**The MIMOD project: an overview**

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**Abstract**

*The MIMOD – Mixed Mode Designs for Social Surveys was awarded a Eurostat Grant, in December 2017. The project is led by Istat (Italy) in partnership with CBS (Netherlands), SSB (Norway), STAT (Austria) and Destatis (Germany).*

*The MIMOD project aims at supporting NSIs in facing a range of challenges which are at the forefront of applied research when implementing multi-mode and multi-devices data collection.*

*The paper describes the activities and the first results achieved by the MIMOD project. Particularly, the results of the survey on mixed-mode in social surveys conducted in the European National Statistical Institutes are presented.*

**Keywords:** mixed-mode data collection, mode effects, mode organisation, case management systems, multi-devices data collection

**1. Introduction**

With the spreading of Internet and mobile devices, web mode for surveys on households or individuals is gaining importance both as a single mode and in combination with others. A wide literature is available on how to mix modes and the effects of mixed-mode on data quality, even though the results are not always conclusive or straightforward for practical applications, see for example De Leeuw E. and Toepoel V., (2017).

At the European level, National Statistical Institutes (NSIs) are implementing more or less complex designs for social surveys and facing several challenges which range from methodological to management issues and data quality aspects.

The MIMOD – Mixed Mode Designs in Social Surveys – project aims at streamlining theoretical results as well as collecting experiences and good practices in European NSIs in order to provide guidelines and suggestions on how to implement mixed-mode designs in social surveys safeguarding output quality.

The MIMOD project is a multi-beneficiary grant awarded by Eurostat to a consortium led by Istat (Italy) in partnership with CBS (Netherlands), SSB (Norway), STAT (Austria) and Destatis (Germany). A Supporting Network of five countries - INSEE (France), Czech Statistical Office (Czech Republic), Central Statistical Office of Poland (Poland), Statistic Finland (Finland) and Statistics Sweden (Sweden) – provides inputs and feedbacks to the project activities. The project started in December 2017 and the Final Workshop will take place in April 2019, in Rome.

The paper is organised as follows. Section 2 provides an overview of the project activities and expected outputs, by briefly illustrating the six work-packages (WPs) composing the project. Section 3 describes the survey on the state of the art of mixed-mode designs in social surveys in the EU NSIs, carried out in spring 2018. It represents a main output that will nourish the development of further investigations in the various WPs. Section 4 concludes with some future steps.

**2. The MIMOD project**

The MIMOD project covers the following main topics: i) mode organisation with the objective of determining the steps in a decision tree that supports the implementation of mixed-mode designs including adaptive and responsive designs (WP1); ii) mode bias/mode effect and its adjustment with the aim of providing general guidelines on methodologies to deal with mode effects in multi-mode designs (WP2); iii) case management in mixed-mode data collection with the purpose of investigating the different systems in use in terms of technical components and organisational approaches used, as well as challenges in efficiency and quality (WP3); iv) mixed-mode questionnaire designs in order to give best practice recommendations on approaches for developing questionnaires for mixed-mode surveys as well as on modes used in the contact and follow-up phases of data collection (WP4) and v) challenges for phone and tablets respondents in CAWI with the aim of investigating the use of mobile devices (smartphones, tablets) in ESS surveys and of mobile device sensors (such as GPS, camera, microphone, accelerometers) to enrich ESS surveys (WP5). WP6 is dedicated to the organisations of events (kick-off meeting and Final Workshop) and the reporting to Eurostat. Within WP6, the general coordination of the project is also ensured.

**3. The survey among EU NSIs on modes organisation**

The general purpose of WP1 of the MIMOD project is to research the topic of mode organisation in mixed-mode social surveys, in order to provide indications and, where possible, recommendations useful to minimise measurement bias and costs and, at the same time, to increase response rate. In particular, research is dedicated to adaptive and responsive designs (Schouten et al., 2013), that represent new approaches to mixed-mode data collection, and to data collection strategies based on sequential or concurrent mixed mode designs. Since the last topic was also analysed by the previous ESSnet DCSS - *Data Collection in Social Surveys* (ESSnet DCSS, 2014), the purpose of WP1 is also to update and supplement those findings in order to take into account any eventual changes occurred since 2014.

A first important step addressed to MIMOD’s goals is the survey run among all the European NSIs, under Istat coordination and supervision. Structure and contents of the survey questionnaire have been designed in cooperation with all WPs and with the contribution of some of the supporting countries. Each WP designed its own section in order to get information necessary to its specific goals and subsequently all sections were put together. After some adjustments for smoothing the whole content and avoiding redundancies of concepts the survey questionnaire was ready to be implemented in the electronic format.

