------------|----------------------------------------------------------------------------------------------|
| A009                    | Subjective state of health       | 1 Good (1, 2)<br>2 Fair (3)<br>3 Poor (4, 5)                                                 |
| A009                    | Subjective state of health       | 1 Good (1, 2)<br>2 Fair or Poor (3, 4, 5)                                                    |
| A009                    | Subjective state of health       | 1 Good or Fair (1, 2, 3)<br>2 Poor (4, 5)                                                    |
| G257                    | How close do you feel to country | 1 Close (1, 2)<br>2 Not Close (3, 4)                                                         |
| X007                    | Marital status                   | 1 Married (1, 2, 4)<br>2 Ever married (Not married now) (3, 5)<br>3 Single/Never married (6) |

|          |                                            |                                                                              |
|----------|--------------------------------------------|------------------------------------------------------------------------------|
| X007     | Marital status                             | 1 Married or Married at least once (1, 3, 4, 5)<br>2 Single (2, 6)           |
| mode     | Mode                                       | 1 CAPI (1)<br>2 CAWI or Self-administered Paper(3, 4)                        |
| X025A_01 | Education (respondent)                     | 1 Low (0, 1)<br>2 Middle (2, 3)<br>3 High (4,5,6,7,8)                        |
| X025A_01 | Education (respondent)                     | 1 Low or Middle (0, 1, 2, 3)<br>2 High (4,5,6,7,8)                           |
| X025A_01 | Education (respondent)                     | 1 Low (0, 1)<br>2 Middle or High (2, 3, 4, 5, 6, 7, 8)                       |
| ivlength | Total length of interview                  | 1 0-70 minutes<br>2 71-90 minutes<br>3 91 and above                          |
| ivlength | Total length of interview                  | 1 0-90 minutes<br>2 91 and more                                              |
| ivlength | Total length of interview                  | 1 0-70 minutes<br>2 71 and more                                              |
| ivlength | Total length of interview                  | 1 0-50 minutes<br>1 51 and more                                              |
| lnge_num | Language of interview (Switzerland)        | 1 German (158)<br>2 French or Italian (144, 207)                             |
| lnge_num | Language of interview (Zimbabwe)           | 1 Shona (405)<br>2 North Ndebele or English (128, 1112)                      |
| respint  | Respondent interested during the interview | 1 Very interested (1)<br>2 Not very interested or somewhat interested (2, 3) |

|           |                      |                                                   |
|-----------|----------------------|---------------------------------------------------|
| reg_nuts1 | Region (Italy)       | 1 Nord Ovest (ITC)                                |
|           |                      | 2 Sud (ITF)                                       |
|           |                      | 3 Isole (ITG)                                     |
|           |                      | 4 Nord Est (ITH)                                  |
|           |                      | 5 Centro (ITI)                                    |
| reg_nuts1 | Region (Italy)       | 1 Nord Ovest (ITC)                                |
|           |                      | 2 Sud (ITF)                                       |
|           |                      | 3 Isole and Centro (ITG, ITI)                     |
|           |                      | 4 IT: Nord Est (ITH)                              |
| reg_nuts1 | Region (Turkey)      | 1 West (TR1, TR2, TR3, TR4)                       |
|           |                      | 2 Central (TR5, TR7)                              |
|           |                      | 3 North (TR8, TR9)                                |
|           |                      | 4 East (TR10, TR11)                               |
|           |                      | 5 South (TR6, TR12)                               |
| reg_nuts1 | Region (Turkey)      | 1 West (TR1, TR2, TR3, TR4)                       |
|           |                      | 2 Central (TR5, TR7)                              |
|           |                      | 3 North and East (TR8, TR9, TR10, TR11)           |
|           |                      | 4 South (TR6, TR12)                               |
| reg_nuts1 | Region (Turkey)      | 1 West and Central (TR1, TR2, TR3, TR4, TR5, TR7) |
|           |                      | 2 North (TR8, TR9)                                |
|           |                      | 3 East (TR10, TR11)                               |
|           |                      | 4 South (TR6, TR12)                               |
| reg_nuts1 | Region (Switzerland) | 1 Region Lemanique (CH01)                         |
|           |                      | 2 Espace Mittelland (CH02)                        |
|           |                      | 3 Nordwestschweiz (CH03)                          |
|           |                      | 4 Zürich (CH04)                                   |
|           |                      | 5 Ostschweiz (CH05)                               |
|           |                      | 6 Zentralschweiz (CH06)                           |
|           |                      | 7 Ticino (CH07)                                   |

|           |                      |                                                                 |
|-----------|----------------------|-----------------------------------------------------------------|
| reg_nuts1 | Region (Switzerland) | 1 Region Lemanique (CH01)                                       |
|           |                      | 2 Espace Mittelland (CH02)                                      |
|           |                      | 3 Nordwestschweiz (CH03)                                        |
|           |                      | 4 Zürich (CH04)                                                 |
|           |                      | 5 Ostschweiz (CH05)                                             |
|           |                      | 6 Zentralschweiz and Ticino (CH06, CH07)                        |
| reg_nuts1 | Region (Switzerland) | 1 Region Lemanique (CH01)                                       |
|           |                      | 2 Espace Mittelland (CH02)                                      |
|           |                      | 3 Nordwestschweiz (CH03)                                        |
|           |                      | 4 Zürich (CH04)                                                 |
|           |                      | 5 Ostschweiz and Ticino (CH05, CH07)                            |
|           |                      | 6 Zentralschweiz (CH06)                                         |
| reg_nuts1 | Region (Switzerland) | 1 Region Lemanique (CH01)                                       |
|           |                      | 2 Espace Mittelland (CH02)                                      |
|           |                      | 3 Nordwestschweiz (CH03)                                        |
|           |                      | 4 Zürich (CH04)                                                 |
|           |                      | 5 Ostschweiz, Zentralschweiz and Ticino (CH05, CH06, CH07)      |
|           |                      |                                                                 |
| reg_nuts1 | Region (Switzerland) | 1 Region Lemanique (CH01)                                       |
|           |                      | 2 Espace Mittelland (CH02)                                      |
|           |                      | 3 Zürich (CH04)                                                 |
|           |                      | 4 Ostschweiz (CH05)                                             |
|           |                      | 5 Zentralschweiz, Ticino and Nordwestschweiz (CH06, CH07, CH03) |
|           |                      |                                                                 |
| reg_iso   | Region (Zimbabwe)    | 1 Harare and Bulawayo (716001, 716002)                          |
|           |                      | 2 Mashonaland and Manicaland (716003, 716004, 716005, 716006)   |
|           |                      | 3 Matebeleland (716008, 716009)                                 |

4 Midlands and Masvingo (716007, 716010)

|         |                   |                                                                                                                                                                              |
|---------|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| reg_iso | Region (Zimbabwe) | 1 Harare and Bulawayo, Matebeleland, Midlands and Masvingo (716001, 716002, 716008, 716009, 716007, 716010)<br>2 Mashonaland and Manicaland (716003, 716004, 716005, 716006) |
|---------|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

#### 4.5. Missing Categories

The contents of the missing categories are similar for both EVS 2017 and WVS 7. The categories labeled as "not applicable," "not asked in survey," and "missing: other" are considered missing data that do not originate from the respondents, and therefore, will not be the focus of this thesis. Conversely, "don't know" and "no answer" represent instances of nonresponses that can be directly linked to the respondents and are crucial to the research.

**Table 6.** Definition of Missing Values

| Missing Value Codes | EVS 2017                                                | WVS 7                                                                                                                                                                                           |
|---------------------|---------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| -1 Don't know       | Choosing voluntarily "don't know" option by respondents | The interviewers recorded responses from participants (respondents coded them in self-administered mode) when the respondents indicated options such as "I do not know" or "It is hard to say." |
| -2 No answer        | Refusal, system missing, wild codes, unattainable       | Refusal, system missing, wild codes, unattainable extreme values                                                                                                                                |

|                        |                                                                                          |                                                                                          |
|------------------------|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
|                        | extreme values, case-level<br>anonymization measures                                     |                                                                                          |
| -3 Not applicable      | Missingness arising from filter questions and missing values in administrative variables | Missingness arising from filter questions and missing values in administrative variables |
| -4 Not asked in survey | Questions not part of EVS or WVS, not added by the national teams                        | Questions not part of EVS or WVS, not added by the national teams                        |
| -5 Missing: Other      | Code -10 Multiple responses (Mail mode)<br>Data is unavailable                           | Data is unavailable                                                                      |

Source: (WVSA, n.d.-d)

#### 4.6. Descriptive Analysis

At the research design stage, the issue of item nonresponses is addressed. Based on the response categories within the dataset, it is determined that "don't know" and "no answer" are appropriate classifications for item nonresponse. A descriptive analysis of the dependent variables are conducted to assess the extent of item nonresponse rates across these question groups. Religiosity, confidence and retrospective item nonresponse rates are presented with respect to independent variables.

#### 4.7. Binary and Multinomial Logistic Regression

In social science research, binary logistic regression is frequently employed for the analysis of dichotomous dependent variables. This method utilizes the logarithmic transformation of the probability (logit) rather than predicting the probability of an event, distinguishing it from standard linear regression. When standard linear regression techniques are applied to binary dependent variables, several problems arise. Firstly, when the predicted values fall outside the range of 0 to 1, the probabilities

become uninterpretable and yield invalid results. Secondly, the assumptions of normal distribution and homoscedasticity are violated in binary dependent variables. A fundamental concept in this method is the odds and odds ratio (OR). The probability of an event occurring is defined as  $p$ , while the probability of it not occurring is  $1 - p$ . The odds value is calculated as  $p / (1 - p)$ . The natural logarithm of the odds (logit) is used for modeling, as it aims to approximate to a normal distribution, facilitating model estimation and interpretation. Logistic regression model is formulated as (Pituch and Stevens, 2015):

**Equation 2.** Logistic Regression Model Formulation

$$\ln\left(\frac{p}{1-p}\right) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_k X_k$$

Model parameters are estimated using the Maximum Likelihood Estimation (MLE) method. MLE aims to identify the set of parameters that maximizes the likelihood of observing the given data across all cases. The model fit is assessed using the "−2 Log Likelihood (−2LL)" value; a lower value indicating better fit and improved prediction. The key distinction between MLE and Ordinary Least Squares (OLS) is that the estimation process in MLE is iterative. This method may encounter convergence issues in certain situations, particularly in cases of multicollinearity or perfect separation, where predictions may not be feasible (Pituch and Stevens, 2015).

In binary logistic regression analysis, it is essential to meet certain assumptions for the findings to be valid. These are aligned as (Pituch and Stevens, 2015):

- **Correct specification:** Significant variables must be included in the model, while insignificant ones should be excluded. The exclusion of a significant variable can lead to biases in the regression coefficients. The Box–Tidwell test is recommended to assess the assumption of a linear relationship between continuous variables and the logit.
- **Independence of observations:** If observations are clustered or matched, this assumption is violated, potentially resulting in incorrect conclusions.

- No measurement error in predictors: It is assumed that explanatory variables are measured without error. If there is measurement error, the coefficients may become biased.
- Sample size: A sufficient sample size (minimum of 500) is necessary for analyses to yield reliable results. It is recommended to have at least 10 observations for each explanatory variable.

Binary logistic regression analysis is carried out in research. Item nonresponse variables (religiosity, confidence and retrospective) are used as the dependent variables. The main curiosity in the thesis is whether there is a change in occurrence of item nonresponse by controlling the age. For this reason, the samples of the countries will be divided into two groups as respondents under 50 and respondents aged 50 and above, and the analyses will be applied to these two separate groups. In this way, it is aimed to make a comparison between the two groups. Logistic regression is applied separately for all selected countries. Since the number of cases per category was below 10, retrospective question analyses for respondents aged 50 and over in Turkey, and religiosity question analyses for both age groups in Zimbabwe, could not be conducted.

Multinomial logistic regression is an extended version of binary logistic regression that is employed when the outcome variable consists of three or more distinct categories (Heeringa et al, 2017). Multinomial logistic regression analyses were conducted only for the religiosity and confidence question groups, as the retrospective variable had a binary structure and was therefore excluded. In Zimbabwe, analyses could not be performed for either age group due to insufficient case numbers (below 10). In Turkey, analyses were conducted only for the under-50 age group. Correlation matrices for the binary logistic regression models are presented in Appendix A, while those for the multinomial logistic regression models are provided in Appendix B (threshold value = 0.70).

## CHAPTER 5. RESULTS

### 5.1. Descriptive Results of Religiosity, Confidence and Retrospective Item Nonresponse Rates

#### 5.1.1. Italy

Table 7 presents the descriptive statistics of religiosity, confidence, and retrospective item nonresponse rates across independent variables. Looking at the sex variable, the mean of religiosity item nonresponse rate is slightly higher among men (0.09) than women (0.08). However, women have a higher mean of confidence item nonresponse rate (0.04) than men (0.02), while the mean of retrospective rate remains equal (0.08 for both sexes).

For the region (Italy) variable, the mean of religiosity item nonresponse rate is highest in Nord Ovest and Nord Est (both 0.09), and lowest in Isole (0.06). The highest confidence item nonresponse rate is observed in Isole (0.04), while the lowest is in Centro and Nord Ovest (0.02). The mean of retrospective item nonresponse rate is also highest in Sud, Isole, and Nord Est (0.10), and lowest in Nord Ovest (0.04).

Respondents who answered “yes” to the question about willingness to fight for country have lower means of religiosity (0.06) and confidence (0.02) item nonresponse rates than those who answered “no”. The means of retrospective rate remains the same (0.07).

For the variable “how close do you feel to your country”, those who do not feel close have a higher mean of religiosity item nonresponse rate (0.09), and a lower confidence rate (0.02). However, the mean of retrospective nonresponse rate is notably higher (0.11) than those who feel close to country (0.07).

In terms of marital status, religiosity item nonresponse is highest among single/never married respondents (0.09), while confidence item nonresponse rates are highest among the ever married (0.05). Retrospective item nonresponse rates are highest among the married (0.08).

Regarding subjective health status, confidence and retrospective item nonresponse rates increase as perceived health worsens. Respondents who were not

very interested during the interview have the highest means of religiosity (0.13), confidence (0.06), and retrospective (0.18) item nonresponse rates. Those who were very interested in the interview have the lowest means across all three categories.

Lastly, in terms of education, mean of religiosity item nonresponse rate is slightly higher among highly educated respondents (0.09). Education level increases, the means of confidence and retrospective item nonresponse rate decreases.

**Table 7.** Religiosity, Confidence and Retrospective Item Nonresponse Rate by Independent Variables in Italy

|                                        |                         | Religiosity Item<br>Nonresponse Rate | Confidence Item<br>Nonresponse Rate | Retrospective Item<br>Nonresponse Rate |
|----------------------------------------|-------------------------|--------------------------------------|-------------------------------------|----------------------------------------|
|                                        |                         | Mean                                 | Mean                                | Mean                                   |
| Sex                                    | Male                    | 0.09                                 | 0.02                                | 0.08                                   |
|                                        | Female                  | 0.08                                 | 0.04                                | 0.08                                   |
| Region (Italy)                         | Nord Ovest              | 0.09                                 | 0.02                                | 0.04                                   |
|                                        | Sud                     | 0.08                                 | 0.03                                | 0.10                                   |
|                                        | Isole                   | 0.06                                 | 0.04                                | 0.10                                   |
|                                        | Nord Est                | 0.09                                 | 0.03                                | 0.10                                   |
|                                        | Centro                  | 0.08                                 | 0.02                                | 0.07                                   |
| Willingness to<br>fight for<br>country | No                      | 0.08                                 | 0.03                                | 0.07                                   |
|                                        | Yes                     | 0.06                                 | 0.02                                | 0.07                                   |
| How close do<br>you feel to<br>country | Close                   | 0.08                                 | 0.03                                | 0.07                                   |
|                                        | Not Close               | 0.09                                 | 0.02                                | 0.11                                   |
|                                        | Married                 | 0.08                                 | 0.03                                | 0.08                                   |
| Marital Status<br>(Respondent)         | Ever married            | 0.07                                 | 0.05                                | 0.06                                   |
|                                        | Single/Never<br>married | 0.09                                 | 0.02                                | 0.07                                   |
|                                        | Good Health             | 0.08                                 | 0.02                                | 0.08                                   |

|                                                     |                        |      |      |      |
|-----------------------------------------------------|------------------------|------|------|------|
| Subjective state<br>of health                       | Fair Health            | 0.09 | 0.04 | 0.08 |
|                                                     | Poor Health            | 0.08 | 0.05 | 0.10 |
| Respondent<br>interested<br>during the<br>interview | Very interested        | 0.06 | 0.02 | 0.05 |
|                                                     | Somewhat<br>interested | 0.09 | 0.03 | 0.08 |
|                                                     | Not very<br>interested | 0.13 | 0.06 | 0.18 |
|                                                     | Low                    | 0.08 | 0.08 | 0.12 |
| Education<br>(Respondent)                           | Middle                 | 0.08 | 0.02 | 0.07 |
|                                                     | High                   | 0.09 | 0.02 | 0.08 |

### 5.1.2. Turkey

Table 8 shows how the mean values of religiosity, confidence, and retrospective item nonresponse rates vary by independent variables in Turkey. Looking at the sex variable, the religiosity item nonresponse rate is equal for both men and women (0.03). However, the confidence item nonresponse rate is higher among women (0.04) than men (0.02), while the retrospective item nonresponse rate is slightly higher among men (0.04) than women (0.03).

In terms of region, the mean of religiosity item nonresponse rate is highest in the South (0.07), while it is lowest in the West and Central regions (0.02). The highest mean of confidence item nonresponse rate is also observed in the East (0.06), and the lowest in the West (0.02). For retrospective item nonresponse rate, the East region shows the highest mean (0.09), while the lowest is observed in the West (0.01).

When considering willingness to fight for the country, respondents who answered "yes" show slightly higher means of religiosity (0.03), confidence (0.03) and retrospective (0.04) item nonresponse rates compared to those who answered "no" (0.02).

For the variable "how close do you feel to your country", those who do not feel close have a slightly lower means of religiosity (0.02) and confidence (0.01) item nonresponse rate than those who do feel close (0.03).

Regarding marital status, single or never married individuals have a higher means of religiosity item nonresponse rate (0.04) than married (0.03) and ever married individuals (0.03). Confidence item nonresponse rate is highest among the ever married (0.04), while retrospective item nonresponse rate is highest among the married (0.04).

As for subjective health status, while the means of religiosity nonresponse rate remains constant across health categories (0.03), the means of retrospective item nonresponse rate increase with worsening health.

Looking at respondent interested during the interview, those who were not very interested have the lowest mean of religiosity item nonresponse rate (0.02), but the highest mean of retrospective item nonresponse rate (0.06).

Finally, looking at the education of respondents, religiosity item nonresponse rates remain stable across categories (0.03), while confidence and retrospective item nonresponse rates decrease as education increases.

**Table 8.** Religiosity, Confidence and Retrospective Item Nonresponse Rate by Independent Variables in Turkey

|                                     |         | Religiosity Item<br>Nonresponse Rate | Confidence Item<br>Nonresponse Rate | Retrospective Item<br>Nonresponse Rate |
|-------------------------------------|---------|--------------------------------------|-------------------------------------|----------------------------------------|
|                                     |         | Mean                                 | Mean                                | Mean                                   |
| Sex                                 | Male    | 0.03                                 | 0.02                                | 0.04                                   |
|                                     | Female  | 0.03                                 | 0.04                                | 0.03                                   |
| Region (Turkey)                     | West    | 0.02                                 | 0.02                                | 0.01                                   |
|                                     | Central | 0.02                                 | 0.03                                | 0.02                                   |
|                                     | North   | 0.05                                 | 0.03                                | 0.06                                   |
|                                     | East    | 0.03                                 | 0.06                                | 0.09                                   |
|                                     | South   | 0.07                                 | 0.05                                | 0.07                                   |
|                                     |         |                                      |                                     |                                        |
| Willingness to<br>fight for country | No      | 0.02                                 | 0.02                                | 0.02                                   |
|                                     | Yes     | 0.03                                 | 0.03                                | 0.04                                   |
|                                     | Close   | 0.03                                 | 0.03                                | 0.03                                   |

|                                                  |                         |      |      |      |
|--------------------------------------------------|-------------------------|------|------|------|
| How close do<br>you feel to<br>country           | Not Close               | 0.02 | 0.01 | 0.03 |
|                                                  | Married                 | 0.03 | 0.03 | 0.04 |
| Marital Status<br>(Respondent)                   | Ever married            | 0.03 | 0.04 | 0.02 |
|                                                  | Single/Never<br>married | 0.04 | 0.03 | 0.03 |
| Subjective state<br>of health                    | Good Health             | 0.03 | 0.03 | 0.03 |
|                                                  | Fair Health             | 0.03 | 0.04 | 0.05 |
|                                                  | Poor Health             | 0.03 | 0.03 | 0.10 |
| Respondent<br>interested during<br>the interview | Very interested         | 0.03 | 0.03 | 0.04 |
|                                                  | Somewhat<br>interested  | 0.04 | 0.03 | 0.03 |
|                                                  | Not very<br>interested  | 0.02 | 0.03 | 0.06 |
| Education<br>(Respondent)                        | Low                     | 0.03 | 0.04 | 0.05 |
|                                                  | Middle                  | 0.03 | 0.03 | 0.03 |
|                                                  | High                    | 0.03 | 0.02 | 0.02 |

### 5.1.3. Switzerland

Table 9 presents the descriptive statistics of religiosity, confidence, and retrospective item nonresponse rates in Switzerland across independent variables.

Starting with the sex variable, means of religiosity item nonresponse rates are equal for both men and women (0.02). However, women show highest mean of item nonresponse in confidence (0.03) and retrospective (0.06) questions.

In terms of region, means of religiosity and confidence item nonresponse rates are relatively same across all regions (0.02 and 0.03). However, mean of retrospective item nonresponse rate is slightly higher in Zürich (0.07) and Ticino (0.06), while the lowest is observed in Ostschweiz and Zentralschweiz (both 0.04).

Respondents who are willing to fight for this country report slightly lower mean of confidence item nonresponse rate (0.01) compared to those who are not (0.02).

Respondents who are willing to fight for country indicate higher mean of retrospective item nonresponse rate (0.05) compared to those who are not (0.04).

For the variable “how close do you feel to the country”, item nonresponse rate’s mean for religiosity remains the same (0.02), but mean of confidence item nonresponse rate is slightly higher among those who do not feel close (0.03), and mean of retrospective item nonresponse rate is higher among those who do not feel close (0.08).

In terms of subjective state of health, means of religiosity, confidence and retrospective item nonresponse rates increase as perceived health declines. When looking at respondent interested during the interview, religiosity item nonresponse slightly increase among those are not very interested (0.03), and retrospective nonresponse is highest among them (0.09).

Respondents who are immigrants show slightly higher means of religiosity and confidence item nonresponse rates (0.03), and higher retrospective item nonresponse rate (0.08) than those born in Switzerland (0.04).

For the language of interview, the mean of confidence item nonresponse rate is slightly lower among French or Italian speakers (0.01).

Lastly, regarding mode of data collection, respondents interviewed via CAPI have higher item nonresponse rates in religiosity and confidence item nonresponse rate. However, mean of retrospective item nonresponse rate is higher among respondents interviewed via CAWI and self- administered method (0.06).

**Table 9.** Religiosity, Confidence and Retrospective Item Nonresponse Rate by Independent Variables in Switzerland

|                         |                      | Religiosity Item<br>Nonresponse Rate | Confidence Item<br>Nonresponse Rate | Retrospective Item<br>Nonresponse Rate |
|-------------------------|----------------------|--------------------------------------|-------------------------------------|----------------------------------------|
|                         |                      | Mean                                 | Mean                                | Mean                                   |
| Sex                     | Male                 | 0.02                                 | 0.01                                | 0.04                                   |
|                         | Female               | 0.02                                 | 0.03                                | 0.06                                   |
| Region<br>(Switzerland) | Region               |                                      |                                     |                                        |
|                         | Lemanique            | 0.02                                 | 0.02                                | 0.05                                   |
|                         | Espace<br>Mittelland | 0.02                                 | 0.02                                | 0.05                                   |

|                                                     |                              |      |      |      |
|-----------------------------------------------------|------------------------------|------|------|------|
|                                                     | Nordwestschweiz              | 0.02 | 0.02 | 0.05 |
|                                                     | Zürich                       | 0.03 | 0.02 | 0.07 |
|                                                     | Ostschweiz                   | 0.03 | 0.03 | 0.04 |
|                                                     | Zentralschweiz               | 0.02 | 0.01 | 0.04 |
|                                                     | Ticino                       | 0.03 | 0.02 | 0.06 |
| Willingness<br>to fight for<br>country              | No                           | 0.02 | 0.02 | 0.04 |
|                                                     | Yes                          | 0.02 | 0.01 | 0.05 |
| How close<br>do you feel<br>to country              | Close                        | 0.02 | 0.02 | 0.05 |
|                                                     | Not Close                    | 0.02 | 0.03 | 0.08 |
| Marital<br>Status<br>(Respondent)                   | Married                      | 0.02 | 0.02 | 0.05 |
|                                                     | Ever married                 | 0.03 | 0.02 | 0.08 |
|                                                     | Single/Never<br>married      | 0.02 | 0.02 | 0.05 |
| Subjective<br>state of<br>health                    | Good Health                  | 0.02 | 0.02 | 0.04 |
|                                                     | Fair Health                  | 0.03 | 0.02 | 0.08 |
|                                                     | Poor Health                  | 0.05 | 0.03 | 0.09 |
| Respondent<br>interested<br>during the<br>interview | Very interested              | 0.02 | 0.02 | 0.03 |
|                                                     | Somewhat<br>interested       | 0.02 | 0.02 | 0.05 |
|                                                     | Not very<br>interested       | 0.03 | 0.02 | 0.09 |
| Education<br>(Respondent)                           | Low                          | 0.04 | 0.04 | 0.19 |
|                                                     | Middle                       | 0.03 | 0.02 | 0.06 |
|                                                     | High                         | 0.02 | 0.01 | 0.03 |
| Respondent<br>immigrant /                           | I am born in this<br>country | 0.02 | 0.02 | 0.04 |

|                                           |                                          |      |      |      |
|-------------------------------------------|------------------------------------------|------|------|------|
| born in<br>country                        | I am an<br>immigrant to this<br>country  | 0.03 | 0.03 | 0.08 |
| Language of<br>interview<br>(Switzerland) | German                                   | 0.02 | 0.02 | 0.05 |
|                                           | French or Italian                        | 0.02 | 0.01 | 0.05 |
|                                           | CAPI                                     | 0.04 | 0.04 | 0.03 |
| Mode                                      | CAWI and Self-<br>administered:<br>Paper | 0.02 | 0.01 | 0.06 |

#### 5.1.4. Zimbabwe

Table 10 presents the descriptive statistics of religiosity, confidence, and retrospective item nonresponse rates in Zimbabwe by independent variables. Starting with the sex variable, religiosity item nonresponse is 0.00 for both men and women. However, women show higher mean of confidence (0.03) and retrospective (0.15) item nonresponse rates compared to men (0.01; 0.10).

Across regions, religiosity item nonresponse is generally 0.00, except for Harare and Bulawayo (0.01). Confidence nonresponse is highest in Matebeleland (0.06), and retrospective nonresponse is also highest in this region (0.29).

For the willingness to fight for the country, individuals who answered "no" reported higher means of religiosity (0.01), confidence (0.03), and retrospective (0.14) item nonresponse rates than those who said "yes."

When considering how close people feel to their country, religiosity item nonresponse is slightly higher for those who feel "not close" (0.01), while confidence item nonresponse is higher for them as well (0.04). Retrospective item nonresponse is slightly lower among the "not close" group (0.10).

Regarding marital status, the mean of religiosity nonresponse rate is consistent at 0.00. Confidence item nonresponse rate is highest among ever married individuals (0.04), and retrospective item nonresponse rate is highest among single/never married and married (0.13). In terms of education, religiosity item nonresponse is consistent at

0.00, but confidence and retrospective nonresponse rates decreases when education level of respondents increases.

As for subjective state of health, religiosity increase slightly among those with poor health (0.01), while retrospective nonresponse rises from 0.12 (good/fair health) to 0.14 (poor health). Respondents who were not very interested or only somewhat interested during the interview showed higher means of confidence (0.03) and retrospective (0.16) item nonresponse rates compared to those who are very interested (0.02 and 0.12, respectively).

For the language of interview, those interviewed in North Ndebele or English show higher means of religiosity (0.01), higher confidence (0.04) and higher retrospective (0.16) item nonresponse rates compared to Shona speakers.

**Table 10.** Religiosity, Confidence and Retrospective Item Nonresponse Rate by Independent Variables in Zimbabwe

|                                        |                        | Religiosity Item<br>Nonresponse Rate | Confidence Item<br>Nonresponse Rate | Retrospective Item<br>Nonresponse Rate |
|----------------------------------------|------------------------|--------------------------------------|-------------------------------------|----------------------------------------|
|                                        |                        | Mean                                 | Mean                                | Mean                                   |
| Sex                                    | Male                   | 0.00                                 | 0.01                                | 0.10                                   |
|                                        | Female                 | 0.00                                 | 0.03                                | 0.15                                   |
| Region<br>(Zimbabwe)                   | Harare and<br>Bulawayo | 0.01                                 | 0.02                                | 0.13                                   |
|                                        | Mashonaland<br>and     | 0.00                                 | 0.01                                | 0.09                                   |
|                                        | Manicaland             |                                      |                                     |                                        |
|                                        | Matebeleland           | 0.00                                 | 0.06                                | 0.29                                   |
|                                        | Midlands<br>and        | 0.00                                 | 0.02                                | 0.12                                   |
|                                        | Masvingo               |                                      |                                     |                                        |
| Willingness<br>to fight for<br>country | No                     | 0.01                                 | 0.03                                | 0.14                                   |
|                                        | Yes                    | 0.00                                 | 0.01                                | 0.12                                   |
|                                        | Close                  | 0.00                                 | 0.01                                | 0.13                                   |

|                                                                     |                                                     |      |      |      |
|---------------------------------------------------------------------|-----------------------------------------------------|------|------|------|
| How close<br>do you feel<br>to country                              | Not Close                                           | 0.01 | 0.04 | 0.10 |
| Marital<br>Status<br>(Respondent)                                   | Married                                             | 0.00 | 0.02 | 0.13 |
|                                                                     | Ever married                                        | 0.00 | 0.04 | 0.11 |
|                                                                     | Single/Never<br>married                             | 0.00 | 0.01 | 0.13 |
| Subjective<br>state of<br>health                                    | Good Health                                         | 0.00 | 0.01 | 0.12 |
|                                                                     | Fair Health                                         | 0.00 | 0.03 | 0.12 |
|                                                                     | Poor Health                                         | 0.01 | 0.02 | 0.14 |
| Respondent<br>interested<br>during the<br>interview (2<br>category) | Very<br>interested                                  | 0.00 | 0.02 | 0.12 |
|                                                                     | Not very<br>interested or<br>somewhat<br>interested | 0.00 | 0.03 | 0.16 |
| Education<br>(Respondent)                                           | Low                                                 | 0.00 | 0.04 | 0.14 |
|                                                                     | Middle                                              | 0.00 | 0.01 | 0.13 |
|                                                                     | High                                                | 0.00 | 0.01 | 0.10 |
| Language of<br>interview<br>(Zimbabwe)                              | Shona                                               | 0.00 | 0.01 | 0.11 |
|                                                                     | North                                               |      |      |      |
|                                                                     | Ndebele or<br>English                               | 0.01 | 0.04 | 0.16 |

## 5.2. Binary Logistic Regression Results for Religiosity, Confidence, And Retrospective Question Groups Among Respondents Aged 50 And Older

Table 11 shows binary logistic regression results for religiosity, confidence, and retrospective question groups among respondents aged 50 and older across selected countries. Separate binary logistic regression analyses are conducted for respondents under 50 and those aged 50 and above. If the number of cases per category is below 10, categories were merged. In cases where merging was not feasible, the

variable was excluded from the analysis. Due to insufficient case numbers, a binary logistic regression analysis could not be performed for the retrospective question among respondents aged 50 and above in the sample of Turkey. Similarly, for the Zimbabwe, binary logistic regression analyses could not be conducted for the religiosity questions due to insufficient cases in both the under-50 and 50-and-above age groups.

Controlling for independent variables, analysis uncovers that some independent variables have a statistically significant impact on the religiosity, confidence and retrospective item nonresponse dependent variables:

- Compared to men, women exhibit a higher likelihood of item nonresponse in the confidence question group, with odds ratios of approximately 1.8 in Italy, 2.7 in Turkey, and 2.8 in Zimbabwe.
- In Italy, the odds of leaving the retrospective question unanswered are approximately 3.2 times higher for respondents in the Isole region and 3 times higher for those in the Nord Est region, compared to those in the Nord Ovest region.
- In Turkey, respondents residing in the West, Central, and North and East regions are approximately 92.5%, 90.4%, and 83.8% less likely, respectively, to leave at least one question in the religiosity question group unanswered compared to those living in the South region. In addition, respondents from the West region are also 47.6% less likely to leave at least one confidence question unanswered compared to those in the South region.
- In Switzerland, respondents residing in the Ostschweiz region are approximately 2.4 times more likely to leave at least one confidence question unanswered compared to those living in the Espace Mitteland region.
- Compared to respondents in the Harare and Bulawayo regions, those residing in the Mashonaland and Manicaland regions in Zimbabwe are approximately 74.8% less likely to leave at least one confidence question unanswered.
- In Turkey, respondents who are willing to fight for the country are approximately 3 times more likely to leave at least one question in the religiosity group unanswered compared to those who are not willing. Similarly,

in Switzerland, those who are willing to fight are about 4 times more likely to leave the retrospective question unanswered.

- In Italy, respondents who are willing to fight for their country are approximately 37.3% less likely to leave at least one confidence question unanswered compared to those who are not willing.
- In Switzerland, longer interview durations are linked with higher odds of item nonresponse. Respondents interviewed for 91 minutes or more are approximately 2.6 times more likely to leave at least one religiosity question unanswered compared to those interviewed for 0–70 minutes. Regarding confidence questions, interview durations of 71–90 minutes and 91 minutes or more are associated with 2.1 and 1.9 times higher odds of nonresponse, respectively.
- In Italy, ever-married individuals are approximately 33.8% less likely to leave at least one religiosity question unanswered compared to those who are currently married.
- In Switzerland, ever-married individuals are approximately 1.9 times more likely to leave at least one confidence question unanswered compared to those who are currently married.
- In Turkey, individuals with health status of fair or poor have approximately 1.7 times higher odds of leaving at least one confidence question unanswered compared to those reporting good health.
- In Italy, respondents who were somewhat interested and not very interested in the interview are approximately 1.8 and 1.6 times more likely, respectively, to leave at least one religiosity question unanswered compared to those who are very interested.
- In Switzerland, respondents who are somewhat interested in the interview are approximately 1.7 times more likely to leave at least one religiosity question unanswered compared to those who are very interested.
- In Italy, respondents who reported no interest in the interview are approximately 2.4 times more likely to leave at least one confidence question unanswered compared to those who are very interested. Similarly, in Switzerland, respondents who were somewhat interested are about 2.1 times

more likely to leave these questions unanswered compared to those who were very interested.

