

## Are they willing to use the web? First results of a possible switch from PAPI to CAPI/CAWI in an establishment survey

Peter Ellguth, Susanne Kohaut<sup>1</sup>

### Abstract

The IAB-Establishment Panel is the most comprehensive establishment survey in Germany with almost 16.000 firms participating every year. Face-to-face interviews with paper and pencil (PAPI) are conducted since 1993. An ongoing project examines possible effects of a change of the survey to computer aided personal interviews (CAPI) combined with a web based version of the questionnaire (CAWI). In a first step, questions about the internet access, the willingness to complete the questionnaire online and reasons for refusal were included in the 2012 wave. First results are indicating a widespread refusal to take part in a web survey. A closer look reveals that smaller establishments, long time participants and older respondents are reluctant to use the internet.

Key Words: Computer assisted interviewing, data collection modes, response effects

### 1. Introduction

#### 1.1 The IAB-Establishment Panel

The IAB Establishment Panel is an annual survey conducted among almost 16,000 establishments from all sectors and establishment size classes in Germany, which provides information about a broad range of establishment structures and parameters. The sampling frame of the IAB Establishment Panel is the Establishment File of the Federal Employment Agency (Bundesagentur für Arbeit - BA), which is aggregated from the employment statistics and contains all establishments/agencies with at least one employee covered by social security. The establishments are drawn in accordance with the principle of optimum stratification meaning the probability of selection increases with establishment size. Ten establishment size classes, 17 sectors and the federal states serve as stratification variables. In order to depict newly founded establishments and to compensate for the effects of panel mortality, establishments are added to the sample every year. To offset the disproportionality of the random sample, the descriptive findings are each extrapolated to the benchmark figures of the population according to the Establishment File of the BA<sup>2</sup>. The survey is designed for longitudinal as well as cross-sectional analyses (for details see Fischer *et al.* 2009: 142-147). It is possible to follow the development of the same firms over time. Therefore, every year each establishment with an interview in the previous year is contacted again.

A specific feature of the IAB Establishment Panel is the joint funding by the German Federal Employment Agency and the federal states (Bundesländer). 13 out of 16 federal governments took part in the project and paid for about 35 % of the sample in 2013. This additional of the financial resource makes it possible to achieve a huge sample size (between 15.500 and 16.000) and to apply the rather costly survey method of face to face interview with paper and pencil to ensure high data quality.

The major part of the questionnaire consists of questions asked annually in an identical form. These are about the structure of the workforce (qualification level, part time work, temporary employment, recruitment, quits and lay-

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<sup>1</sup> Peter Ellguth, Institute for Employment Research, Regensburger Str. 104, 90478 Nuremberg, Germany ([peter.ellguth@iab.de](mailto:peter.ellguth@iab.de)); Susanne Kohaut, Institute for Employment Research, Regensburger Str. 104, 90478 Nuremberg, Germany ([Susanne.kohaut@iab.de](mailto:Susanne.kohaut@iab.de))

<sup>2</sup> For further information on the IAB Establishment Panel, see Ellguth *et al.* (2014).

offs etc.) and establishment characteristics like business figures and policies, remuneration and working time issues, training activities and further structural information.

Some of these modules are complemented by biennial asked questions, which aim to broaden and accentuate the annual basic information and enrich the potential for empirical analysis. These questions are about further training and innovation activities (asked in uneven years) and work practices and working time issues (asked in even years). Moreover, in every questionnaire there is room for focal subjects that are determined by the stakeholders of the IAB Establishment Panel survey. These questions often cover current political topics and therefore ensure that the IAB Establishment Panel not only provides data for longitudinal analyses but also up-to-date information on new developments.

## 1.2 Adapting the survey mode

To guarantee the future potential of the IAB Establishment Panel possible methodological adjustments have to be considered. One subject is whether it will be necessary and possible to change the survey mode to computer aided techniques and what problems could be implicated. Face-to-face interviews with paper and pencil (PAPI) were state of the art at the beginning of the 1990<sup>th</sup> when the IAB Establishment Panel started. It is still the method of choice when high data quality and highest possible response rates are to be achieved. Additionally, a paper questionnaire has the advantage that it can be left in the establishment with the respondent. This is very important in a business survey because there are often questions included that cannot be answered without further effort. With a paper questionnaire the respondent can do some research and complete questions later without the interviewer.