*3.1. Surveys contents and aims*

The content of the survey questionnaire reflects the structure of the MIMOD project and comprises the following sections:

* Section A: Data collection strategies
* Section B: Questionnaire design
* Section C: Use of smartphone and tablets
* Section D: Methodologies to deal with mode effects
* Section E: Case Management Systems

Section A corresponds to WP1, but also asks for information useful to the entire project. In particular, it investigates *i)* which data collection modes are used for the main social surveys and how modes are combined, *ii)* the five-year trend in the use of mixed-mode and of the web mode in social surveys, *iii)* how concurrent and sequential mixed-mode designs are managed, *iv)* which communications strategies with respondents are used, *v)* the use of incentives to respondents, *vi)* the management of break-offs and *vii)* the use of adaptive/responsive survey designs. Since it was too difficult to collect detailed information on the last topic through a limited number of structured questions, it was decided to ask for contact details of experts to be contacted later for a personal semi-structured telephone interview on this subject.

Section B corresponds to WP4 and investigates on questionnaire design strategies adopted for mixed-mode surveys that include the web mode. It asks for information aimed at understanding whether survey questionnaires differ across modes, in what they differ (i.e. number of questions, don’t know options, errors and consistency, etc.) and the extent of these differences (large to small, many or few questions).

Section C corresponds to WP5 and investigates on the use of smartphones as a new channel for respondents to participate in social surveys. Like section B, it investigates only on mixed-mode surveys that adopt the web mode and asks for information about i) adaptation of questionnaire design to smartphones, ii) the management of the use of smartphone by respondents (encouraged or discouraged), iii) the use of apps and iv) pros and cons of the use of this instrument to fill out statistical questionnaires.

Section D collects information strictly connected to WP2’s aims. It investigates about activities and methods recently used by the NSIs to assess and/or to adjust for mode effect due to the adoption of mixed-mode data collection. It also asks to supply methodological reports through links or by uploading documentation. Due to its specificity, it was recommended that a methodologist filled it out.

Section E, the last section, corresponds to WP3 and collects information useful to provide a detailed and exhaustive definition of ‘Case Management System’ (CMS) and to give an overview on the state of the art of CMS. Therefore, it collects information about technical components and organisational aspects of mixed-mode data collection processes of EU NSIs.

The survey was based on a web questionnaire developed in Limesurvey by Istat. Invitations were sent by email to contact persons designated by the directors of social statistics. The email contained an explanation of the survey contents and a link to the questionnaire. In this way NSIs could access directly to their own questionnaire thus simplifying their task.

Since the questionnaire’s sections could be answered by different professional profiles, it was made it possible to fill out sections contemporarily, by choosing them through an index. The questionnaire could be submitted only once all sections were correctly filled out.

*3.2. Preliminary results[[1]](#footnote-1)*

In the last five years the adoption of mixed mode strategies in social surveys has increased as well as the use of the web mode especially as a component of the ‘mix’ (tables 1, 2 and 3).

**Table 1. Do more social surveys offer mixed-mode compared to five years ago?**

|  |  |  |
| --- | --- | --- |
|  | **Absolute values** | **Percent values1** |
| Yes | 22 | 71,0 |
| No, mixed-mode remained unchanged  | 8 | 25,8 |
| No, mixed-mode decreased | 1 | 3,2 |
| Total | 31 | 100 |

*1 Calculated on countries*

Source: MIMOD survey

**Table 2. Has the use of web mode increased, decreased or remained unchanged compared to five years ago?**

|  |  |  |
| --- | --- | --- |
|  | **Absolute values** | **Percent values1** |
| Increased | 20 | 64,5 |
| Remained unchanged  | 11  | 35,5 |
| Decreased | 0 | -- |
| Total | 31 | 100 |

*1 Calculated on countries*

Source: MIMOD survey

**Table 3. The use of web mode has increased**

|  |  |  |
| --- | --- | --- |
|  | **Absolute values** | **Percent values1** |
| As a component of mixed-mode | 16 | 80,0 *(51,6)\** |
| Both as a single and as a component of mixed-mode | 4 | 20,0 *(12,9)\** |
| As a single mode | 0 | -- |
| Total | 20 | 100 |
| *(\*) Referred to total number of NSIs – 31 NSIs* |

*1 Calculated on countries*

Source: MIMOD survey

The increased use of the web mode mainly depends on the need to of reducing survey costs (all NSIs) and of improving survey coverage (14 NSIs), but also on the increased Internet coverage (11 NSIs). The web mode remained unchanged because it is not adopted (6 NSIs), because of negative experiences with web surveys (2 NSIs) and because of the low internet coverage (2 NSIs).