- For the retrospective question, respondents in Italy who were somewhat interested and not very interested in the interview are approximately 2.3 and 5.9 times more likely, respectively, to leave the retrospective question unanswered compared to those who were very interested.
- In Italy, respondents with a low level of education are approximately 2.2 times more likely to leave at least one confidence question unanswered compared to those with a medium level of education. In contrast, in Switzerland, respondents with a high level of education are approximately 54.9% less likely to leave these questions unanswered compared to those with a middle level of education.
- In Switzerland, immigrants are approximately 1.9 times more likely to leave at least one confidence question unanswered and 4.3 times more likely to leave the retrospective question unanswered compared to individuals born in the country.
- In Switzerland, interviews conducted via CAPI are approximately 8 times more likely to result in item nonresponse in at least one religiosity question and 5 times more likely in at least one confidence question, compared to CAWI and self-administered paper-based modes, respectively.

**Table 11.** Binary Logistic Regression Results for Religiosity, Confidence, and Retrospective Question Groups Among Respondents Aged 50 and Older

|                         | Religiosity |         |             | Confidence |         |             |          | Retrospective |        |             |          |
|-------------------------|-------------|---------|-------------|------------|---------|-------------|----------|---------------|--------|-------------|----------|
|                         | Exp(B)      |         |             | Exp(B)     |         |             |          | Exp(B)        |        |             |          |
|                         | Italy       | Turkey  | Switzerland | Italy      | Turkey  | Switzerland | Zimbabwe | Italy         | Turkey | Switzerland | Zimbabwe |
| <b>Sex</b>              |             |         |             |            |         |             |          |               |        |             |          |
| Male (ref.)             |             |         |             |            |         |             |          |               |        |             |          |
| Female                  | 0.893       | 1.239   | 1.183       | 1.814**    | 2.730** | 1.552       | 2.758**  | 1.117         | -      | 0.676       | 1.513    |
| <b>Region 1 (Italy)</b> |             |         |             |            |         |             |          |               |        |             |          |
| Nord Ovest (ref.)       |             |         |             |            |         |             |          |               |        |             |          |
| Sud                     | 1.101       | -       | -           | 0.829      | -       | -           | -        | 1.836         | -      | -           | -        |
| Isole                   | 0.880       | -       | -           | 1.656      | -       | -           | -        | 3.249**       | -      | -           | -        |
| Nord Est                | 1.227       | -       | -           | 1.400      | -       | -           | -        | 2.990**       | -      | -           | -        |
| Centro                  | 0.787       | -       | -           | 0.923      | -       | -           | -        | 0.873         | -      | -           | -        |
| <b>Region 2</b>         |             |         |             |            |         |             |          |               |        |             |          |
| (Turkey)                |             |         |             |            |         |             |          |               |        |             |          |
| South (ref.)            |             |         |             |            |         |             |          |               |        |             |          |
| West                    | -           | 0.075** | -           | -          | 0.524*  | -           | -        | -             | -      | -           | -        |
| Central                 | -           | 0.096** | -           | -          | 0.452   | -           | -        | -             | -      | -           | -        |

|                   |   |         |       |   |       |        |   |   |   |       |   |
|-------------------|---|---------|-------|---|-------|--------|---|---|---|-------|---|
| North and East    | - | 0.162** | -     | - | 0.977 | -      | - | - | - | -     | - |
| <hr/>             |   |         |       |   |       |        |   |   |   |       |   |
| Region 3          |   |         |       |   |       |        |   |   |   |       |   |
| (Switzerland)     |   |         |       |   |       |        |   |   |   |       |   |
| Espace            |   |         |       |   |       |        |   |   |   |       |   |
| Mittelland (ref.) |   |         |       |   |       |        |   |   |   |       |   |
| Region            |   |         |       |   |       |        |   |   |   |       |   |
| Lemanique         | - | -       | 0.751 | - | -     | 1.464  | - | - | - | 0.283 | - |
| Nordwestschweiz   | - | -       | 0.786 | - | -     | 1.103  | - | - | - | 1.031 | - |
| Zürich            | - | -       | 1.866 | - | -     | 2.232  | - | - | - | 0.556 | - |
| Ostschweiz        | - | -       | 1.993 | - | -     | 2.437* | - | - | - | 0.629 | - |
| Zentralschweiz    | - | -       | 0.924 | - | -     | -      | - | - | - | -     | - |
| Ticino            | - | -       | 0.818 | - | -     | -      | - | - | - | -     | - |
| <hr/>             |   |         |       |   |       |        |   |   |   |       |   |
| Region 4          |   |         |       |   |       |        |   |   |   |       |   |
| (Switzerland)     |   |         |       |   |       |        |   |   |   |       |   |
| Espace            |   |         |       |   |       |        |   |   |   |       |   |
| Mittelland (ref.) |   |         |       |   |       |        |   |   |   |       |   |
| Region            |   |         |       |   |       |        |   |   |   |       |   |
| Lemanique         | - | -       | -     | - | -     | -      | - | - | - | -     | - |
| Nordwestschweiz   | - | -       | -     | - | -     | -      | - | - | - | -     | - |

|                              |   |   |   |   |   |       |   |   |   |       |   |
|------------------------------|---|---|---|---|---|-------|---|---|---|-------|---|
| Zürich                       | - | - | - | - | - | -     | - | - | - | -     | - |
| Ostschweiz                   | - | - | - | - | - | -     | - | - | - | -     | - |
| Zentralschweiz<br>and Ticino | - | - | - | - | - | 1.232 | - | - | - | 0.390 | - |

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#### Region 5

(Zimbabwe)

Harare and

Bulawayo (ref.)

Mashonaland and

Manicaland

|   |   |   |   |   |   |        |   |   |   |   |
|---|---|---|---|---|---|--------|---|---|---|---|
| - | - | - | - | - | - | 0.252* | - | - | - | - |
|---|---|---|---|---|---|--------|---|---|---|---|

Matebeleland

|   |   |   |   |   |   |       |   |   |   |   |
|---|---|---|---|---|---|-------|---|---|---|---|
| - | - | - | - | - | - | 1.597 | - | - | - | - |
|---|---|---|---|---|---|-------|---|---|---|---|

Midlands and

Masvingo

|   |   |   |   |   |   |       |   |   |   |   |
|---|---|---|---|---|---|-------|---|---|---|---|
| - | - | - | - | - | - | 0.949 | - | - | - | - |
|---|---|---|---|---|---|-------|---|---|---|---|

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#### Region 6

(Zimbabwe)

Harare and

Bulawayo,

Matebeleland,

Midlands and  
Masvingo (ref.)

|                               |   |   |   |   |   |   |   |   |   |   |       |
|-------------------------------|---|---|---|---|---|---|---|---|---|---|-------|
| Mashonaland and<br>Manicaland | - | - | - | - | - | - | - | - | - | - | 0.699 |
|-------------------------------|---|---|---|---|---|---|---|---|---|---|-------|

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Willingness to  
fight

for country

No (ref.)

|     |       |         |       |        |       |       |       |       |   |        |       |
|-----|-------|---------|-------|--------|-------|-------|-------|-------|---|--------|-------|
| Yes | 0.885 | 2.986** | 0.845 | 0.627* | 1.160 | 0.841 | 0.812 | 1.321 | - | 3.970* | 0.550 |
|-----|-------|---------|-------|--------|-------|-------|-------|-------|---|--------|-------|

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How close do  
you feel to  
country

Close (ref.)

|           |       |       |   |       |       |   |       |       |   |   |   |
|-----------|-------|-------|---|-------|-------|---|-------|-------|---|---|---|
| Not close | 1.172 | 0.742 | - | 0.818 | 0.724 | - | 2.486 | 1.471 | - | - | - |
|-----------|-------|-------|---|-------|-------|---|-------|-------|---|---|---|

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Total length of  
interview 1  
0-70 minutes  
(ref.)

|                                                                                                 |        |   |        |       |   |        |       |       |   |       |       |
|-------------------------------------------------------------------------------------------------|--------|---|--------|-------|---|--------|-------|-------|---|-------|-------|
| 71-90 mminutes                                                                                  | 1.028  | - | 1.122  | 1.353 | - | 2.140* | -     | -     | - | -     | -     |
| 91 and more                                                                                     | 1.703  | - | 2.579* | 1.647 | - | 1.843* | -     | -     | - | -     | -     |
| <hr/>                                                                                           |        |   |        |       |   |        |       |       |   |       |       |
| Total length of<br>interview 2<br>0-90 minutes<br>(ref.)                                        |        |   |        |       |   |        |       |       |   |       |       |
| 91 and more                                                                                     | -      | - | -      | -     | - | -      | 0.849 | -     | - | -     | 0.708 |
| <hr/>                                                                                           |        |   |        |       |   |        |       |       |   |       |       |
| Total length of<br>interview 3<br>0-70 minutes<br>(ref.)                                        |        |   |        |       |   |        |       |       |   |       |       |
| 71 and more                                                                                     | -      | - | -      | -     | - | -      | -     | 1.881 | - | 2.006 | -     |
| <hr/>                                                                                           |        |   |        |       |   |        |       |       |   |       |       |
| Marital status<br>(Respondent)<br>Married now<br>(ref.)<br>Ever married<br>(Not married<br>now) |        |   |        |       |   |        |       |       |   |       |       |
|                                                                                                 | 0.662* | - | 0.818  | 0.708 | - | 1.870* | -     | -     | - | -     | -     |

|                                         |       |       |       |       |        |       |       |       |   |       |   |
|-----------------------------------------|-------|-------|-------|-------|--------|-------|-------|-------|---|-------|---|
| Single/Never married                    | 0.654 | -     | 0.559 | 0.563 | -      | 1.216 | -     | -     | - | -     | - |
| <hr/>                                   |       |       |       |       |        |       |       |       |   |       |   |
| Marital status (Respondent)             |       |       |       |       |        |       |       |       |   |       |   |
| Married or Married at least once (ref.) |       |       |       |       |        |       |       |       |   |       |   |
| Single                                  | -     | 1.398 | -     | -     | 1.505  | -     | -     | 0.630 | - | 0.552 | - |
| <hr/>                                   |       |       |       |       |        |       |       |       |   |       |   |
| Subjective state of health 1            |       |       |       |       |        |       |       |       |   |       |   |
| Good (ref.)                             |       |       |       |       |        |       |       |       |   |       |   |
| Fair                                    | 1.144 | -     | 1.098 | 1.031 | -      | 1.041 | 0.886 | -     | - | -     | - |
| Poor                                    | 0.942 | -     | 1.137 | 0.935 | -      | 0.916 | 0.658 | -     | - | -     | - |
| <hr/>                                   |       |       |       |       |        |       |       |       |   |       |   |
| Subjective state of health 2            |       |       |       |       |        |       |       |       |   |       |   |
| Good (ref.)                             |       |       |       |       |        |       |       |       |   |       |   |
| Fair or poor                            | -     | 0.939 | -     | -     | 1.697* | -     | -     | 1.074 | - | 1.954 | - |
| <hr/>                                   |       |       |       |       |        |       |       |       |   |       |   |

Subjective state  
of  
health 3  
Good or Fair  
(ref.)

|      |   |   |   |   |   |   |   |   |   |   |       |
|------|---|---|---|---|---|---|---|---|---|---|-------|
| Poor | - | - | - | - | - | - | - | - | - | - | 2.148 |
|------|---|---|---|---|---|---|---|---|---|---|-------|

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Respondent  
interested during  
the interview 1  
Very interested  
(ref.)

|                        |         |   |        |       |   |         |   |        |   |       |   |
|------------------------|---------|---|--------|-------|---|---------|---|--------|---|-------|---|
| Somewhat<br>interested | 1.783** | - | 1.697* | 1.343 | - | 2.122** | - | 2.250* | - | 2.100 | - |
|------------------------|---------|---|--------|-------|---|---------|---|--------|---|-------|---|

|                        |        |   |       |         |   |       |   |         |   |       |   |
|------------------------|--------|---|-------|---------|---|-------|---|---------|---|-------|---|
| Not very<br>interested | 1.621* | - | 1.677 | 2.422** | - | 1.308 | - | 5.891** | - | 0.407 | - |
|------------------------|--------|---|-------|---------|---|-------|---|---------|---|-------|---|

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Respondent  
interested during  
the interview 2

|                                                  |       |       |       |         |       |         |       |       |   |       |       |
|--------------------------------------------------|-------|-------|-------|---------|-------|---------|-------|-------|---|-------|-------|
| Very interested<br>(ref.)                        |       |       |       |         |       |         |       |       |   |       |       |
| Somewhat<br>interested or not<br>very interested | -     | 1.053 | -     | -       | 1.347 | -       | -     | -     | - | -     | -     |
| <hr/>                                            |       |       |       |         |       |         |       |       |   |       |       |
| Education 1<br>(Respondent)                      |       |       |       |         |       |         |       |       |   |       |       |
| Middle (ref.)                                    |       |       |       |         |       |         |       |       |   |       |       |
| Low                                              | 1.115 | -     | 1.162 | 2.162** | -     | 1.934   | -     | -     | - | -     | -     |
| High                                             | 1.149 | -     | 0.630 | 1.018   | -     | 0.451** | -     | -     | - | -     | -     |
| <hr/>                                            |       |       |       |         |       |         |       |       |   |       |       |
| Education 2,<br>(Respondent)                     |       |       |       |         |       |         |       |       |   |       |       |
| Middle or High<br>(ref.)                         |       |       |       |         |       |         |       |       |   |       |       |
| Low                                              | -     | 0.741 | -     | -       | 1.404 | -       | 1.785 | -     | - | 0.567 | 1.184 |
| <hr/>                                            |       |       |       |         |       |         |       |       |   |       |       |
| Education 3<br>(Respondent)                      |       |       |       |         |       |         |       |       |   |       |       |
| Low (ref.)                                       |       |       |       |         |       |         |       |       |   |       |       |
| Middle or High                                   | -     | -     | -     | -       | -     | -       | -     | 1.213 | - | -     | -     |
| <hr/>                                            |       |       |       |         |       |         |       |       |   |       |       |

|                   |   |   |       |   |   |        |       |   |   |         |
|-------------------|---|---|-------|---|---|--------|-------|---|---|---------|
| Respondent        |   |   |       |   |   |        |       |   |   |         |
| immigrant / born  |   |   |       |   |   |        |       |   |   |         |
| in country        |   |   |       |   |   |        |       |   |   |         |
| Born in this      |   |   |       |   |   |        |       |   |   |         |
| country (ref.)    |   |   |       |   |   |        |       |   |   |         |
| Immigrant in this | - | - | 0.759 | - | - | 1.879* | -     | - | - | 4.263** |
| country           |   |   |       |   |   |        |       |   |   |         |
| Language of       |   |   |       |   |   |        |       |   |   |         |
| interview 1       |   |   |       |   |   |        |       |   |   |         |
| German (ref.)     |   |   |       |   |   |        |       |   |   |         |
| French or Italian | - | - | 2.096 | - | - | 1.352  | -     | - | - | 0.829   |
| Language of       |   |   |       |   |   |        |       |   |   |         |
| interview 2       |   |   |       |   |   |        |       |   |   |         |
| Shona (ref.)      |   |   |       |   |   |        |       |   |   |         |
| North Ndebele or  | - | - | -     | - | - | -      | 1.857 | - | - | -       |
| English           |   |   |       |   |   |        |       |   |   | 1.841   |
| Mode              |   |   |       |   |   |        |       |   |   |         |

CAWI and Self

administered:

Paper (ref.)

|      |   |   |         |   |   |         |   |   |   |       |   |
|------|---|---|---------|---|---|---------|---|---|---|-------|---|
| CAPI | - | - | 7.984** | - | - | 5.037** | - | - | - | 1.271 | - |
|------|---|---|---------|---|---|---------|---|---|---|-------|---|

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\*\*p < 0.01

\*p < 0.05

### **5.3. Binary Logistic Regression Results for Religiosity, Confidence, and Retrospective Question Groups Among Respondents Aged Under 50**

Table 12 shows binary logistic regression results for religiosity, confidence, and retrospective question groups among respondents aged under 50 across selected countries. Controlling for independent variables, analysis uncovers that some independent variables have a statistically significant impact on the religiosity, confidence and retrospective item nonresponse dependent variables:

- Women are approximately 1.5 times more likely in Turkey and 2.4 times more likely in Switzerland to leave at least one question in the confidence question group unanswered compared to men.
- In Italy, respondents residing in the Sud region are approximately 59.9% less likely to leave at least one confidence question unanswered compared to those living in the Nord Ovest region.
- In Turkey, respondents residing in the West, Central, North, and East regions are approximately 86.4%, 82.1%, 59.8%, and 83.9% less likely, respectively, to leave at least one religiosity question unanswered compared to those living in the South region. In addition, respondents from the West region are about 43.1% less likely to leave the confidence questions unanswered compared to those in the South. Regarding the retrospective question, individuals residing in the West and Central regions are approximately 80.3% less likely to leave the question unanswered compared to respondents from the South region.
- In Switzerland, respondents residing in the Ostschweiz and Ticino region are approximately 2.2 times more likely to leave at least one religiosity question unanswered compared to those living in the Espace Mittelland region.
- In Zimbabwe, respondents residing in the Matebeleland region are approximately 2.5 times more likely to leave at least one confidence question unanswered compared to those living in the Harare and Bulawayo regions.
- In Italy, respondents who are willing to fight for their country are approximately 34.9% less likely to leave at least one religiosity question

unanswered compared to those who are not willing. In contrast, in Turkey, respondents are about 2.2 times more likely to leave these questions unanswered.

- In Italy and Zimbabwe, respondents who are willing to fight for their country are approximately 46.6% and 42.9% less likely, respectively, to leave at least one confidence question unanswered compared to those who are not willing.
- In Turkey, respondents who do not feel close to their country are approximately 69.2% less likely to leave at least one confidence question unanswered compared to those who do feel close. In contrast, in Zimbabwe, respondents are about 2.7 times more likely to leave these questions unanswered.
- Respondents interviewed for 71 to 90 minutes are approximately 3.1 times more likely to leave at least one confidence question unanswered compared to those interviewed for 0 to 70 minutes. For retrospective questions, interviews lasting 91 minutes or more are associated with approximately 2.6 times higher odds of item nonresponse.
- In Turkey, respondents who are single are approximately 1.3 times more likely to leave at least one religiosity question unanswered compared to those who are currently married.
- In Zimbabwe, respondents who are ever married are approximately 2.7 times more likely to leave at least one confidence question unanswered compared to those who are currently married.
- In Italy, respondents who report their health status as fair or poor are approximately 1.6 times more likely to leave at least one religiosity question unanswered compared to those who report their health as good.
- In Italy and Turkey, respondents who report their health status as fair or poor are approximately 1.9 and 1.7 times more likely, respectively, to leave at least one confidence question unanswered compared to those who report their health as good.
- In Turkey, respondents who report their health status as fair or poor are approximately 2.3 times more likely to leave the retrospective question unanswered compared to those who report their health as good.

- In Italy, respondents who were somewhat interested and not very interested in the interview are approximately 1.6 and 2.4 times more likely, respectively, to leave at least one religiosity question unanswered compared to those who were very interested.
- In Italy, respondents who were somewhat interested and not very interested in the interview are approximately 2.0 and 2.8 times more likely, respectively, to leave at least one confidence question unanswered compared to those who were very interested.
- In Turkey, respondents who were somewhat interested in the interview are approximately 1.5 times more likely to leave at least one confidence question unanswered compared to those who were very interested.
- In Zimbabwe, respondents with a low level of education are approximately 3.2 times more likely to leave at least one confidence question unanswered compared to those with a medium level of education.
- In Italy, respondents with a high level of education are approximately 61.2% less likely to leave at least one confidence question unanswered compared to those with low or medium levels of education.
- In Switzerland, respondents with a high level of education are approximately 59% less likely to leave the retrospective question unanswered compared to those with low or medium levels of education.
- In Switzerland, immigrants are approximately 2.1 times more likely to leave the retrospective question unanswered compared to individuals who were born in the country.
- In Switzerland, interviews conducted via CAPI are approximately 9.1 and 7.5 times more likely to result in item nonresponse to at least one question in the religiosity and confidence groups, respectively, compared to CAWI and self-administered paper-based modes.
- In Zimbabwe, respondents who are interviewed in North Ndebele or English are approximately 2 times more likely to leave at least one confidence question unanswered compared to those interviewed in Shona.

**Table 12.** Binary Logistic Regression Results for Religiosity, Confidence, and Retrospective Question Groups Among Respondents Aged Under 50

|                   | Religiosity |         |             | Confidence |         |             |          | Retrospective |        |             |          |
|-------------------|-------------|---------|-------------|------------|---------|-------------|----------|---------------|--------|-------------|----------|
|                   | Exp(B)      |         |             | Exp(B)     |         |             |          | Exp(B)        |        |             |          |
|                   | Italy       | Turkey  | Switzerland | Italy      | Turkey  | Switzerland | Zimbabwe | Italy         | Turkey | Switzerland | Zimbabwe |
| Sex               |             |         |             |            |         |             |          |               |        |             |          |
| Male (ref.)       |             |         |             |            |         |             |          |               |        |             |          |
| Female            | 0.979       | 1.216   | 1.337       | 0.712      | 1.548** | 2.364**     | 1.360    | 0.549         | 0.653  | 1.828       | 1.527    |
| Region 1 (Italy)  |             |         |             |            |         |             |          |               |        |             |          |
| Nord Ovest (ref.) |             |         |             |            |         |             |          |               |        |             |          |
| Sud               | 0.756       | -       | -           | 0.401**    | -       | -           | -        | 2.270         | -      | -           | -        |
| Isole             | 0.587       | -       | -           | 0.505      | -       | -           | -        | 2.636         | -      | -           | -        |
| Nord Est          | 1.578       | -       | -           | 1.389      | -       | -           | -        | 1.544         | -      | -           | -        |
| Centro            | 0.810       | -       | -           | 0.512      | -       | -           | -        | 1.210         | -      | -           | -        |
| Region 2          |             |         |             |            |         |             |          |               |        |             |          |
| (Turkey)          |             |         |             |            |         |             |          |               |        |             |          |
| South (ref.)      |             |         |             |            |         |             |          |               |        |             |          |
| West              | -           | 0.136** | -           | -          | 0.569** | -           | -        | -             | -      | -           | -        |
| Central           | -           | 0.179** | -           | -          | 0.665   | -           | -        | -             | -      | -           | -        |

|                   |   |         |        |   |       |       |   |   |         |       |   |
|-------------------|---|---------|--------|---|-------|-------|---|---|---------|-------|---|
| North             | - | 0.402** | -      | - | 1.091 | -     | - | - | -       | -     | - |
| East              | - | 0.161** | -      | - | 1.005 | -     | - | - | -       | -     | - |
| <hr/>             |   |         |        |   |       |       |   |   |         |       |   |
| Region 3          |   |         |        |   |       |       |   |   |         |       |   |
| (Turkey)          |   |         |        |   |       |       |   |   |         |       |   |
| South (ref.)      |   |         |        |   |       |       |   |   |         |       |   |
| North             | - | -       | -      | - | -     | -     | - | - | 0.903   | -     | - |
| East              | - | -       | -      | - | -     | -     | - | - | 1.958   | -     | - |
| West and Central  | - | -       | -      | - | -     | -     | - | - | 0.197** | -     | - |
| <hr/>             |   |         |        |   |       |       |   |   |         |       |   |
| Region 4          |   |         |        |   |       |       |   |   |         |       |   |
| (Switzerland)     |   |         |        |   |       |       |   |   |         |       |   |
| Espace            |   |         |        |   |       |       |   |   |         |       |   |
| Mittelland (ref.) |   |         |        |   |       |       |   |   |         |       |   |
| Region            |   |         |        |   |       |       |   |   |         |       |   |
| Lemanique         | - | -       | 1.135  | - | -     | 1.151 | - | - | -       | 0.919 | - |
| Nordwestschweiz   | - | -       | 0.878  | - | -     | 1.538 | - | - | -       | 1.587 | - |
| Zürich            | - | -       | 1.940  | - | -     | 1.489 | - | - | -       | 0.831 | - |
| Ostschweiz and    | - | -       | 2.193* | - | -     | 1.393 | - | - | -       | 0.673 | - |
| Ticino            | - | -       |        | - | -     |       | - | - | -       |       | - |
| Zentralschweiz    | - | -       | 1.153  | - | -     | 1.160 | - | - | -       | 0.944 | - |
| <hr/>             |   |         |        |   |       |       |   |   |         |       |   |

|                                                                                          |         |         |       |        |         |       |         |       |   |       |       |
|------------------------------------------------------------------------------------------|---------|---------|-------|--------|---------|-------|---------|-------|---|-------|-------|
| Region 5<br>(Zimbabwe)<br>Harare and<br>Bulawayo (ref.)<br>Mashonaland and<br>Manicaland | -       | -       | -     | -      | -       | -     | 0.757   | -     | - | -     | 0.606 |
| Matebeleland                                                                             | -       | -       | -     | -      | -       | -     | 2.497*  | -     | - | -     | 1.778 |
| Midlands and<br>Masvingo                                                                 | -       | -       | -     | -      | -       | -     | 0.837   | -     | - | -     | 0.903 |
| <hr/>                                                                                    |         |         |       |        |         |       |         |       |   |       |       |
| Willingness to<br>fight<br>for country<br>No (ref.)                                      |         |         |       |        |         |       |         |       |   |       |       |
| Yes                                                                                      | 0.651** | 2.235** | 0.746 | 0.534* | 1.362   | 1.421 | 0.571*  | 1.177 | - | 0.977 | 1.212 |
| <hr/>                                                                                    |         |         |       |        |         |       |         |       |   |       |       |
| How close do<br>you feel to<br>country<br>Close (ref.)                                   |         |         |       |        |         |       |         |       |   |       |       |
| Not close                                                                                | 0.761   | 0.764   | 1.109 | 0.644  | 0.308** | 1.716 | 2.732** | 1.343 | - | 1.440 | 0.693 |

|                                  |       |   |       |       |   |       |         |   |   |        |       |
|----------------------------------|-------|---|-------|-------|---|-------|---------|---|---|--------|-------|
| Total length of<br>interview 1   |       |   |       |       |   |       |         |   |   |        |       |
| 0-70 minutes<br>(ref.)           |       |   |       |       |   |       |         |   |   |        |       |
| 71-90 mminutes                   | -     | - | 1.750 | -     | - | 1.733 | 3.129** | - | - | 1.951  | -     |
| 91 and more                      | -     | - | 1.034 | -     | - | 1.468 | 1.683   | - | - | 2.564* | -     |
| Total length of<br>interview 2   |       |   |       |       |   |       |         |   |   |        |       |
| 0-90 minutes<br>(ref.)           |       |   |       |       |   |       |         |   |   |        |       |
| 91 and more                      | -     | - | -     | -     | - | -     | -       | - | - | -      | 1.164 |
| Total length of<br>interview 3   |       |   |       |       |   |       |         |   |   |        |       |
| 0-70 minutes<br>(ref.)           |       |   |       |       |   |       |         |   |   |        |       |
| 71 and more                      | 1.185 | - | -     | 1.399 | - | -     | -       | - | - | -      | -     |
| Marital status 1<br>(Respondent) |       |   |       |       |   |       |         |   |   |        |       |

|                                                   |       |        |       |       |       |       |        |       |       |       |       |   |
|---------------------------------------------------|-------|--------|-------|-------|-------|-------|--------|-------|-------|-------|-------|---|
| Married now<br>(ref.)                             |       |        |       |       |       |       |        |       |       |       |       |   |
| Ever married                                      |       |        |       |       |       |       |        |       |       |       |       |   |
| (Not married<br>now)                              | 1.043 | 0.650  | 0.905 | -     | -     | -     | 2.679* | -     | -     | -     | -     | - |
| Single/Never<br>married                           | 0.793 | 1.323* | 0.951 | -     | -     | -     | 0.680  | -     | -     | -     | -     | - |
| <hr/>                                             |       |        |       |       |       |       |        |       |       |       |       |   |
| Marital status 2<br>(Respondent)                  |       |        |       |       |       |       |        |       |       |       |       |   |
| Married or<br>Married at least<br>once (ref.)     |       |        |       |       |       |       |        |       |       |       |       |   |
| Single                                            | -     | -      | -     | 1.169 | 0.906 | 1.528 | -      | 1.158 | 0.969 | 1.002 | 0.993 |   |
| <hr/>                                             |       |        |       |       |       |       |        |       |       |       |       |   |
| Subjective state<br>of<br>health 1<br>Good (ref.) |       |        |       |       |       |       |        |       |       |       |       |   |
| Fair                                              | -     | 1.057  | -     | -     | -     | -     | 1.422  | -     | -     | -     | 1.048 |   |
| Poor                                              | -     | 1.577  | -     | -     | -     | -     | 0.724  | -     | -     | -     | 0.915 |   |
|                                                   | <hr/> |        | <hr/> |       |       |       |        | <hr/> |       |       |       |   |

|                                                    |         |       |       |         |         |       |   |       |         |       |   |  |
|----------------------------------------------------|---------|-------|-------|---------|---------|-------|---|-------|---------|-------|---|--|
| Subjective state<br>of<br>health 2                 |         |       |       |         |         |       |   |       |         |       |   |  |
| Good (ref.)                                        |         |       |       |         |         |       |   |       |         |       |   |  |
| Fair or poor                                       | 1.571*  | -     | 0.785 | 1.875*  | 1.712** | 0.840 | - | 0.941 | 2.337** | 0.735 | - |  |
| Respondent<br>interested during<br>the interview 1 |         |       |       |         |         |       |   |       |         |       |   |  |
| Very interested<br>(ref.)                          |         |       |       |         |         |       |   |       |         |       |   |  |
| Somewhat<br>interested                             | 1.622** | 0.884 | 1.220 | 2.047** | 1.511*  | 1.347 | - | 1.489 | -       | 1.468 | - |  |
| Not very<br>interested                             | 2.429** | 0.623 | 1.548 | 2.815** | 1.621   | 1.081 | - | 1.682 | -       | 1.917 | - |  |
| Respondent<br>interested during<br>the interview 2 |         |       |       |         |         |       |   |       |         |       |   |  |
| Very interested<br>(ref.)                          |         |       |       |         |         |       |   |       |         |       |   |  |

|                                                  |   |   |   |   |   |   |       |   |       |   |       |
|--------------------------------------------------|---|---|---|---|---|---|-------|---|-------|---|-------|
| Somewhat<br>interested or not<br>very interested | - | - | - | - | - | - | 1.685 | - | 1.049 | - | 1.263 |
|--------------------------------------------------|---|---|---|---|---|---|-------|---|-------|---|-------|

---

Education 1

(Respondent)

Middle (ref.)

|     |   |       |   |   |       |   |   |   |   |   |       |
|-----|---|-------|---|---|-------|---|---|---|---|---|-------|
| Low | - | 1.113 | - | - | 1.202 | - | - | - | - | - | 1.177 |
|-----|---|-------|---|---|-------|---|---|---|---|---|-------|

|      |   |       |   |   |       |   |   |   |   |   |       |
|------|---|-------|---|---|-------|---|---|---|---|---|-------|
| High | - | 1.145 | - | - | 0.989 | - | - | - | - | - | 0.879 |
|------|---|-------|---|---|-------|---|---|---|---|---|-------|

---

Education 2

(Respondent)

Middle or High

(ref.)

|     |   |   |   |   |   |   |         |   |       |   |   |
|-----|---|---|---|---|---|---|---------|---|-------|---|---|
| Low | - | - | - | - | - | - | 3.152** | - | 1.294 | - | - |
|-----|---|---|---|---|---|---|---------|---|-------|---|---|

---

Education 3

(Respondent)

Low or middle

(ref.)

|      |       |   |       |        |   |       |   |       |   |        |   |
|------|-------|---|-------|--------|---|-------|---|-------|---|--------|---|
| High | 0.954 | - | 0.760 | 0.388* | - | 0.715 | - | 1.760 | - | 0.410* | - |
|------|-------|---|-------|--------|---|-------|---|-------|---|--------|---|

---

|                   |   |   |       |   |   |       |        |   |   |        |       |
|-------------------|---|---|-------|---|---|-------|--------|---|---|--------|-------|
| Respondent        |   |   |       |   |   |       |        |   |   |        |       |
| immigrant / born  |   |   |       |   |   |       |        |   |   |        |       |
| in country        |   |   |       |   |   |       |        |   |   |        |       |
| Born in this      |   |   |       |   |   |       |        |   |   |        |       |
| country (ref.)    |   |   |       |   |   |       |        |   |   |        |       |
| Immigrant in this | - | - | 1.150 | - | - | 1.617 | -      | - | - | 2.118* | -     |
| country           |   |   |       |   |   |       |        |   |   |        |       |
| Language of       |   |   |       |   |   |       |        |   |   |        |       |
| interview 1       |   |   |       |   |   |       |        |   |   |        |       |
| German (ref.)     |   |   |       |   |   |       |        |   |   |        |       |
| French or Italian | - | - | 1.095 | - | - | 0.640 | -      | - | - | 0.468  | -     |
| Language of       |   |   |       |   |   |       |        |   |   |        |       |
| interview 2       |   |   |       |   |   |       |        |   |   |        |       |
| Shona (ref.)      |   |   |       |   |   |       |        |   |   |        |       |
| North Ndebele or  |   |   |       |   |   |       |        |   |   |        |       |
| English           | - | - | -     | - | - | -     | 2.008* | - | - | -      | 1.243 |
| Mode              |   |   |       |   |   |       |        |   |   |        |       |

CAWI and Self

administered:

Paper (ref.)

|      |   |   |         |   |   |         |   |   |   |       |   |
|------|---|---|---------|---|---|---------|---|---|---|-------|---|
| CAPI | - | - | 9.169** | - | - | 7.476** | - | - | - | 1.177 | - |
|------|---|---|---------|---|---|---------|---|---|---|-------|---|

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\*\*p < 0.01

\*p < 0.05

#### **5.4. Multinomial Logistic Regression Results For Religiosity, Confidence, And Retrospective Question Groups Among Respondents Aged 50 And Older**

Table 13 shows multinomial logistic regression results for religiosity and confidence question groups among respondents aged 50 and older across selected countries. Multinomial logistic regression analyses are conducted for the religiosity and confidence question groups. However, this analysis could not be applied to the retrospective question group, as it consists of only two categories. Analyses could not be conducted for Zimbabwe due to insufficient case numbers. Similarly, analyses for respondents aged 50 and above in the sample of Turkey could not be performed for the same reason. No such issues were encountered for Switzerland and Italy.

