

Implementation of Multimode-CMA at the Survey Department of Statistics Denmark

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Abstract

In 2024, the Survey Department of Statistics Denmark implemented the multimode Case Management Application (CMA) in surveys involving Computer-Assisted Personal Interviews (CAPI). The CAPI method is exclusively used for target groups that are particularly challenging to reach or interview. This implementation required some customization of the CMA platform's layout and functionality to meet the specific needs of our interviewer staff. Additionally, education of the interviewers and the development of comprehensive manuals were essential components of the process.

The implementation of the CMA presented several challenges, both in preparing the interviewers and during the actual fieldwork. Key issues included varying levels of computer skills among the interviewers, ensuring CMA integration with the activity from Computer Assisted Web Interviewing (CAWI) to avoid redundant contact attempts, and addressing errors in the registration of interviews and contact attempts.

Our paper explores these challenges in greater depth, detailing how they were addressed at different stages of the process - before, during, and after fieldwork. By sharing our experiences and solutions, we aim to contribute to the broader knowledge base on effectively managing multimode survey implementations.

1. Introduction

The Survey Department at Statistics Denmark conducts 50-70 surveys annually, primarily for external clients such as governmental institutions, NGOs, universities, and research institutes. Data collection is predominantly outsourced, except for surveys utilizing the Computer-Assisted Personal Interview (CAPI) method. CAPI is mainly conducted in private households and we use the Danish registers to create specific populations for each survey. Respondents are typically selected through simple random sampling and cannot be replaced by someone else.

In 2024, we implemented CMA for the administration of our multimode surveys and have successfully completed two large-scale data collections using the system. One survey among children placed outside their homes (foster care, orphanage, etc.) and another survey among elderly people in care facilities. The CMA version we use is 5.14.2.

2. Our interviewers

Our interviewer staff comprises approximately 250 individuals and each survey typically requires 90-100 interviewers. We have three supervisors overseeing them. Interviews are conducted on laptops in offline mode.

The majority of our interviewers are retired, resourceful individuals, with an average age of 72 years. The age range of our interviewers spans from 52 to 86 years.

2.1 Training the interviewers

To prepare our interviewers for using CMA in fieldwork, we provide a comprehensive one-day training session covering both the CMA system and the questionnaire. This training is supplemented with practical exercises and detailed manuals.

2.2 The interviewer experience

Our interviewers generally find CMA to be useful, effective, easy to use and helpful in their fieldwork. CMA enhances the efficiency of CAPI surveys, particularly by reducing reliance on paper and the need for postal distribution to interviewers across the country. It also prevents the circulation and mishandling of physical materials containing personal information. Transferring respondents between interviewers during fieldwork is efficient, eliminating the risk of mix-ups and duplicates. Additionally, communication between interviewers and the supervisors is facilitated by having a common and updated source of information.

One of our biggest challenges is the varying computer skills among interviewers, requiring user-friendly and easily comprehensible interface and manuals.

Prior to the first launch of a multimode survey in CMA, we conducted a focus group with interviewers to test the system with our initial modifications and provide feedback for final improvements. The majority of their feedback that we were not able to address was concerning the topics described in the following

- Text size
 - Interviewers reported that while they could adjust the text size for the columns, the size of the detail template enlarged simultaneously, resulting in excessively large text. This made navigation difficult due to the unnecessarily large text size in the detail template. See appendix.
- Scrolling
 - The ability to scroll on the case overview and detail template using the mouse was identified as an area for improvement.
- Performance
 - Interviewers noted general performance issues, particularly when searching or using filter functions.

3. Wrongfully placed interviews and attempts

Interviewers occasionally start interviews with the wrong respondent. This issue has always existed and will likely continue to do so. In CMA, this problem persists despite the presence of pop-ups with large, bold text asking the interviewer to confirm the respondent's identity, as well as clear mouse-overs for each button. The interviewer marks the wrong row in their case overview, and confirms the identity information from the pop-up window.



Image 2.1: The identity pop-up asking for confirmation on name and address of the chosen respondent. The text read 'Are you sure you want to start an interview with NAME, ADDRESS'.

It is common to have different routes in the survey based on background information on the respondent, such as age or type of placement. This means that a wrongly conducted interview cannot necessarily be transferred to the correct respondent afterwards. In some cases, the interview cannot be used, or the respondent may encounter questions that are not relevant or inappropriate to them (e.g. an 11-year-old being asked about drug use).

To avoid these scenarios, we have invested a lot of time into instructing the interviewers to be aware of this, as well as increasing the size of the pop-up texts. Additionally, we are considering altering the layout and structure of the button panel (e.g., start interview, attempts) as a further initiative, if the issue persists.