All countries but one adopt mixed-mode strategies for collecting data for social surveys and the great majority of them uses the web as a component of their ‘mix of modes’ (Table 4).

**Table 4. Adoption of mixed-mode strategies in social surveys**

|  |  |  |
| --- | --- | --- |
|  | **Absolute values** | **Percent values1** |
| Do not use mixed-mode strategies  | 1 | 3,0**1** |
| Use mixed-mode strategies | 30 | 97,0 |
| * *mixed-mode including CAWI*
 |  *23* |  *77,0*  |
| * *mixed-mode without CAWI*
 |  *7* |  *23,0*  |
| Total countries | 31 | 100 |

*1 Calculated on countries*

Source: MIMOD survey

The following results refer to the 9 main social surveys[[2]](#footnote-2) run in the 31 European NSIs. The use of mixed-mode strategies[[3]](#footnote-3) in experiments or pilot surveys were excluded from the survey.

Social surveys are mainly based on mixed-mode data collection (50,9%) although the use of a single technique is still high (40,5%) (Table 5).

**Table 5. Data collection strategies in social surveys: mixed versus single mode**

|  |  |
| --- | --- |
|  | **Percent values1**  |
| Mixed-mode | 50,9 |
| Single mode | 40,5 |
| Multi-mode[[4]](#footnote-4) *(\*)* | 8,6 |
| Total | 100 |

*1 Calculated on surveys*

Source: MIMOD survey

PAP/PAPI and CATI are the most frequently used techniques for single mode surveys while, for what concerns mixed-mode, several combinations of modes are used by the NSIs. These combinations include CAWI in 43% of cases (57% does not include the web mode) and, in general, make a large use of modes that are computer-assisted and interviewer administered (CATI and CAPI) (Table 6).

**Table 6. Modes adopted for single mode and mixed-mode data collection strategies**

|  |  |  |  |
| --- | --- | --- | --- |
| **Single mode** | **Percent values1** | **Mixed-mode** | **Percent values1** |
| PAP/PAPI | 45,1 *(18,3\*)* | Including CAWI[[5]](#footnote-5) | 43,0 *(21,9\*)* |
| CAPI | 42,5 *(17,2\*)* |
| CATI | 10,6 *(4,3\*)* | Not including CAWI[[6]](#footnote-6) | 57,0 *(29,0\*)* |
| CAWI | 1,8 *(0,7\*)* |
| Total | 100 *(40,5\*)* | Total | 100 *(50,9\*)* |
| *(\*) Referred to total number of NSIs – 31 NSIs* |

*1 Calculated on surveys*

Source: MIMOD survey

To communicate with respondents, half of the NSIs use communication strategies that are equally structured for all social surveys, while the other half prefers survey tailor made communication. Advance letters or invitations are the most frequently used means of communication which are made of paper letters. Paper letters are also used as reminders to CAWI non-respondents.

In order to encourage survey response, some countries offer an incentive to respondents. This typically comes in two main forms: monetary and non-monetary incentives; whatever the form, they are a good way not only to increase response rates, but also to thank respondents for their time. Table 7 shows the number of NSIs giving an incentive for each survey. It is interesting to notice that more incentives are given for the HBS (9 countries, corresponding to the 64.3% of the countries running the survey through mixed mode), the AES (7 countries, about 54%) and EU-SILC (7 countries, 46,7%). For HETUS/TUS all three NSIs running this survey with mixed-mode offer an incentive to respondents.

**Table 7. The use of incentives by survey**

|  |  |  |
| --- | --- | --- |
| **Survey** | **N** | **% on countries running the survey through mixed-mode** |
| LFS wave 1 | 3 | 27.3 |
| LFS wave 2 and subsequent ones | 2 | 11.1 |
| EU SILC Wave1 | 5 | 45.5 |
| EU SILC wave 2 and subsequent ones | 7 | 46.7 |
| EHIS | 4 | 33.3 |
| AES | 7 | 53.9 |
| ICT | 4 | 23.5 |
| HBS | 9 | 64.3 |
| HETUS/TUS | 3 | 100 |

Source: MIMOD survey

In some cases incentives are offered unconditionally, however, it is a common practice to offer an incentive only to those households completing the questionnaire. In these cases respondents are offered a small present (i.e shopping bag, a reflector or a gift card for stores) and sometimes they are proposed to participate to lotteries (of iPads or other prizes).