Controlling for independent variables, analysis uncovers that some independent variables have a statistically significant impact on religiosity and confidence item nonresponse dependent variables:

- In Italy, male respondents are approximately 1.8 times more likely than female respondents to provide complete responses to the confidence questions, rather than exhibiting middle or high levels of item nonresponse.
- In Switzerland, male respondents are approximately 2.1 times more likely than female respondents to provide complete responses to the confidence questions rather than exhibiting middle or high levels of item nonresponse.
- In Italy, respondents residing in the Sud and Nord Est regions are approximately 41.4% and 46% less likely, respectively, to provide complete responses to the religiosity questions compared to those living in the Centro region, relative to the reference category of middle or high item nonresponse.
- In Switzerland, respondents residing in the Ostschweiz region are approximately 78% less likely to provide complete responses to the confidence questions compared to those living in the Zentralschweiz, Ticino, and Nordwestschweiz regions, relative to the reference category of middle or high item nonresponse.

- In Switzerland, individuals interviewed for 0–70 minutes and 71–90 minutes have approximately 4.2 and 3.2 times higher odds, respectively, of showing no item nonresponse to the religiosity questions compared to those interviewed for 91 minutes or more, relative to the reference category of middle or high item nonresponse.
- In Switzerland, individuals interviewed for 0–70 minutes have approximately 2.5 times higher odds of showing no item nonresponse to the confidence questions compared to those interviewed for 91 minutes or more, relative to the reference category of middle or high item nonresponse.
- In Italy, individuals who reported being very interested in the interview have approximately 2.4 times higher odds of showing no item nonresponse to the religiosity questions compared to those who were not very interested or only somewhat interested, relative to the reference category of middle or high item nonresponse.
- Similarly, in Italy and Switzerland, individuals who reported being very interested in the interview have approximately 2.6 and 3.1 times higher odds, respectively, of showing no item nonresponse to the confidence questions compared to those who are not very interested or somewhat interested, relative to the reference category of middle or high item nonresponse.
- In Italy, individuals with a low level of education have approximately 65.8% lower odds of showing no item nonresponse to the confidence questions compared to those with middle or high education levels, relative to the reference category of middle or high item nonresponse.
- In Switzerland, individuals with low or middle levels of education have approximately 57.6% lower odds of showing no item nonresponse to the confidence questions compared to those with a high level of education, relative to the reference category of middle or high item nonresponse.
- In Switzerland, individuals interviewed via CAPI have approximately 87.2% and 82.5% lower odds, respectively, of showing no item nonresponse to the religiosity and confidence questions compared to those interviewed via CAWI or self-administered paper-based modes, relative to the reference category of middle or high item nonresponse.

- In Italy, individuals who report good health have approximately 1.6 times higher odds of showing low item nonresponse to the religiosity questions compared to those with fair or poor health, relative to the reference category of middle or high item nonresponse.
- In Italy, individuals who reported being very interested in the interview have approximately 2 and 3 times higher odds, respectively, of showing low item nonresponse to the religiosity and confidence questions compared to those with not or somewhat interested, relative to the reference category of middle or high item nonresponse.
- In Italy, individuals with a low level of education have approximately 2.6 times higher odds of showing low item nonresponse to the religiosity questions compared to those with a high level of education, relative to the reference category of middle or high item nonresponse.

**Table 13.** Multinomial Logistic Regression Results for Religiosity, Confidence, and Retrospective Question Groups Among Respondents Aged 50 and Older

|                        |                  | Religiosity Item Nonresponse Rates |             | Confidence Item Nonresponse Rates |             |
|------------------------|------------------|------------------------------------|-------------|-----------------------------------|-------------|
|                        |                  | Exp(B)                             |             | Exp(B)                            |             |
|                        |                  | Italy                              | Switzerland | Italy                             | Switzerland |
| No item<br>nonresponse | Sex              |                                    |             |                                   |             |
|                        | Male             | 0.889                              | 0.817       | 1.837*                            | 2.087*      |
|                        | Female (ref.)    |                                    |             |                                   |             |
|                        | Region 1 (Italy) |                                    |             |                                   |             |
|                        | Nord Ovest       | 0.729                              | -           | -                                 | -           |
|                        | Sud              | 0.586*                             | -           | -                                 | -           |
|                        | Isole            | 0.826                              | -           | -                                 | -           |
|                        | Nord Est         | 0.540*                             | -           | -                                 | -           |
|                        | Centro (ref.)    |                                    |             |                                   |             |
|                        | Region 2 (Italy) |                                    |             |                                   |             |
|                        | Nord Ovest       | -                                  | -           | 1.092                             | -           |
|                        | Sud              | -                                  | -           | 1.294                             | -           |
|                        | Nord Est         | -                                  | -           | 0.767                             | -           |

|                                                   |       |       |       |         |
|---------------------------------------------------|-------|-------|-------|---------|
| Isole and Centro (ref.)                           |       |       |       |         |
| Region 3 (Switzerland)                            |       |       |       |         |
| Region Lemanique                                  | -     | 3.084 | -     | -       |
| Espace Mittelland                                 | -     | 1.642 | -     | -       |
| Nordwestschweiz                                   | -     | 1.621 | -     | -       |
| Zürich                                            | -     | 0.718 | -     | -       |
| Ostschweiz                                        | -     | 0.920 | -     | -       |
| Zentralschweiz and Ticino (ref.)                  |       |       |       |         |
| Region 4 (Switzerland)                            |       |       |       |         |
| Region Lemanique                                  | -     | -     | -     | 0.513   |
| Espace Mittelland                                 | -     | -     | -     | 0.949   |
| Zürich                                            | -     | -     | -     | 0.321   |
| Ostschweiz                                        | -     | -     | -     | 0.220** |
| Zentralschweiz, Ticino and Nordwestschweiz (ref.) |       |       |       |         |
| Willingness to fight for country                  |       |       |       |         |
| No                                                | 0.881 | 0.742 | 0.636 | 1.005   |

---

Yes (ref.)

---

How close do you feel to  
country

Close 1.150 - 0.918 -

Not close (ref.)

---

Total length of interview 1

0-70 minutes 0.951 - 1.702 -

71 and more (ref.)

---

Total length of interview 2

0-70 minutes - 4.163\*\* - 2.482\*

71-90 minutes - 3.168\* - 0.957

91 and more (ref.)

---

Marital Status

Married or Married at least  
once 0.561 0.931 0.261 0.996

Single (ref.)

---

State of health (subjective)

Good Health 1.294 1.438 0.868 0.754

Fair or Poor Health (ref.)

---

Respondent interested  
during the interview

|                 |         |       |         |         |
|-----------------|---------|-------|---------|---------|
| Very interested | 2.360** | 1.352 | 2.573** | 3.089** |
|-----------------|---------|-------|---------|---------|

Not very interested or  
somewhat interested (ref.)

---

Education 1 (Respondent)

|     |       |   |   |   |
|-----|-------|---|---|---|
| Low | 1.667 | - | - | - |
|-----|-------|---|---|---|

|        |       |   |   |   |
|--------|-------|---|---|---|
| Middle | 1.206 | - | - | - |
|--------|-------|---|---|---|

High (ref.)

---

Education 2 (Respondent)

|     |   |   |         |   |
|-----|---|---|---------|---|
| Low | - | - | 0.342** | - |
|-----|---|---|---------|---|

Middle or Upper (ref.)

---

Education 3 (Respondent)

|               |   |       |   |        |
|---------------|---|-------|---|--------|
| Low or middle | - | 0.587 | - | 0.424* |
|---------------|---|-------|---|--------|

High (ref.)

---

Respondent immigrant /

born in country

|                           |   |       |   |       |
|---------------------------|---|-------|---|-------|
| I am born in this country | - | 1.133 | - | 1.991 |
|---------------------------|---|-------|---|-------|

|                                 |                                          |       |         |       |         |
|---------------------------------|------------------------------------------|-------|---------|-------|---------|
|                                 | I am an immigrant to this country (ref.) |       |         |       |         |
|                                 | Language of interview                    |       |         |       |         |
|                                 | German                                   | -     | 1.932   | -     | 0.941   |
|                                 | French or Italian (ref.)                 |       |         |       |         |
|                                 | Mode                                     |       |         |       |         |
|                                 | CAPI                                     | -     | 0.128** | -     | 0.175** |
|                                 | CAWI and Self-administered: Paper (ref.) |       |         |       |         |
| Low level item nonresponse rate | Sex                                      |       |         |       |         |
|                                 | Male                                     | 1.104 | 0.588   | 1.261 | 1.458   |
|                                 | Female (ref.)                            |       |         |       |         |
|                                 | Region 1 (Italy)                         |       |         |       |         |
|                                 | Nord Ovest                               | 0.788 | -       | -     | -       |
|                                 | Sud                                      | 0.592 | -       | -     | -       |
|                                 | Isole                                    | 0.757 | -       | -     | -       |
|                                 | Nord Est                                 | 0.655 | -       | -     | -       |
|                                 | Centro (ref.)                            |       |         |       |         |
|                                 | Region 2 (Italy)                         |       |         |       |         |

|                         |   |   |       |   |
|-------------------------|---|---|-------|---|
| Nord Ovest              | - | - | 1.002 | - |
| Sud                     | - | - | 1.031 | - |
| Nord Est                | - | - | 0.859 | - |
| Isole and Centro (ref.) |   |   |       |   |

---

#### Region 3 (Switzerland)

|                                  |   |       |   |   |
|----------------------------------|---|-------|---|---|
| Region Lemanique                 | - | 5.032 | - | - |
| Espace Mittelland                | - | 3.003 | - | - |
| Nordwestschweiz                  | - | 1.904 | - | - |
| Zürich                           | - | 2.055 | - | - |
| Ostschweiz                       | - | 3.318 | - | - |
| Zentralschweiz and Ticino (ref.) |   |       |   |   |

---

#### Region 4 (Switzerland)

|                   |   |   |   |       |
|-------------------|---|---|---|-------|
| Region Lemanique  | - | - | - | 0.520 |
| Espace Mittelland | - | - | - | 0.756 |
| Zürich            | - | - | - | 0.445 |
| Ostschweiz        | - | - | - | 0.271 |

---

Zentralschweiz, Ticino and  
Nordwestschweiz (ref.)

Willingness to fight for  
country

|            |       |       |       |       |
|------------|-------|-------|-------|-------|
| No         | 0.878 | 0.781 | 0.969 | 1.626 |
| Yes (ref.) |       |       |       |       |

How close do you feel to  
country

|                  |       |   |       |   |
|------------------|-------|---|-------|---|
| Close            | 1.003 | - | 1.248 | - |
| Not close (ref.) |       |   |       |   |

Total length of interview 1

|                    |       |   |       |   |
|--------------------|-------|---|-------|---|
| 0-70 minutes       | 0.556 | - | 1.210 | - |
| 71 and more (ref.) |       |   |       |   |

Total length of interview 2

|                    |   |       |   |       |
|--------------------|---|-------|---|-------|
| 0-70 minutes       | - | 2.225 | - | 1.711 |
| 71-90 minutes      | - | 1.736 | - | 1.196 |
| 91 and more (ref.) |   |       |   |       |

Marital Status

|                                                   |         |       |         |       |
|---------------------------------------------------|---------|-------|---------|-------|
| Married or Married at least once                  | 0.587   | 1.703 | 0.231   | 0.752 |
| Single (ref.)                                     |         |       |         |       |
| State of health (subjective)                      |         |       |         |       |
| Good Health                                       | 1.627*  | 1.501 | 0.751   | 0.597 |
| Fair or Poor Health (ref.)                        |         |       |         |       |
| Respondent interested during the interview        |         |       |         |       |
| Very interested                                   | 1.993** | 0.720 | 3.029** | 1.967 |
| Not very interested or somewhat interested (ref.) |         |       |         |       |
| Education 1 (Respondent)                          |         |       |         |       |
| Low                                               | 2.604*  | -     | -       | -     |
| Middle                                            | 1.124   | -     | -       | -     |
| High (ref.)                                       |         |       |         |       |
| Education 2 (Respondent)                          |         |       |         |       |
| Low                                               | -       | -     | 0.521   | -     |
| Middle or Upper (ref.)                            |         |       |         |       |
| Education 3 (Respondent)                          |         |       |         |       |

|                                              |   |       |   |       |
|----------------------------------------------|---|-------|---|-------|
| Low or middle                                | - | 0.917 | - | 1.008 |
| High (ref.)                                  |   |       |   |       |
| <hr/>                                        |   |       |   |       |
| Respondent immigrant /<br>born in country    |   |       |   |       |
| I am born in this country                    | - | 1.839 | - | 1.052 |
| I am an immigrant to this<br>country (ref.)  |   |       |   |       |
| <hr/>                                        |   |       |   |       |
| Language of interview                        |   |       |   |       |
| German                                       | - | 0.988 | - | 0.496 |
| French or Italian (ref.)                     |   |       |   |       |
| <hr/>                                        |   |       |   |       |
| Mode                                         |   |       |   |       |
| CAPI                                         | - | 1.048 | - | 0.903 |
| CAWI and Self-<br>administered: Paper (ref.) |   |       |   |       |

---

\*\*p < 0.01

\*p < 0.05

### **5.5. Multinomial Logistic Regression Results For Religiosity, Confidence, And Retrospective Question Groups Among Respondents Aged Under 50**

Table 14 shows multinomial logistic regression results for religiosity and confidence question groups among respondents aged under 50 across selected countries. Controlling for independent variables, analysis uncovers that some independent variables have a statistically significant impact on the religiosity and confidence item nonresponse dependent variables:

- In Turkey, men have approximately 1.6 times higher odds of showing no item nonresponse to the religiosity questions compared to women, relative to the reference category of middle or high item nonresponse.
- In Turkey and Switzerland, men have approximately 1.8 and 3 times higher odds, respectively, of showing no item nonresponse to the confidence questions compared to women, relative to the reference category of middle or high item nonresponse.
- In Italy, individuals living in the Nord Est region have approximately 58.8% lower odds of showing no item nonresponse to the religiosity questions compared to those in the Centro region, relative to the reference category of middle or high item nonresponse.
- In Italy, individuals living in the Nord Ovest and Nord Est regions have approximately 67.6% and 76.5% lower odds, respectively, of showing no item nonresponse to the confidence questions compared to those residing in the Isole and Centro regions, relative to the reference category of middle or high item nonresponse.
- In Turkey, individuals living in the West, Central, and North and East regions have approximately 9.8, 6.7, and 2.7 times higher odds, respectively, of showing no item nonresponse to the religiosity questions compared to those residing in the South region, relative to the reference category of middle or high item nonresponse.
- In Turkey, individuals living in the West region have approximately 2.6 times higher odds of showing no item nonresponse to the confidence questions

compared to those residing in the South region, relative to the reference category of middle or high item nonresponse.

- In Italy, individuals who are not willing to fight for the country have approximately 40% and 56.7% lower odds, respectively, of showing no item nonresponse to the religiosity and confidence questions compared to those who are willing to fight, relative to the reference category of middle or high item nonresponse.
- In Turkey, individuals who are not willing to fight for the country have approximately 2.7 and 2 times higher odds, respectively, of showing no item nonresponse to the religiosity and confidence questions compared to those who are willing to fight, relative to the reference category of middle or high item nonresponse.
- In Italy, individuals who feel close to the country have approximately 67.3% lower odds of showing no item nonresponse to the confidence questions compared to those who do not feel close, relative to the reference category of middle or high item nonresponse.
- In Italy, individuals interviewed for 0–50 minutes have approximately 2.5 times higher odds of showing no item nonresponse to the confidence questions compared to those interviewed for 51 minutes or more, relative to the reference category of middle or high item nonresponse.
- In Turkey, individuals who are currently married or have ever been married have approximately 2.2 times higher odds of showing no item nonresponse to the religiosity questions compared to those who have never been married, relative to the reference category of middle or high item nonresponse.
- In Turkey, individuals who report good health have approximately 2 times higher odds of showing no item nonresponse to the confidence questions compared to those with fair or poor self-reported health, relative to the reference category of middle or high item nonresponse.
- In Italy, individuals who are very interested in the interview have approximately 2.4 times higher odds of showing no item nonresponse to the religiosity and confidence questions compared to those who are not interested

or somewhat interested, relative to the reference category of middle or high item nonresponse.

- In Switzerland, individuals interviewed using the CAPI mode have approximately 94% and 85.8% lower odds, respectively, of showing no item nonresponse to the religiosity and confidence questions compared to those interviewed via CAWI or self-administered paper-based modes, relative to the reference category of middle or high item nonresponse.
- In Turkey, individuals living in the West region have approximately 2.3 times higher odds of showing low item nonresponse to the confidence questions compared to those residing in the South region, relative to the reference category of middle or high item nonresponse.
- In Italy, individuals who feel close to the country have approximately 71.3% lower odds of showing low item nonresponse to the confidence questions compared to those who do not feel close, relative to the reference category of middle or high item nonresponse.
- In Turkey, individuals who are married or have ever been married have approximately 1.9 times higher odds of showing low item nonresponse to the religiosity questions compared to those who have never been married or single, relative to the reference category of middle or high item nonresponse.
- In Italy, individuals who are very interested in the interview have approximately 2.2 times higher odds of showing low item nonresponse to the religiosity questions compared to those who are not interested or somewhat interested, relative to the reference category of middle or high item nonresponse.

**Table 14.** Multinomial Logistic Regression Results for Religiosity, Confidence, and Retrospective Question Groups Among Respondents Aged Under 50

|                     |                         | Religiosity Item Nonresponse Rates |         |             | Confidence Item Nonresponse Rates |         |             |
|---------------------|-------------------------|------------------------------------|---------|-------------|-----------------------------------|---------|-------------|
|                     |                         | Exp(B)                             |         |             | Exp(B)                            |         |             |
|                     |                         | Italy                              | Turkey  | Switzerland | Italy                             | Turkey  | Switzerland |
| No item nonresponse | Sex                     |                                    |         |             |                                   |         |             |
|                     | Male                    | 1.048                              | 1.621*  | 1.165       | 0.976                             | 1.768** | 3.042**     |
|                     | Female (ref.)           |                                    |         |             |                                   |         |             |
|                     | Region 1 (Italy)        |                                    |         |             |                                   |         |             |
|                     | Nord Ovest              | 0.597                              | -       | -           | -                                 | -       | -           |
|                     | Sud                     | 0.847                              | -       | -           | -                                 | -       | -           |
|                     | Isole                   | 1.372                              | -       | -           | -                                 | -       | -           |
|                     | Nord Est                | 0.412**                            | -       | -           | -                                 | -       | -           |
|                     | Centro (ref.)           |                                    |         |             |                                   |         |             |
|                     | Region 2 (Italy)        |                                    |         |             |                                   |         |             |
|                     | Nord Ovest              | -                                  | -       | -           | 0.324*                            | -       | -           |
|                     | Sud                     | -                                  | -       | -           | 0.943                             | -       | -           |
|                     | Nord Est                | -                                  | -       | -           | 0.235**                           | -       | -           |
|                     | Isole and Centro (ref.) |                                    |         |             |                                   |         |             |
|                     | Region 3 (Turkey)       |                                    |         |             |                                   |         |             |
|                     | West                    | -                                  | 9.752** | -           | -                                 | 2.580** | -           |

|                |   |         |   |   |       |   |
|----------------|---|---------|---|---|-------|---|
| Central        | - | 6.682** | - | - | 1.529 | - |
| North and East | - | 2.668** | - | - | 0.845 | - |
| South (ref.)   |   |         |   |   |       |   |

---

#### Region 4

(Switzerland)

|                   |   |   |       |   |   |   |
|-------------------|---|---|-------|---|---|---|
| Region Lemanique  | - | - | 0.447 | - | - | - |
| Espace Mittelland | - | - | 0.942 | - | - | - |
| Nordwestschweiz   | - | - | 2.488 | - | - | - |
| Zürich            | - | - | 0.556 | - | - | - |
| Ostschweiz        | - | - | 0.344 | - | - | - |

Zentralschweiz and

Ticino (ref.)

---

#### Region 5

(Switzerland)

|                   |   |   |   |   |   |       |
|-------------------|---|---|---|---|---|-------|
| Region Lemanique  | - | - | - | - | - | 1.694 |
| Espace Mittelland | - | - | - | - | - | 0.863 |
| Zürich            | - | - | - | - | - | 0.711 |
| Ostschweiz        | - | - | - | - | - | 0.525 |

Zentralschweiz,

Ticino and

Nordwestschweiz

(ref.)

Willingness to fight

for country

No

0.600\*\*

2.694\*\*

0.987

0.433\*

2.001\*

1.390

Yes (ref.)

How close do you feel

to country

Close

0.715

0.761

-

0.327\*

-

-

Not close (ref.)

Total length of

interview 1

0-70 minutes

1.268

-

1.805

-

-

1.480

71 and more (ref.)

Total length of

interview 2

0-50 minutes

-

-

-

2.454\*\*

-

-

51 and more (ref.)

Marital Status

Married or Married at

least once

0.920

2.201\*\*

0.741

1.298

1.107

1.364

---

Single (ref.)

---

State of health

(subjective)

Good Health                      1.527                      1.602                      0.600                      1.300                      1.958\*\*                      0.703

Fair or Poor Health

(ref.)

---

Respondent interested

during the interview

Very interested                      2.372\*\*                      1.035                      1.520                      2.416\*\*                      1.147                      1.489

Not very interested or

somewhat interested

(ref.)

---

Education 1

(Respondent)

Low                      -                      1.682                      -                      -                      0.645                      -

Middle                      -                      1.367                      -                      -                      0.904                      -

High (ref.)

---

Education 2

(Respondent)

Low or middle                      0.908                      -                      0.491                      0.435                      -                      0.769

High (ref.)

---

|                                          |                  |       |       |         |       |       |         |
|------------------------------------------|------------------|-------|-------|---------|-------|-------|---------|
| Respondent                               |                  |       |       |         |       |       |         |
| immigrant / born in country              |                  |       |       |         |       |       |         |
| I am born in this country                |                  | -     | -     | 0.951   | -     | -     | 1.626   |
| I am an immigrant to this country (ref.) |                  |       |       |         |       |       |         |
| Language of interview                    |                  |       |       |         |       |       |         |
| German                                   |                  | -     | -     | 0.916   | -     | -     | 0.897   |
| French or Italian (ref.)                 |                  |       |       |         |       |       |         |
| Mode                                     |                  |       |       |         |       |       |         |
| CAPI                                     |                  | -     | -     | 0.060** | -     | -     | 0.142** |
| CAWI and Self-administered: Paper        |                  |       |       |         |       |       |         |
| Low level item nonresponse rate          | Sex              |       |       |         |       |       |         |
|                                          | Male             | 1.247 | 1.480 | 0.859   | 0.108 | 1.545 | 2.232   |
|                                          | Female (ref.)    |       |       |         |       |       |         |
|                                          | Region 1 (Italy) |       |       |         |       |       |         |
|                                          | Nord Ovest       | 0.488 | -     | -       | -     | -     | -       |
|                                          | Sud              | 0.633 | -     | -       | -     | -     | -       |
|                                          | Isole            | 0.992 | -     | -       | -     | -     | -       |

|                                     |       |       |       |       |        |   |
|-------------------------------------|-------|-------|-------|-------|--------|---|
| Nord Est                            | 0.587 | -     | -     | -     | -      | - |
| Centro (ref.)                       |       |       |       |       |        |   |
| Region 2 (Italy)                    |       |       |       |       |        |   |
| Nord Ovest                          | -     | -     | -     | 0.409 | -      | - |
| Sud                                 | -     | -     | -     | 0.629 | -      | - |
| Nord Est                            | -     | -     | -     | 0.420 | -      | - |
| Isole and Centro (ref.)             |       |       |       |       |        |   |
| Region 3 (Turkey)                   |       |       |       |       |        |   |
| West                                | -     | 1.462 | -     | -     | 2.319* | - |
| Central                             | -     | 1.301 | -     | -     | 1.267  | - |
| North and East                      | -     | 0.705 | -     | -     | 1.005  | - |
| South (ref.)                        |       |       |       |       |        |   |
| Region 4<br>(Switzerland)           |       |       |       |       |        |   |
| Region Lemanique                    | -     | -     | 0.225 | -     | -      | - |
| Espace Mittelland                   | -     | -     | 0.777 | -     | -      | - |
| Nordwestschweiz                     | -     | -     | 2.140 | -     | -      | - |
| Zürich                              | -     | -     | 0.906 | -     | -      | - |
| Ostschweiz                          | -     | -     | 0.674 | -     | -      | - |
| Zentralschweiz and<br>Ticino (ref.) |       |       |       |       |        |   |

Region 5

(Switzerland)

|                  |   |   |   |   |   |       |
|------------------|---|---|---|---|---|-------|
| Region Lemanique | - | - | - | - | - | 3.060 |
|------------------|---|---|---|---|---|-------|

|                   |   |   |   |   |   |       |
|-------------------|---|---|---|---|---|-------|
| Espace Mittelland | - | - | - | - | - | 0.411 |
|-------------------|---|---|---|---|---|-------|

|        |   |   |   |   |   |       |
|--------|---|---|---|---|---|-------|
| Zürich | - | - | - | - | - | 0.631 |
|--------|---|---|---|---|---|-------|

|            |   |   |   |   |   |       |
|------------|---|---|---|---|---|-------|
| Ostschweiz | - | - | - | - | - | 0.323 |
|------------|---|---|---|---|---|-------|

Zentralschweiz,

Ticino and

Nordwestschweiz

(ref.)

---

Willingness to fight

for country

|    |       |       |       |       |       |       |
|----|-------|-------|-------|-------|-------|-------|
| No | 0.823 | 1.353 | 1.529 | 0.658 | 1.850 | 1.173 |
|----|-------|-------|-------|-------|-------|-------|

Yes (ref.)

---

How close do you feel

to country

|       |       |       |   |        |   |   |
|-------|-------|-------|---|--------|---|---|
| Close | 0.845 | 1.007 | - | 0.287* | - | - |
|-------|-------|-------|---|--------|---|---|

Not close (ref.)

---

Total length of

interview 1

|              |       |   |       |   |   |       |
|--------------|-------|---|-------|---|---|-------|
| 0-70 minutes | 1.141 | - | 1.360 | - | - | 0.742 |
|--------------|-------|---|-------|---|---|-------|

---

71 and more (ref.)

---

Total length of  
interview 2

0-50 minutes                    -                    -                    -                    2.326                    -                    -

51 and more (ref.)

---

Marital Status

Married or Married at  
least once                    1.442                    1.913\*\*                    0.726                    1.179                    1.363                    0.654

Single (ref.)

---

State of health  
(subjective)

Good Health                    0.937                    1.621                    0.705                    0.559                    1.706                    0.531

Fair or Poor Health  
(ref.)

---

Respondent interested  
during the interview

Very interested                    2.232\*\*                    1.364                    1.241                    1.177                    0.703                    1.208

Not very interested or  
somewhat interested  
(ref.)

---

Education 1  
(Respondent)

|             |   |       |   |   |       |   |
|-------------|---|-------|---|---|-------|---|
| Low         | - | 1.839 | - | - | 0.513 | - |
| Middle      | - | 1.262 | - | - | 0.783 | - |
| High (ref.) |   |       |   |   |       |   |

Education 2  
(Respondent)

|               |       |   |       |       |   |       |
|---------------|-------|---|-------|-------|---|-------|
| Low or middle | 0.850 | - | 0.576 | 1.178 | - | 1.143 |
| High (ref.)   |       |   |       |       |   |       |

Respondent  
immigrant / born in  
country

|                                             |   |   |       |   |   |       |
|---------------------------------------------|---|---|-------|---|---|-------|
| I am born in this<br>country                | - | - | 0.820 | - | - | 1.015 |
| I am an immigrant to<br>this country (ref.) |   |   |       |   |   |       |

Language of interview

|                          |   |   |       |   |   |       |
|--------------------------|---|---|-------|---|---|-------|
| German                   | - | - | 0.598 | - | - | 2.362 |
| French or Italian (ref.) |   |   |       |   |   |       |

Mode

|      |   |   |       |   |   |       |
|------|---|---|-------|---|---|-------|
| CAPI | - | - | 0.440 | - | - | 1.161 |
|------|---|---|-------|---|---|-------|

CAWI and Self-  
administered: Paper  
(ref.)

---

**\*\*p < 0.01**

**\*p < 0.05**

## CHAPTER 6. CONCLUSION AND DISCUSSION

The concept of TSE has been a topic of discussion in the field of survey methodology for a considerable time (Biemer, 2010; Biemer & Lyberg, 2003; Groves & Lyberg, 2010; Biemer, 2011; Weisberg, 2005; Groves et al., 2009; Biemer, 2016; Groves, 2005; Smith, 2011). TSE refers to the sum of all errors that occur during the survey process. These errors can be observed in the survey design, data collection phase, data processing and finally in the data analysis/reporting stage (Biemer, 2010).

The item nonresponse focuses on response categories such as "don't know", "refusal", and "not ascertained". Item nonresponse is discussed in the literature based on topics such as sensitive questions, questions requiring cognitive effort, respondent characteristics, language proficiency, survey mode, interviewer effects, survey design, and culture. Item nonresponse error and measurement error, which are components of total survey error, are closely related to each other, and these two error components can play a clarifying role in understanding the impact of respondents' ages and socio-demographic characteristics on data quality.

As the global population ages, the representation of old people in surveys is becoming increasingly significant. In this context, this thesis focuses on three primary research questions. Firstly, it investigates whether item nonresponse is observed according to age groups; secondly, it examines whether item nonresponse is observed based on socio-demographic characteristics; and finally, it explores what methodological strategies can be suggested to improve data quality for older respondents.

Accordingly, both binary logistic regression and multinomial logistic regression analyses were conducted in this thesis, separately for each country and age group (respondents aged 50 and older and those under 50). The results of the binary logistic regression analyses indicate that certain socio-demographic characteristics, country affiliation, and survey design/paradata variables are significantly associated with item nonresponse in religiosity, confidence, and retrospective questions across both age groups. Similarly, the multinomial logistic regression results show that some socio-demographic characteristics, country affiliation, and survey design/paradata

variables are significantly associated with item nonresponse levels in the religiosity and confidence question groups among both older and younger respondents.

### **6.1. Socio-Demographic Factors**

Gender emerges as a significant factor influencing item nonresponse, particularly in confidence questions, where women are consistently more likely than men to leave questions unanswered. People aged 50 and over have a higher possibility of leaving at least one confidence question unanswered than those aged 50 and under. Among people aged 50 and over, women in Italy, Turkey, and Zimbabwe are approximately 1.8, 2.7, and 2.8 times more likely than men to provide at least one confidence question unanswered, respectively. In contrast, in Italy and Switzerland, men are approximately 83.7% and 2.1 times more likely, respectively, to provide no item nonresponse in confidence questions compared to showing middle or high levels of nonresponse. Among respondents under the age of 50, the same pattern is observed. In Turkey and Switzerland, women are approximately 55% and 2.4 times more likely, respectively, than men to provide at least one of these questions unanswered. Men in Turkey are about 76.8% more likely to provide complete responses to confidence questions than women, while in Switzerland, this likelihood is approximately three times higher. This suggests that women are more prone to give middle or high levels of nonresponse than men. Confidence questions can be linked with more public knowledge than other questions. In this situation, it is suspected that this may result from the exclusion of women from the public sphere and the exclusion of public sphere knowledge. However, this assumption needs further evidence-based work. Simultaneously, in Turkey, men are 62.1% more likely to answer religiosity questions among those under 50. Therefore, it is suspected that the sensitivity of religiosity questions may differ based on gender and age.

Regional differences are among the key independent variables influencing item nonresponse levels. In Italy, among individuals aged 50 and over, regional differences are most estimated in retrospective questions, while for individuals under 50, these differences are more estimated in confidence and religiosity questions. Among individuals aged 50 and over, those living in the Isole and Nord Est regions in Italy are

3.2 and 3 times more likely to provide a retrospective question missing than those living in the Nord Ovest region. Among those under 50 in Italy, those living in the Sud region are less likely to provide confidence questions missing than those living in the Nord Ovest region. Those living in the Nord Est region are more likely to give middle or high item nonresponse to religiosity questions than those living in the Centro region, while those living in the Nord Ovest and Nord Est regions are more likely to give middle or high item nonresponse to confidence questions than those living in the Isole and Centro regions.

In Turkey, region affects the response behavior of both individuals under 50 and those over 50. Respondents residing in the South region, in particular, exhibit higher item nonresponse rates in religiosity, confidence, and retrospective questions. In contrast, the West region stands out with consistently lower item nonresponse rates, in accordance with the unit-level nonresponse rates. Notably, statistically significant differences in retrospective questions are observed only among respondents under the age of 50. Among individuals aged 50 and over in Turkey, those living in the West, Central, and North and East regions are 92.5%, 90.4%, and 83.8% less likely to provide at least one religiosity question unanswered compared to those living in the South region, while those living in the West region are 47.6% less likely to give at least one confidence question unanswered compared to the same reference region. Similar pattern is observed for those under 50. Those living in the West, Central, North, and East regions have an 86.4%, 82.1%, 59.8%, and 83.9% lower possibility of missing at least one religiosity question compared to those living in the South region, while the likelihood for confidence questions is 43.1% in the West region. For retrospective questions, respondents under 50 in the West and Central regions are approximately 80.3% less likely to leave the question unanswered compared to those in the South. Respondents living in the West, Central, and North and East regions are approximately 9.8, 6.7, and 2.7 times more likely, respectively, to provide no item nonresponse to religiosity questions compared to providing middle or high levels of item nonresponse, relative to those living in the South region. Similarly, individuals residing in the West region are about 2.6 times more likely to give no item nonresponse to confidence questions, compared to middle or high levels of nonresponse, than those living in the South. In conclusion, individuals living in the South region are more likely to leave

religiosity, confidence, and retrospective questions unanswered compared to those in other regions, with religiosity questions showing the highest likelihood of item nonresponse referring to the sensitivity.

In Switzerland, individuals residing in the Ostschweiz region exhibit a higher tendency toward item nonresponse among both those under and over the age of 50; however, this tendency varies depending on the type of question. Confidence questions are more common among older people, while religiosity questions are more common among younger people. Among people over 50, residents of the Ostschweiz region are approximately 2.4 times more likely to provide at least one confidence question unanswered than those living in the Espace Mittelland region. Among those under the age of 50, respondents residing in the Ostschweiz and Ticino regions are approximately 2.2 times more likely to leave at least one religiosity question unanswered compared to the same reference region. In other words, confidence questions are more frequent among those over 50, while nonresponse to religiosity questions is more frequent among those under 50.

In Zimbabwe, among people aged 50 and over, those living in Mashonaland and Manicaland were approximately 74.8% less likely to give at least one missing for confidence questions compared to those living in Harare and Bulawayo, while among people under 50, those living in Matebeleland were approximately 2.5 times more likely to provide at least one missing for confidence questions compared to those living in the same reference region. Therefore, the impact of regional differences varies with age, with some regions suggesting a higher risk of item nonresponse in certain age groups.

