



# Online, face-to-face and telephone surveys—Comparing different sampling methods in wine consumer research

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## Abstract

Today, depending on topic, goal and budget, all kinds of sampling methods are being used, in order to collect consumer data for research in the wine business. However, it is questionable which survey method is able to generate data that does represent the entire population. A representative face-to-face survey with 2000 respondents and a telephone survey with 1000 respondents were compared with two online surveys, one based on quota sampling (2000) and the other on snowball sampling (3000) using identical questions. Due to the sampling method, three of the surveys were representative of the socio-demographic structure of the German population in terms of six demographic variables that were selected for the quota sampling. The online survey (based on the snowball sample) had large biases concerning representativeness. Regarding the behavioural characteristics of consumers, the face-to-face data delivered the best results, followed by the telephone interviews and finally the online quota survey. Face-to-face surveys still deliver the most representative results. Telephone surveys may provide a good alternative, but we would advise use of a larger sample. The online quota survey needs to be corrected, while in the case of snowball sampling, one should relinquish representativeness.

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## 1. Introduction

From the 1940s to the 1970s, mail and face-to-face surveys were the main modes of data collection (Lyberg and Kasprzyk, 1991). However, the increasing rates of telephone coverage, the low cost of telephone surveys relative to face-to-face interviews, the speed with which telephone surveys can be conducted, as well as the quality of the data produced via phone surveys have all contributed to the global success of telephone surveys. Telephone interviewing of samples generated by random digit dialling became an especially popular method (Dillman, 2000). The emergence of Internet surveys in the 1990s threatened the dominance of telephone surveys due to their advantages in terms of cost and speed. Indeed, Internet surveys soon appeared as a

promising alternative to prior methods; nevertheless, there are still problems with the coverage and, as a result, with the representativeness of online surveys (Couper, 2011). Therefore, researchers today are often hesitant to do Internet-based data collection when the goal is to yield a representative national sample (Chang and Krosnick, 2009).

In the context of wine consumer research, various types of sampling methods have been in use, depending on the topic, goal and budget of the survey. Traditional methods, such as face-to-face, telephone or national mail surveys have already been proven successful and the results of these types of surveys can be published as representative of the population. However, as indicated in several studies quoted below, it is questionable whether online surveys do represent the entire population.

Aquilino (1994), Greenfield et al. (2000) as well as Midanik and Greenfield (2003) have already dealt with the question of alcohol in their comparison studies of face-to-face and telephone surveys. However, they did not investigate only wine consumers; rather, they tested these two modes in terms of sensitive questions primarily relating to alcoholism. As far as we know, there have been no studies investigating various sampling methods in wine

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consumer research, although it would be necessary in order to analyse the effectiveness of these modes. This study therefore focuses on comparing four different sampling methods (face-to-face, telephone and two online methods) with identical questionnaires, used when interviewing wine consumers. The goal is to analyse the effect of each mode, including pinpointing differences in the behavioural and demographic profiles of the respondents across these modes. Outcomes of this study should help in the mode choice and in the interpretation of results of surveys administered by face-to-face, telephone or online methods. In addition, this study should illustrate whether the new sampling method – online survey – can deliver representative results.

We begin below by outlining past comparison studies of modes and by comparing face-to-face, telephone and Internet surveys in terms of advantages and disadvantages. This is followed by a description of the national study and by the results of the analysis, which has the goal of highlighting the differences between the selected modes. Finally, in the conclusion, we give an overview of the most important findings and discuss managerial implications of further research.

## 2. Literature review

The current literature mainly focuses on analysing online and face-to-face or telephone surveys in terms of response rate, sensitive questions, social desirability, or ‘don’t know’ responses. There is only a small amount of research that offers comparisons concerning the quality and representativeness of these different survey modes (Bracken et al., 2009). In the following section, we briefly outline the advantages and disadvantages of the chosen sampling methods, followed by the literature overview and then finish this chapter with a discussion of wine-related research.

### 2.1. Advantages and disadvantages

Face-to-face surveys have several key strengths. These surveys are clearly structured, flexible and adaptable. They are based on personal interaction and can be controlled within the survey environment. Physical stimuli can be used and respondents are able to be observed. On the other hand, there are also some disadvantages, such as interviewer bias, high cost per respondent, geographical limitations and time pressure on respondents (Holbrook et al., 2003a, 2003b; Alreck and Settle, 2004).

During the past 60 years, the use of telephones for the collection of survey data has been transformed from a rarely used and often criticised method into a dominant mode of data collection all over the world. Current statistics show that the telephone survey is still one of the most important survey modes (AMD, 2012), although the trend is falling. The possibility of random digital dialling (RDD), good geographical coverage, personal interaction and lower cost compared to face-to-face surveys contributes to the advantages of telephone surveys. Major potential disadvantages include interviewer bias, lower response rate and the inability to use visual help (Goldstein and Jennings, 2002; Peterson et al., 2003).

Online surveys have a number of strengths, such as lower cost and higher speed; they are visual, interactive, and flexible; they do not require interviewers to be present and busy people – often educated and well-off – who systematically ignore taking part in a telephone survey are willing to answer questions posted on their computer screens (Kellner, 2004; Duffy et al., 2005). Nevertheless, Couper (2011) notes that relying on such modes, which require initiative from respondents, will likely lead to selective samples, raising concerns about nonresponse bias. Samples used for large national and international face-to-face and telephone surveys are considered representative of the general population, while online samples are currently regarded as representative of population subgroups only (Hoogendorn and Daalman, 2009).

At the beginning of the 21st century, experts expected that the majority of survey research would be conducted online (Schonlau et al., 2001; Evans and Mathur, 2005). In the year 2000, the proportion of online surveys in Germany was only 3% of all surveys; at present, it is 36% (AMD, 2012). In spite of the continuously growing number of Internet users, the basic drawback – the lack of representativeness of the entire population – still has not disappeared. For example, with 51.5 million of its people online, Internet access in Germany (Walker, 2012) is still heavily distorted by age, education and gender (Blasius and Brandt, 2010). Thus, the current practice for creating a sample representative is to weight variables in respect to socio-demographic characteristics as well as different attitudes (Loosveldt and Sonck, 2008; Lee and Valliant, 2009). The above-mentioned bias of online samples may cause a weighting factor of 100 (Vehovar et al., 1999; Faas and Schoen, 2006); however, Bandilla et al. (2003); it has been already reported that weighting variables at a level greater than five are seen as very problematic and not very helpful.

Web-panel surveys offer an alternative sampling method. However, even this mode has problems with representativeness (see Duffy et al., 2005; Taylor et al., 2009). In Germany, for example, only 4.7% of all Internet users are registered in any kind of Web panel. These are so-called heavy users who use the Internet several times a day. The response rate of these panels is approximately 20%, so we can conclude that only 1% of the Internet users in Germany can be reached by Web-panel surveys (Liljeberg and Krambeer, 2012).

The online survey is still developing, and new techniques such as Skype videophone surveys, social media surveys and mobile device surveys (with the help of smartphones) open new possibilities.

### 2.2. Face-to-face versus telephone

Some of the earliest results of comparing face-to-face interviews and telephone surveys were reported by Hochstim (1967), Rogers (1976) and Groves (1979). In these studies, general questions concerning use of scales in telephone interviews and popularity of these survey modes were investigated. Groves (1979) found that respondents expressed more discomfort about discussing sensitive topics over the telephone than face to face. The interviewers reported that most respondents said they would

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