Image 2.2: Button panel

Interviewers can find it challenging to distinguish between buttons and their functions. They generally find it illogical that the attempts button does not trigger an immediate action, unlike the start-interview button. Additionally, they can find the button images difficult to differentiate and connect to specific actions.

We would aim to address this by increasing the distance between buttons and possibly grouping them, which could help prevent incorrect registrations of interviews and attempts. It could also be beneficial to have the 'Add attempt' button both on the front page as well as in the attempts area. Additionally, we are considering changing the images on the buttons to enhance differentiation and clarity. We will however also be hesitant to make these changes ourselves in case any modification of the layout will be coming from Blaise later on.



Image 2.3: Suggestion for the button panel layout.

Another issue regarding wrongful registrations is the problem of interviewers closing their laptops immediately after the interview without completing the post-interview registration (from the attempts data model). It is not uncommon for the survey itself to include post-interview questions as well (e.g.,

did the respondent answer alone, etc.). This leads to additional support requests from interviewers, as they need to restart the interview to finish the case correctly. We have simplified the post-interview registration in the attempts data model as much as possible and instructed interviewers to complete this process while still in the interview situation, and not close their laptops before returning to their list of cases in CMA.

4. Modifications

Before launching our first survey through CMA, we made some modifications to some of the data models and the layout. Most of these changes were implemented using the settings options. However, some adjustments were made directly in the data models or added as scripts placed on the server.

We anticipate that it always will be necessary to create survey-specific attempts data models as well as survey specific detail templates. Since the surveys requiring CAPI mode targets very specific groups, such as children in out-of-home care or elderly individuals in care facilities, the refusal reasons and attempts routes are unique and need to be customized for each survey.

4.1 Integrating CAWI activity in CMA

To accommodate the multimode dataflow, we needed to update CMA with the status from Computer Assisted Web Interviewing (CAWI) for each respondent in CMA. Most of our questionnaires can be answered in CAWI mode alongside CAPI, meaning interviewers require information and status updates on any CAWI activity, to prevent unnecessary contact attempts. Updating CAWI activity can also demonstrate how an interviewer's contact attempts can facilitate a CAWI response, serving as a motivating factor.

In collaboration with the developers at Blaise, we implemented a script that automatically updates a custom column in CMA with the status of the CAWI – either completed or partial. This script closes the case in CMA when a questionnaire is complete in CAWI mode and allows the interviewer to finish a partially completed questionnaire with the respondent. The script updates every 15 minutes.

4.2 Planning of routes

Our interviewers often cover large areas and use various forms of transportation (cars, bikes, trains, and ferries) to reach their respondents. This requires them to spend time planning routes to optimize their time and travel expenses. In CMA, we needed the ability to filter by appointments, postal code, and town/parish. To meet these route-planning related needs, we implemented an appointment filter button and split the ContactInfoShort column. We dedicated a custom column to each piece of information in the ContactInfoShort variable through the MakeSettingsXML script, making it easier for interviewers to comprehend and navigate using filter functions. We placed the actual ContactInfoShort column to the far right and minimized its width.

This allows interviewers to sort by both appointments and locations in their area, enabling them to plan routes and optimize their time efficiently.

5. Attempts data and salary for the interviewers

Another benefit we gain from using CMA is the ability to calculate the interviewer salaries based on attempts data. We no longer need a separate registration system for this. By utilizing variables from the attempts data, such as case status, outcome, type, and counts of attempts, we can calculate salaries.

6. Conclusion

After implementing CMA for our multimode surveys, we have observed several significant benefits from both the interviewers' and administration's perspectives. CMA has proven to be a reliable and stable system, allowing us to conduct more complex surveys with confidence. We anticipate that upcoming improvements to the dashboard and administrative interface will further enhance our experience.

The modifications applied to CMA have yielded substantial benefits, making the time invested in implementation and in-depth training for our interviewers well worth it. Enhancing the layout of CMA remains an area for potential improvement.