Overall, the region variable stands out as a significant factor in the models addressing item nonresponse across all three question groups. The findings indicate that regional differences significantly influence item nonresponse behaviors. For instance, regardless of age group, individuals residing in the southern part of Turkey are more likely to leave both religiosity and confidence questions unanswered compared to those living in other regions. This phenomenon may stem from culturally distinct norms, socio-economic conditions, or various other reasons that differ by region. Similarly, individuals living in Ostschweiz regions of Switzerland exhibit a higher likelihood of providing these two question groups missing compared to other

areas. Confidence questions tend to elicit higher item nonresponse among respondents aged 50 and above, while religiosity questions show higher nonresponse rates among those under 50. The Ostschweiz region includes many sparsely populated settlements, which are suspected to be more conservative. This situation may indicate a lack of trust in surveys both in highly populated developed cities and in less developed, less populated, more conservative areas. Thus, further research is needed to measure trust levels of residents particularly for surveys in such regions. Accordingly, it is recommended that various measures be taken in survey design to mitigate regional differences while considering costs (e.g., the varying amounts of incentives, time for data collection, ensuring the trust toward the survey or underlining the importance of the survey).

The marital status variable is statistically significant for both individuals under and over the age of 50. Among those aged 50 and above, in Italy, individuals who are ever married are approximately 33.8% less likely to give at least one religiosity question missing compared to those who are currently married. In Switzerland, ever married individuals are 1.9 times more likely to give at least one confidence question missing than currently married individuals. Among those under the age of 50, single individuals in Turkey are 1.3 times more likely to leave at least one religiosity question unanswered than currently married individuals. In Zimbabwe, ever-married (not currently married) individuals are 2.7 times more likely to give at least one confidence question missing than currently married individuals.

Research findings indicate that worsening self-reported health increases the likelihood of item-nonresponse to religiosity, confidence, and retrospective questions. This varies by age group and country. Among individuals aged 50 and above, item nonresponse is more likely to occur in confidence questions in Turkey and in religiosity questions in Italy. Among those under the age of 50, item nonresponse is more likely to be observed in confidence and retrospective questions in Turkey, and in religiosity and confidence questions in Italy. Specifically, among older respondents in Turkey, those who report their health as fair or poor are approximately 1.7 times more likely to provide at least one confidence question missing compared to those who report good health. In Italy, those self-reporting their health as good are approximately 1.6 times more likely to exhibit low item nonresponse to religiosity questions than

those self-reporting their health as fair or poor. Among people under 50, in Italy, those who self-reported their health as fair or poor were approximately 1.6 and 1.9 times more likely, respectively, to give at least one of the religiosity and confidence questions unanswered compared to those who self-reported their health as good. In Turkey, individuals under 50 who report fair or poor health status are approximately 1.7 times more likely to give at least one confidence question unanswered and about 2.3 times more likely to give the retrospective question unanswered compared to those reporting good health. Consequently, the likelihood of item nonresponse increases as health worsens in these countries. This likelihood is particularly estimated for both confidence and religiosity questions in Turkey and Italy, while only in Turkey, among people under 50, those who self-reported their health as poor were significantly more likely to provide the retrospective question missing.

The research results indicate that low education increases the risk of item nonresponse across all age groups and in the three selected countries except Turkey. However, the extent of this relationship varies by question type, age, and country. Among individuals aged 50 and above in Italy, those with low educational attainment are approximately 2.2 times more likely to leave at least one confidence question unanswered compared to those with a middle level of education. Additionally, respondents with low education are about 2.6 times more likely to show low item nonresponse in religiosity questions, compared to middle or high levels, than those with high level education. In Switzerland, highly educated individuals aged 50 and above are 54.9% less likely to give at least one confidence question missing compared to those with a middle level of education. Among respondents under the age of 50, those in Italy with high education are approximately 61.2% less likely to give at least one confidence question missing compared to those with low or middle education. In Zimbabwe, individuals under 50 with low education are approximately 3.2 times more likely to leave at least one confidence question unanswered compared to those with middle or high levels of education. In Switzerland, among people under 50, those with a higher education level are approximately 59% less likely to give a retrospective question missing than those with a lower or middle educational level. While lower educational attainment is associated with a higher likelihood of item nonresponse

across various question groups, this likelihood is particularly estimated in confidence questions. In Turkey, education was not found as statistically significant.

People with lower levels of education tend to a higher risk of item nonresponse to confidence questions, varying by age and country. For example, people aged 50 and over with low educational attainment in Italy and those under 50 in Zimbabwe have a more tendency to provide missing for confidence questions. It is suspected that this phenomenon may be related to the nature of confidence questions. Since confidence questions can be associated with public sphere knowledge, individuals with higher levels of education may exhibit a greater tendency to give complete answers to these questions.

In Switzerland, immigrants are at higher risk of item nonresponse on confidence and retrospective questions, and this pattern varies across age groups. Among individuals aged 50 and over, immigrants are approximately 1.9 times more likely to give at least one confidence question missing and 4.3 times more likely to provide the retrospective question unanswered compared to native respondents. Among people under 50, immigrants in Switzerland are approximately 2.1 times more likely to give the retrospective question missing compared to native individuals. These findings suggest that older immigrants, in particular, are more likely to exhibit item nonresponse, especially to retrospective questions. This may reflect the compounded disadvantage that may be experienced by older immigrants, where age and migration status jointly contribute to increased tendency not to give complete answers.. Additionally, immigrants may struggle to situate themselves when responding to questions related to the public sphere, that is worth to study especially with qualitative methods. Factors such as the duration of the immigrant's stay in the country or their sense of belonging to the host nation can influence their attitudes towards the questions asked. For instance, when answering a question like 'Trust in the European Union,' an immigrant may be uncertain whether to assess themselves from the perspective of their immigrant status in this country or their citizenship status in their country of origin. Such uncertainties may trigger item nonresponse behavior. Qualitative methods would be useful to understand and reveal such dynamics during the interview. Additionally, questions regarding trust in the press or the education system are also related to the

public sphere, which may lead immigrants to show disinterest in these questions or to lack a definitive stance. Naturally, this situation may differ according to age groups.

## **6.2. Country Affiliation**

Willingness to fight for the country and feelings of closeness to the country influence item nonresponse behavior in different ways depending on both age group and country. Among individuals aged 50 and over, the willingness to fight is associated with higher item nonresponse in Turkey and Switzerland; the opposite relationship is observed in Italy. Among individuals under 50, both the willingness to fight and feelings of closeness to the country have significant effects on item nonresponse, but the direction varies by country. In Italy and Zimbabwe, individuals willing to fight tend to show lower levels of item nonresponse, whereas in Turkey, they exhibit higher item nonresponse. Similarly, individuals who do not feel close to the country are more likely to provide missing answers in Turkey and Zimbabwe, while the reverse is true in Italy.

In Turkey and Switzerland, individuals aged 50 and over who are willing to fight for the country tend to exhibit higher item nonresponse in certain groups of questions. In Turkey, these individuals are approximately three times more likely to give at least one of the religiosity questions missing, while in Switzerland, they are approximately four times more likely to leave the retrospective question unanswered. In Italy, these individuals are approximately 37.3% less likely to provide at least one of the confidence questions missing. Among respondents under age 50, both willingness to fight and feeling close to the country significantly affect item nonresponse to religiosity and confidence questions, while the direction of these effects varies across countries. In Italy, individuals who state willingness to fight for their country are more likely to respond to these questions, whereas those who report feeling close to the country are more likely to provide them unanswered. In Italy, those willing to fight for the country are 34.9% and 46.6% less likely to provide at least one of the religiosity and confidence questions missing compared to those who are unwilling to fight. In contrast, individuals who feel close to the country are 67.3% and 71.3% less likely to provide none or only a low level of nonresponse to confidence

questions than those who do not. In Turkey, willingness to fight is associated with higher item nonresponse to religiosity questions, while feeling close to the country is associated with greater response likelihood to confidence questions. Respondents who are unwilling to fight are approximately 2.7 and 2 times more likely to provide no item nonresponse to religiosity and confidence questions, respectively, compared to those who are willing to fight for their countries. In addition, individuals who do not feel close to the country are 69.2% less likely to give at least one confidence question missing than those who feel close. In Zimbabwe, those willing to fight for the country are more likely to answer confidence questions, while those who do not feel close to the country are 42.9% less likely to give at least one confidence question unanswered than those who are not willing. Those who do not feel close to the country are 2.7 times more likely to leave at least one of the confidence questions unanswered than those who do feel close.

### **6.3. Survey Design or Paradata**

In both age groups, particularly in the cases of Switzerland and Zimbabwe, longer interview durations are associated with increased item nonresponse. However, in Italy, shorter interviews are associated with higher complete answers. In Switzerland, for individuals aged 50 and over, the likelihood of item nonresponse on religiosity and confidence questions increases with longer interview length. For example, interviews lasting 91 minutes or longer are associated with higher item nonresponse (for both religiosity and confidence) than shorter interviews. Individuals who give shorter interviews are more likely to provide complete answers. For example, interviews lasting 0–70 minutes and 71–90 minutes are approximately 4.2 and 3.2 times more likely to answer religiosity questions completely than interviews lasting 91 minutes or longer. Similarly, respondents who completed the survey within 0–70 minutes are approximately 2.5 times more likely to answer all confidence questions, as opposed to middle or high levels of item nonresponse, compared to those with interviews lasting 91 minutes or more.

Among respondents under the age of 50, longer interview durations are associated with an increased likelihood of item nonresponse in Zimbabwe and

Switzerland. Conversely, in Italy, shorter interviews offer a greater likelihood of responding to all confidence questions. Respondents interviewed between 71-90 minutes in Zimbabwe are approximately 3.1 times more likely to provide at least one confidence question missing compared to those interviewed for 0–70 minutes. In Switzerland, interviews lasting 91 minutes or longer are approximately 2.6 times more likely to show item nonresponse in retrospective questions. In Italy, respondents whose interviews lasted 0–50 minutes are approximately 2.5 times more likely to answer all confidence questions, rather than obtaining middle or high levels of item nonresponse, compared to those interviewed for 51 minutes or longer.

Therefore, it can be stated that interviews with long durations tend to result in item nonresponse for some countries. For example, in the case of confidence and religiosity questions, longer survey durations in Zimbabwe and Switzerland increase the likelihood of occurring item nonresponse. According to Krosnick (1991), respondent motivation can be shaped by various factors, including cognitive needs, perceived societal value of the survey, the attitude of the interviewer, the subjective importance of the questions, and the duration of the interview. In this context, an increase in interview length may reduce respondents' and interviewers' interest in the survey. Additionally, the potential decrease in the interviewer's interest may lead to a decreased level of rapport between interviewers and respondents, which could negatively impact survey efficiency.

Among respondents aged 50 and over, the level of interest in the interview significantly affects the likelihood of item nonresponse; as interest decreases, the likelihood of occurring item-nonresponse increases. In Italy, individuals who reported being somewhat interested or not very interested in the interview are approximately 1.8 and 1.6 times more likely, respectively, than those who were very interested to give at least one religiosity question missing. For the retrospective question, the likelihood is approximately 2.3 and 5.9 times higher, respectively. Respondents who were very interested in the interview are approximately 2.4 and 2.6 times more likely to provide no item nonresponse in religiosity and confidence questions, respectively, compared to those who were less interested, relative to the likelihood of occurring moderate or high item nonresponse. Similarly, they are approximately 2 and 3 times more likely to provide low item nonresponse for religiosity and confidence questions, respectively,

rather than middle or high levels of nonresponse. In Switzerland, as interest in the interview increases, the likelihood of item nonresponse, particularly on religiosity and confidence questions, decreases. In Switzerland, individuals who are somewhat interested in the interview are approximately 1.7 and 2.1 times more likely to provide at least one of the religiosity and confidence questions unanswered than those who are very interested. Similarly, individuals who are very interested in the interview are approximately 3 times more likely to give no item nonresponse to confidence questions than those who are not very interested or somewhat interested. In Zimbabwe, the interview interest variable is statistically significant only for confidence questions. Those who are not very interested in the interview are approximately 2.4 times more likely to provide at least one of the confidence questions missing than those who are very interested.

Among people under 50, lower levels of interest in the interview are associated with a higher likelihood of item nonresponse, particularly in Italy and Turkey, for religiosity and confidence questions. In Italy, individuals who are somewhat or not very interested in the interview are approximately 1.6 and 2.4 times more likely to provide at least one of the religiosity questions missing and 2 and 2.8 times more likely to provide at least one of the confidence questions missing than those who are very interested. Similarly, individuals who are very interested in the interview are approximately 2.4 times more likely to provide no item nonresponse to religiosity and confidence questions than those who are not very interested or somewhat interested, and approximately 2.2 times more likely to provide low item nonresponse to religiosity questions compared to showing middle or high nonresponse. In Turkey, individuals who are somewhat interested in the interview are approximately 1.5 times more likely to give at least one of the confidence questions missing than those who are very interested.

In Switzerland, among respondents interviewed via CAPI, the likelihood of item nonresponse to both religiosity and confidence questions is higher among those under the age of 50 compared to those aged 50 and over. Among respondents aged 50 and above in Switzerland, CAPI interviews are associated with significantly higher odds of item nonresponse—approximately 8 times for religiosity and 5 times for confidence questions—compared to CAWI and self-administered paper-based modes.

Additionally, CAPI respondents have approximately 87.2% and 82.5% lower odds, respectively, of providing no item nonresponse to the religiosity and confidence questions compared to those interviewed via CAWI or self-administered paper-based modes, relative to the reference category of middle or high item nonresponse. Among respondents under age 50 in Switzerland, those interviewed via CAPI have approximately 94% and 85.8% lower odds of providing no item nonresponse to the religiosity and confidence questions, respectively. CAPI respondents are approximately 9.2 and 7.5 times more likely to give at least one of the religiosity and confidence questions missing.

These results suggest that item nonresponse is lower in self-completed surveys compared to interviewer-administered modes in Switzerland. To reduce nonresponse, Switzerland employs matrix questionnaire designs and mini-panel strategies within the CAWI method. Among people under the age of 50, interviews conducted in North Ndebele or English in Zimbabwe are 2 times more likely to result in confidence questions left unanswered compared to those conducted in Shona. While item nonresponse is higher in interviews conducted in North Ndebele or English, the academic literature suggests that language mismatch and limited language proficiency contribute significantly to increased item nonresponse (Jacobsen, 2022; Kleiner et al., 2015). This suggests that if participants had not been given the option to choose the interview language, there might have been more unanswered questions, as expected.

#### **6.4. Recommendations for Survey Methodology Strategies about Older**

##### **Respondents**

Surveys specifically designed for certain subgroups within society are available. Since the designs of these studies are tailored for selected groups, they provide more rigorous research for academia and policymakers, covering every stages from the sampling design to data collection and analysis. Naturally, the focus of these surveys on specific topics (such as health, violence, etc.) and groups (such as youth, children, the elderly, women, etc.) necessitates this rigor. However, large-scale surveys conducted for a broad audience can also produce specialized questionnaire modules for specific groups. In this context, modules aimed at immigrants can be incorporated

into the research design in countries with a high immigrant population, such as Switzerland. In this regard, the World Values Survey and the European Values Study could facilitate the development of a separate module for immigrants in countries with large immigrant populations (this proportion should be documented in the surveys). However, this could increase the budget and time for the survey.

Similarly, a supportive separate module can be added for elderly respondents. The length of question and answer process can be monitored to minimize the risk of cognitive burden especially for respondents. The module can be supported by simplified questions, the use of showcards or landmarks to ease interviewing process. However, considering the selected question groups and their content for the World Values Survey and European Values Study, the need for additional modules for older adults in these countries should be investigated and tested through pre-tests. The likelihood of item nonresponse is high among those under 50 and those over 50, at varying levels, across different countries and question groups. Therefore, the possible reasons for this situation should be investigated according to country-contexts

In addition to specifically designed modules for older or immigrant respondents, qualitative interviews can be incorporated into the research design alongside surveys targeting sub-groups in various countries. Insights derived from in depth interviews or focus group discussions can provide an alternative perspective to the quantitative results obtained from surveys. These interviews, aimed at specific age groups or immigrant populations, can further substantiate the findings of the surveys. Moreover, different levels of item nonresponse are estimated across question groups, countries, and age groups. The core concepts measured by survey questions may be interpreted differently by respondents from different age groups, or certain subtopics within these questions/concepts may align with some respondents' interests while others may not. Qualitative interviews can help to understand these variations and support the interpretation of survey results. In fact, understanding such divergences may also be beneficial during the questionnaire design phase. Even though the questions are standardized for different groups, in social research involving abstract concepts such as "value," questions may be interpreted differently depending on the country and socio-demographic context. In this case, the use of experimental studies can allow countries to assess how concepts embedded in survey questions are

understood by different sub-groups of people, and such assessments can also be evaluated by age groups. In short, in-depth interviews and experimental designs prior to main survey are recommended both in the pretesting process of survey questions and as an additional data collection method.

Furthermore, conversational interviews may also be tested although this is new way for standardization. Although this technique may threaten standardization in survey studies, it can be used effectively across some questions or question groups. According to the study by West et al. (2018), conversational interviewing enhances response accuracy, although it may lead to an increase in interviewer effects for certain questions. The research suggests that the conversational interviewing technique can be employed for complex and technical questions. Accordingly, this technique can also be applied to specific groups or particular questions. It can be utilized for elderly participants residing in institutions or those who refuse to participate in surveys while living in private households. However, it should be noted that this new strategy should be tested for target population prior to its use in the main data collection. Furthermore, the comparison with other age groups can be provided if the same technique is employed for all age groups. The study by Kutschar et al. (2019) indicates that cognitive function significantly affects item nonresponse in standardized surveys. Therefore, if conversational technique is to be implemented, interviewers should receive special training sessions specific to this method. Given that the effects of conversational or standardized interviewing techniques may vary by culture or country, it is recommended that comprehensive research be conducted for future studies. In addition to all these recommendations, it should be added that rather than offering general methodological recommendations covering all countries, age groups and question groups, these methods need to be tested in different contexts and survey settings.

## **6.5. Contribution to Literature and Limitations**

This thesis provides a significant contribution to the literature by thoroughly examining the factors influencing the behavior of nonresponse to questions across three groups: religiosity, confidence, and retrospective questions. Utilizing datasets

from Italy, Turkey, Switzerland, and Zimbabwe, comparative analyses have been conducted. In particular, the effects of variables such as gender, educational level, and regional differences on item nonresponse levels have been analyzed comparatively using data obtained from these countries, and the variations in results have been presented in light of the literature. Furthermore, the thesis discusses how the occurrence of item nonresponse varies by age groups (under age 50 and aged 50 and over) across countries focusing on elderly respondents and what factors may influence this situation. Finally, it emphasizes that factors such as country affiliation, data collection method, survey language, interviewers' interest in the survey, and survey duration can affect item nonresponse depending on the question groups and the countries.

The thesis has also certain limitations. Separate binary logistic regression models are conducted for individuals under the age of 50 and those aged 50 and above. If the number of cases per category is below 10, categories are merged. If merging is not feasible, the variable is excluded from the analysis to avoid biased interpretations. In the sample of Turkey, binary logistic regression analyses for the retrospective question could not be performed for respondents aged 50 and above due to a small number of cases. Similarly, in the sample of Zimbabwe, analyses related to the religiosity questions could not be conducted for either age group due to limited number of cases. Statistical analyses were conducted only for variables which are obtained from sufficient number of cases. Multinomial logistic regression analyses are carried out only for the religiosity and confidence question groups, as the retrospective question is binary and therefore not suitable for the dependent variable needed for multinomial logistic regression. In Zimbabwe, multinomial logistic regression analyses could not be performed for either age group due to small number of cases. In Turkey, while these analyses are not feasible for respondents aged 50 and above, they are conducted for those under 50.

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## APPENDIX A – CORRELATION MATRICES OF BINARY LOGISTIC REGRESSION MODELS

Correlation Matrix for the Independent Variables of Religiosity Item Nonresponse Model among Respondents Aged 50 and Above in Italy

|                                              | Constant | Female | Sud    | Isole  | Nord Est | Centro | Willingness to<br>fight<br>for country<br>(Yes) | Not close<br>feel to<br>country | 71-90<br>mminutes | 91 and<br>more | Ever married<br>(Not married<br>now) | Single/Never<br>married | Fair<br>health | Poor<br>health | Somewhat<br>interested in<br>interview | Not very<br>interested in<br>interview | Low level<br>education | High level<br>education |
|----------------------------------------------|----------|--------|--------|--------|----------|--------|-------------------------------------------------|---------------------------------|-------------------|----------------|--------------------------------------|-------------------------|----------------|----------------|----------------------------------------|----------------------------------------|------------------------|-------------------------|
| Constant                                     | 1.000    | -0.274 | -0.364 | -0.308 | -0.461   | -0.415 | -0.454                                          | -0.129                          | -0.140            | -0.048         | -0.107                               | -0.134                  | -0.182         | -0.068         | -0.426                                 | -0.299                                 | -0.065                 | -0.166                  |
| Female                                       | -0.274   | 1.000  | 0.037  | 0.051  | 0.027    | 0.035  | 0.135                                           | -0.010                          | -0.015            | -0.034         | -0.158                               | 0.040                   | -0.107         | -0.053         | -0.063                                 | 0.013                                  | -0.080                 | -0.036                  |
| Sud                                          | -0.364   | 0.037  | 1.000  | 0.359  | 0.428    | 0.446  | 0.018                                           | -0.145                          | -0.021            | -0.089         | 0.034                                | 0.057                   | -0.064         | -0.076         | -0.080                                 | -0.040                                 | -0.014                 | -0.029                  |
| Isole                                        | -0.308   | 0.051  | 0.359  | 1.000  | 0.342    | 0.343  | -0.048                                          | -0.144                          | -0.019            | -0.008         | 0.000                                | 0.012                   | 0.025          | -0.041         | -0.006                                 | 0.030                                  | -0.068                 | -0.005                  |
| Nord Est                                     | -0.461   | 0.027  | 0.428  | 0.342  | 1.000    | 0.444  | -0.017                                          | 0.003                           | 0.002             | -0.066         | -0.006                               | 0.021                   | -0.093         | -0.049         | 0.103                                  | 0.157                                  | 0.002                  | -0.024                  |
| Centro                                       | -0.415   | 0.035  | 0.446  | 0.343  | 0.444    | 1.000  | 0.027                                           | -0.030                          | -0.020            | -0.008         | 0.044                                | 0.065                   | -0.085         | -0.082         | -0.072                                 | 0.053                                  | 0.036                  | 0.003                   |
| Willingness to<br>fight<br>for country (Yes) | -0.454   | 0.135  | 0.018  | -0.048 | -0.017   | 0.027  | 1.000                                           | 0.134                           | 0.013             | -0.002         | 0.065                                | 0.040                   | -0.049         | 0.068          | 0.127                                  | 0.110                                  | 0.021                  | -0.020                  |
| Not close feel to<br>country                 | -0.129   | -0.010 | -0.145 | -0.144 | 0.003    | -0.030 | 0.134                                           | 1.000                           | 0.043             | 0.046          | -0.016                               | 0.023                   | -0.016         | -0.063         | -0.026                                 | -0.036                                 | 0.007                  | 0.023                   |
| 71-90 mminutes                               | -0.140   | -0.015 | -0.021 | -0.019 | 0.002    | -0.020 | 0.013                                           | 0.043                           | 1.000             | 0.063          | 0.011                                | -0.031                  | -0.049         | 0.038          | 0.120                                  | 0.080                                  | -0.009                 | -0.024                  |
| 91 and more                                  | -0.048   | -0.034 | -0.089 | -0.008 | -0.066   | -0.008 | -0.002                                          | 0.046                           | 0.063             | 1.000          | -0.009                               | 0.019                   | 0.028          | 0.096          | 0.037                                  | -0.146                                 | -0.015                 | 0.025                   |
| Ever married (Not<br>married now)            | -0.107   | -0.158 | 0.034  | 0.000  | -0.006   | 0.044  | 0.065                                           | -0.016                          | 0.011             | -0.009         | 1.000                                | 0.125                   | -0.043         | -0.165         | -0.002                                 | 0.010                                  | -0.172                 | 0.018                   |
| Single/Never<br>married                      | -0.134   | 0.040  | 0.057  | 0.012  | 0.021    | 0.065  | 0.040                                           | 0.023                           | -0.031            | 0.019          | 0.125                                | 1.000                   | -0.049         | -0.035         | -0.052                                 | -0.041                                 | 0.043                  | -0.049                  |
| Fair health                                  | -0.182   | -0.107 | -0.064 | 0.025  | -0.093   | -0.085 | -0.049                                          | -0.016                          | -0.049            | 0.028          | -0.043                               | -0.049                  | 1.000          | 0.295          | -0.035                                 | -0.065                                 | -0.155                 | 0.038                   |
| Poor health                                  | -0.068   | -0.053 | -0.076 | -0.041 | -0.049   | -0.082 | 0.068                                           | -0.063                          | 0.038             | 0.096          | -0.165                               | -0.035                  | 0.295          | 1.000          | -0.008                                 | -0.128                                 | -0.147                 | -0.018                  |
| Somewhat<br>interested in<br>interview       | -0.426   | -0.063 | -0.080 | -0.006 | 0.103    | -0.072 | 0.127                                           | -0.026                          | 0.120             | 0.037          | -0.002                               | -0.052                  | -0.035         | -0.008         | 1.000                                  | 0.406                                  | -0.057                 | 0.118                   |
| Not very<br>interested in<br>interview       | -0.299   | 0.013  | -0.040 | 0.030  | 0.157    | 0.053  | 0.110                                           | -0.036                          | 0.080             | -0.146         | 0.010                                | -0.041                  | -0.065         | -0.128         | 0.406                                  | 1.000                                  | -0.169                 | 0.080                   |
| Low level<br>education                       | -0.065   | -0.080 | -0.014 | -0.068 | 0.002    | 0.036  | 0.021                                           | 0.007                           | -0.009            | -0.015         | -0.172                               | 0.043                   | -0.155         | -0.147         | -0.057                                 | -0.169                                 | 1.000                  | 0.132                   |
| High level<br>education                      | -0.166   | -0.036 | -0.029 | -0.005 | -0.024   | 0.003  | -0.020                                          | 0.023                           | -0.024            | 0.025          | 0.018                                | -0.049                  | 0.038          | -0.018         | 0.118                                  | 0.080                                  | 0.132                  | 1.000                   |

**Correlation Matrix for the Independent Variables of Confidence Item Nonresponse Model among Respondents Aged 50 and Above in Italy**

|                                              | Constant | Female | Sud    | Isole  | Nord Est | Centro | Willingness<br>to fight<br>for country<br>(Yes) | Not close<br>feel to<br>country | 71-90<br>minutes | 91 and<br>more | Ever married<br>(Not married<br>now) | Single/Never<br>married | Fair<br>health | Poor<br>health | Somewhat<br>interested in<br>interview | Not very<br>interested in<br>interview | Low level<br>education | High level<br>education |
|----------------------------------------------|----------|--------|--------|--------|----------|--------|-------------------------------------------------|---------------------------------|------------------|----------------|--------------------------------------|-------------------------|----------------|----------------|----------------------------------------|----------------------------------------|------------------------|-------------------------|
| stant                                        | 1.000    | -0.334 | -0.351 | -0.358 | -0.471   | -0.415 | -0.382                                          | -0.091                          | -0.154           | -0.041         | -0.083                               | -0.105                  | -0.174         | -0.063         | -0.435                                 | -0.358                                 | -0.093                 | -0.157                  |
| male                                         | -0.334   | 1.000  | 0.043  | 0.064  | 0.034    | 0.025  | 0.121                                           | -0.013                          | -0.022           | -0.013         | -0.168                               | 0.014                   | -0.124         | -0.070         | -0.048                                 | 0.040                                  | -0.050                 | -0.032                  |
| ud                                           | -0.351   | 0.043  | 1.000  | 0.381  | 0.425    | 0.426  | 0.036                                           | -0.147                          | -0.035           | -0.154         | 0.056                                | 0.049                   | -0.052         | -0.088         | -0.068                                 | -0.042                                 | -0.017                 | -0.011                  |
| ole                                          | -0.358   | 0.064  | 0.381  | 1.000  | 0.388    | 0.374  | -0.053                                          | -0.133                          | -0.023           | -0.023         | 0.005                                | -0.004                  | 0.037          | -0.058         | 0.013                                  | 0.051                                  | -0.051                 | -0.001                  |
| d Est                                        | -0.471   | 0.034  | 0.425  | 0.388  | 1.000    | 0.452  | -0.028                                          | -0.003                          | 0.005            | -0.100         | 0.006                                | 0.014                   | -0.082         | -0.052         | 0.098                                  | 0.184                                  | 0.012                  | -0.036                  |
| ntro                                         | -0.415   | 0.025  | 0.426  | 0.374  | 0.452    | 1.000  | 0.031                                           | -0.019                          | -0.020           | -0.013         | 0.060                                | 0.048                   | -0.073         | -0.102         | -0.051                                 | 0.069                                  | 0.036                  | 0.011                   |
| Willingness to<br>fight<br>for country (Yes) | -0.382   | 0.121  | 0.036  | -0.053 | -0.028   | 0.031  | 1.000                                           | 0.100                           | 0.004            | 0.000          | 0.066                                | 0.065                   | -0.071         | 0.076          | 0.127                                  | 0.125                                  | -0.012                 | -0.025                  |
| Not close feel to<br>country                 | -0.091   | -0.013 | -0.147 | -0.133 | -0.003   | -0.019 | 0.100                                           | 1.000                           | 0.040            | 0.061          | -0.017                               | 0.014                   | -0.016         | -0.059         | -0.042                                 | -0.042                                 | -0.010                 | 0.026                   |
| nminutes                                     | -0.154   | -0.022 | -0.035 | -0.023 | 0.005    | -0.020 | 0.004                                           | 0.040                           | 1.000            | 0.079          | 0.009                                | -0.031                  | -0.031         | 0.055          | 0.136                                  | 0.099                                  | -0.006                 | -0.020                  |
| d more                                       | -0.041   | -0.013 | -0.154 | -0.023 | -0.100   | -0.013 | 0.000                                           | 0.061                           | 0.079            | 1.000          | -0.007                               | 0.013                   | 0.040          | 0.124          | 0.023                                  | -0.159                                 | -0.017                 | 0.023                   |
| Ever married<br>(Not married<br>now)         | -0.083   | -0.168 | 0.056  | 0.005  | 0.006    | 0.060  | 0.066                                           | -0.017                          | 0.009            | -0.007         | 1.000                                | 0.127                   | -0.048         | -0.181         | -0.012                                 | -0.002                                 | -0.186                 | 0.016                   |
| Single/Never<br>married                      | -0.105   | 0.014  | 0.049  | -0.004 | 0.014    | 0.048  | 0.065                                           | 0.014                           | -0.031           | 0.013          | 0.127                                | 1.000                   | -0.056         | -0.031         | -0.034                                 | -0.053                                 | 0.038                  | -0.060                  |
| health                                       | -0.174   | -0.124 | -0.052 | 0.037  | -0.082   | -0.073 | -0.071                                          | -0.016                          | -0.031           | 0.040          | -0.048                               | -0.056                  | 1.000          | 0.344          | -0.041                                 | -0.076                                 | -0.171                 | 0.045                   |
| health                                       | -0.063   | -0.070 | -0.088 | -0.058 | -0.052   | -0.102 | 0.076                                           | -0.059                          | 0.055            | 0.124          | -0.181                               | -0.031                  | 0.344          | 1.000          | -0.005                                 | -0.134                                 | -0.167                 | -0.009                  |
| Somewhat<br>interested in<br>interview       | -0.435   | -0.048 | -0.068 | 0.013  | 0.098    | -0.051 | 0.127                                           | -0.042                          | 0.136            | 0.023          | -0.012                               | -0.034                  | -0.041         | -0.005         | 1.000                                  | 0.484                                  | -0.071                 | 0.083                   |
| Not very<br>interested in<br>interview       | -0.358   | 0.040  | -0.042 | 0.051  | 0.184    | 0.069  | 0.125                                           | -0.042                          | 0.099            | -0.159         | -0.002                               | -0.053                  | -0.076         | -0.134         | 0.484                                  | 1.000                                  | -0.170                 | 0.062                   |
| Low level<br>education                       | -0.093   | -0.050 | -0.017 | -0.051 | 0.012    | 0.036  | -0.012                                          | -0.010                          | -0.006           | -0.017         | -0.186                               | 0.038                   | -0.171         | -0.167         | -0.071                                 | -0.170                                 | 1.000                  | 0.156                   |
| High level<br>education                      | -0.157   | -0.032 | -0.011 | -0.001 | -0.036   | 0.011  | -0.025                                          | 0.026                           | -0.020           | 0.023          | 0.016                                | -0.060                  | 0.045          | -0.009         | 0.083                                  | 0.062                                  | 0.156                  | 1.000                   |

**Correlation Matrix for the Independent Variables of Retrospective Item Nonresponse Model among Respondents Aged 50 and Above in Italy**

|                                        | Constant | Female | Sud    | Isole  | Nord Est | Centro | Willingness to fight for country (Yes) | Not close feel to country | 71 minutes and more | Single | Fair or poor health | Somewhat interested in interview | Not very interested in interview | Middle or upper level education |
|----------------------------------------|----------|--------|--------|--------|----------|--------|----------------------------------------|---------------------------|---------------------|--------|---------------------|----------------------------------|----------------------------------|---------------------------------|
| Constant                               | 1.000    | -0.262 | -0.476 | -0.486 | -0.574   | -0.436 | -0.452                                 | -0.126                    | -0.149              | -0.073 | -0.193              | -0.459                           | -0.472                           | -0.039                          |
| Female                                 | -0.262   | 1.000  | 0.052  | 0.060  | 0.031    | 0.026  | 0.130                                  | -0.022                    | -0.018              | 0.024  | -0.147              | -0.020                           | 0.041                            | -0.125                          |
| Sud                                    | -0.476   | 0.052  | 1.000  | 0.556  | 0.585    | 0.495  | 0.075                                  | -0.119                    | -0.108              | 0.030  | -0.038              | -0.059                           | -0.023                           | -0.003                          |
| Isole                                  | -0.486   | 0.060  | 0.556  | 1.000  | 0.552    | 0.451  | 0.009                                  | -0.121                    | -0.014              | -0.018 | 0.040               | 0.012                            | 0.089                            | -0.077                          |
| Nord Est                               | -0.574   | 0.031  | 0.585  | 0.552  | 1.000    | 0.507  | 0.023                                  | 0.022                     | -0.070              | 0.002  | -0.079              | 0.081                            | 0.218                            | 0.009                           |
| Centro                                 | -0.436   | 0.026  | 0.495  | 0.451  | 0.507    | 1.000  | 0.062                                  | -0.006                    | -0.030              | 0.029  | -0.051              | -0.049                           | 0.067                            | 0.054                           |
| Willingness to fight for country (Yes) | -0.452   | 0.130  | 0.075  | 0.009  | 0.023    | 0.062  | 1.000                                  | 0.138                     | 0.025               | 0.029  | 0.006               | 0.126                            | 0.194                            | 0.054                           |
| Not close feel to country              | -0.126   | -0.022 | -0.119 | -0.121 | 0.022    | -0.006 | 0.138                                  | 1.000                     | 0.117               | 0.009  | -0.037              | -0.049                           | -0.017                           | -0.025                          |
| 71 minutes and more                    | -0.149   | -0.018 | -0.108 | -0.014 | -0.070   | -0.030 | 0.025                                  | 0.117                     | 1.000               | -0.040 | 0.059               | 0.112                            | 0.002                            | -0.051                          |
| Single                                 | -0.073   | 0.024  | 0.030  | -0.018 | 0.002    | 0.029  | 0.029                                  | 0.009                     | -0.040              | 1.000  | -0.045              | -0.027                           | -0.037                           | 0.102                           |
| Fair or poor health                    | -0.193   | -0.147 | -0.038 | 0.040  | -0.079   | -0.051 | 0.006                                  | -0.037                    | 0.059               | -0.045 | 1.000               | -0.028                           | -0.056                           | -0.209                          |
| Somewhat interested in interview       | -0.459   | -0.020 | -0.059 | 0.012  | 0.081    | -0.049 | 0.126                                  | -0.049                    | 0.112               | -0.027 | -0.028              | 1.000                            | 0.600                            | -0.101                          |
| Not very interested in interview       | -0.472   | 0.041  | -0.023 | 0.089  | 0.218    | 0.067  | 0.194                                  | -0.017                    | 0.002               | -0.037 | -0.056              | 0.600                            | 1.000                            | -0.214                          |
| Middle or upper level education        | -0.039   | -0.125 | -0.003 | -0.077 | 0.009    | 0.054  | 0.054                                  | -0.025                    | -0.051              | 0.102  | -0.209              | -0.101                           | -0.214                           | 1.000                           |

