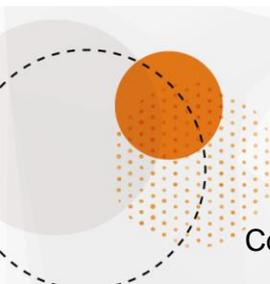


GfK Verein

Are dual-frame surveys necessary in market research?

Research report on
GfK's methodology test





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1 Introduction

The relevance of dual-frame surveys (1)

According to the ADM (2014), telephone surveys constitute 37% of quantitative interviews in Germany. However, in terms of sales, the share generated by telephone surveys could be much higher. The economic significance of this method for the market research industry is thus obvious.

The majority of telephone interviews have until now been conducted on landlines. Consumers who are *easier to reach via a mobile phone* are under-represented in surveys that are conducted only on landlines and consumers who can *only be reached via a mobile phone* (so-called "mobile-only consumers") are automatically excluded. Both groups are also more difficult to contact for face-to-face surveys and both groups are growing larger. The issue of recruiting participants via telephone for online surveys should also be discussed in this context.

Dual users, who are easier to reach via mobile phone, and particularly mobile-only users, are very important for many markets and topics of concern for both market and opinion

research. It is also for this reason that the ADM has been intensively engaged, through the Dual-Frame Research Project 2011/2012, in researching how landline and mobile samples can be usefully combined methodologically.

GfK has been observing the telecommunications market as part of the Tele.Basics^{home} study since as early as 2001 using dual-frame surveys, which take the form of a combination of mobile-only and landline interviews. The present report suggests improvements to certain aspects of ADM's method and should also answer the general question of what additional benefits can a dual-frame survey provide compared with a landline-only sample.

Many studies show that mobile-only users have a different socio-demographic structure to landline users. However, can the same be said of the attitudes of this target group? And is this also true of dual users who are easier to reach via a mobile phone?

The relevance of dual-frame surveys (2)

Three points must be mentioned here:

- Dual users who are easier to reach via a mobile phone are more likely to be willing to participate in a survey and/or to agree to a scheduled interview if the call is made at an inconvenient time. In addition, almost one in three now primarily use a mobile phone even when they are at home.
- It is better to use this approach particularly when trying to reach people whose work requires them to be mobile, for example, specialists, craftsmen or senior managers.
- This group must often travel for professional reasons and frequently uses the internet on a mobile device while waiting at train stations and airports or while using public transportation.

Mobile technology thus makes it possible to contact people directly for dual-frame surveys regardless of which household they are currently living in and/or regardless of where they are residing at the moment.

The application of a dual-frame design is presently (spring 2015) not yet necessary to ensure a survey is representative because it is currently still possible to reach over 85% of the German population over the age of 14 via a landline. The question arises, however, concerning how long this share will remain so high. GfK has already been observing this development for many years and will continue to do so:

- How is the mobile-only share developing in the context of technological innovations (key words: smartphone, LTE, etc.) and tariff offerings (flat rates, combinations of mobile and landline tariffs)?
- In addition, and this question is particularly important, how will actual telephone behaviour as well as people's contactability change in the future depending on the consumer's as well as the household's type and number of "connection points"? These questions can only be answered empirically.

Ronald Frank
GfK Verein

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2 Main findings

The GfK dual-frame methodology test: Aim

Based on the ADM research project, GfK, together with GfK Verein, conducted its own methodology test of dual-frame survey designs in order to examine two questions:

1

Further development:

Can ADM's **weighting approach** be improved?

2

Are dual-frame surveys necessary in market research?

- Are there any **differences between the results** of a dual-frame survey and a landline-only survey?
- **What can be gained by using** a relatively more labour- and cost-intensive **dual-frame** design?

The weighting approach of the ADM can be improved in the following respects

1

1.1

Design weight

Overview

Design weight as a corrective to the different selection probabilities of various groups of people.

