

# Connecting with *Elizabeth*: Using artificial intelligence as a data collection aid

Craig Kolb, Ask Afrika  
Dr Peter Millican, University of Oxford

## *Abstract*

This paper proposes a new approach to data collection in marketing research. A simple form of artificial intelligence, commonly referred to as ‘chatbot’ technology, is shown to provide a viable way of probing open-ended questions.

Typically, open-ended questions in a computer-aided web interviewing (CAWI) or computer-aided personal interviewing (CAPI) environment, are left to self-completion. Though economical, sometimes little benefit is obtained, as self-completion often yields superficial responses. An approach which would allow a computer to ask open-ended questions, probe a respondent’s initial answer to those questions, and create the sense that the respondent is engaging in a conversation, would result in far richer responses.

To explore the potential of such an approach, a simple open-ended question ‘Why did you choose your current cell phone network operator?’ was asked of 10 subjects, who were successfully probed by a chatbot named *Elizabeth*. The *Elizabeth* system was chosen for this research because it is a general platform which is powerful and flexible enough to be easily re-programmed for different tasks and is well documented, while also being freely available for non-commercial use. As such, it provides an ideal platform for marketing research practitioners to experiment with chatbot technology.

Criteria for evaluating the success of automated interviewing are discussed, including Alan Turing’s test for intelligence, it being concluded that existing criteria are unsuitable for the marketing research interviewing context. Four criteria are proposed specifically for chatbot-based interviewing: 1) ‘relevance of interviewer questions’; 2) ‘avoidance of suggestion’; 3) ‘relevance of respondent answers’, 4) ‘maximisation of the volume of information elicited’.

*Elizabeth* performed well against these criteria, significantly outperforming the self-completion method. *Elizabeth*’s operating techniques in this application are explored, and the reasons for its success discussed. In order to advance our understanding of what factors improve interviewing success on the four criteria, hypotheses are also suggested to direct future research into chatbot-based interviewing.

The paper concludes with a discussion of possible future developments of this approach to marketing research, and the potential for further applications of artificial intelligence in the area.