**Correlation Matrix for the Independent Variables of Religiosity Item Nonresponse Model among Respondents Aged 50 Below in Italy**

|                                                 | Constant | Female | Sud    | Isole  | Nord Est | Centro | Willingness<br>to fight<br>for country<br>(Yes) | Not close<br>feel to<br>country | 71 minutes<br>and more | Ever<br>married<br>(Not<br>married<br>now) | Single/Neve<br>r married | Fair or poor<br>health | Somewhat<br>interested in<br>interview | Not very<br>interested in<br>interview | High level<br>education |
|-------------------------------------------------|----------|--------|--------|--------|----------|--------|-------------------------------------------------|---------------------------------|------------------------|--------------------------------------------|--------------------------|------------------------|----------------------------------------|----------------------------------------|-------------------------|
| Constant                                        | 1.000    | -0.373 | -0.468 | -0.426 | -0.466   | -0.470 | -0.434                                          | -0.244                          | -0.134                 | -0.122                                     | -0.392                   | -0.101                 | -0.362                                 | -0.248                                 | -0.172                  |
| Female                                          | -0.373   | 1.000  | -0.006 | -0.015 | -0.010   | 0.027  | 0.140                                           | 0.013                           | 0.012                  | -0.020                                     | 0.139                    | 0.024                  | -0.004                                 | 0.055                                  | -0.068                  |
| Sud                                             | -0.468   | -0.006 | 1.000  | 0.428  | 0.489    | 0.502  | 0.031                                           | 0.032                           | 0.063                  | 0.074                                      | 0.062                    | -0.065                 | -0.063                                 | -0.107                                 | -0.005                  |
| Isole                                           | -0.426   | -0.015 | 0.428  | 1.000  | 0.395    | 0.409  | 0.115                                           | 0.045                           | 0.024                  | 0.040                                      | 0.044                    | -0.026                 | -0.039                                 | 0.052                                  | 0.070                   |
| Nord Est                                        | -0.466   | -0.010 | 0.489  | 0.395  | 1.000    | 0.462  | -0.020                                          | 0.065                           | 0.052                  | 0.047                                      | 0.017                    | -0.091                 | 0.063                                  | 0.112                                  | 0.011                   |
| Centro                                          | -0.470   | 0.027  | 0.502  | 0.409  | 0.462    | 1.000  | 0.089                                           | 0.047                           | 0.065                  | 0.028                                      | 0.045                    | -0.037                 | -0.075                                 | 0.048                                  | -0.042                  |
| Willingness<br>to fight<br>for country<br>(Yes) | -0.434   | 0.140  | 0.031  | 0.115  | -0.020   | 0.089  | 1.000                                           | 0.165                           | 0.033                  | 0.042                                      | 0.080                    | -0.052                 | 0.078                                  | 0.081                                  | 0.045                   |
| Not close<br>feel to<br>country                 | -0.244   | 0.013  | 0.032  | 0.045  | 0.065    | 0.047  | 0.165                                           | 1.000                           | -0.020                 | 0.040                                      | -0.081                   | -0.134                 | 0.037                                  | 0.006                                  | 0.082                   |
| 71 minutes<br>and more                          | -0.134   | 0.012  | 0.063  | 0.024  | 0.052    | 0.065  | 0.033                                           | -0.020                          | 1.000                  | -0.095                                     | 0.011                    | -0.090                 | 0.024                                  | -0.026                                 | 0.043                   |
| Ever<br>married                                 | -0.122   | -0.020 | 0.074  | 0.040  | 0.047    | 0.028  | 0.042                                           | 0.040                           | -0.095                 | 1.000                                      | 0.155                    | -0.062                 | -0.024                                 | -0.012                                 | 0.005                   |
| Single/Neve<br>r married                        | -0.392   | 0.139  | 0.062  | 0.044  | 0.017    | 0.045  | 0.080                                           | -0.081                          | 0.011                  | 0.155                                      | 1.000                    | 0.062                  | 0.018                                  | -0.048                                 | -0.025                  |
| Fair or poor<br>health                          | -0.101   | 0.024  | -0.065 | -0.026 | -0.091   | -0.037 | -0.052                                          | -0.134                          | -0.090                 | -0.062                                     | 0.062                    | 1.000                  | 0.087                                  | 0.061                                  | -0.001                  |
| Somewhat<br>interested in<br>interview          | -0.362   | -0.004 | -0.063 | -0.039 | 0.063    | -0.075 | 0.078                                           | 0.037                           | 0.024                  | -0.024                                     | 0.018                    | 0.087                  | 1.000                                  | 0.325                                  | 0.078                   |
| Not very<br>interested in<br>interview          | -0.248   | 0.055  | -0.107 | 0.052  | 0.112    | 0.048  | 0.081                                           | 0.006                           | -0.026                 | -0.012                                     | -0.048                   | 0.061                  | 0.325                                  | 1.000                                  | 0.004                   |
| High level<br>education                         | -0.172   | -0.068 | -0.005 | 0.070  | 0.011    | -0.042 | 0.045                                           | 0.082                           | 0.043                  | 0.005                                      | -0.025                   | -0.001                 | 0.078                                  | 0.004                                  | 1.000                   |

**Correlation Matrix for the Independent Variables of Confidence Item Nonresponse Model among Respondents Aged 50 Below in Italy**

|                                                 | Constant | Female | Sud    | Isole  | Nord Est | Centro | Willingness<br>to fight<br>for country<br>(Yes) | Not close<br>feel to<br>country | 71 minutes<br>and more | Single | Fair or poor<br>health | Somewhat<br>interested in<br>interview | Not very<br>interested in<br>interview | High level<br>education |
|-------------------------------------------------|----------|--------|--------|--------|----------|--------|-------------------------------------------------|---------------------------------|------------------------|--------|------------------------|----------------------------------------|----------------------------------------|-------------------------|
| Constant                                        | 1.000    | -0.363 | -0.359 | -0.362 | -0.459   | -0.412 | -0.397                                          | -0.230                          | -0.154                 | -0.413 | -0.143                 | -0.432                                 | -0.334                                 | -0.129                  |
| Female                                          | -0.363   | 1.000  | 0.020  | -0.011 | -0.013   | 0.049  | 0.145                                           | 0.043                           | 0.032                  | 0.137  | 0.021                  | -0.027                                 | 0.038                                  | -0.042                  |
| Sud                                             | -0.359   | 0.020  | 1.000  | 0.346  | 0.425    | 0.387  | 0.054                                           | 0.046                           | 0.033                  | 0.024  | -0.074                 | -0.095                                 | -0.149                                 | 0.036                   |
| Isole                                           | -0.362   | -0.011 | 0.346  | 1.000  | 0.379    | 0.343  | 0.119                                           | 0.045                           | -0.003                 | 0.029  | -0.038                 | -0.051                                 | 0.056                                  | 0.069                   |
| Nord Est                                        | -0.459   | -0.013 | 0.425  | 0.379  | 1.000    | 0.428  | -0.013                                          | 0.060                           | 0.048                  | 0.037  | -0.115                 | 0.047                                  | 0.139                                  | 0.015                   |
| Centro                                          | -0.412   | 0.049  | 0.387  | 0.343  | 0.428    | 1.000  | 0.090                                           | 0.060                           | 0.068                  | 0.053  | -0.041                 | -0.076                                 | 0.057                                  | -0.018                  |
| Willingness<br>to fight<br>for country<br>(Yes) | -0.397   | 0.145  | 0.054  | 0.119  | -0.013   | 0.090  | 1.000                                           | 0.170                           | 0.059                  | 0.027  | -0.064                 | 0.072                                  | 0.076                                  | 0.056                   |
| Not close<br>feel to<br>country                 | -0.230   | 0.043  | 0.046  | 0.045  | 0.060    | 0.060  | 0.170                                           | 1.000                           | -0.005                 | -0.107 | -0.135                 | 0.031                                  | -0.001                                 | 0.075                   |
| 71 minutes<br>and more                          | -0.154   | 0.032  | 0.033  | -0.003 | 0.048    | 0.068  | 0.059                                           | -0.005                          | 1.000                  | 0.024  | -0.099                 | 0.017                                  | -0.030                                 | 0.017                   |
| Single                                          | -0.413   | 0.137  | 0.024  | 0.029  | 0.037    | 0.053  | 0.027                                           | -0.107                          | 0.024                  | 1.000  | 0.111                  | 0.035                                  | -0.009                                 | -0.025                  |
| Fair or poor<br>health                          | -0.143   | 0.021  | -0.074 | -0.038 | -0.115   | -0.041 | -0.064                                          | -0.135                          | -0.099                 | 0.111  | 1.000                  | 0.097                                  | 0.062                                  | -0.027                  |
| Somewhat<br>interested in<br>interview          | -0.432   | -0.027 | -0.095 | -0.051 | 0.047    | -0.076 | 0.072                                           | 0.031                           | 0.017                  | 0.035  | 0.097                  | 1.000                                  | 0.412                                  | 0.026                   |
| Not very<br>interested in<br>interview          | -0.334   | 0.038  | -0.149 | 0.056  | 0.139    | 0.057  | 0.076                                           | -0.001                          | -0.030                 | -0.009 | 0.062                  | 0.412                                  | 1.000                                  | -0.022                  |
| High level<br>education                         | -0.129   | -0.042 | 0.036  | 0.069  | 0.015    | -0.018 | 0.056                                           | 0.075                           | 0.017                  | -0.025 | -0.027                 | 0.026                                  | -0.022                                 | 1.000                   |

**Correlation Matrix for the Independent Variables of Retrospective Item Nonresponse Model among Respondents Aged 50 Below in Italy**

|                                                 | Constant | Female | Sud    | Isole  | Nord Est | Centro | Willingness<br>to fight<br>for country<br>(Yes) | Not close<br>feel to<br>country | Single | Fair or poor<br>health | Somewhat<br>interested in<br>interview | Not very<br>interested in<br>interview | High level<br>education |
|-------------------------------------------------|----------|--------|--------|--------|----------|--------|-------------------------------------------------|---------------------------------|--------|------------------------|----------------------------------------|----------------------------------------|-------------------------|
| Constant                                        | 1.000    | -0.281 | -0.596 | -0.564 | -0.534   | -0.516 | -0.416                                          | -0.227                          | -0.354 | -0.117                 | -0.377                                 | -0.282                                 | -0.193                  |
| Female                                          | -0.281   | 1.000  | 0.004  | -0.004 | 0.000    | 0.028  | 0.137                                           | 0.031                           | 0.138  | -0.007                 | 0.012                                  | 0.058                                  | -0.086                  |
| Sud                                             | -0.596   | 0.004  | 1.000  | 0.626  | 0.602    | 0.611  | 0.017                                           | 0.003                           | 0.048  | -0.006                 | -0.044                                 | -0.079                                 | -0.009                  |
| Isole                                           | -0.564   | -0.004 | 0.626  | 1.000  | 0.535    | 0.543  | 0.080                                           | -0.008                          | 0.022  | 0.029                  | -0.037                                 | 0.072                                  | 0.070                   |
| Nord Est                                        | -0.534   | 0.000  | 0.602  | 0.535  | 1.000    | 0.520  | -0.010                                          | 0.048                           | -0.001 | -0.063                 | 0.045                                  | 0.104                                  | 0.011                   |
| Centro                                          | -0.516   | 0.028  | 0.611  | 0.543  | 0.520    | 1.000  | 0.066                                           | 0.006                           | 0.018  | -0.011                 | -0.071                                 | 0.049                                  | -0.068                  |
| Willingness<br>to fight<br>for country<br>(Yes) | -0.416   | 0.137  | 0.017  | 0.080  | -0.010   | 0.066  | 1.000                                           | 0.156                           | 0.085  | -0.033                 | 0.117                                  | 0.132                                  | 0.028                   |
| Not close<br>feel to<br>country                 | -0.227   | 0.031  | 0.003  | -0.008 | 0.048    | 0.006  | 0.156                                           | 1.000                           | -0.115 | -0.101                 | 0.052                                  | 0.037                                  | 0.089                   |
| Single                                          | -0.354   | 0.138  | 0.048  | 0.022  | -0.001   | 0.018  | 0.085                                           | -0.115                          | 1.000  | 0.072                  | 0.032                                  | -0.043                                 | -0.027                  |
| Fair or poor<br>health                          | -0.117   | -0.007 | -0.006 | 0.029  | -0.063   | -0.011 | -0.033                                          | -0.101                          | 0.072  | 1.000                  | 0.058                                  | 0.029                                  | 0.021                   |
| Somewhat<br>interested in<br>interview          | -0.377   | 0.012  | -0.044 | -0.037 | 0.045    | -0.071 | 0.117                                           | 0.052                           | 0.032  | 0.058                  | 1.000                                  | 0.382                                  | 0.123                   |
| Not very<br>interested in<br>interview          | -0.282   | 0.058  | -0.079 | 0.072  | 0.104    | 0.049  | 0.132                                           | 0.037                           | -0.043 | 0.029                  | 0.382                                  | 1.000                                  | 0.041                   |
| High level<br>education                         | -0.193   | -0.086 | -0.009 | 0.070  | 0.011    | -0.068 | 0.028                                           | 0.089                           | -0.027 | 0.021                  | 0.123                                  | 0.041                                  | 1.000                   |

**Correlation Matrix for the Independent Variables of Religiosity Item Nonresponse Model among Respondents Aged 50 and Above in Turkey**

|                                                         | Constant | Female | West   | Central | North and East | Willingness to fight for country (Yes) | Not close feel to country | Single | Fair or poor health | Somewhat interested or not very interested in interview | Low level education |
|---------------------------------------------------------|----------|--------|--------|---------|----------------|----------------------------------------|---------------------------|--------|---------------------|---------------------------------------------------------|---------------------|
| Constant                                                | 1.000    | -0.270 | -0.191 | -0.136  | -0.087         | -0.665                                 | -0.341                    | -0.074 | -0.163              | -0.123                                                  | -0.392              |
| Female                                                  | -0.270   | 1.000  | 0.002  | 0.024   | 0.008          | 0.063                                  | -0.011                    | 0.044  | -0.014              | -0.079                                                  | -0.199              |
| West                                                    | -0.191   | 0.002  | 1.000  | 0.381   | 0.413          | -0.201                                 | 0.065                     | -0.034 | 0.014               | -0.004                                                  | 0.011               |
| Central                                                 | -0.136   | 0.024  | 0.381  | 1.000   | 0.339          | -0.194                                 | 0.118                     | -0.004 | -0.010              | -0.024                                                  | 0.004               |
| North and East                                          | -0.087   | 0.008  | 0.413  | 0.339   | 1.000          | -0.252                                 | 0.036                     | 0.030  | 0.013               | 0.060                                                   | -0.089              |
| Willingness to fight for country (Yes)                  | -0.665   | 0.063  | -0.201 | -0.194  | -0.252         | 1.000                                  | 0.300                     | -0.003 | -0.061              | -0.092                                                  | 0.035               |
| Not close feel to country                               | -0.341   | -0.011 | 0.065  | 0.118   | 0.036          | 0.300                                  | 1.000                     | -0.036 | -0.005              | -0.184                                                  | 0.006               |
| Single                                                  | -0.074   | 0.044  | -0.034 | -0.004  | 0.030          | -0.003                                 | -0.036                    | 1.000  | 0.068               | -0.035                                                  | -0.011              |
| Fair or poor health                                     | -0.163   | -0.014 | 0.014  | -0.010  | 0.013          | -0.061                                 | -0.005                    | 0.068  | 1.000               | 0.073                                                   | -0.044              |
| Somewhat interested or not very interested in interview | -0.123   | -0.079 | -0.004 | -0.024  | 0.060          | -0.092                                 | -0.184                    | -0.035 | 0.073               | 1.000                                                   | 0.067               |
| Low level education                                     | -0.392   | -0.199 | 0.011  | 0.004   | -0.089         | 0.035                                  | 0.006                     | -0.011 | -0.044              | 0.067                                                   | 1.000               |

**Correlation Matrix for the Independent Variables of Confidence Item Nonresponse Model among Respondents Aged 50 and Above in Turkey**

|                                                         | Constant | Female | West   | Central | North and East | Willingness to fight for country (Yes) | Not close feel to country | Single | Fair or poor health | Somewhat interested or not very interested in interview | Low level education |
|---------------------------------------------------------|----------|--------|--------|---------|----------------|----------------------------------------|---------------------------|--------|---------------------|---------------------------------------------------------|---------------------|
| Constant                                                | 1.000    | -0.347 | -0.352 | -0.213  | -0.195         | -0.547                                 | -0.229                    | -0.091 | -0.215              | -0.188                                                  | -0.439              |
| Female                                                  | -0.347   | 1.000  | 0.018  | 0.012   | 0.036          | 0.024                                  | -0.044                    | 0.075  | 0.015               | -0.041                                                  | -0.162              |
| West                                                    | -0.352   | 0.018  | 1.000  | 0.455   | 0.519          | -0.043                                 | 0.071                     | 0.006  | -0.073              | -0.052                                                  | -0.026              |
| Central                                                 | -0.213   | 0.012  | 0.455  | 1.000   | 0.400          | -0.139                                 | 0.116                     | 0.002  | -0.057              | -0.040                                                  | -0.011              |
| North and East                                          | -0.195   | 0.036  | 0.519  | 0.400   | 1.000          | -0.205                                 | 0.009                     | 0.048  | -0.045              | 0.041                                                   | -0.104              |
| Willingness to fight for country (Yes)                  | -0.547   | 0.024  | -0.043 | -0.139  | -0.205         | 1.000                                  | 0.251                     | -0.006 | 0.027               | 0.004                                                   | 0.025               |
| Not close feel to country                               | -0.229   | -0.044 | 0.071  | 0.116   | 0.009          | 0.251                                  | 1.000                     | -0.048 | -0.013              | -0.200                                                  | 0.013               |
| Single                                                  | -0.091   | 0.075  | 0.006  | 0.002   | 0.048          | -0.006                                 | -0.048                    | 1.000  | 0.061               | -0.032                                                  | -0.015              |
| Fair or poor health                                     | -0.215   | 0.015  | -0.073 | -0.057  | -0.045         | 0.027                                  | -0.013                    | 0.061  | 1.000               | 0.035                                                   | -0.038              |
| Somewhat interested or not very interested in interview | -0.188   | -0.041 | -0.052 | -0.040  | 0.041          | 0.004                                  | -0.200                    | -0.032 | 0.035               | 1.000                                                   | 0.076               |
| Low level education                                     | -0.439   | -0.162 | -0.026 | -0.011  | -0.104         | 0.025                                  | 0.013                     | -0.015 | -0.038              | 0.076                                                   | 1.000               |

**Correlation Matrix for the Independent Variables of Religiosity Item Nonresponse Model among Respondents Aged 50 Below in Turkey**

|                                                 | Constant | Female | West   | Central | North  | East   | Willingness<br>to fight<br>for country<br>(Yes) | Not close<br>feel to<br>country | Ever<br>married<br>(Not<br>married<br>now) | Single/Neve<br>r married | Fair health | Poor health | Somewhat<br>interested in<br>interview | Not very<br>interested in<br>interview | Low level<br>education | High level<br>education |
|-------------------------------------------------|----------|--------|--------|---------|--------|--------|-------------------------------------------------|---------------------------------|--------------------------------------------|--------------------------|-------------|-------------|----------------------------------------|----------------------------------------|------------------------|-------------------------|
| Constant                                        | 1.000    | -0.308 | -0.193 | -0.100  | -0.186 | -0.094 | -0.647                                          | -0.168                          | -0.083                                     | -0.336                   | -0.150      | -0.095      | -0.187                                 | -0.080                                 | -0.350                 | -0.272                  |
| Female                                          | -0.308   | 1.000  | -0.045 | -0.061  | -0.060 | -0.033 | 0.058                                           | 0.005                           | -0.064                                     | 0.130                    | -0.018      | -0.009      | -0.027                                 | 0.013                                  | -0.043                 | 0.005                   |
| West                                            | -0.193   | -0.045 | 1.000  | 0.397   | 0.371  | 0.270  | -0.164                                          | 0.000                           | 0.052                                      | -0.059                   | 0.011       | -0.078      | 0.019                                  | -0.064                                 | -0.028                 | -0.039                  |
| Central                                         | -0.100   | -0.061 | 0.397  | 1.000   | 0.308  | 0.224  | -0.199                                          | 0.086                           | 0.046                                      | -0.055                   | -0.071      | -0.080      | 0.011                                  | -0.023                                 | -0.023                 | -0.018                  |
| North                                           | -0.186   | -0.060 | 0.371  | 0.308   | 1.000  | 0.212  | -0.110                                          | 0.075                           | 0.000                                      | -0.039                   | -0.026      | 0.008       | 0.060                                  | 0.057                                  | 0.011                  | 0.002                   |
| East                                            | -0.094   | -0.033 | 0.270  | 0.224   | 0.212  | 1.000  | -0.128                                          | 0.037                           | 0.003                                      | -0.001                   | 0.017       | 0.004       | -0.034                                 | 0.007                                  | -0.044                 | 0.049                   |
| Willingness<br>to fight<br>for country<br>(Yes) | -0.647   | 0.058  | -0.164 | -0.199  | -0.110 | -0.128 | 1.000                                           | 0.106                           | 0.001                                      | 0.028                    | 0.020       | 0.099       | 0.039                                  | -0.007                                 | 0.022                  | 0.008                   |
| Not close<br>to<br>country                      | -0.168   | 0.005  | 0.000  | 0.086   | 0.075  | 0.037  | 0.106                                           | 1.000                           | -0.024                                     | -0.006                   | -0.040      | -0.037      | -0.145                                 | -0.043                                 | -0.015                 | 0.014                   |
| Ever married<br>(Not married<br>now)            | -0.083   | -0.064 | 0.052  | 0.046   | 0.000  | 0.003  | 0.001                                           | -0.024                          | 1.000                                      | 0.136                    | -0.020      | -0.090      | 0.037                                  | 0.007                                  | 0.031                  | -0.035                  |
| Single/Never<br>married                         | -0.336   | 0.130  | -0.059 | -0.055  | -0.039 | -0.001 | 0.028                                           | -0.006                          | 0.136                                      | 1.000                    | 0.083       | -0.002      | -0.035                                 | 0.026                                  | 0.141                  | -0.008                  |
| Fair health                                     | -0.150   | -0.018 | 0.011  | -0.071  | -0.026 | 0.017  | 0.020                                           | -0.040                          | -0.020                                     | 0.083                    | 1.000       | 0.104       | -0.057                                 | 0.003                                  | -0.055                 | 0.024                   |
| Poor health                                     | -0.095   | -0.009 | -0.078 | -0.080  | 0.008  | 0.004  | 0.099                                           | -0.037                          | -0.090                                     | -0.002                   | 0.104       | 1.000       | -0.087                                 | 0.012                                  | 0.017                  | 0.050                   |
| Somewhat<br>interested in<br>interview          | -0.187   | -0.027 | 0.019  | 0.011   | 0.060  | -0.034 | 0.039                                           | -0.145                          | 0.037                                      | -0.035                   | -0.057      | -0.087      | 1.000                                  | 0.123                                  | 0.051                  | 0.028                   |
| Not very<br>interested in<br>interview          | -0.080   | 0.013  | -0.064 | -0.023  | 0.057  | 0.007  | -0.007                                          | -0.043                          | 0.007                                      | 0.026                    | 0.003       | 0.012       | 0.123                                  | 1.000                                  | 0.025                  | 0.011                   |
| Low level<br>education                          | -0.350   | -0.043 | -0.028 | -0.023  | 0.011  | -0.044 | 0.022                                           | -0.015                          | 0.031                                      | 0.141                    | -0.055      | 0.017       | 0.051                                  | 0.025                                  | 1.000                  | 0.399                   |
| High level<br>education                         | -0.272   | 0.005  | -0.039 | -0.018  | 0.002  | 0.049  | 0.008                                           | 0.014                           | -0.035                                     | -0.008                   | 0.024       | 0.050       | 0.028                                  | 0.011                                  | 0.399                  | 1.000                   |

**Correlation Matrix for the Independent Variables of Confidence Item Nonresponse Model among Respondents Aged 50 Below in Turkey**

|                                                 | Constant | Female | West   | Central | North  | East   | Willingness<br>to fight<br>for country<br>(Yes) | Not close<br>feel to<br>country | Single | Fair or poor<br>health | Somewhat<br>interested in<br>interview | Not very<br>interested in<br>interview | Low level<br>education | High level<br>education |
|-------------------------------------------------|----------|--------|--------|---------|--------|--------|-------------------------------------------------|---------------------------------|--------|------------------------|----------------------------------------|----------------------------------------|------------------------|-------------------------|
| Constant                                        | 1.000    | -0.342 | -0.324 | -0.182  | -0.252 | -0.189 | -0.623                                          | -0.078                          | -0.310 | -0.197                 | -0.251                                 | -0.112                                 | -0.329                 | -0.257                  |
| Female                                          | -0.342   | 1.000  | -0.028 | -0.053  | -0.060 | -0.026 | 0.075                                           | -0.014                          | 0.130  | -0.022                 | -0.005                                 | -0.001                                 | -0.049                 | 0.001                   |
| West                                            | -0.324   | -0.028 | 1.000  | 0.464   | 0.431  | 0.380  | -0.071                                          | -0.024                          | -0.009 | -0.009                 | 0.011                                  | -0.098                                 | -0.025                 | -0.026                  |
| Central                                         | -0.182   | -0.053 | 0.464  | 1.000   | 0.363  | 0.315  | -0.164                                          | 0.071                           | -0.017 | -0.080                 | -0.010                                 | -0.040                                 | -0.016                 | -0.019                  |
| North                                           | -0.252   | -0.060 | 0.431  | 0.363   | 1.000  | 0.293  | -0.089                                          | 0.055                           | -0.005 | -0.016                 | 0.066                                  | 0.063                                  | 0.016                  | 0.002                   |
| East                                            | -0.189   | -0.026 | 0.380  | 0.315   | 0.293  | 1.000  | -0.112                                          | 0.017                           | 0.034  | 0.049                  | -0.055                                 | -0.001                                 | -0.058                 | 0.056                   |
| Willingness<br>to fight<br>for country<br>(Yes) | -0.623   | 0.075  | -0.071 | -0.164  | -0.089 | -0.112 | 1.000                                           | 0.064                           | 0.020  | 0.048                  | 0.100                                  | 0.009                                  | 0.009                  | 0.004                   |
| Not close<br>feel to<br>country                 | -0.078   | -0.014 | -0.024 | 0.071   | 0.055  | 0.017  | 0.064                                           | 1.000                           | -0.018 | -0.061                 | -0.128                                 | -0.047                                 | -0.007                 | 0.003                   |
| Single                                          | -0.310   | 0.130  | -0.009 | -0.017  | -0.005 | 0.034  | 0.020                                           | -0.018                          | 1.000  | 0.099                  | -0.037                                 | 0.048                                  | 0.141                  | -0.008                  |
| Fair or poor<br>health                          | -0.197   | -0.022 | -0.009 | -0.080  | -0.016 | 0.049  | 0.048                                           | -0.061                          | 0.099  | 1.000                  | -0.054                                 | 0.034                                  | -0.051                 | 0.047                   |
| Somewhat<br>interested                          | -0.251   | -0.005 | 0.011  | -0.010  | 0.066  | -0.055 | 0.100                                           | -0.128                          | -0.037 | -0.054                 | 1.000                                  | 0.178                                  | 0.053                  | 0.027                   |
| Not very<br>interested                          | -0.112   | -0.001 | -0.098 | -0.040  | 0.063  | -0.001 | 0.009                                           | -0.047                          | 0.048  | 0.034                  | 0.178                                  | 1.000                                  | 0.033                  | 0.016                   |
| Low level<br>education                          | -0.329   | -0.049 | -0.025 | -0.016  | 0.016  | -0.058 | 0.009                                           | -0.007                          | 0.141  | -0.051                 | 0.053                                  | 0.033                                  | 1.000                  | 0.399                   |
| High level<br>education                         | -0.257   | 0.001  | -0.026 | -0.019  | 0.002  | 0.056  | 0.004                                           | 0.003                           | -0.008 | 0.047                  | 0.027                                  | 0.016                                  | 0.399                  | 1.000                   |

**Correlation Matrix for the Independent Variables of Retrospective Item Nonresponse Model among Respondents Aged 50 Below in Turkey**

|                                                         | Constant | Female | Single | Fair or poor health | Low level education | Somewhat interested or not very interested in | West and Central | North  | East   |
|---------------------------------------------------------|----------|--------|--------|---------------------|---------------------|-----------------------------------------------|------------------|--------|--------|
| Constant                                                | 1.000    | -0.298 | -0.452 | -0.305              | -0.392              | -0.283                                        | -0.365           | -0.364 | -0.364 |
| Female                                                  | -0.298   | 1.000  | 0.118  | -0.066              | -0.088              | -0.025                                        | -0.017           | -0.040 | -0.028 |
| Single                                                  | -0.452   | 0.118  | 1.000  | 0.071               | 0.149               | -0.009                                        | -0.021           | -0.003 | 0.027  |
| Fair or poor health                                     | -0.305   | -0.066 | 0.071  | 1.000               | -0.075              | -0.054                                        | -0.004           | 0.020  | 0.081  |
| Low level education                                     | -0.392   | -0.088 | 0.149  | -0.075              | 1.000               | 0.053                                         | -0.001           | 0.020  | -0.088 |
| Somewhat interested or not very interested in interview | -0.283   | -0.025 | -0.009 | -0.054              | 0.053               | 1.000                                         | -0.035           | 0.096  | -0.037 |
| West and Central                                        | -0.365   | -0.017 | -0.021 | -0.004              | -0.001              | -0.035                                        | 1.000            | 0.312  | 0.358  |
| North                                                   | -0.364   | -0.040 | -0.003 | 0.020               | 0.020               | 0.096                                         | 0.312            | 1.000  | 0.306  |
| East                                                    | -0.364   | -0.028 | 0.027  | 0.081               | -0.088              | -0.037                                        | 0.358            | 0.306  | 1.000  |