1.2

Structural weighting ("redressment")

- Correctives to the mobile-only share
- Weighting of data regarding socio-demographic structures according to universe

1.3

Weighting procedure

Weighting is performed using **GfK's linear weighting** instead of the usual IPF procedure

GfK's method

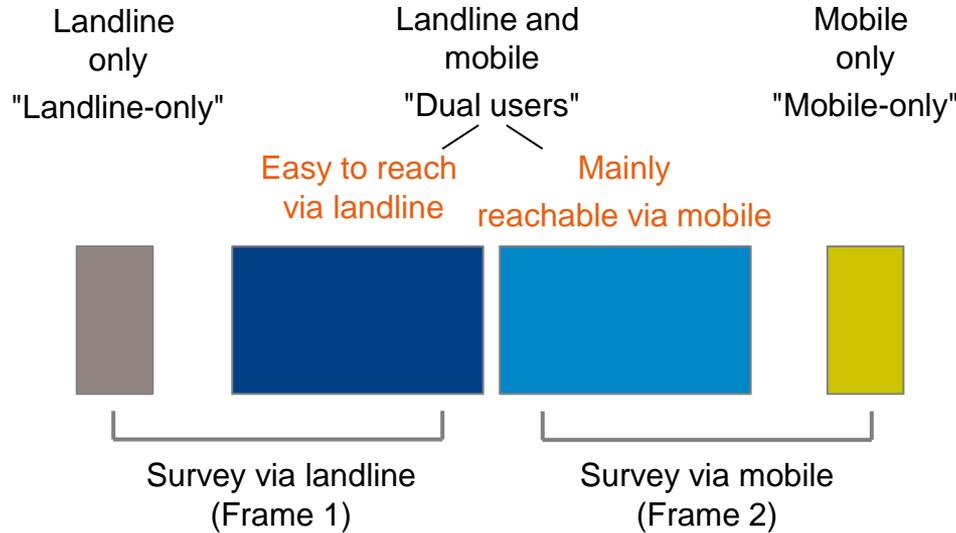
1. Use of reach for landline and mobile phone use
2. Transformation of number of telephone numbers
3. No account taken of the number of target persons in the household

The mobile-only share is an input in the weighting procedure, not a result derived from it.

GfK Linear Weighting, because in the view of GfK, common procedures such as IPF (marginal weighting by using iterative proportional fitting) do not deal adequately with complex design weights.

The GfK dual-frame methodology test: Are dual-frame surveys necessary in market research? The key question

2



Compared with landline-only surveys, two user groups can be captured through dual-frame surveys:

- **Dual users reached via mobile phone**
- **Mobile-only**

But does it make the sample more representative?

The GfK dual-frame methodology test: Analysis to answer the key question

2.1

Do dual users reached by mobile differ significantly from mobile users who can also be reached via a landline phone?

Analysis of dual users reached via a mobile versus dual users reached via a landline

2.2

Do mobile-only users differ significantly from mobile users who can also be reached via landline?

Analysis of dual users reached via landline versus mobile-only

2.3

Which of the two samples is more similar in its structure to the universe when not weighted?

Non-weighted comparison of the total dual-frame sample versus landline

2.4

Does a dual-frame survey provide results for a total population aged 14 and above that are different to a landline-only survey?

Weighted comparison of the total dual-frame sample versus landline

Analysis of dual users reached via mobile phone: Conclusions

2.1

Do dual users reached via a mobile phone differ significantly from mobile users who can also be reached via a landline phone?

Analysis of dual users reached via mobile phone versus dual users reached via landline phone

- 1) Dual users contacted via a mobile phone are **socio-demographically different** from dual users contacted via a landline phone.
- 2) After making a structural matching of their socio-demographic structure, **few differences** remain in terms of **attitudes and behaviours**.
- 3) Dual users reached via a mobile phone only differ significantly from dual users contacted via a landline phone in terms of the **following characteristics**:
 - Greater need to be mobile for professional reasons
 - More intensive use of a mobile phone as an end device (including for telephone calls at home, accessing the internet, association of a landline number with a mobile phone)
 - More internet use while travelling, particularly in public transportation/waiting areas, via a mobile phone or smartphone
 - Enjoy shopping more
 - Tend to be less trusting

Dual-frame surveys that take account of dual users who can be reached on a mobile phone thus result in only a marginally better coverage of the universe!

Analysis of mobile-only: Conclusions

2.2

Do mobile-only users differ significantly from mobile users who can also be reached via a landline phone?