6. Appendix

6.1 Case overview and text sizes on 13inch screen.

Survey til visning: SkemaTilInstruktion By/Sogn: <Alle> Søg:

Liste med alle cases:

Seneste kontaktforsøg	Adresse	Postnr	By/Sogn	Navn	Køn	Alder	Ekstra info 1	Ekstra info 2
21-1-2025, 11:00:00	Kongensgade 1	1301	København	Arne Beck	M	40	Evt. supplerende info om din case	Evt. supplerende info om din case
21-1-2025, 10:00:00	Kanalvej 5	1301	København	Karina Magnussen	K	18	Evt. supplerende info om din case	Evt. supplerende info om din case
23-1-2025, 17:00:00	Storetorv 10	1301	København	Thomas Møller	M	67	Evt. supplerende info om din case	Evt. supplerende info om din case
23-1-2025, 10:40:10	Æblevej 3	1301	København	Pauline Magnussen	M	56	Evt. supplerende info om din case	Evt. supplerende info om din case
23-1-2025, 10:40:10	Ladegårdsgade 5	1301	København	Arne Ladegård	K	67	Evt. supplerende info om din case	Evt. supplerende info om din case
23-1-2025, 10:54:00	Kongensgade 3	2750	Ballerup	Anne-Marie Jørgensen	K	21	Evt. supplerende info om din case	Evt. supplerende info om din case
23-1-2025, 10:54:00	Strandvej 10	2750	Ballerup	Pauline Ladegård	K	38	Evt. supplerende info om din case	Evt. supplerende info om din case
med respons 21-1-2025, 10:00:00	Pærevej 8	2750	Ballerup	Pauline Frederiksen	K	69	Evt. supplerende info om din case	Evt. supplerende info om din case
21-1-2025, 10:00:00	Storetorv 1	2750	Ballerup	Lene Ladegård	K	58	Evt. supplerende info om din case	Evt. supplerende info om din case
21-1-2025, 10:00:00	Storetorv 2	2750	Ballerup	Anders Jørgensen	K	40	Evt. supplerende info om din case	Evt. supplerende info om din case
21-1-2025, 10:00:00	Vestergade 8	3200	Helsinge	Thomas Magnussen	K	18	Evt. supplerende info om din case	Evt. supplerende info om din case

Vælg visningsrækkefølge: Postnr

Resp_ID1: AB1149

Navn:	Arne Ladegård	Status:	Uploadet	Telefon:	12345678 / 87654321
Adresse:	Ladegårdsgade 5	Aftale:		Nyt telefonnummer:	
Postnummer:	1301	Seneste resultat:	100:Gennemført interview	Antal kontaktforsøg(#KF):	2
Sogn:	København	Seneste kontaktforsøg:	23-1-2025, 10:40:10		

Image 6.1. Case overview and detail template with the small text size. This is the best text size for the detail template.

Survey til visning: SkemaTilInstruktion By/Sogn: <Alle> Søg:

Liste med alle cases:

Resultat	Seneste kontaktforsøg	Adresse	Postnr	By/Sogn	Navn
401:Ikke truffet	21-1-2025, 11:00:00	Kongensgade 1	1301	København	Arne Beck
200:Aftale lavet	21-1-2025, 10:00:00	Kanalvej 5	1301	København	Karina Magnussen
200:Aftale lavet	22-1-2025, 17:00:00	Æblevej 3	1301	København	Pauline Magnussen
100:Gennemført interview	23-1-2025, 10:40:10	Ladegårdsgade 5	1301	København	Arne Ladegård
203:Har ikke tid	23-1-2025, 10:54:00	Kongensgade 3	2750	Ballerup	Anne-Marie Jørgensen
404:Ingen aftale - Kontakt opnået med respons	21-1-2025, 10:00:00	Strandvej 10	2750	Ballerup	Pauline Ladegård
		Pærevej 8	2750	Ballerup	Pauline Frederiksen

Vælg visningsrækkefølge: Postnr

Resp_ID1: AB1149

Navn:	Arne Ladegård	Status:	Uploadet	Telefon:	12345678 / 87654321
Adresse:	Ladegårdsgade 5	Aftale:		Nyt telefonnummer:	

Image 6.2. Case overview and detail template with medium text size. This is the best text size for the case overview.

Survey til visning: SkemaTilInstruktion By/Sogn: <Alle> Søg:

Liste med alle cases:

Antal kontaktforsøg	Resultat	Seneste kontaktforsøg	Adresse	Postnr
1	401:Ikke truffet	21-1-2025, 11:00:00	Kongensgade 1	1301
1	200:Aftale lavet	21-1-2025, 10:00:00	Kanalvej 5	1301
1	200:Aftale lavet	22-1-2025, 17:00:00	Storetorv 10	1301
1	200:Aftale lavet	22-1-2025, 17:00:00	Æblevej 3	1301
2	100:Gennemført interview	23-1-2025, 10:40:10	Ladegårdsgade 5	1301

Vælg visningsrækkefølge: Postnr

Resp_ID1: AB1149

Navn:	Arne Ladegård	Status:	Uploadet	Telefon:	12345678 / 87654321
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Image 6.3. Case overview and detail template with the large text size.