Correlation Matrix for the Independent Variables of Religiosity Item Nonresponse Model among Respondents Aged 50 and Above in Switzerland

|                                           | Constant | Female | Region Lemanique | Nordwestschweiz | Zürich | Ostschweiz | Zentralschweiz | Ticino | Willingness to fight for country (Yes) | 71-90 minutes | 91 minutes and more | Ever married (Not married now) | Single/ Never married | Fair health | Poor health | Somewhat interested in interview | Not very interested in interview | Low level education | High level education | I am immigrant in this country | French or Italian (language of interview) | CAPI   |
|-------------------------------------------|----------|--------|------------------|-----------------|--------|------------|----------------|--------|----------------------------------------|---------------|---------------------|--------------------------------|-----------------------|-------------|-------------|----------------------------------|----------------------------------|---------------------|----------------------|--------------------------------|-------------------------------------------|--------|
| Constant                                  | 1.000    | -0.307 | 0.015            | -0.418          | -0.454 | -0.555     | -0.364         | -0.011 | -0.446                                 | -0.142        | -0.186              | -0.123                         | -0.077                | -0.169      | -0.042      | -0.343                           | -0.195                           | -0.016              | -0.227               | -0.090                         | -0.316                                    | -0.424 |
| Female                                    | -0.307   | 1.000  | -0.048           | 0.000           | -0.041 | 0.043      | -0.045         | -0.060 | 0.099                                  | -0.018        | -0.008              | -0.126                         | -0.032                | 0.027       | 0.080       | 0.007                            | -0.012                           | -0.013              | 0.184                | -0.003                         | 0.038                                     | -0.010 |
| Region Lemanique                          | 0.015    | -0.048 | 1.000            | 0.080           | 0.083  | 0.075      | 0.076          | 0.387  | -0.092                                 | -0.001        | 0.002               | 0.002                          | 0.012                 | -0.002      | 0.007       | 0.006                            | 0.055                            | -0.005              | -0.079               | -0.018                         | -0.610                                    | -0.080 |
| Nordwestschweiz                           | -0.418   | 0.000  | 0.080            | 1.000           | 0.447  | 0.457      | 0.329          | 0.066  | 0.050                                  | 0.055         | 0.011               | 0.005                          | -0.019                | 0.026       | -0.042      | 0.040                            | -0.027                           | 0.064               | -0.017               | -0.084                         | 0.318                                     | 0.042  |
| Zürich                                    | -0.454   | -0.041 | 0.083            | 0.447           | 1.000  | 0.540      | 0.392          | 0.079  | 0.016                                  | 0.088         | 0.024               | -0.033                         | -0.099                | -0.041      | -0.100      | 0.044                            | 0.031                            | 0.019               | -0.132               | -0.053                         | 0.390                                     | 0.095  |
| Ostschweiz                                | -0.555   | 0.043  | 0.075            | 0.457           | 0.540  | 1.000      | 0.413          | 0.061  | 0.087                                  | 0.148         | 0.075               | -0.045                         | -0.004                | -0.011      | -0.063      | 0.058                            | 0.073                            | -0.002              | 0.005                | -0.024                         | 0.400                                     | 0.054  |
| Zentralschweiz                            | -0.364   | -0.045 | 0.076            | 0.329           | 0.392  | 0.413      | 1.000          | 0.061  | -0.006                                 | 0.142         | 0.102               | -0.049                         | -0.020                | 0.015       | 0.027       | -0.003                           | 0.039                            | 0.031               | -0.008               | -0.019                         | 0.276                                     | 0.046  |
| Ticino                                    | -0.011   | -0.060 | 0.387            | 0.066           | 0.079  | 0.061      | 0.061          | 1.000  | -0.044                                 | 0.029         | 0.004               | 0.003                          | -0.052                | -0.139      | 0.006       | -0.078                           | -0.114                           | -0.028              | -0.022               | 0.000                          | -0.312                                    | 0.066  |
| Willingness to fight for country (Yes)    | -0.446   | 0.099  | -0.092           | 0.050           | 0.016  | 0.087      | -0.006         | -0.044 | 1.000                                  | -0.102        | -0.086              | 0.159                          | 0.078                 | 0.057       | -0.043      | 0.072                            | 0.022                            | 0.047               | 0.006                | 0.163                          | -0.017                                    | -0.061 |
| 71-90 minutes                             | -0.142   | -0.018 | -0.001           | 0.055           | 0.088  | 0.148      | 0.142          | 0.029  | -0.102                                 | 1.000         | 0.256               | 0.011                          | -0.017                | -0.107      | 0.035       | 0.019                            | -0.015                           | -0.012              | -0.012               | -0.027                         | 0.056                                     | -0.068 |
| 91 minutes and more                       | -0.186   | -0.008 | 0.002            | 0.011           | 0.024  | 0.075      | 0.102          | 0.004  | -0.086                                 | 0.256         | 1.000               | -0.011                         | -0.037                | 0.041       | 0.075       | -0.011                           | 0.009                            | -0.005              | -0.022               | -0.065                         | 0.008                                     | 0.109  |
| Ever married (Not married now)            | -0.123   | -0.126 | 0.002            | 0.005           | -0.033 | -0.045     | -0.049         | 0.003  | 0.159                                  | 0.011         | -0.011              | 1.000                          | 0.148                 | 0.040       | 0.015       | -0.005                           | -0.083                           | -0.025              | 0.030                | 0.060                          | -0.081                                    | -0.062 |
| Single/ Never married                     | -0.077   | -0.032 | 0.012            | -0.019          | -0.099 | -0.004     | -0.020         | -0.052 | 0.078                                  | -0.017        | -0.037              | 0.148                          | 1.000                 | 0.042       | -0.045      | -0.028                           | 0.019                            | 0.004               | -0.036               | 0.077                          | -0.026                                    | 0.000  |
| Fair health                               | -0.169   | 0.027  | -0.002           | 0.026           | -0.041 | -0.011     | 0.015          | -0.139 | 0.057                                  | -0.107        | 0.041               | 0.040                          | 0.042                 | 1.000       | 0.130       | 0.021                            | 0.024                            | -0.016              | 0.117                | -0.079                         | -0.046                                    | 0.014  |
| Poor health                               | -0.042   | 0.080  | 0.007            | -0.042          | -0.100 | -0.063     | 0.027          | 0.006  | -0.043                                 | 0.035         | 0.075               | 0.015                          | -0.045                | 0.130       | 1.000       | -0.079                           | -0.040                           | -0.005              | 0.087                | -0.050                         | -0.016                                    | -0.023 |
| Somewhat interested in interview          | -0.343   | 0.007  | 0.006            | 0.040           | 0.044  | 0.058      | -0.003         | -0.078 | 0.072                                  | 0.019         | -0.011              | -0.005                         | -0.028                | 0.021       | -0.079      | 1.000                            | 0.287                            | -0.081              | 0.061                | 0.091                          | -0.098                                    | 0.259  |
| Not very interested in interview          | -0.195   | -0.012 | 0.055            | -0.027          | 0.031  | 0.073      | 0.039          | -0.114 | 0.022                                  | -0.015        | 0.009               | -0.083                         | 0.019                 | 0.024       | -0.040      | 0.287                            | 1.000                            | -0.120              | 0.037                | 0.059                          | -0.084                                    | 0.216  |
| Low level education                       | -0.016   | -0.013 | -0.005           | 0.064           | 0.019  | -0.002     | 0.031          | -0.028 | 0.047                                  | -0.012        | -0.005              | -0.025                         | 0.004                 | -0.016      | -0.005      | -0.081                           | -0.120                           | 1.000               | 0.121                | -0.185                         | 0.002                                     | -0.075 |
| High level education                      | -0.227   | 0.184  | -0.079           | -0.017          | -0.132 | 0.005      | -0.008         | -0.022 | 0.006                                  | -0.012        | -0.022              | 0.030                          | -0.036                | 0.117       | 0.087       | 0.061                            | 0.037                            | 0.121               | 1.000                | -0.127                         | 0.025                                     | 0.077  |
| I am immigrant in this country            | -0.090   | -0.003 | -0.018           | -0.084          | -0.053 | -0.024     | -0.019         | 0.000  | 0.163                                  | -0.027        | -0.065              | 0.060                          | 0.077                 | -0.079      | -0.050      | 0.091                            | 0.059                            | -0.185              | -0.127               | 1.000                          | -0.164                                    | -0.016 |
| French or Italian (language of interview) | -0.316   | 0.038  | -0.610           | 0.318           | 0.390  | 0.400      | 0.276          | -0.312 | -0.017                                 | 0.056         | 0.008               | -0.081                         | -0.026                | -0.046      | -0.016      | -0.098                           | -0.084                           | 0.002               | 0.025                | -0.164                         | 1.000                                     | 0.064  |
| CAPI                                      | -0.424   | -0.010 | -0.080           | 0.042           | 0.095  | 0.054      | 0.046          | 0.066  | -0.061                                 | -0.068        | 0.109               | -0.062                         | 0.000                 | 0.014       | -0.023      | 0.259                            | 0.216                            | -0.075              | 0.077                | -0.016                         | 0.064                                     | 1.000  |

Correlation Matrix for the Independent Variables of Confidence Item Nonresponse Model among Respondents Aged 50 and Above in Switzerland

|                                           | Constant | Female | Region Lemanique | Nordwestschweiz | Zürich | Ostschweiz | Zentralschweiz and Ticino | Willingness to fight for country (Yes) | 71-90 minutes | 91 minutes and more | Ever married (Not married now) | Single/ Never married | Fair health | Poor health | Somewhat interested in interview | Not very interested in interview | Low level education | High level education | I am immigrant in this country | French or Italian (language of interview) | CAPI   |
|-------------------------------------------|----------|--------|------------------|-----------------|--------|------------|---------------------------|----------------------------------------|---------------|---------------------|--------------------------------|-----------------------|-------------|-------------|----------------------------------|----------------------------------|---------------------|----------------------|--------------------------------|-------------------------------------------|--------|
| Constant                                  | 1.000    | -0.326 | -0.113           | -0.433          | -0.476 | -0.567     | -0.335                    | -0.380                                 | -0.155        | -0.160              | -0.196                         | -0.125                | -0.116      | -0.047      | -0.360                           | -0.148                           | -0.034              | -0.161               | -0.155                         | -0.244                                    | -0.435 |
| Female                                    | -0.326   | 1.000  | -0.022           | -0.014          | -0.026 | 0.068      | -0.057                    | 0.070                                  | -0.002        | 0.002               | -0.118                         | -0.018                | 0.039       | 0.082       | 0.002                            | -0.028                           | -0.014              | 0.120                | 0.011                          | 0.038                                     | -0.016 |
| Region Lemanique                          | -0.113   | -0.022 | 1.000            | 0.168           | 0.186  | 0.186      | 0.344                     | -0.094                                 | 0.034         | 0.021               | 0.017                          | 0.024                 | 0.026       | 0.005       | 0.039                            | 0.076                            | -0.005              | -0.084               | -0.020                         | -0.540                                    | -0.068 |
| Nordwestschweiz                           | -0.433   | -0.014 | 0.168            | 1.000           | 0.486  | 0.485      | 0.346                     | 0.025                                  | 0.040         | 0.023               | 0.000                          | -0.031                | 0.001       | -0.035      | 0.033                            | -0.054                           | 0.084               | -0.027               | -0.097                         | 0.317                                     | 0.059  |
| Zürich                                    | -0.476   | -0.026 | 0.186            | 0.486           | 1.000  | 0.560      | 0.402                     | -0.014                                 | 0.069         | 0.007               | -0.012                         | -0.107                | -0.066      | -0.103      | 0.042                            | 0.003                            | 0.020               | -0.132               | -0.029                         | 0.370                                     | 0.115  |
| Ostschweiz                                | -0.567   | 0.068  | 0.186            | 0.485           | 0.560  | 1.000      | 0.400                     | 0.072                                  | 0.136         | 0.049               | -0.022                         | -0.010                | -0.045      | -0.080      | 0.062                            | 0.049                            | -0.008              | -0.017               | 0.005                          | 0.360                                     | 0.053  |
| Zentralschweiz and Ticino                 | -0.335   | -0.057 | 0.344            | 0.346           | 0.402  | 0.400      | 1.000                     | -0.038                                 | 0.116         | 0.068               | -0.023                         | -0.037                | -0.077      | 0.017       | -0.042                           | -0.031                           | 0.021               | -0.037               | 0.008                          | 0.044                                     | 0.084  |
| Willingness to fight for country (Yes)    | -0.380   | 0.070  | -0.094           | 0.025           | -0.014 | 0.072      | -0.038                    | 1.000                                  | -0.156        | -0.093              | 0.140                          | 0.071                 | 0.018       | -0.043      | 0.072                            | -0.005                           | 0.054               | -0.013               | 0.164                          | -0.046                                    | -0.031 |
| 71-90 minutes                             | -0.155   | -0.002 | 0.034            | 0.040           | 0.069  | 0.136      | 0.116                     | -0.156                                 | 1.000         | 0.286               | 0.036                          | -0.017                | -0.120      | 0.034       | 0.026                            | -0.012                           | 0.013               | -0.016               | -0.029                         | 0.025                                     | -0.052 |
| 91 minutes and more                       | -0.160   | 0.002  | 0.021            | 0.023           | 0.007  | 0.049      | 0.068                     | -0.093                                 | 0.286         | 1.000               | 0.016                          | -0.013                | 0.033       | 0.056       | -0.025                           | 0.021                            | -0.001              | -0.008               | -0.037                         | -0.044                                    | 0.066  |
| Ever married (Not married now)            | -0.196   | -0.118 | 0.017            | 0.000           | -0.012 | -0.022     | -0.023                    | 0.140                                  | 0.036         | 0.016               | 1.000                          | 0.211                 | 0.027       | 0.011       | 0.028                            | -0.074                           | 0.013               | 0.010                | 0.054                          | -0.072                                    | 0.004  |
| Single/ Never married                     | -0.125   | -0.018 | 0.024            | -0.031          | -0.107 | -0.010     | -0.037                    | 0.071                                  | -0.017        | -0.013              | 0.211                          | 1.000                 | 0.058       | -0.015      | -0.019                           | 0.013                            | 0.001               | -0.045               | 0.097                          | -0.043                                    | 0.053  |
| Fair health                               | -0.116   | 0.039  | 0.026            | 0.001           | -0.066 | -0.045     | -0.077                    | 0.018                                  | -0.120        | 0.033               | 0.027                          | 0.058                 | 1.000       | 0.132       | 0.020                            | 0.006                            | -0.049              | 0.126                | -0.097                         | -0.113                                    | 0.009  |
| Poor health                               | -0.047   | 0.082  | 0.005            | -0.035          | -0.103 | -0.080     | 0.017                     | -0.043                                 | 0.034         | 0.056               | 0.011                          | -0.015                | 0.132       | 1.000       | -0.065                           | -0.064                           | 0.002               | 0.088                | -0.056                         | -0.012                                    | 0.001  |
| Somewhat interested in interview          | -0.360   | 0.002  | 0.039            | 0.033           | 0.042  | 0.062      | -0.042                    | 0.072                                  | 0.026         | -0.025              | 0.028                          | -0.019                | 0.020       | -0.065      | 1.000                            | 0.289                            | -0.082              | 0.045                | 0.125                          | -0.145                                    | 0.279  |
| Not very interested in interview          | -0.148   | -0.028 | 0.076            | -0.054          | 0.003  | 0.049      | -0.031                    | -0.005                                 | -0.012        | 0.021               | -0.074                         | 0.013                 | 0.006       | -0.064      | 0.289                            | 1.000                            | -0.148              | 0.058                | 0.039                          | -0.143                                    | 0.215  |
| Low level education                       | -0.034   | -0.014 | -0.005           | 0.084           | 0.020  | -0.008     | 0.021                     | 0.054                                  | 0.013         | -0.001              | 0.013                          | 0.001                 | -0.049      | 0.002       | -0.082                           | -0.148                           | 1.000               | 0.142                | -0.182                         | 0.005                                     | -0.058 |
| High level education                      | -0.161   | 0.120  | -0.084           | -0.027          | -0.132 | -0.017     | -0.037                    | -0.013                                 | -0.016        | -0.008              | 0.010                          | -0.045                | 0.126       | 0.088       | 0.045                            | 0.058                            | 0.142               | 1.000                | -0.198                         | 0.009                                     | 0.089  |
| I am immigrant in this country            | -0.155   | 0.011  | -0.020           | -0.097          | -0.029 | 0.005      | 0.008                     | 0.164                                  | -0.029        | -0.037              | 0.054                          | 0.097                 | -0.097      | -0.056      | 0.125                            | 0.039                            | -0.182              | -0.198               | 1.000                          | -0.163                                    | 0.051  |
| French or Italian (language of interview) | -0.244   | 0.038  | -0.540           | 0.317           | 0.370  | 0.360      | 0.044                     | -0.046                                 | 0.025         | -0.044              | -0.072                         | -0.043                | -0.113      | -0.012      | -0.145                           | -0.143                           | 0.005               | 0.009                | -0.163                         | 1.000                                     | 0.049  |
| CAPI                                      | -0.435   | -0.016 | -0.068           | 0.059           | 0.115  | 0.053      | 0.084                     | -0.031                                 | -0.052        | 0.066               | 0.004                          | 0.053                 | 0.009       | 0.001       | 0.279                            | 0.215                            | -0.058              | 0.089                | 0.051                          | 0.049                                     | 1.000  |

**Correlation Matrix for the Independent Variables of Retrospective Item Nonresponse Model among Respondents Aged 50 and Above in Switzerland**

|                                           | Constant | Female | Region Lemanique | Nordwestschweiz | Zürich | Ostschweiz | Zentralschweiz and Ticino | Willingness to fight for country (Yes) | 71 and more | Single | Fair or poor health | Somewhat interested in interview | Not very interested in interview | Low level education | I am immigrant in this country | French or Italian (language of interview) | CAPI   |
|-------------------------------------------|----------|--------|------------------|-----------------|--------|------------|---------------------------|----------------------------------------|-------------|--------|---------------------|----------------------------------|----------------------------------|---------------------|--------------------------------|-------------------------------------------|--------|
| Constant                                  | 1.000    | -0.234 | 0.071            | -0.250          | -0.124 | -0.279     | -0.082                    | -0.522                                 | -0.218      | -0.047 | -0.231              | -0.282                           | -0.022                           | -0.634              | -0.089                         | -0.153                                    | -0.273 |
| Female                                    | -0.234   | 1.000  | -0.007           | 0.010           | -0.003 | 0.082      | -0.010                    | 0.020                                  | 0.016       | -0.021 | 0.108               | -0.128                           | -0.081                           | 0.149               | -0.048                         | 0.020                                     | -0.090 |
| Region Lemanique                          | 0.071    | -0.007 | 1.000            | 0.092           | 0.085  | 0.071      | 0.221                     | -0.103                                 | -0.065      | 0.001  | 0.025               | 0.061                            | 0.091                            | -0.085              | -0.046                         | -0.472                                    | -0.116 |
| Nordwestschweiz                           | -0.250   | 0.010  | 0.092            | 1.000           | 0.413  | 0.410      | 0.272                     | 0.006                                  | 0.061       | -0.007 | -0.023              | 0.016                            | -0.044                           | -0.053              | -0.134                         | 0.347                                     | 0.063  |
| Zürich                                    | -0.124   | -0.003 | 0.085            | 0.413           | 1.000  | 0.358      | 0.241                     | -0.019                                 | -0.037      | -0.070 | -0.061              | -0.031                           | 0.018                            | -0.131              | -0.114                         | 0.326                                     | 0.032  |
| Ostschweiz                                | -0.279   | 0.082  | 0.071            | 0.410           | 0.358  | 1.000      | 0.225                     | 0.033                                  | 0.076       | -0.007 | -0.029              | 0.040                            | 0.030                            | -0.006              | -0.090                         | 0.308                                     | 0.037  |
| Zentralschweiz and Ticino                 | -0.082   | -0.010 | 0.221            | 0.272           | 0.241  | 0.225      | 1.000                     | -0.082                                 | 0.012       | -0.023 | 0.004               | -0.025                           | -0.017                           | -0.053              | -0.081                         | -0.002                                    | 0.088  |
| Willingness to fight for country (Yes)    | -0.522   | 0.020  | -0.103           | 0.006           | -0.019 | 0.033      | -0.082                    | 1.000                                  | -0.019      | 0.003  | -0.016              | 0.048                            | -0.035                           | -0.002              | 0.204                          | -0.011                                    | -0.002 |
| 71 and more                               | -0.218   | 0.016  | -0.065           | 0.061           | -0.037 | 0.076      | 0.012                     | -0.019                                 | 1.000       | 0.010  | -0.032              | 0.031                            | -0.050                           | 0.041               | 0.001                          | -0.008                                    | 0.014  |
| Single                                    | -0.047   | -0.021 | 0.001            | -0.007          | -0.070 | -0.007     | -0.023                    | 0.003                                  | 0.010       | 1.000  | 0.017               | 0.038                            | 0.003                            | -0.027              | 0.081                          | -0.026                                    | 0.045  |
| Fair or poor health                       | -0.231   | 0.108  | 0.025            | -0.023          | -0.061 | -0.029     | 0.004                     | -0.016                                 | -0.032      | 0.017  | 1.000               | -0.050                           | -0.064                           | 0.203               | -0.114                         | -0.101                                    | -0.032 |
| Somewhat interested in interview          | -0.282   | -0.128 | 0.061            | 0.016           | -0.031 | 0.040      | -0.025                    | 0.048                                  | 0.031       | 0.038  | -0.050              | 1.000                            | 0.205                            | 0.056               | 0.126                          | -0.209                                    | 0.265  |
| Not very interested in interview          | -0.022   | -0.081 | 0.091            | -0.044          | 0.018  | 0.030      | -0.017                    | -0.035                                 | -0.050      | 0.003  | -0.064              | 0.205                            | 1.000                            | 0.000               | -0.056                         | -0.086                                    | 0.094  |
| Low level education                       | -0.634   | 0.149  | -0.085           | -0.053          | -0.131 | -0.006     | -0.053                    | -0.002                                 | 0.041       | -0.027 | 0.203               | 0.056                            | 0.000                            | 1.000               | -0.162                         | 0.066                                     | 0.099  |
| I am immigrant in this country            | -0.089   | -0.048 | -0.046           | -0.134          | -0.114 | -0.090     | -0.081                    | 0.204                                  | 0.001       | 0.081  | -0.114              | 0.126                            | -0.056                           | -0.162              | 1.000                          | -0.299                                    | 0.030  |
| French or Italian (language of interview) | -0.153   | 0.020  | -0.472           | 0.347           | 0.326  | 0.308      | -0.002                    | -0.011                                 | -0.008      | -0.026 | -0.101              | -0.209                           | -0.086                           | 0.066               | -0.299                         | 1.000                                     | 0.011  |
| CAPI                                      | -0.273   | -0.090 | -0.116           | 0.063           | 0.032  | 0.037      | 0.088                     | -0.002                                 | 0.014       | 0.045  | -0.032              | 0.265                            | 0.094                            | 0.099               | 0.030                          | 0.011                                     | 1.000  |

Correlation Matrix for the Independent Variables of Religiosity Item Nonresponse Model among Respondents Aged 50 Below in Switzerland

|                                           | Constant | Female | Region Lemanique | Nordwestschweiz | Zürich | Ostschweiz and Ticino | Zentralschweiz | Willingness to fight for country (Yes) | Not close feel to country | 71-90 minutes | 91 and more | Ever married (Not married now) | Single/ Never married | Fair or poor health | Somewhat interested in interview | Not very interested in interview | High level education | I am immigrant in this country | French or Italian (language of interview) | CAPI   |
|-------------------------------------------|----------|--------|------------------|-----------------|--------|-----------------------|----------------|----------------------------------------|---------------------------|---------------|-------------|--------------------------------|-----------------------|---------------------|----------------------------------|----------------------------------|----------------------|--------------------------------|-------------------------------------------|--------|
| Constant                                  | 1.000    | -0.362 | -0.214           | -0.408          | -0.483 | -0.499                | -0.424         | -0.346                                 | -0.082                    | -0.014        | -0.090      | -0.096                         | -0.371                | -0.107              | -0.279                           | -0.241                           | -0.268               | -0.117                         | -0.202                                    | -0.453 |
| Female                                    | -0.362   | 1.000  | -0.015           | 0.003           | 0.064  | 0.013                 | -0.052         | 0.116                                  | 0.004                     | -0.022        | 0.009       | 0.025                          | 0.062                 | -0.053              | 0.061                            | 0.079                            | -0.004               | -0.001                         | 0.015                                     | 0.086  |
| Region Lemanique                          | -0.214   | -0.015 | 1.000            | 0.243           | 0.329  | 0.411                 | 0.229          | -0.083                                 | 0.069                     | -0.083        | -0.013      | -0.024                         | 0.017                 | 0.029               | 0.004                            | 0.006                            | -0.033               | 0.010                          | -0.484                                    | 0.012  |
| Nordwestschweiz                           | -0.408   | 0.003  | 0.243            | 1.000           | 0.454  | 0.442                 | 0.353          | 0.039                                  | 0.016                     | -0.049        | 0.017       | -0.013                         | 0.056                 | 0.019               | 0.005                            | 0.048                            | 0.001                | -0.029                         | 0.189                                     | 0.066  |
| Zürich                                    | -0.483   | 0.064  | 0.329            | 0.454           | 1.000  | 0.584                 | 0.455          | 0.019                                  | 0.028                     | -0.042        | -0.014      | -0.030                         | 0.019                 | 0.024               | -0.072                           | -0.007                           | -0.055               | -0.060                         | 0.259                                     | 0.029  |
| Ostschweiz and Ticino                     | -0.499   | 0.013  | 0.411            | 0.442           | 0.584  | 1.000                 | 0.451          | 0.071                                  | 0.023                     | -0.041        | 0.080       | -0.049                         | 0.031                 | 0.019               | -0.038                           | 0.011                            | -0.012               | -0.020                         | 0.110                                     | 0.045  |
| Zentralschweiz                            | -0.424   | -0.052 | 0.229            | 0.353           | 0.455  | 0.451                 | 1.000          | 0.065                                  | 0.006                     | 0.021         | 0.068       | -0.012                         | 0.075                 | 0.064               | -0.018                           | 0.028                            | 0.038                | 0.011                          | 0.216                                     | 0.026  |
| Willingness to fight for country (Yes)    | -0.346   | 0.116  | -0.083           | 0.039           | 0.019  | 0.071                 | 0.065          | 1.000                                  | 0.133                     | -0.025        | -0.009      | 0.040                          | 0.113                 | 0.053               | -0.003                           | -0.005                           | 0.012                | 0.022                          | 0.040                                     | -0.067 |
| Not close feel to country                 | -0.082   | 0.004  | 0.069            | 0.016           | 0.028  | 0.023                 | 0.006          | 0.133                                  | 1.000                     | 0.012         | 0.020       | 0.000                          | -0.046                | -0.045              | -0.031                           | -0.091                           | -0.021               | -0.119                         | -0.052                                    | 0.037  |
| 71-90 minutes                             | -0.014   | -0.022 | -0.083           | -0.049          | -0.042 | -0.041                | 0.021          | -0.025                                 | 0.012                     | 1.000         | 0.155       | -0.068                         | 0.033                 | 0.036               | -0.092                           | -0.036                           | -0.046               | -0.059                         | 0.028                                     | -0.119 |
| 91 and more                               | -0.090   | 0.009  | -0.013           | 0.017           | -0.014 | 0.080                 | 0.068          | -0.009                                 | 0.020                     | 0.155         | 1.000       | -0.070                         | 0.045                 | 0.050               | -0.101                           | -0.065                           | 0.014                | -0.140                         | 0.062                                     | -0.005 |
| Ever married (Not married now)            | -0.096   | 0.025  | -0.024           | -0.013          | -0.030 | -0.049                | -0.012         | 0.040                                  | 0.000                     | -0.068        | -0.070      | 1.000                          | 0.230                 | -0.083              | 0.037                            | -0.023                           | 0.027                | 0.010                          | -0.062                                    | 0.007  |
| Single/ Never married                     | -0.371   | 0.062  | 0.017            | 0.056           | 0.019  | 0.031                 | 0.075          | 0.113                                  | -0.046                    | 0.033         | 0.045       | 0.230                          | 1.000                 | -0.001              | -0.057                           | 0.007                            | 0.050                | 0.142                          | 0.034                                     | -0.012 |
| Fair or poor health                       | -0.107   | -0.053 | 0.029            | 0.019           | 0.024  | 0.019                 | 0.064          | 0.053                                  | -0.045                    | 0.036         | 0.050       | -0.083                         | -0.001                | 1.000               | -0.044                           | -0.024                           | 0.083                | -0.055                         | 0.026                                     | -0.033 |
| Somewhat interested in interview          | -0.279   | 0.061  | 0.004            | 0.005           | -0.072 | -0.038                | -0.018         | -0.003                                 | -0.031                    | -0.092        | -0.101      | 0.037                          | -0.057                | -0.044              | 1.000                            | 0.315                            | 0.097                | 0.025                          | -0.209                                    | 0.382  |
| Not very interested in interview          | -0.241   | 0.079  | 0.006            | 0.048           | -0.007 | 0.011                 | 0.028          | -0.005                                 | -0.091                    | -0.036        | -0.065      | -0.023                         | 0.007                 | -0.024              | 0.315                            | 1.000                            | 0.088                | 0.028                          | -0.100                                    | 0.290  |
| High level education                      | -0.268   | -0.004 | -0.033           | 0.001           | -0.055 | -0.012                | 0.038          | 0.012                                  | -0.021                    | -0.046        | 0.014       | 0.027                          | 0.050                 | 0.083               | 0.097                            | 0.088                            | 1.000                | -0.042                         | 0.023                                     | 0.125  |
| I am immigrant in this country            | -0.117   | -0.001 | 0.010            | -0.029          | -0.060 | -0.020                | 0.011          | 0.022                                  | -0.119                    | -0.059        | -0.140      | 0.010                          | 0.142                 | -0.055              | 0.025                            | 0.028                            | -0.042               | 1.000                          | -0.081                                    | -0.064 |
| French or Italian (language of interview) | -0.202   | 0.015  | -0.484           | 0.189           | 0.259  | 0.110                 | 0.216          | 0.040                                  | -0.052                    | 0.028         | 0.062       | -0.062                         | 0.034                 | 0.026               | -0.209                           | -0.100                           | 0.023                | -0.081                         | 1.000                                     | -0.022 |
| CAPI                                      | -0.453   | 0.086  | 0.012            | 0.066           | 0.029  | 0.045                 | 0.026          | -0.067                                 | 0.037                     | -0.119        | -0.005      | 0.007                          | -0.012                | -0.033              | 0.382                            | 0.290                            | 0.125                | -0.064                         | -0.022                                    | 1.000  |

Correlation Matrix for the Independent Variables of Confidence Item Nonresponse Model among Respondents Aged 50 Below in Switzerland

|                                                 | Constant | Female | Region<br>Lemanique | Nordwestschweiz | Zürich | Ostschweiz<br>and Ticino | Zentralschweiz | Willingness<br>to fight<br>for country<br>(Yes) | Not close<br>feel to<br>country | 71-90<br>minutes | 91 minutes<br>and more | Single | Fair or<br>poor<br>health | Somewhat<br>interested in<br>interview | Not very<br>interested in<br>interview | High level<br>education | I am<br>immigrant in<br>this country | French or<br>Italian<br>(language of<br>interview) | CAPI   |
|-------------------------------------------------|----------|--------|---------------------|-----------------|--------|--------------------------|----------------|-------------------------------------------------|---------------------------------|------------------|------------------------|--------|---------------------------|----------------------------------------|----------------------------------------|-------------------------|--------------------------------------|----------------------------------------------------|--------|
| Constant                                        | 1.000    | -0.434 | -0.182              | -0.460          | -0.431 | -0.429                   | -0.400         | -0.425                                          | -0.125                          | -0.022           | -0.117                 | -0.399 | -0.104                    | -0.295                                 | -0.204                                 | -0.230                  | -0.153                               | -0.130                                             | -0.462 |
| Female                                          | -0.434   | 1.000  | -0.013              | 0.033           | 0.067  | 0.008                    | -0.049         | 0.140                                           | 0.028                           | -0.021           | 0.021                  | 0.085  | -0.055                    | 0.074                                  | 0.073                                  | -0.020                  | 0.028                                | -0.002                                             | 0.133  |
| Region Lemanique                                | -0.182   | -0.013 | 1.000               | 0.256           | 0.305  | 0.363                    | 0.220          | -0.060                                          | 0.083                           | -0.076           | -0.014                 | -0.002 | 0.045                     | 0.000                                  | -0.014                                 | -0.035                  | -0.002                               | -0.532                                             | 0.016  |
| Nordwestschweiz                                 | -0.460   | 0.033  | 0.256               | 1.000           | 0.498  | 0.471                    | 0.408          | 0.079                                           | 0.038                           | -0.046           | 0.010                  | 0.059  | 0.018                     | 0.015                                  | 0.061                                  | 0.007                   | -0.016                               | 0.175                                              | 0.111  |
| Zürich                                          | -0.431   | 0.067  | 0.305               | 0.498           | 1.000  | 0.531                    | 0.446          | 0.042                                           | 0.060                           | -0.045           | -0.027                 | -0.003 | 0.020                     | -0.057                                 | 0.004                                  | -0.049                  | -0.060                               | 0.200                                              | 0.017  |
| Ostschweiz and<br>Ticino                        | -0.429   | 0.008  | 0.363               | 0.471           | 0.531  | 1.000                    | 0.432          | 0.084                                           | 0.018                           | -0.062           | 0.066                  | 0.013  | 0.020                     | -0.037                                 | 0.021                                  | 0.007                   | -0.010                               | 0.071                                              | 0.023  |
| Zentralschweiz                                  | -0.400   | -0.049 | 0.220               | 0.408           | 0.446  | 0.432                    | 1.000          | 0.068                                           | 0.021                           | 0.003            | 0.057                  | 0.039  | 0.062                     | -0.002                                 | 0.040                                  | 0.053                   | 0.014                                | 0.181                                              | 0.055  |
| Willingness to<br>fight<br>for country (Yes)    | -0.425   | 0.140  | -0.060              | 0.079           | 0.042  | 0.084                    | 0.068          | 1.000                                           | 0.171                           | -0.015           | -0.001                 | 0.124  | 0.038                     | 0.002                                  | -0.005                                 | 0.007                   | 0.039                                | 0.023                                              | -0.009 |
| Not close feel to<br>country                    | -0.125   | 0.028  | 0.083               | 0.038           | 0.060  | 0.018                    | 0.021          | 0.171                                           | 1.000                           | 0.030            | 0.031                  | -0.042 | -0.022                    | -0.046                                 | -0.085                                 | -0.028                  | -0.135                               | -0.061                                             | 0.066  |
| 71-90 minutes                                   | -0.022   | -0.021 | -0.076              | -0.046          | -0.045 | -0.062                   | 0.003          | -0.015                                          | 0.030                           | 1.000            | 0.157                  | 0.048  | 0.033                     | -0.064                                 | -0.047                                 | -0.044                  | -0.056                               | 0.004                                              | -0.121 |
| 91 minutes and<br>more                          | -0.117   | 0.021  | -0.014              | 0.010           | -0.027 | 0.066                    | 0.057          | -0.001                                          | 0.031                           | 0.157            | 1.000                  | 0.069  | 0.049                     | -0.071                                 | -0.058                                 | 0.017                   | -0.136                               | 0.039                                              | 0.030  |
| Single                                          | -0.399   | 0.085  | -0.002              | 0.059           | -0.003 | 0.013                    | 0.039          | 0.124                                           | -0.042                          | 0.048            | 0.069                  | 1.000  | -0.004                    | -0.040                                 | 0.012                                  | -0.001                  | 0.171                                | 0.042                                              | 0.048  |
| Fair or poor health                             | -0.104   | -0.055 | 0.045               | 0.018           | 0.020  | 0.020                    | 0.062          | 0.038                                           | -0.022                          | 0.033            | 0.049                  | -0.004 | 1.000                     | -0.030                                 | 0.009                                  | 0.095                   | -0.088                               | 0.015                                              | -0.033 |
| Somewhat<br>interested in<br>interview          | -0.295   | 0.074  | 0.000               | 0.015           | -0.057 | -0.037                   | -0.002         | 0.002                                           | -0.046                          | -0.064           | -0.071                 | -0.040 | -0.030                    | 1.000                                  | 0.275                                  | 0.100                   | 0.027                                | -0.206                                             | 0.398  |
| Not very<br>interested in<br>interview          | -0.204   | 0.073  | -0.014              | 0.061           | 0.004  | 0.021                    | 0.040          | -0.005                                          | -0.085                          | -0.047           | -0.058                 | 0.012  | 0.009                     | 0.275                                  | 1.000                                  | 0.066                   | 0.007                                | -0.063                                             | 0.236  |
| High level<br>education                         | -0.230   | -0.020 | -0.035              | 0.007           | -0.049 | 0.007                    | 0.053          | 0.007                                           | -0.028                          | -0.044           | 0.017                  | -0.001 | 0.095                     | 0.100                                  | 0.066                                  | 1.000                   | -0.064                               | 0.029                                              | 0.112  |
| I am immigrant in<br>this country               | -0.153   | 0.028  | -0.002              | -0.016          | -0.060 | -0.010                   | 0.014          | 0.039                                           | -0.135                          | -0.056           | -0.136                 | 0.171  | -0.088                    | 0.027                                  | 0.007                                  | -0.064                  | 1.000                                | -0.079                                             | -0.044 |
| French or Italian<br>(language of<br>interview) | -0.130   | -0.002 | -0.532              | 0.175           | 0.200  | 0.071                    | 0.181          | 0.023                                           | -0.061                          | 0.004            | 0.039                  | 0.042  | 0.015                     | -0.206                                 | -0.063                                 | 0.029                   | -0.079                               | 1.000                                              | -0.055 |
| CAPI                                            | -0.462   | 0.133  | 0.016               | 0.111           | 0.017  | 0.023                    | 0.055          | -0.009                                          | 0.066                           | -0.121           | 0.030                  | 0.048  | -0.033                    | 0.398                                  | 0.236                                  | 0.112                   | -0.044                               | -0.055                                             | 1.000  |