Analysis of mobile-only users versus dual users reached via a landline phone

- 1) Mobile-only users **differ significantly in socio-demographic terms** from dual users who are contacted via a landline phone.
- 2) Unlike dual users reached via a mobile phone, there are still **a large number of differences** in terms of various **attitudes and behaviours** after a structural matching has been made to the demographics.
- 3) Particular attention should be given to the following with regard to the mobile-only subgroup:
 - A larger share of the self-employed and senior managers
 - Greater mobility during leisure time and working hours
 - More intensive mobile internet usage while travelling, regardless of location and particularly on a mobile phone or smartphone

A dual-frame structure takes account of the special group of mobile-only users and thus covers the universe more accurately!

Non-weighted comparison of dual-frame versus landline for the total sample: Conclusions

2.3

Which of the two samples is more similar in its structure to the universe when not weighted?

Non-weighted comparison of dual-frame versus landline for the total sample:

The **dual-frame unweighted sample reflects** the socio-demographic structure of the **universe** more **accurately**:

- 1) The dual-frame sample deviates significantly more widely from the universe in terms of distribution by state than the landline-only survey. This is not surprising because a stratified random selection of telephone numbers at the household level according to region size and state was conducted for the landline sample, while this was not possible for the mobile sample because the mobile phone sampling frame does not provide for the regional identification of telephone numbers.
- 2) Instead, the distribution of **age and sex** in the dual-frame sample is much closer to the universe. Men and young people are significantly under-represented in the landline sample.
- 3) With regard to distribution in terms of **current profession**, there are also slightly fewer deviations from the universe in the dual-frame sample.

Implication for methodology: in dual-frame surveys, less weighting is required and therefore the sampling error is smaller.

Weighted comparison of dual-frame versus landline for the total sample: Conclusions

2.4

Does a dual-frame survey provide different results for a total population aged 14 and above from those generated by a landline-only survey?

Weighted comparison of dual-frame versus landline for the total sample

- 1) The socio-demographic differences between the dual-frame sample and the landline-only sample for the total population aged 14 and above are offset by **weighting**. In this way, the structure of both samples corresponds to the **structure of the universe**. Afterwards, hardly any significant differences are left in terms of the various attitudes and behaviours.
- 2) Characteristics related to **education and profession** play a special role in the weighting procedure. These correlate with a range of different attitudes and behaviours and must therefore be adjusted to the structure of the universe.

After being weighted, the two types of samples do not generally show a different picture of the population aged 14 and above. Using an additional mobile phone sampling frame does not generally produce different results at the level of the total population aged 14 and above.

Are dual-frame surveys necessary in market research?

Does supplementing the mobile frame lead to more representative results?

Yes, because:

1. The total population is covered better when population groups that cannot be contacted via a landline phone (particularly mobile-only groups) are taken into account.
2. Respondents who can be reached on a landline and a mobile phone complement one another in their socio-demographic structure, which means the dual sample better reflects the universe and its particular characteristics without being weighted.

But does that mean that all telephone studies must be changed into dual-frame studies?

No, at least for the present, because:

The differences between the groups contacted via a landline or mobile phone seem to be largely socio-demographic in nature and can (still) be offset by an extensive weighting of the landline sample (incl. education and profession!). After weighting, there are still hardly any significant differences at the level of the total population in terms of attitudes and behaviours.



- GfK therefore recommends using dual-frame surveys if there is a need to look at particularly mobile groups separately or if mobile-only is an important target group for the purposes of the investigation.
- GfK will continuously observe the further development of the share of mobile-only users in the total population and their profile.

3 Methodology

Method

 Fieldwork	Winter 2013/2014						
 Regional coverage	All of Germany						
 Method	Telephone survey using CATI (computer assisted telephone interviewing) via landline and mobile						
 Sample	<table><tr><td>Total</td><td>n=2,248 respondents 14 years old and above, of which</td></tr><tr><td>via landline</td><td>n=1,148 respondents</td></tr><tr><td>via mobile phone</td><td>n=1,100 respondents</td></tr></table>	Total	n=2,248 respondents 14 years old and above, of which	via landline	n=1,148 respondents	via mobile phone	n=1,100 respondents
Total	n=2,248 respondents 14 years old and above, of which						
via landline	n=1,148 respondents						
via mobile phone	n=1,100 respondents						
 Weighting	Weighting according to the structure of population aged 14 and above (Germans + EU foreign nationals) from the 2013 Radio Media Analysis						