It is well know how the adoption of mixed strategies has a strong impact on survey questionnaire design. This is especially true when the mix contained self-completed and interviewer administered questionnaires. To evaluate this impact, differences among questionnaires of mixed-mode surveys that include the CAWI mode were investigated. Figure 1 shows that the main differences rely on the management of error and consistency checks, on the placement and wording of instructions, on the use of the ‘don’t know’ option, on permission of item non-responses and on questions wording.

**Figure 1. Questionnaire’s characteristics that differ in a mixed-mode survey**

Another issue concerning the design of web questionnaire is the use of smartphones, that, in general, is allowed for respondents participating to social surveys, although the questionnaire is not adapted to the medium (Table 8). If the use of ‘apps’ for social surveys is not a topic of immediate interest for NSIs, pre-testing for multiple devices and multiple browsers is performed for almost the majority of social surveys using the web mode.

**Table 8. Adaptation of web questionnaires to smartphones**

|  |  |
| --- | --- |
|  | **Percent values1** |
| Slightly adapted | 7,4 |
| Not adapted, but smartphone are usable | 74,1 |
| Smartphones are blocked | 18,5 |
| Profoundly adapted | 0 |
| Total | 100 |

*1 Calculated on surveys*

Source: MIMOD survey

It is well known how the adoption of mixed-mode strategies may affect final estimates in terms of mode effect and/or selection effect. This is why the majority of the NSIs (21 out of 31) carried out studies and activities aimed at assessing or adjusting for the above effects in the recent years. NSIs were involved in pre-tests or experiments on questionnaire design, in pilot surveys, in the evaluation of differences in distributions of socio-demographic or target variables or in differences in quality indicators (e.g. total or item non response rates, break-off rates, etc.). Until now, only 12 NSIs out of 31 have the need to take some measures to adjust estimates for mode effect and the weight adjustment (for distributions that differ over modes) is the most frequently adopted.

Mixed-mode surveys require IT infrastructures able to manage and support the organisational and technical complexity of the data collection strategies. In fact the majority of NSIs are adapting their IT-system to the new data collections processes or are planning to do it in the next future[[7]](#footnote-7).

**4. Next steps**

In the following months the project activities will be fully developed, and completed by the end of 2018. As mentioned, the survey on the use of mixed-mode and multi-devices in social surveys represents a key input for the work in each WP. The final goal of the MIMOD project is to represent a platform for sharing experiences at the European level and providing suggestions to cope with some challenges ahead of EU NSIs in implementing mixed-mode designs in social surveys. The project outcomes will be presented and discussed with the statistical community in the Final Workshop that will be organised by Istat in April 2019.

**5. References**

De Leeuw E. and Toepoel V. (2017), Mixed-Mode and Mixed-Device Surveys, <https://www.researchgate.net/publication/321973068_Mixed-Mode_and_Mixed-Device_Surveys> (Accessed: 18 May 2018).

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1. This paragraph is written by Manuela Murgia in cooperation with Martina Lo Conte [↑](#footnote-ref-1)
2. The main social surveys investigated are: Labour Force Survey waves 1 and 2 (LFS), Survey on Income and Living Conditions waves 1 and 2 (EU-SILC), European Health Interview Survey (EHIS), Adult Education Survey (AES), Survey on Information and Communication Technology (ICT), Household Budget Survey (HBS), Harmonised European Time Use Survey (HETUS/TUS). [↑](#footnote-ref-2)
3. The data collection modes and sources investigated are: CATI, CAPI, PAP/PAPI, CAWI, Register and other sources (i.e. big data, web scraping, gps, apps, etc.). [↑](#footnote-ref-3)
4. Multi-mode represents the use of different data collection modes to administer different sections of the survey questionnaire to the same sample unit. [↑](#footnote-ref-4)
5. For mixed-mode strategies that inlcude CAWI, the most frequently combinations of mode are CATI-CAWI (7,7%), CAPI-CAWI (7,7%) and CATI-CAPI-CAWI-Registers(7,0%). [↑](#footnote-ref-5)
6. Among these kind of mixed-mode strategies the mostly frequently mentioned CAPI-PAPI (13,4%), CATI-Registers (13,4%) and CATI-CAPI- Registers (10,6%). [↑](#footnote-ref-6)
7. 10 NSIs out of 10 are practically changing their IT-System, 6 NSIs out f 10 plan to start projects on changing the IT-system within the next two years and 5 out of 10 are in the concept phase of defining how to change their IT-System. [↑](#footnote-ref-7)