Correlation Matrix for the Independent Variables of Retrospective Item Nonresponse Model among Respondents Aged 50 Below in Switzerland

|                                                 | Constant | Female | Region<br>Lemanique | Nordwestschweiz | Zürich | Ostschweiz<br>and Ticino | Zentralschweiz | Willingness<br>to fight<br>for country<br>(Yes) | Not close<br>feel to<br>country | 71-90<br>minutes | 91 minutes<br>and more | Single | Fair or poor<br>health | Somewhat<br>interested in<br>interview | Not very<br>interested in<br>interview | High level<br>education | I am<br>immigrant in<br>this country | French or<br>Italian<br>(language of<br>interview) | CAPI   |
|-------------------------------------------------|----------|--------|---------------------|-----------------|--------|--------------------------|----------------|-------------------------------------------------|---------------------------------|------------------|------------------------|--------|------------------------|----------------------------------------|----------------------------------------|-------------------------|--------------------------------------|----------------------------------------------------|--------|
| Constant                                        | 1.000    | -0.454 | -0.146              | -0.494          | -0.398 | -0.358                   | -0.358         | -0.425                                          | -0.104                          | -0.057           | -0.183                 | -0.361 | -0.105                 | -0.346                                 | -0.257                                 | -0.212                  | -0.188                               | -0.132                                             | -0.299 |
| Female                                          | -0.454   | 1.000  | -0.006              | 0.038           | 0.089  | 0.001                    | -0.047         | 0.141                                           | 0.037                           | -0.049           | 0.037                  | 0.043  | 0.003                  | 0.097                                  | 0.077                                  | -0.005                  | -0.010                               | -0.004                                             | 0.080  |
| Region<br>Lemanique                             | -0.146   | -0.006 | 1.000               | 0.254           | 0.244  | 0.292                    | 0.194          | -0.058                                          | 0.046                           | -0.025           | -0.022                 | -0.043 | 0.013                  | 0.004                                  | -0.049                                 | -0.033                  | -0.010                               | -0.551                                             | 0.015  |
| Nordwestschweiz                                 | -0.494   | 0.038  | 0.254               | 1.000           | 0.502  | 0.441                    | 0.436          | 0.076                                           | 0.041                           | -0.017           | 0.022                  | 0.051  | 0.002                  | 0.021                                  | 0.087                                  | 0.001                   | -0.051                               | 0.177                                              | 0.107  |
| Zürich                                          | -0.398   | 0.089  | 0.244               | 0.502           | 1.000  | 0.415                    | 0.405          | 0.047                                           | 0.068                           | -0.035           | 0.001                  | -0.045 | 0.016                  | -0.045                                 | 0.007                                  | -0.068                  | -0.078                               | 0.182                                              | 0.000  |
| Ostschweiz and<br>Ticino                        | -0.358   | 0.001  | 0.292               | 0.441           | 0.415  | 1.000                    | 0.363          | 0.032                                           | -0.006                          | -0.048           | 0.066                  | -0.007 | 0.009                  | -0.020                                 | 0.014                                  | 0.017                   | -0.020                               | 0.043                                              | 0.031  |
| Zentralschweiz                                  | -0.358   | -0.047 | 0.194               | 0.436           | 0.405  | 0.363                    | 1.000          | 0.014                                           | 0.034                           | 0.006            | 0.067                  | -0.006 | 0.024                  | -0.009                                 | 0.038                                  | 0.007                   | 0.007                                | 0.171                                              | 0.046  |
| Willingness to<br>fight<br>for country (Yes)    | -0.425   | 0.141  | -0.058              | 0.076           | 0.047  | 0.032                    | 0.014          | 1.000                                           | 0.179                           | 0.014            | 0.014                  | 0.127  | 0.025                  | 0.004                                  | -0.008                                 | 0.040                   | 0.083                                | 0.018                                              | -0.063 |
| Not close feel to<br>country                    | -0.104   | 0.037  | 0.046               | 0.041           | 0.068  | -0.006                   | 0.034          | 0.179                                           | 1.000                           | 0.037            | 0.031                  | -0.036 | -0.026                 | -0.097                                 | -0.144                                 | -0.067                  | -0.122                               | -0.015                                             | 0.025  |
| 71-90 minutes                                   | -0.057   | -0.049 | -0.025              | -0.017          | -0.035 | -0.048                   | 0.006          | 0.014                                           | 0.037                           | 1.000            | 0.208                  | 0.026  | 0.018                  | -0.059                                 | -0.073                                 | -0.026                  | -0.048                               | 0.007                                              | -0.152 |
| 91 minutes and<br>more                          | -0.183   | 0.037  | -0.022              | 0.022           | 0.001  | 0.066                    | 0.067          | 0.014                                           | 0.031                           | 0.208            | 1.000                  | 0.047  | 0.055                  | -0.012                                 | -0.074                                 | 0.039                   | -0.135                               | 0.038                                              | 0.022  |
| Single                                          | -0.361   | 0.043  | -0.043              | 0.051           | -0.045 | -0.007                   | -0.006         | 0.127                                           | -0.036                          | 0.026            | 0.047                  | 1.000  | -0.019                 | -0.046                                 | 0.033                                  | 0.007                   | 0.215                                | 0.046                                              | 0.018  |
| Fair or poor<br>health                          | -0.105   | 0.003  | 0.013               | 0.002           | 0.016  | 0.009                    | 0.024          | 0.025                                           | -0.026                          | 0.018            | 0.055                  | -0.019 | 1.000                  | -0.013                                 | 0.015                                  | 0.068                   | -0.049                               | -0.007                                             | -0.047 |
| Somewhat<br>interested in<br>interview          | -0.346   | 0.097  | 0.004               | 0.021           | -0.045 | -0.020                   | -0.009         | 0.004                                           | -0.097                          | -0.059           | -0.012                 | -0.046 | -0.013                 | 1.000                                  | 0.397                                  | 0.101                   | 0.017                                | -0.164                                             | 0.327  |
| Not very<br>interested in<br>interview          | -0.257   | 0.077  | -0.049              | 0.087           | 0.007  | 0.014                    | 0.038          | -0.008                                          | -0.144                          | -0.073           | -0.074                 | 0.033  | 0.015                  | 0.397                                  | 1.000                                  | 0.065                   | -0.011                               | -0.074                                             | 0.238  |
| High level<br>education                         | -0.212   | -0.005 | -0.033              | 0.001           | -0.068 | 0.017                    | 0.007          | 0.040                                           | -0.067                          | -0.026           | 0.039                  | 0.007  | 0.068                  | 0.101                                  | 0.065                                  | 1.000                   | -0.071                               | 0.022                                              | 0.124  |
| I am immigrant in<br>this country               | -0.188   | -0.010 | -0.010              | -0.051          | -0.078 | -0.020                   | 0.007          | 0.083                                           | -0.122                          | -0.048           | -0.135                 | 0.215  | -0.049                 | 0.017                                  | -0.011                                 | -0.071                  | 1.000                                | -0.082                                             | -0.111 |
| French or Italian<br>(language of<br>interview) | -0.132   | -0.004 | -0.551              | 0.177           | 0.182  | 0.043                    | 0.171          | 0.018                                           | -0.015                          | 0.007            | 0.038                  | 0.046  | -0.007                 | -0.164                                 | -0.074                                 | 0.022                   | -0.082                               | 1.000                                              | -0.006 |
| CAPI                                            | -0.299   | 0.080  | 0.015               | 0.107           | 0.000  | 0.031                    | 0.046          | -0.063                                          | 0.025                           | -0.152           | 0.022                  | 0.018  | -0.047                 | 0.327                                  | 0.238                                  | 0.124                   | -0.111                               | -0.006                                             | 1.000  |

**Correlation Matrix for the Independent Variables of Confidence Item Nonresponse Model among Respondents Aged 50 and Above in Zimbabwe**

|                                                  | Constant | Female | Mashonaland & Manicaland | Matebeleland | Midlands & Masvingo | Willingness to fight for country (Yes) | Not close feel to country | 91 minutes and more | Fair health | Poor health | Low level education | North Ndebele or English (language of interview) |
|--------------------------------------------------|----------|--------|--------------------------|--------------|---------------------|----------------------------------------|---------------------------|---------------------|-------------|-------------|---------------------|--------------------------------------------------|
| Constant                                         | 1.000    | -0.464 | -0.483                   | -0.131       | -0.515              | -0.413                                 | -0.145                    | -0.446              | -0.407      | -0.449      | -0.038              | -0.338                                           |
| Female                                           | -0.464   | 1.000  | 0.082                    | -0.008       | 0.088               | 0.246                                  | 0.071                     | 0.073               | 0.062       | 0.039       | -0.257              | 0.108                                            |
| Mashonaland & Manicaland                         | -0.483   | 0.082  | 1.000                    | 0.359        | 0.639               | -0.020                                 | 0.064                     | 0.181               | -0.016      | 0.047       | -0.215              | 0.216                                            |
| Matebeleland                                     | -0.131   | -0.008 | 0.359                    | 1.000        | 0.387               | 0.097                                  | 0.100                     | -0.004              | -0.079      | -0.041      | -0.313              | -0.510                                           |
| Midlands & Masvingo                              | -0.515   | 0.088  | 0.639                    | 0.387        | 1.000               | -0.004                                 | 0.165                     | 0.131               | -0.042      | 0.074       | -0.166              | 0.214                                            |
| Willingness to fight for country (Yes)           | -0.413   | 0.246  | -0.020                   | 0.097        | -0.004              | 1.000                                  | 0.042                     | 0.155               | 0.065       | 0.109       | -0.053              | -0.060                                           |
| Not close feel to country                        | -0.145   | 0.071  | 0.064                    | 0.100        | 0.165               | 0.042                                  | 1.000                     | 0.073               | -0.098      | -0.155      | -0.018              | -0.042                                           |
| 91 minutes and more                              | -0.446   | 0.073  | 0.181                    | -0.004       | 0.131               | 0.155                                  | 0.073                     | 1.000               | 0.074       | 0.059       | 0.003               | 0.051                                            |
| Fair health                                      | -0.407   | 0.062  | -0.016                   | -0.079       | -0.042              | 0.065                                  | -0.098                    | 0.074               | 1.000       | 0.648       | -0.105              | -0.089                                           |
| Poor health                                      | -0.449   | 0.039  | 0.047                    | -0.041       | 0.074               | 0.109                                  | -0.155                    | 0.059               | 0.648       | 1.000       | -0.115              | 0.059                                            |
| Low level education                              | -0.038   | -0.257 | -0.215                   | -0.313       | -0.166              | -0.053                                 | -0.018                    | 0.003               | -0.105      | -0.115      | 1.000               | 0.273                                            |
| North Ndebele or English (language of interview) | -0.338   | 0.108  | 0.216                    | -0.510       | 0.214               | -0.060                                 | -0.042                    | 0.051               | -0.089      | 0.059       | 0.273               | 1.000                                            |

**Correlation Matrix for the Independent Variables of Retrospective Item Nonresponse Model among Respondents Aged 50 and Above in Zimbabwe**

|                                                           | Constant | Female | Mashonaland<br>&<br>Manicaland | Willingness<br>to fight<br>for country<br>(Yes) | 91 minutes<br>and more | Poor<br>health | Low level<br>education | North Ndebele<br>or English<br>(language of<br>interview) |
|-----------------------------------------------------------|----------|--------|--------------------------------|-------------------------------------------------|------------------------|----------------|------------------------|-----------------------------------------------------------|
| Constant                                                  | 1.000    | -0.459 | -0.412                         | -0.472                                          | -0.382                 | -0.326         | -0.180                 | -0.476                                                    |
| Female                                                    | -0.459   | 1.000  | 0.127                          | 0.219                                           | -0.012                 | -0.026         | -0.287                 | 0.060                                                     |
| Mashonaland<br>& Manicaland                               | -0.412   | 0.127  | 1.000                          | -0.079                                          | 0.111                  | 0.001          | -0.155                 | 0.342                                                     |
| Willingness to<br>fight<br>for country                    | -0.472   | 0.219  | -0.079                         | 1.000                                           | 0.100                  | 0.036          | 0.061                  | 0.045                                                     |
| 91 minutes and<br>more                                    | -0.382   | -0.012 | 0.111                          | 0.100                                           | 1.000                  | -0.022         | 0.012                  | -0.009                                                    |
| Poor health                                               | -0.326   | -0.026 | 0.001                          | 0.036                                           | -0.022                 | 1.000          | -0.097                 | 0.145                                                     |
| Low level<br>education                                    | -0.180   | -0.287 | -0.155                         | 0.061                                           | 0.012                  | -0.097         | 1.000                  | 0.118                                                     |
| North Ndebele<br>or English<br>(language of<br>interview) | -0.476   | 0.060  | 0.342                          | 0.045                                           | -0.009                 | 0.145          | 0.118                  | 1.000                                                     |

**Correlation Matrix for the Independent Variables of Confidence Item Nonresponse Model among Respondents Aged 50 Below in Zimbabwe**

|                                                         | Constant | Female | Mashonaland & Manicaland | Matebeleland | Midlands & Masvingo | Willingness to fight for country (Yes) | Not close feel to country | 71-90 minutes | 91 minutes and more | Ever married (Not married now) | Single/Never married | Fair health | Poor health | Somewhat interested or not very interested in interview | Low level education | North Ndebele or English (language of interview) |
|---------------------------------------------------------|----------|--------|--------------------------|--------------|---------------------|----------------------------------------|---------------------------|---------------|---------------------|--------------------------------|----------------------|-------------|-------------|---------------------------------------------------------|---------------------|--------------------------------------------------|
| Constant                                                | 1.000    | -0.372 | -0.494                   | -0.234       | -0.387              | -0.350                                 | -0.189                    | -0.348        | -0.477              | -0.157                         | -0.242               | -0.264      | -0.128      | -0.160                                                  | -0.096              | -0.352                                           |
| Female                                                  | -0.372   | 1.000  | -0.013                   | 0.016        | -0.001              | 0.118                                  | -0.008                    | 0.033         | 0.046               | -0.103                         | 0.169                | -0.052      | -0.003      | -0.090                                                  | -0.067              | 0.057                                            |
| Mashonaland & Manicaland                                | -0.494   | -0.013 | 1.000                    | 0.392        | 0.531               | -0.063                                 | 0.106                     | -0.029        | 0.177               | 0.083                          | 0.052                | 0.006       | -0.038      | 0.060                                                   | -0.092              | 0.223                                            |
| Matebeleland                                            | -0.234   | 0.016  | 0.392                    | 1.000        | 0.381               | 0.011                                  | 0.074                     | 0.034         | -0.020              | 0.138                          | 0.057                | -0.080      | -0.070      | 0.019                                                   | -0.123              | -0.299                                           |
| Midlands & Masvingo                                     | -0.387   | -0.001 | 0.531                    | 0.381        | 1.000               | 0.010                                  | 0.063                     | -0.051        | 0.094               | -0.010                         | 0.030                | -0.094      | 0.003       | 0.058                                                   | -0.073              | 0.122                                            |
| Willingness to fight for country (Yes)                  | -0.350   | 0.118  | -0.063                   | 0.011        | 0.010               | 1.000                                  | 0.057                     | -0.021        | 0.030               | 0.077                          | 0.026                | -0.057      | -0.012      | 0.010                                                   | -0.088              | 0.020                                            |
| Not close feel to country                               | -0.189   | -0.008 | 0.106                    | 0.074        | 0.063               | 0.057                                  | 1.000                     | -0.018        | 0.053               | 0.004                          | -0.104               | 0.052       | -0.112      | -0.036                                                  | 0.036               | -0.109                                           |
| 71-90 minutes                                           | -0.348   | 0.033  | -0.029                   | 0.034        | -0.051              | -0.021                                 | -0.018                    | 1.000         | 0.458               | 0.079                          | -0.005               | -0.003      | 0.005       | 0.022                                                   | 0.071               | 0.166                                            |
| 91 minutes and more                                     | -0.477   | 0.046  | 0.177                    | -0.020       | 0.094               | 0.030                                  | 0.053                     | 0.458         | 1.000               | 0.061                          | 0.010                | 0.022       | -0.091      | 0.008                                                   | 0.000               | 0.030                                            |
| Ever married (Not married now)                          | -0.157   | -0.103 | 0.083                    | 0.138        | -0.010              | 0.077                                  | 0.004                     | 0.079         | 0.061               | 1.000                          | 0.157                | -0.034      | -0.115      | 0.055                                                   | -0.061              | -0.006                                           |
| Single/Never married                                    | -0.242   | 0.169  | 0.052                    | 0.057        | 0.030               | 0.026                                  | -0.104                    | -0.005        | 0.010               | 0.157                          | 1.000                | 0.074       | 0.077       | 0.025                                                   | 0.117               | -0.135                                           |
| Fair health                                             | -0.264   | -0.052 | 0.006                    | -0.080       | -0.094              | -0.057                                 | 0.052                     | -0.003        | 0.022               | -0.034                         | 0.074                | 1.000       | 0.392       | 0.057                                                   | -0.005              | 0.017                                            |
| Poor health                                             | -0.128   | -0.003 | -0.038                   | -0.070       | 0.003               | -0.012                                 | -0.112                    | 0.005         | -0.091              | -0.115                         | 0.077                | 0.392       | 1.000       | 0.024                                                   | -0.100              | -0.027                                           |
| Somewhat interested or not very interested in interview | -0.160   | -0.090 | 0.060                    | 0.019        | 0.058               | 0.010                                  | -0.036                    | 0.022         | 0.008               | 0.055                          | 0.025                | 0.057       | 0.024       | 1.000                                                   | 0.040               | -0.021                                           |
| Low level education                                     | -0.096   | -0.067 | -0.092                   | -0.123       | -0.073              | -0.088                                 | 0.036                     | 0.071         | 0.000               | -0.061                         | 0.117                | -0.005      | -0.100      | 0.040                                                   | 1.000               | 0.139                                            |
| North Ndebele or English (language of interview)        | -0.352   | 0.057  | 0.223                    | -0.299       | 0.122               | 0.020                                  | -0.109                    | 0.166         | 0.030               | -0.006                         | -0.135               | 0.017       | -0.027      | -0.021                                                  | 0.139               | 1.000                                            |

**Correlation Matrix for the Independent Variables of Retrospective Item Nonresponse Model among Respondents Aged 50 Below in Zimbabwe**

|                                                         | Constant | Female | Mashonaland & Manicaland | Matebeleland | Midlands & Masvingo | Willingness to fight for country (Yes) | Not close feel to country | 91 minutes and more | Single | Fair health | Poor health | Somewhat interested or not very interested in interview | Low level education | High level education | North Ndebele or English (language of interview) |
|---------------------------------------------------------|----------|--------|--------------------------|--------------|---------------------|----------------------------------------|---------------------------|---------------------|--------|-------------|-------------|---------------------------------------------------------|---------------------|----------------------|--------------------------------------------------|
| Constant                                                | 1.000    | -0.430 | -0.473                   | -0.200       | -0.380              | -0.490                                 | -0.101                    | -0.330              | -0.257 | -0.262      | -0.162      | -0.145                                                  | -0.119              | -0.167               | -0.252                                           |
| Female                                                  | -0.430   | 1.000  | 0.029                    | 0.061        | 0.019               | 0.103                                  | -0.041                    | 0.033               | 0.225  | -0.040      | 0.014       | -0.080                                                  | -0.025              | 0.078                | 0.037                                            |
| Mashonaland & Manicaland                                | -0.473   | 0.029  | 1.000                    | 0.304        | 0.515               | -0.079                                 | 0.080                     | 0.144               | 0.016  | 0.003       | -0.036      | -0.001                                                  | -0.049              | 0.012                | 0.257                                            |
| Matebeleland                                            | -0.200   | 0.061  | 0.304                    | 1.000        | 0.301               | 0.083                                  | -0.009                    | -0.084              | 0.027  | -0.088      | -0.048      | -0.041                                                  | -0.067              | 0.101                | -0.314                                           |
| Midlands & Masvingo                                     | -0.380   | 0.019  | 0.515                    | 0.301        | 1.000               | -0.022                                 | 0.048                     | 0.066               | -0.026 | -0.054      | 0.002       | 0.026                                                   | -0.025              | -0.067               | 0.170                                            |
| Willingness to fight for country (Yes)                  | -0.490   | 0.103  | -0.079                   | 0.083        | -0.022              | 1.000                                  | 0.098                     | -0.003              | 0.001  | -0.037      | -0.033      | 0.076                                                   | 0.006               | 0.061                | -0.013                                           |
| Not close feel to country                               | -0.101   | -0.041 | 0.080                    | -0.009       | 0.048               | 0.098                                  | 1.000                     | 0.011               | -0.059 | 0.001       | -0.082      | -0.063                                                  | -0.056              | -0.047               | -0.092                                           |
| 91 minutes and more                                     | -0.330   | 0.033  | 0.144                    | -0.084       | 0.066               | -0.003                                 | 0.011                     | 1.000               | 0.038  | 0.015       | -0.058      | -0.002                                                  | 0.043               | 0.022                | -0.030                                           |
| Single                                                  | -0.257   | 0.225  | 0.016                    | 0.027        | -0.026              | 0.001                                  | -0.059                    | 0.038               | 1.000  | 0.088       | 0.090       | -0.018                                                  | 0.111               | 0.009                | -0.188                                           |
| Fair health                                             | -0.262   | -0.040 | 0.003                    | -0.088       | -0.054              | -0.037                                 | 0.001                     | 0.015               | 0.088  | 1.000       | 0.375       | 0.034                                                   | -0.021              | 0.003                | 0.004                                            |
| Poor health                                             | -0.162   | 0.014  | -0.036                   | -0.048       | 0.002               | -0.033                                 | -0.082                    | -0.058              | 0.090  | 0.375       | 1.000       | -0.004                                                  | -0.122              | 0.055                | -0.068                                           |
| Somewhat interested or not very interested in interview | -0.145   | -0.080 | -0.001                   | -0.041       | 0.026               | 0.076                                  | -0.063                    | -0.002              | -0.018 | 0.034       | -0.004      | 1.000                                                   | 0.049               | 0.045                | -0.002                                           |
| Low level education                                     | -0.119   | -0.025 | -0.049                   | -0.067       | -0.025              | 0.006                                  | -0.056                    | 0.043               | 0.111  | -0.021      | -0.122      | 0.049                                                   | 1.000               | 0.127                | 0.073                                            |
| High level education                                    | -0.167   | 0.078  | 0.012                    | 0.101        | -0.067              | 0.061                                  | -0.047                    | 0.022               | 0.009  | 0.003       | 0.055       | 0.045                                                   | 0.127               | 1.000                | -0.147                                           |
| North Ndebele or English (language of interview)        | -0.252   | 0.037  | 0.257                    | -0.314       | 0.170               | -0.013                                 | -0.092                    | -0.030              | -0.188 | 0.004       | -0.068      | -0.002                                                  | 0.073               | -0.147               | 1.000                                            |

## APPENDIX B. CORRELATION MATRICES OF MULTINOMIAL LOGISTIC REGRESSION MODELS

**Correlations for the Independent Variables of Religiosity Item Nonresponse Model among Respondents Aged 50 and Above in Italy**

|                                           |                                    | Sex     | Region<br>(Italy) | Willingness<br>to<br>fight for<br>country | How close<br>do you<br>feel to<br>country | Total length<br>of interview | Marital<br>Status | Subjective<br>state of<br>health | Respondent<br>interested<br>during<br>the<br>interview | Education |
|-------------------------------------------|------------------------------------|---------|-------------------|-------------------------------------------|-------------------------------------------|------------------------------|-------------------|----------------------------------|--------------------------------------------------------|-----------|
| Sex                                       | Pearson                            | 1       | -0.023            | -.172**                                   | 0.047                                     | 0.015                        | -.064*            | .159**                           | .096**                                                 | -.127**   |
|                                           | Correlation<br>Sig. (2-<br>tailed) |         | 0.469             | 0.000                                     | 0.136                                     | 0.635                        | 0.041             | 0.000                            | 0.002                                                  | 0.000     |
| Region<br>(Italy)                         | Pearson                            | -0.023  | 1                 | 0.019                                     | -0.027                                    | 0.001                        | -0.041            | .071*                            | -0.055                                                 | 0.047     |
|                                           | Correlation<br>Sig. (2-<br>tailed) | 0.469   |                   | 0.549                                     | 0.388                                     | 0.980                        | 0.199             | 0.024                            | 0.083                                                  | 0.136     |
| Willingness<br>to<br>fight for<br>country | Pearson                            | -.172** | 0.019             | 1                                         | -.167**                                   | 0.016                        | -0.016            | -0.039                           | -.205**                                                | .110**    |
|                                           | Correlation<br>Sig. (2-<br>tailed) | 0.000   | 0.549             |                                           | 0.000                                     | 0.612                        | 0.612             | 0.215                            | 0.000                                                  | 0.000     |
| How close<br>do you<br>feel to<br>country | Pearson                            | 0.047   | -0.027            | -.167**                                   | 1                                         | -0.061                       | -0.030            | 0.056                            | .108**                                                 | -.070*    |
|                                           | Correlation<br>Sig. (2-<br>tailed) | 0.136   | 0.388             | 0.000                                     |                                           | 0.052                        | 0.346             | 0.074                            | 0.001                                                  | 0.026     |
| Total length<br>of interview              | Pearson                            | 0.015   | 0.001             | 0.016                                     | -0.061                                    | 1                            | 0.012             | 0.014                            | -.088**                                                | 0.004     |
|                                           | Correlation<br>Sig. (2-<br>tailed) | 0.635   | 0.980             | 0.612                                     | 0.052                                     |                              | 0.713             | 0.660                            | 0.005                                                  | 0.906     |
| Marital<br>Status                         | Pearson                            | -.064*  | -0.041            | -0.016                                    | -0.030                                    | 0.012                        | 1                 | 0.009                            | 0.023                                                  | .087**    |
|                                           | Correlation<br>Sig. (2-<br>tailed) | 0.041   | 0.199             | 0.612                                     | 0.346                                     | 0.713                        |                   | 0.776                            | 0.472                                                  | 0.006     |
| Subjective<br>state of<br>health          | Pearson                            | .159**  | .071*             | -0.039                                    | 0.056                                     | 0.014                        | 0.009             | 1                                | .103**                                                 | -.217**   |
|                                           | Correlation<br>Sig. (2-<br>tailed) | 0.000   | 0.024             | 0.215                                     | 0.074                                     | 0.660                        | 0.776             |                                  | 0.001                                                  | 0.000     |
| Respondent<br>interested<br>during<br>the | Pearson                            | .096**  | -0.055            | -.205**                                   | .108**                                    | -.088**                      | 0.023             | .103**                           | 1                                                      | -.209**   |
|                                           | Correlation<br>Sig. (2-<br>tailed) | 0.002   | 0.083             | 0.000                                     | 0.001                                     | 0.005                        | 0.472             | 0.001                            |                                                        | 0.000     |
| Education                                 | Pearson                            | -.127** | 0.047             | .110**                                    | -.070*                                    | 0.004                        | .087**            | -.217**                          | -.209**                                                | 1         |
|                                           | Correlation<br>Sig. (2-<br>tailed) | 0.000   | 0.136             | 0.000                                     | 0.026                                     | 0.906                        | 0.006             | 0.000                            | 0.000                                                  |           |

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

**Correlations for the Independent Variables of Confidence Item Nonresponse Model among Respondents Aged 50 and Above in Italy**

|                                            |                     | Sex     | Region (Italy) | Willingness to fight for country | How close do you feel to country | Total length of interview | Marital Status | Subjective state of health | Respondent interested during the interview | Education |
|--------------------------------------------|---------------------|---------|----------------|----------------------------------|----------------------------------|---------------------------|----------------|----------------------------|--------------------------------------------|-----------|
| Sex                                        | Pearson Correlation | 1       | -0.030         | -.172**                          | 0.047                            | 0.015                     | -.064*         | .159**                     | .096**                                     | -.154**   |
|                                            | Sig. (2-tailed)     |         | 0.342          | 0.000                            | 0.136                            | 0.635                     | 0.041          | 0.000                      | 0.002                                      | 0.000     |
| Region (Italy)                             | Pearson Correlation | -0.030  | 1              | 0.017                            | 0.043                            | -0.004                    | -0.041         | 0.056                      | -0.024                                     | 0.015     |
|                                            | Sig. (2-tailed)     | 0.342   |                | 0.583                            | 0.176                            | 0.902                     | 0.193          | 0.077                      | 0.442                                      | 0.628     |
| Willingness to fight for country           | Pearson Correlation | -.172** | 0.017          | 1                                | -.167**                          | 0.016                     | -0.016         | -0.039                     | -.205**                                    | .106**    |
|                                            | Sig. (2-tailed)     | 0.000   | 0.583          |                                  | 0.000                            | 0.612                     | 0.612          | 0.215                      | 0.000                                      | 0.001     |
| How close do you feel to country           | Pearson Correlation | 0.047   | 0.043          | -.167**                          | 1                                | -0.061                    | -0.030         | 0.056                      | .108**                                     | -0.061    |
|                                            | Sig. (2-tailed)     | 0.136   | 0.176          | 0.000                            |                                  | 0.052                     | 0.346          | 0.074                      | 0.001                                      | 0.053     |
| Total length of interview                  | Pearson Correlation | 0.015   | -0.004         | 0.016                            | -0.061                           | 1                         | 0.012          | 0.014                      | -.088**                                    | -0.005    |
|                                            | Sig. (2-tailed)     | 0.635   | 0.902          | 0.612                            | 0.052                            |                           | 0.713          | 0.660                      | 0.005                                      | 0.880     |
| Marital Status                             | Pearson Correlation | -.064*  | -0.041         | -0.016                           | -0.030                           | 0.012                     | 1              | 0.009                      | 0.023                                      | .075*     |
|                                            | Sig. (2-tailed)     | 0.041   | 0.193          | 0.612                            | 0.346                            | 0.713                     |                | 0.776                      | 0.472                                      | 0.017     |
| Subjective state of health                 | Pearson Correlation | .159**  | 0.056          | -0.039                           | 0.056                            | 0.014                     | 0.009          | 1                          | .103**                                     | -.234**   |
|                                            | Sig. (2-tailed)     | 0.000   | 0.077          | 0.215                            | 0.074                            | 0.660                     | 0.776          |                            | 0.001                                      | 0.000     |
| Respondent interested during the interview | Pearson Correlation | .096**  | -0.024         | -.205**                          | .108**                           | -.088**                   | 0.023          | .103**                     | 1                                          | -.167**   |
|                                            | Sig. (2-tailed)     | 0.002   | 0.442          | 0.000                            | 0.001                            | 0.005                     | 0.472          | 0.001                      |                                            | 0.000     |
| Education                                  | Pearson Correlation | -.154** | 0.015          | .106**                           | -0.061                           | -0.005                    | .075*          | -.234**                    | -.167**                                    | 1         |
|                                            | Sig. (2-tailed)     | 0.000   | 0.628          | 0.001                            | 0.053                            | 0.880                     | 0.017          | 0.000                      | 0.000                                      |           |

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

**Correlations for the Independent Variables of Religiosity Item Nonresponse Model among Respondents Aged 50 Below in Italy**

|                                           |                                    | Sex     | Region<br>(Italy) | Willingness<br>to<br>fight for<br>country | How close<br>do you<br>feel to<br>country | Total length<br>of interview | Marital<br>Status | Subjective<br>state of<br>health | Respondent<br>interested<br>during<br>the<br>interview | Education |
|-------------------------------------------|------------------------------------|---------|-------------------|-------------------------------------------|-------------------------------------------|------------------------------|-------------------|----------------------------------|--------------------------------------------------------|-----------|
| Sex                                       | Pearson                            | 1       | 0.001             | -.127**                                   | -0.018                                    | -0.008                       | -.135**           | -0.016                           | -0.005                                                 | 0.064     |
|                                           | Correlation<br>Sig. (2-<br>tailed) |         | 0.968             | 0.000                                     | 0.596                                     | 0.826                        | 0.000             | 0.638                            | 0.879                                                  | 0.065     |
| Region<br>(Italy)                         | Pearson                            | 0.001   | 1                 | -0.045                                    | -0.049                                    | -0.055                       | -0.026            | 0.035                            | -0.017                                                 | 0.028     |
|                                           | Correlation<br>Sig. (2-<br>tailed) | 0.968   |                   | 0.193                                     | 0.155                                     | 0.111                        | 0.457             | 0.319                            | 0.616                                                  | 0.422     |
| Willingness<br>to<br>fight for<br>country | Pearson                            | -.127** | -0.045            | 1                                         | -.142**                                   | -0.032                       | -0.063            | 0.035                            | -.121**                                                | -0.028    |
|                                           | Correlation<br>Sig. (2-<br>tailed) | 0.000   | 0.193             |                                           | 0.000                                     | 0.355                        | 0.069             | 0.314                            | 0.000                                                  | 0.426     |
| How close<br>do you<br>feel to<br>country | Pearson                            | -0.018  | -0.049            | -.142**                                   | 1                                         | 0.046                        | .095**            | .107**                           | -0.033                                                 | -0.067    |
|                                           | Correlation<br>Sig. (2-<br>tailed) | 0.596   | 0.155             | 0.000                                     |                                           | 0.183                        | 0.006             | 0.002                            | 0.342                                                  | 0.055     |
| Total length<br>of interview              | Pearson                            | -0.008  | -0.055            | -0.032                                    | 0.046                                     | 1                            | -0.029            | .097**                           | -0.010                                                 | -0.050    |
|                                           | Correlation<br>Sig. (2-<br>tailed) | 0.826   | 0.111             | 0.355                                     | 0.183                                     |                              | 0.406             | 0.005                            | 0.781                                                  | 0.151     |
| Marital<br>Status                         | Pearson                            | -.135** | -0.026            | -0.063                                    | .095**                                    | -0.029                       | 1                 | -.073*                           | -0.014                                                 | 0.015     |
|                                           | Correlation<br>Sig. (2-<br>tailed) | 0.000   | 0.457             | 0.069                                     | 0.006                                     | 0.406                        |                   | 0.034                            | 0.689                                                  | 0.670     |
| Subjective<br>state of<br>health          | Pearson                            | -0.016  | 0.035             | 0.035                                     | .107**                                    | .097**                       | -.073*            | 1                                | -.086*                                                 | -0.012    |
|                                           | Correlation<br>Sig. (2-<br>tailed) | 0.638   | 0.319             | 0.314                                     | 0.002                                     | 0.005                        | 0.034             |                                  | 0.013                                                  | 0.726     |
| Respondent<br>interested<br>during<br>the | Pearson                            | -0.005  | -0.017            | -.121**                                   | -0.033                                    | -0.010                       | -0.014            | -.086*                           | 1                                                      | -0.059    |
|                                           | Correlation<br>Sig. (2-<br>tailed) | 0.879   | 0.616             | 0.000                                     | 0.342                                     | 0.781                        | 0.689             | 0.013                            |                                                        | 0.088     |
| Education                                 | Pearson                            | 0.064   | 0.028             | -0.028                                    | -0.067                                    | -0.050                       | 0.015             | -0.012                           | -0.059                                                 | 1         |
|                                           | Correlation<br>Sig. (2-<br>tailed) | 0.065   | 0.422             | 0.426                                     | 0.055                                     | 0.151                        | 0.670             | 0.726                            | 0.088                                                  |           |

