Computer Audio–Recorded Interviewing (CARI)

> As an industry leader in survey research, RTI International offers clients expertise in data collection techniques and experience with diverse populations. Computer audio-recorded interviewing (CARI), an innovation RTI developed in 1999, is among the technologies we offer for specialized data collection. Today, survey organizations employ CARI as a best practice to provide performance feedback to interviewers, enhance data quality, assess questionnaire design, and estimate survey error.

The Power of Audio

CARI records live interviews, with interviewees' consent, to preserve the interaction for replay and evaluation.

CARI creates a digital record of the exchanges between interviewer and respondent from either telephone or in-person interviews. It provides a valuable opportunity to improve the quality of data collection, interviewer performance, and questionnaire design. Compared to other quality assurance methods, CARI saves time and money by reducing or eliminating the need for live monitoring, re-interviews, and labor-intensive verifications.

CARI can be deployed on any audio-enabled data collection device—desktop computers (for telephone interviewers) and laptops, tablets, or smartphones (for field interviewers).

The power of CARI comes from its capability to review and rate those recordings. Based on years of experience with CARI, RTI has developed a comprehensive quality evaluation system known as QUEST. This proprietary software enables staff members to manage the audio files, rate the audio files for quality, and provide feedback to interviewers. The system supports both telephone and in-person surveys.

Once the recordings have been collected, they are automatically uploaded to QUEST. The cases are then assigned to trained quality-monitoring staff members who listen to and assess the recordings based on what they hear during the interview. Standard classification codes allow results to be compared across surveys, survey modes, interviewers, and time.

The steps of a CARI system

1. The device records part or all of the interview.
2. Quality monitors classify the audio content.
3. A database stores quantified evaluation data.
4. Reports display performance ratings, statistical summaries, and alerts.

Consistency, Validity, and Completeness

Data collection managers typically have questions about the process. Are the interviewers following protocol? Do respondents understand the questions correctly? Were all the intended questions asked and answered?

CARI can help answer questions about interviewer performance, data quality, questionnaire design, and other critical issues.

The process of reviewing and coding audio recordings uses the power of stored metrics and descriptive statistics to produce evaluation data for methodical and logical analysis.

For example, a report on interviewer performance may identify interviewers who perform exceptionally well and those who make critical errors; supervisors can then provide praise or guidance. Summary reports give project managers a sense of overall data quality.

A particular survey item may score low on comprehension if it evokes confusion among respondents, suggesting that the text needs to be rewritten. Such situations, which affect the value and validity of survey results, are difficult to detect without a technology like CARI.

If an interviewer seems to enter data without asking the question out loud, an alert can be raised for possible poor technique or shortcutting. Deeper review may provide an adequate explanation or uncover a serious problem.

CARI Benefits for Survey Operations and Research

- Improves opportunities for coaching and managing interviewing staff members for telephone or field studies, based on evidence from actual interviews
- Allows for multiple reviews of the same interview by repeated playback
- Facilitates training of monitors on evaluation protocols through group review of audio recordings, thereby ensuring consistency in interviewer feedback and minimizing rater variability
- Lowers the overall cost of determining the authenticity of field interviews by reducing or eliminating the need for field observations and verifications
- Confirms that the interviewer followed the correct protocol when administering specialized modules
- Supports cognitive testing, pilot-testing, or in-production item evaluation by questionnaire designers—providing important insights into survey instrument performance and respondents' cognitive abilities to answer complex, challenging, or sensitive questions
- Captures and clarifies open-ended or free-speech responses
- Allows for evaluation of respondents' emotional reactions to particular survey sections or items
- Assesses interviewer-respondent interactions
- Uses GPS and other verification technologies to provide a multipronged approach to ensuring data quality

RTI's Recent Publications on CARI

Thissen, M. R., & Myers, S. K. (2016). Systems and processes for detecting interviewer falsification and assuring data collection quality. *Journal of the International Association for Official Statistics.* http://content.iospress.com/articles/statistical-journal-of-the-iaos/sji947

Thissen, M. R. (2014). Computer audio-recorded interviewing as a tool for survey research. *Social Science Computer Review*, 32(1) 90–104. http://ssc.sagepub.com/content/early/2013/07/26/0894439313500128.abstract

Kinsey, S., Stone, D., & Spain, C. (2012). QUEST: Supporting the standardized evaluation of interview quality and interviewer performance. Presented at The Federal Committee on Statistical Methodology (FCSM). https://fcsm.sites.usa.gov/files/2014/05/Kinsey_2012FCSM_VIII-D.pdf.

RTI Clients Supported by CARI

CARI is one of the tools RTI uses to ensure quality for our clients, which include the following:

- U.S. Department of Education/National Center for Education Statistics
- Department of Health and Human Services/Administration for Children and Families
- U.S. Food and Drug Administration
- National Institute of Child Health and Human Development
- All of RTI's telephone survey clients, unless the technology is declined.

More Information

David B. Rice
Senior Business Development Specialist
Research Computing Division
919.316.3912
drice@rti.org
RTI International
3040 E. Cornwallis Road, PO Box 12194
Research Triangle Park, NC 27709-2194 USA