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

**Correlations for the Independent Variables of Confidence Item Nonresponse Model among Respondents Aged 50 Below in Italy**

|                                            |                     | Sex     | Region (Italy) | Willingness to fight for country | How close do you feel to country | Total length of interview | Marital Status | Subjective state of health | Respondent interested during the interview | Education |
|--------------------------------------------|---------------------|---------|----------------|----------------------------------|----------------------------------|---------------------------|----------------|----------------------------|--------------------------------------------|-----------|
| Sex                                        | Pearson Correlation | 1       | 0.015          | -.127**                          | -0.018                           | 0.005                     | -.135**        | -0.016                     | -0.005                                     | 0.064     |
|                                            | Sig. (2-tailed)     |         | 0.663          | 0.000                            | 0.596                            | 0.875                     | 0.000          | 0.638                      | 0.879                                      | 0.065     |
| Region (Italy)                             | Pearson Correlation | 0.015   | 1              | -.088*                           | -0.037                           | -.069*                    | -0.032         | 0.012                      | 0.007                                      | -0.011    |
|                                            | Sig. (2-tailed)     | 0.663   |                | 0.011                            | 0.280                            | 0.048                     | 0.363          | 0.725                      | 0.845                                      | 0.755     |
| Willingness to fight for country           | Pearson Correlation | -.127** | -.088*         | 1                                | -.142**                          | 0.032                     | -0.063         | 0.035                      | -.121**                                    | -0.028    |
|                                            | Sig. (2-tailed)     | 0.000   | 0.011          |                                  | 0.000                            | 0.361                     | 0.069          | 0.314                      | 0.000                                      | 0.426     |
| How close do you feel to country           | Pearson Correlation | -0.018  | -0.037         | -.142**                          | 1                                | -0.045                    | .095**         | .107**                     | -0.033                                     | -0.067    |
|                                            | Sig. (2-tailed)     | 0.596   | 0.280          | 0.000                            |                                  | 0.190                     | 0.006          | 0.002                      | 0.342                                      | 0.055     |
| Total length of interview                  | Pearson Correlation | 0.005   | -.069*         | 0.032                            | -0.045                           | 1                         | -0.064         | .120**                     | -0.036                                     | -.069*    |
|                                            | Sig. (2-tailed)     | 0.875   | 0.048          | 0.361                            | 0.190                            |                           | 0.063          | 0.001                      | 0.300                                      | 0.048     |
| Marital Status                             | Pearson Correlation | -.135** | -0.032         | -0.063                           | .095**                           | -0.064                    | 1              | -.073*                     | -0.014                                     | 0.015     |
|                                            | Sig. (2-tailed)     | 0.000   | 0.363          | 0.069                            | 0.006                            | 0.063                     |                | 0.034                      | 0.689                                      | 0.670     |
| Subjective state of health                 | Pearson Correlation | -0.016  | 0.012          | 0.035                            | .107**                           | .120**                    | -.073*         | 1                          | -.086*                                     | -0.012    |
|                                            | Sig. (2-tailed)     | 0.638   | 0.725          | 0.314                            | 0.002                            | 0.001                     | 0.034          |                            | 0.013                                      | 0.726     |
| Respondent interested during the interview | Pearson Correlation | -0.005  | 0.007          | -.121**                          | -0.033                           | -0.036                    | -0.014         | -.086*                     | 1                                          | -0.059    |
|                                            | Sig. (2-tailed)     | 0.879   | 0.845          | 0.000                            | 0.342                            | 0.300                     | 0.689          | 0.013                      |                                            | 0.088     |
| Education                                  | Pearson Correlation | 0.064   | -0.011         | -0.028                           | -0.067                           | -.069*                    | 0.015          | -0.012                     | -0.059                                     | 1         |
|                                            | Sig. (2-tailed)     | 0.065   | 0.755          | 0.426                            | 0.055                            | 0.048                     | 0.670          | 0.726                      | 0.088                                      |           |

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

**Correlations for the Independent Variables of Religiosity Item Nonresponse Model among Respondents Aged 50 Below in Turkey**

|                                           |                                    | Sex     | Region<br>(Turkey) | Willingness<br>to<br>fight for<br>country | How close<br>do you<br>feel to<br>country | Marital<br>Status | Subjective<br>state of<br>health | Respondent<br>interested<br>during<br>the<br>interview | Education |
|-------------------------------------------|------------------------------------|---------|--------------------|-------------------------------------------|-------------------------------------------|-------------------|----------------------------------|--------------------------------------------------------|-----------|
| Sex                                       | Pearson                            | 1       | -0.011             | -.082**                                   | 0.008                                     | -.147**           | .049*                            | 0.013                                                  | -.072**   |
|                                           | Correlation<br>Sig. (2-<br>tailed) |         | 0.666              | 0.001                                     | 0.748                                     | 0.000             | 0.043                            | 0.591                                                  | 0.003     |
| Region<br>(Turkey)                        | Pearson                            | -0.011  | 1                  | -.058*                                    | -0.047                                    | -0.039            | -0.002                           | -.067**                                                | -0.029    |
|                                           | Correlation<br>Sig. (2-<br>tailed) | 0.666   |                    | 0.018                                     | 0.053                                     | 0.112             | 0.940                            | 0.006                                                  | 0.239     |
| Willingness<br>to<br>fight for<br>country | Pearson                            | -.082** | -.058*             | 1                                         | -.157**                                   | -0.035            | -0.043                           | -.111**                                                | -0.014    |
|                                           | Correlation<br>Sig. (2-<br>tailed) | 0.001   | 0.018              |                                           | 0.000                                     | 0.153             | 0.076                            | 0.000                                                  | 0.570     |
| How close<br>do you<br>feel to<br>country | Pearson                            | 0.008   | -0.047             | -.157**                                   | 1                                         | 0.031             | .068**                           | .215**                                                 | -0.012    |
|                                           | Correlation<br>Sig. (2-<br>tailed) | 0.748   | 0.053              | 0.000                                     |                                           | 0.209             | 0.005                            | 0.000                                                  | 0.637     |
| Marital<br>Status                         | Pearson                            | -.147** | -0.039             | -0.035                                    | 0.031                                     | 1                 | -.086**                          | 0.031                                                  | .160**    |
|                                           | Correlation<br>Sig. (2-<br>tailed) | 0.000   | 0.112              | 0.153                                     | 0.209                                     |                   | 0.000                            | 0.207                                                  | 0.000     |
| Subjective<br>state of<br>health          | Pearson                            | .049*   | -0.002             | -0.043                                    | .068**                                    | -.086**           | 1                                | .064**                                                 | -.080**   |
|                                           | Correlation<br>Sig. (2-<br>tailed) | 0.043   | 0.940              | 0.076                                     | 0.005                                     | 0.000             |                                  | 0.008                                                  | 0.001     |
| Respondent<br>interested<br>during<br>the | Pearson                            | 0.013   | -.067**            | -.111**                                   | .215**                                    | 0.031             | .064**                           | 1                                                      | 0.026     |
|                                           | Correlation<br>Sig. (2-<br>tailed) | 0.591   | 0.006              | 0.000                                     | 0.000                                     | 0.207             | 0.008                            |                                                        | 0.293     |
| Education                                 | Pearson                            | -.072** | -0.029             | -0.014                                    | -0.012                                    | .160**            | -.080**                          | 0.026                                                  | 1         |
|                                           | Correlation<br>Sig. (2-<br>tailed) | 0.003   | 0.239              | 0.570                                     | 0.637                                     | 0.000             | 0.001                            | 0.293                                                  |           |

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

**Correlations for the Independent Variables of Confidence Item Nonresponse Model among Respondents Aged 50 Below in Turkey**

|                                           |                     | Sex     | Region<br>(Turkey) | Willingness<br>to<br>fight for<br>country | Marital<br>Status | Subjective<br>state of<br>health | Respondent<br>interested<br>during<br>the<br>interview | Education |
|-------------------------------------------|---------------------|---------|--------------------|-------------------------------------------|-------------------|----------------------------------|--------------------------------------------------------|-----------|
| Sex                                       | Pearson Correlation | 1       | -0.008             | -.084**                                   | -.148**           | .049*                            | 0.013                                                  | -.075**   |
|                                           | Sig. (2-tailed)     |         | 0.743              | 0.001                                     | 0.000             | 0.044                            | 0.579                                                  | 0.002     |
| Region<br>(Turkey)                        | Pearson Correlation | -0.008  | 1                  | -.057*                                    | -0.035            | 0.003                            | -.066**                                                | -0.032    |
|                                           | Sig. (2-tailed)     | 0.743   |                    | 0.018                                     | 0.147             | 0.886                            | 0.007                                                  | 0.191     |
| Willingness<br>to<br>fight for<br>country | Pearson Correlation | -.084** | -.057*             | 1                                         | -0.027            | -0.044                           | -.108**                                                | -0.011    |
|                                           | Sig. (2-tailed)     | 0.001   | 0.018              |                                           | 0.259             | 0.072                            | 0.000                                                  | 0.640     |
| Marital<br>Status                         | Pearson Correlation | -.148** | -0.035             | -0.027                                    | 1                 | -.086**                          | 0.034                                                  | .159**    |
|                                           | Sig. (2-tailed)     | 0.000   | 0.147              | 0.259                                     |                   | 0.000                            | 0.163                                                  | 0.000     |
| Subjective<br>state of<br>health          | Pearson Correlation | .049*   | 0.003              | -0.044                                    | -.086**           | 1                                | .066**                                                 | -.078**   |
|                                           | Sig. (2-tailed)     | 0.044   | 0.886              | 0.072                                     | 0.000             |                                  | 0.007                                                  | 0.001     |
| Respondent<br>interested<br>during<br>the | Pearson Correlation | 0.013   | -.066**            | -.108**                                   | 0.034             | .066**                           | 1                                                      | 0.029     |
|                                           | Sig. (2-tailed)     | 0.579   | 0.007              | 0.000                                     | 0.163             | 0.007                            |                                                        | 0.235     |
| Education                                 | Pearson Correlation | -.075** | -0.032             | -0.011                                    | .159**            | -.078**                          | 0.029                                                  | 1         |
|                                           | Sig. (2-tailed)     | 0.002   | 0.191              | 0.640                                     | 0.000             | 0.001                            | 0.235                                                  |           |

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

Correlations for the Independent Variables of Religiosity Item Nonresponse Model among Respondents Aged 50 and Above in Switzerland

|                                                     |                     | Sex     | Region<br>(Switzerland) | Willingness<br>to<br>fight for<br>country | Total length<br>of interview | Marital<br>Status | Subjective<br>state of<br>health | Respondent<br>interested<br>during<br>the<br>interview | Education | Respondent<br>immigrant /<br>born in<br>country | Language of<br>interview | Mode   |
|-----------------------------------------------------|---------------------|---------|-------------------------|-------------------------------------------|------------------------------|-------------------|----------------------------------|--------------------------------------------------------|-----------|-------------------------------------------------|--------------------------|--------|
| Sex                                                 | Pearson Correlation | 1       | 0.030                   | -.117**                                   | -0.002                       | -0.002            | -0.011                           | .073*                                                  | -.216**   | -0.005                                          | 0.027                    | -0.051 |
|                                                     | Sig. (2-tailed)     |         | 0.364                   | 0.000                                     | 0.956                        | 0.949             | 0.729                            | 0.025                                                  | 0.000     | 0.876                                           | 0.410                    | 0.118  |
| Region<br>(Switzerland)                             | Pearson Correlation | 0.030   | 1                       | -0.057                                    | -.066*                       | 0.007             | 0.006                            | -0.035                                                 | -0.031    | -.096**                                         | -.474**                  | .084** |
|                                                     | Sig. (2-tailed)     | 0.364   |                         | 0.079                                     | 0.043                        | 0.834             | 0.859                            | 0.288                                                  | 0.340     | 0.003                                           | 0.000                    | 0.010  |
| Willingness to<br>fight for<br>country              | Pearson Correlation | -.117** | -0.057                  | 1                                         | .074*                        | -0.028            | -0.018                           | -0.034                                                 | 0.002     | -.125**                                         | 0.063                    | -.073* |
|                                                     | Sig. (2-tailed)     | 0.000   | 0.079                   |                                           | 0.023                        | 0.389             | 0.591                            | 0.293                                                  | 0.953     | 0.000                                           | 0.054                    | 0.024  |
| Total length<br>of interview                        | Pearson Correlation | -0.002  | -.066*                  | .074*                                     | 1                            | -0.024            | 0.037                            | 0.026                                                  | -0.036    | 0.061                                           | 0.050                    | -0.052 |
|                                                     | Sig. (2-tailed)     | 0.956   | 0.043                   | 0.023                                     |                              | 0.456             | 0.253                            | 0.424                                                  | 0.270     | 0.060                                           | 0.128                    | 0.111  |
| Marital Status                                      | Pearson Correlation | -0.002  | 0.007                   | -0.028                                    | -0.024                       | 1                 | -0.016                           | 0.011                                                  | 0.032     | -0.036                                          | 0.012                    | 0.057  |
|                                                     | Sig. (2-tailed)     | 0.949   | 0.834                   | 0.389                                     | 0.456                        |                   | 0.618                            | 0.728                                                  | 0.326     | 0.271                                           | 0.718                    | 0.080  |
| Subjective<br>state of<br>health                    | Pearson Correlation | -0.011  | 0.006                   | -0.018                                    | 0.037                        | -0.016            | 1                                | 0.053                                                  | -.129**   | .088**                                          | .116**                   | -0.039 |
|                                                     | Sig. (2-tailed)     | 0.729   | 0.859                   | 0.591                                     | 0.253                        | 0.618             |                                  | 0.102                                                  | 0.000     | 0.007                                           | 0.000                    | 0.234  |
| Respondent<br>interested<br>during<br>the interview | Pearson Correlation | .073*   | -0.035                  | -0.034                                    | 0.026                        | 0.011             | 0.053                            | 1                                                      | -.069*    | -0.024                                          | .240**                   | .194** |
|                                                     | Sig. (2-tailed)     | 0.025   | 0.288                   | 0.293                                     | 0.424                        | 0.728             | 0.102                            |                                                        | 0.034     | 0.470                                           | 0.000                    | 0.000  |
| Education                                           | Pearson Correlation | -.216** | -0.031                  | 0.002                                     | -0.036                       | 0.032             | -.129**                          | -.069*                                                 | 1         | .141**                                          | -0.013                   | .135** |
|                                                     | Sig. (2-tailed)     | 0.000   | 0.340                   | 0.953                                     | 0.270                        | 0.326             | 0.000                            | 0.034                                                  |           | 0.000                                           | 0.693                    | 0.000  |
| Respondent<br>immigrant /<br>born in<br>country     | Pearson Correlation | -0.005  | -.096**                 | -.125**                                   | 0.061                        | -0.036            | .088**                           | -0.024                                                 | .141**    | 1                                               | .209**                   | -0.011 |
|                                                     | Sig. (2-tailed)     | 0.876   | 0.003                   | 0.000                                     | 0.060                        | 0.271             | 0.007                            | 0.470                                                  | 0.000     |                                                 | 0.000                    | 0.724  |
| Language of<br>interview                            | Pearson Correlation | 0.027   | -.474**                 | 0.063                                     | 0.050                        | 0.012             | .116**                           | .240**                                                 | -0.013    | .209**                                          | 1                        | -0.032 |
|                                                     | Sig. (2-tailed)     | 0.410   | 0.000                   | 0.054                                     | 0.128                        | 0.718             | 0.000                            | 0.000                                                  | 0.693     | 0.000                                           |                          | 0.323  |
| Mode                                                | Pearson Correlation | -0.051  | .084**                  | -.073*                                    | -0.052                       | 0.057             | -0.039                           | .194**                                                 | .135**    | -0.011                                          | -0.032                   | 1      |
|                                                     | Sig. (2-tailed)     | 0.118   | 0.010                   | 0.024                                     | 0.111                        | 0.080             | 0.234                            | 0.000                                                  | 0.000     | 0.724                                           | 0.323                    |        |

\*\*. Correlation is significant at the 0.01 level (2-tailed).

\*. Correlation is significant at the 0.05 level (2-tailed).

Correlations for the Independent Variables of Confidence Item Nonresponse Model among Respondents Aged 50 and Above in Switzerland

|                                                     |                                    | Sex     | Region<br>(Switzerland) | Willingness<br>to<br>fight for<br>country | Total length<br>of interview | Marital<br>Status | Subjective<br>state of<br>health | Respondent<br>interested<br>during<br>the<br>interview | Education | Respondent<br>immigrant /<br>born in<br>country | Language of<br>interview | Mode   |
|-----------------------------------------------------|------------------------------------|---------|-------------------------|-------------------------------------------|------------------------------|-------------------|----------------------------------|--------------------------------------------------------|-----------|-------------------------------------------------|--------------------------|--------|
| Sex                                                 | Pearson                            | 1       | 0.018                   | -.117**                                   | -0.002                       | -0.002            | -0.011                           | .073*                                                  | -.216**   | -0.005                                          | 0.027                    | -0.051 |
|                                                     | Correlation<br>Sig. (2-<br>tailed) |         | 0.591                   | 0.000                                     | 0.956                        | 0.949             | 0.729                            | 0.025                                                  | 0.000     | 0.876                                           | 0.410                    | 0.118  |
| Region<br>(Switzerland)                             | Pearson                            | 0.018   | 1                       | -.099**                                   | -0.056                       | -0.010            | -0.035                           | -0.051                                                 | -0.029    | -.080*                                          | -.527**                  | .105** |
|                                                     | Correlation<br>Sig. (2-<br>tailed) | 0.591   |                         | 0.002                                     | 0.083                        | 0.760             | 0.288                            | 0.115                                                  | 0.370     | 0.014                                           | 0.000                    | 0.001  |
| Willingness to<br>fight for<br>country              | Pearson                            | -.117** | -.099**                 | 1                                         | .074*                        | -0.028            | -0.018                           | -0.034                                                 | 0.002     | -.125**                                         | 0.063                    | -.073* |
|                                                     | Correlation<br>Sig. (2-<br>tailed) | 0.000   | 0.002                   |                                           | 0.023                        | 0.389             | 0.591                            | 0.293                                                  | 0.953     | 0.000                                           | 0.054                    | 0.024  |
| Total length<br>of interview                        | Pearson                            | -0.002  | -0.056                  | .074*                                     | 1                            | -0.024            | 0.037                            | 0.026                                                  | -0.036    | 0.061                                           | 0.050                    | -0.052 |
|                                                     | Correlation<br>Sig. (2-<br>tailed) | 0.956   | 0.083                   | 0.023                                     |                              | 0.456             | 0.253                            | 0.424                                                  | 0.270     | 0.060                                           | 0.128                    | 0.111  |
| Marital Status                                      | Pearson                            | -0.002  | -0.010                  | -0.028                                    | -0.024                       | 1                 | -0.016                           | 0.011                                                  | 0.032     | -0.036                                          | 0.012                    | 0.057  |
|                                                     | Correlation<br>Sig. (2-<br>tailed) | 0.949   | 0.760                   | 0.389                                     | 0.456                        |                   | 0.618                            | 0.728                                                  | 0.326     | 0.271                                           | 0.718                    | 0.080  |
| Subjective<br>state of<br>health                    | Pearson                            | -0.011  | -0.035                  | -0.018                                    | 0.037                        | -0.016            | 1                                | 0.053                                                  | -.129**   | .088**                                          | .116**                   | -0.039 |
|                                                     | Correlation<br>Sig. (2-<br>tailed) | 0.729   | 0.288                   | 0.591                                     | 0.253                        | 0.618             |                                  | 0.102                                                  | 0.000     | 0.007                                           | 0.000                    | 0.234  |
| Respondent<br>interested<br>during<br>the interview | Pearson                            | .073*   | -0.051                  | -0.034                                    | 0.026                        | 0.011             | 0.053                            | 1                                                      | -.069*    | -0.024                                          | .240**                   | .194** |
|                                                     | Correlation<br>Sig. (2-<br>tailed) | 0.025   | 0.115                   | 0.293                                     | 0.424                        | 0.728             | 0.102                            |                                                        | 0.034     | 0.470                                           | 0.000                    | 0.000  |
| Education                                           | Pearson                            | -.216** | -0.029                  | 0.002                                     | -0.036                       | 0.032             | -.129**                          | -.069*                                                 | 1         | .141**                                          | -0.013                   | .135** |
|                                                     | Correlation<br>Sig. (2-<br>tailed) | 0.000   | 0.370                   | 0.953                                     | 0.270                        | 0.326             | 0.000                            | 0.034                                                  |           | 0.000                                           | 0.693                    | 0.000  |
| Respondent<br>immigrant /<br>born in<br>country     | Pearson                            | -0.005  | -.080*                  | -.125**                                   | 0.061                        | -0.036            | .088**                           | -0.024                                                 | .141**    | 1                                               | .209**                   | -0.011 |
|                                                     | Correlation<br>Sig. (2-<br>tailed) | 0.876   | 0.014                   | 0.000                                     | 0.060                        | 0.271             | 0.007                            | 0.470                                                  | 0.000     |                                                 | 0.000                    | 0.724  |
| Language of<br>interview                            | Pearson                            | 0.027   | -.527**                 | 0.063                                     | 0.050                        | 0.012             | .116**                           | .240**                                                 | -0.013    | .209**                                          | 1                        | -0.032 |
|                                                     | Correlation<br>Sig. (2-<br>tailed) | 0.410   | 0.000                   | 0.054                                     | 0.128                        | 0.718             | 0.000                            | 0.000                                                  | 0.693     | 0.000                                           |                          | 0.323  |
| Mode                                                | Pearson                            | -0.051  | .105**                  | -.073*                                    | -0.052                       | 0.057             | -0.039                           | .194**                                                 | .135**    | -0.011                                          | -0.032                   | 1      |
|                                                     | Correlation<br>Sig. (2-<br>tailed) | 0.118   | 0.001                   | 0.024                                     | 0.111                        | 0.080             | 0.234                            | 0.000                                                  | 0.000     | 0.724                                           | 0.323                    |        |

\*\*. Correlation is significant at the 0.01 level (2-tailed).

\*. Correlation is significant at the 0.05 level (2-tailed).

Correlations for the Independent Variables of Religiosity Item Nonresponse Model among Respondents Aged 50 Below in Switzerland

|                                                     |                                    | Sex     | Region<br>(Switzerland) | Willingness<br>to<br>fight for<br>country | Total length<br>of interview | Marital<br>Status | Subjective<br>state of<br>health | Respondent<br>interested<br>during<br>the<br>interview | Education | Respondent<br>immigrant /<br>born in<br>country | Language of<br>interview | Mode    |
|-----------------------------------------------------|------------------------------------|---------|-------------------------|-------------------------------------------|------------------------------|-------------------|----------------------------------|--------------------------------------------------------|-----------|-------------------------------------------------|--------------------------|---------|
| Sex                                                 | Pearson                            | 1       | 0.011                   | -.165**                                   | -0.005                       | -0.018            | 0.021                            | -.073**                                                | 0.010     | 0.024                                           | -0.016                   | 0.030   |
|                                                     | Correlation<br>Sig. (2-<br>tailed) |         | 0.701                   | 0.000                                     | 0.869                        | 0.525             | 0.449                            | 0.009                                                  | 0.730     | 0.400                                           | 0.567                    | 0.277   |
| Region<br>(Switzerland)                             | Pearson                            | 0.011   | 1                       | -.055*                                    | -0.047                       | 0.009             | -0.035                           | -.101**                                                | 0.007     | -0.034                                          | -.468**                  | 0.000   |
|                                                     | Correlation<br>Sig. (2-<br>tailed) | 0.701   |                         | 0.048                                     | 0.090                        | 0.759             | 0.215                            | 0.000                                                  | 0.792     | 0.222                                           | 0.000                    | 0.996   |
| Willingness to<br>fight for<br>country              | Pearson                            | -.165** | -.055*                  | 1                                         | -0.010                       | -.097**           | -.069*                           | -0.013                                                 | -0.038    | -0.052                                          | 0.010                    | -0.047  |
|                                                     | Correlation<br>Sig. (2-<br>tailed) | 0.000   | 0.048                   |                                           | 0.733                        | 0.001             | 0.013                            | 0.642                                                  | 0.176     | 0.061                                           | 0.712                    | 0.093   |
| Total length of<br>interview                        | Pearson                            | -0.005  | -0.047                  | -0.010                                    | 1                            | -0.043            | -0.027                           | 0.034                                                  | -0.021    | .108**                                          | 0.019                    | -.077** |
|                                                     | Correlation<br>Sig. (2-<br>tailed) | 0.869   | 0.090                   | 0.733                                     |                              | 0.125             | 0.341                            | 0.228                                                  | 0.457     | 0.000                                           | 0.486                    | 0.006   |
| Marital Status                                      | Pearson                            | -0.018  | 0.009                   | -.097**                                   | -0.043                       | 1                 | -0.003                           | .063*                                                  | -.068*    | -.151**                                         | -0.028                   | 0.007   |
|                                                     | Correlation<br>Sig. (2-<br>tailed) | 0.525   | 0.759                   | 0.001                                     | 0.125                        |                   | 0.904                            | 0.024                                                  | 0.014     | 0.000                                           | 0.323                    | 0.789   |
| Subjective<br>state of<br>health                    | Pearson                            | 0.021   | -0.035                  | -.069*                                    | -0.027                       | -0.003            | 1                                | 0.021                                                  | -.079**   | 0.009                                           | 0.035                    | -0.001  |
|                                                     | Correlation<br>Sig. (2-<br>tailed) | 0.449   | 0.215                   | 0.013                                     | 0.341                        | 0.904             |                                  | 0.459                                                  | 0.005     | 0.737                                           | 0.206                    | 0.981   |
| Respondent<br>interested<br>during<br>the interview | Pearson                            | -.073** | -.101**                 | -0.013                                    | 0.034                        | .063*             | 0.021                            | 1                                                      | -.070*    | -0.025                                          | .270**                   | .318**  |
|                                                     | Correlation<br>Sig. (2-<br>tailed) | 0.009   | 0.000                   | 0.642                                     | 0.228                        | 0.024             | 0.459                            |                                                        | 0.012     | 0.368                                           | 0.000                    | 0.000   |
| Education                                           | Pearson                            | 0.010   | 0.007                   | -0.038                                    | -0.021                       | -.068*            | -.079**                          | -.070*                                                 | 1         | .059*                                           | -0.046                   | .092**  |
|                                                     | Correlation<br>Sig. (2-<br>tailed) | 0.730   | 0.792                   | 0.176                                     | 0.457                        | 0.014             | 0.005                            | 0.012                                                  |           | 0.035                                           | 0.102                    | 0.001   |
| Respondent<br>immigrant /<br>born in country        | Pearson                            | 0.024   | -0.034                  | -0.052                                    | .108**                       | -.151**           | 0.009                            | -0.025                                                 | .059*     | 1                                               | .088**                   | -.071*  |
|                                                     | Correlation<br>Sig. (2-<br>tailed) | 0.400   | 0.222                   | 0.061                                     | 0.000                        | 0.000             | 0.737                            | 0.368                                                  | 0.035     |                                                 | 0.002                    | 0.011   |
| Language of<br>interview                            | Pearson                            | -0.016  | -.468**                 | 0.010                                     | 0.019                        | -0.028            | 0.035                            | .270**                                                 | -0.046    | .088**                                          | 1                        | 0.028   |
|                                                     | Correlation<br>Sig. (2-<br>tailed) | 0.567   | 0.000                   | 0.712                                     | 0.486                        | 0.323             | 0.206                            | 0.000                                                  | 0.102     | 0.002                                           |                          | 0.309   |
| Mode                                                | Pearson                            | 0.030   | 0.000                   | -0.047                                    | -.077**                      | 0.007             | -0.001                           | .318**                                                 | .092**    | -.071*                                          | 0.028                    | 1       |
|                                                     | Correlation<br>Sig. (2-<br>tailed) | 0.277   | 0.996                   | 0.093                                     | 0.006                        | 0.789             | 0.981                            | 0.000                                                  | 0.001     | 0.011                                           | 0.309                    |         |

\*\*. Correlation is significant at the 0.01 level (2-tailed).

\*. Correlation is significant at the 0.05 level (2-tailed).

Correlations for the Independent Variables of Confidence Item Nonresponse Model among Respondents Aged 50 Below in Switzerland

|                                                     |                                    | Sex     | Region<br>(Switzerland) | Willingness<br>to<br>fight for<br>country | Total length<br>of interview | Marital<br>Status | Subjective<br>state of<br>health | Respondent<br>interested<br>during<br>the<br>interview | Education | Respondent<br>immigrant /<br>born in<br>country | Language of<br>interview | Mode    |
|-----------------------------------------------------|------------------------------------|---------|-------------------------|-------------------------------------------|------------------------------|-------------------|----------------------------------|--------------------------------------------------------|-----------|-------------------------------------------------|--------------------------|---------|
| Sex                                                 | Pearson                            | 1       | 0.013                   | -.165**                                   | -0.005                       | -0.018            | 0.021                            | -.073**                                                | 0.010     | 0.024                                           | -0.016                   | 0.030   |
|                                                     | Correlation<br>Sig. (2-<br>tailed) |         | 0.651                   | 0.000                                     | 0.869                        | 0.525             | 0.449                            | 0.009                                                  | 0.730     | 0.400                                           | 0.567                    | 0.277   |
| Region<br>(Switzerland)                             | Pearson                            | 0.013   | 1                       | -.065*                                    | -0.046                       | -0.022            | -0.022                           | -.114**                                                | -0.006    | -0.023                                          | -.499**                  | 0.030   |
|                                                     | Correlation<br>Sig. (2-<br>tailed) | 0.651   |                         | 0.021                                     | 0.101                        | 0.436             | 0.430                            | 0.000                                                  | 0.831     | 0.417                                           | 0.000                    | 0.282   |
| Willingness to<br>fight for<br>country              | Pearson                            | -.165** | -.065*                  | 1                                         | -0.010                       | -.097**           | -.069*                           | -0.013                                                 | -0.038    | -0.052                                          | 0.010                    | -0.047  |
|                                                     | Correlation<br>Sig. (2-<br>tailed) | 0.000   | 0.021                   |                                           | 0.733                        | 0.001             | 0.013                            | 0.642                                                  | 0.176     | 0.061                                           | 0.712                    | 0.093   |
| Total length of<br>interview                        | Pearson                            | -0.005  | -0.046                  | -0.010                                    | 1                            | -0.043            | -0.027                           | 0.034                                                  | -0.021    | .108**                                          | 0.019                    | -.077** |
|                                                     | Correlation<br>Sig. (2-<br>tailed) | 0.869   | 0.101                   | 0.733                                     |                              | 0.125             | 0.341                            | 0.228                                                  | 0.457     | 0.000                                           | 0.486                    | 0.006   |
| Marital Status                                      | Pearson                            | -0.018  | -0.022                  | -.097**                                   | -0.043                       | 1                 | -0.003                           | .063*                                                  | -.068*    | -.151**                                         | -0.028                   | 0.007   |
|                                                     | Correlation<br>Sig. (2-<br>tailed) | 0.525   | 0.436                   | 0.001                                     | 0.125                        |                   | 0.904                            | 0.024                                                  | 0.014     | 0.000                                           | 0.323                    | 0.789   |
| Subjective<br>state of<br>health                    | Pearson                            | 0.021   | -0.022                  | -.069*                                    | -0.027                       | -0.003            | 1                                | 0.021                                                  | -.079**   | 0.009                                           | 0.035                    | -0.001  |
|                                                     | Correlation<br>Sig. (2-<br>tailed) | 0.449   | 0.430                   | 0.013                                     | 0.341                        | 0.904             |                                  | 0.459                                                  | 0.005     | 0.737                                           | 0.206                    | 0.981   |
| Respondent<br>interested<br>during<br>the interview | Pearson                            | -.073** | -.114**                 | -0.013                                    | 0.034                        | .063*             | 0.021                            | 1                                                      | -.070*    | -0.025                                          | .270**                   | .318**  |
|                                                     | Correlation<br>Sig. (2-<br>tailed) | 0.009   | 0.000                   | 0.642                                     | 0.228                        | 0.024             | 0.459                            |                                                        | 0.012     | 0.368                                           | 0.000                    | 0.000   |
| Education                                           | Pearson                            | 0.010   | -0.006                  | -0.038                                    | -0.021                       | -.068*            | -.079**                          | -.070*                                                 | 1         | .059*                                           | -0.046                   | .092**  |
|                                                     | Correlation<br>Sig. (2-<br>tailed) | 0.730   | 0.831                   | 0.176                                     | 0.457                        | 0.014             | 0.005                            | 0.012                                                  |           | 0.035                                           | 0.102                    | 0.001   |
| Respondent<br>immigrant /<br>born in country        | Pearson                            | 0.024   | -0.023                  | -0.052                                    | .108**                       | -.151**           | 0.009                            | -0.025                                                 | .059*     | 1                                               | .088**                   | -.071*  |
|                                                     | Correlation<br>Sig. (2-<br>tailed) | 0.400   | 0.417                   | 0.061                                     | 0.000                        | 0.000             | 0.737                            | 0.368                                                  | 0.035     |                                                 | 0.002                    | 0.011   |
| Language of<br>interview                            | Pearson                            | -0.016  | -.499**                 | 0.010                                     | 0.019                        | -0.028            | 0.035                            | .270**                                                 | -0.046    | .088**                                          | 1                        | 0.028   |
|                                                     | Correlation<br>Sig. (2-<br>tailed) | 0.567   | 0.000                   | 0.712                                     | 0.486                        | 0.323             | 0.206                            | 0.000                                                  | 0.102     | 0.002                                           |                          | 0.309   |
| Mode                                                | Pearson                            | 0.030   | 0.030                   | -0.047                                    | -.077**                      | 0.007             | -0.001                           | .318**                                                 | .092**    | -.071*                                          | 0.028                    | 1       |
|                                                     | Correlation<br>Sig. (2-<br>tailed) | 0.277   | 0.282                   | 0.093                                     | 0.006                        | 0.789             | 0.981                            | 0.000                                                  | 0.001     | 0.011                                           | 0.309                    |         |

\*\*. Correlation is significant at the 0.01 level (2-tailed).

\*. Correlation is significant at the 0.05 level (2-tailed).