**Table 1.2–1**  
**Face-to-face, self-administered and mail questionnaires**

<b>Interview mode</b>	<b>Share of responses</b> <i>basis: all establishments</i>	<b>Number of</b> <b>questionnaires</b>
Entirely face-to-face	70,2%	11419
Mainly face-to-face	2,5%	401
Mainly self-administered	4,1%	668
Entirely self-administered	13,6%	2220
No information available	2,9%	476
Printed questionnaire via mail	6,7%	1086
<b>Overall</b>	<b>100%</b>	<b>16270</b>

Source: IAB Establishment Panel 2012

In the meantime alternative computer aided survey methods are available and well established. Computer aided personal interviews (CAPI) as a possible alternative have some advantages compared to the traditional method:

- Validation and consistency checks during the interview,
- automated skip patterns, so that only relevant parts of the survey are shown,
- dependent interviewing,
- provision of additional information.

When changing the survey mode of the IAB Establishment Panel it is important that it will still be possible to complete the questionnaire on site without an interviewer being present. Otherwise response rates (unit and item) would decrease.

There are examples of establishment surveys in Germany which use computer aided personal interviews (CAPI) as the main mode of data collection. If a respondent wants to answer the questionnaire or part of it without the interviewer being present, then a printed version of the questionnaire (or part of it) is left in the establishment (like in PAPI). This recourse to a paper and pencil version of the questionnaire somehow contradicts the whole idea of a

computer aided survey mode. If the advantages of a computerized survey are to be fully exploited, a switch from the computer aided face-to-face interview to a web based version of the questionnaire (CAWI) seems to be the only promising solution.

In our understanding the knowledge about a switch from PAPI to CAPI and especially the described combination of survey modes applied at establishment level is insufficient or virtually non-existent.<sup>3</sup>

## 2. Internet access and willingness to use the internet

### 2.1 Descriptive results

Therefore, as a first step a few questions about the internet access of the establishments and especially the willingness to complete the questionnaire on the internet were included in the 2012 wave of the IAB Establishment Panel. In the following some key results are presented that might also be interesting for the general debate on survey methodology. To begin with the access to the internet: 92% of the establishments have the technical requirements to use the web (about 2% did not answer the question). As expected this ability to answer/complete a questionnaire online is strongly depending on the establishment size. In firms with 10 or more employees 95% of the firms have internet access. Only very few establishment with 50 and more employees do not have internet access. However, among small enterprises (less than 10 employees) about 15% could not participate in a web-survey.

**Table 2.1–1**  
**Internet access and willingness to use the internet**

Establishment size	Internet access	Willingness to use the web
	<i>Basis: all establishments</i>	<i>Basis: establishments with internet access</i>
	yes	yes
1 - 9	84%	31%
10 - 49	95%	39%
50 - 499	99%	44%
500 a.m.	98%	48%
<b>Overall</b>	<b>92%</b>	<b>38%</b>

Source: IAB Establishment Panel 2012

Access to the internet is of course just a prerequisite for participating in a web survey. The willingness and ability of the respondents to answer questions via the web is obviously quite a different story. Only 38% of the owners/managers say that they would be willing to do so. Like the technical requirements the willingness to participate increases with the establishment size. Refusal is most probable among small enterprises (fewer than 10 employees) with almost 70% and drops continuously to around 50% among large companies (500 and more employees). The overall result might at least partly be driven by the fact that the establishments already taking part in the IAB Establishment Panel are used to face-to-face interviews, especially at the end of the interview when these additional questions were presented.

This predisposition/preoccupation is also reflected in the answers to the follow up question why they wouldn't complete such a questionnaire via internet (see table 2.1–2). As the main reason for their refusal the respondents

<sup>3</sup> One of the few papers we found is a kind of practical guideline dealing with the introduction of web-based data collection in establishment surveys (Fox et al. 2004). For individual or household surveys on the contrary there is a vast literature about mode changes from PAPI to CAPI to CAWI and mixed-mode approaches.

mention “safety concerns” (54%).<sup>4</sup> Among the category “other reasons” (which should be stated as plain text) there were mainly such which refer to the interview situation itself. In 3 out of 10 establishments the respondents obviously appreciate the personal contact with the interviewer and the fact that it is their counterpart who is responsible for a successful interview. In every seventh firm there are regulations or operating guidelines which do not allow the use of the internet for such purposes.

**Table 2.1–2**  
**Reasons for a refusal to use the internet**

<b>Reasons for refusal</b>	<b>Share of responses</b> <i>Basis: establishments with internet access</i>
Company regulations	14%
Safety concerns	54%
Preferred interview situation: f2f	30%
Other reasons	16%
<b>Overall (multiple responses)</b>	<b>114%</b>

Source: IAB Establishment Panel 2012

For conducting a web survey among establishments the above figures are rather discouraging. Two thirds of the sample could or would not take part at all or complete the questionnaire via the internet most because of safety concerns, some because the respondents prefer the ‘comfortable’ face to face situation. For our concern – a possible change of the survey mode from PAPI to CAPI and CAWI – these figures must be broken down and seen in the context of the mode the interview in the IAB Establishment Panel was conducted (table 2.1-3).

**Table 2.1–3**  
**Internet access and willingness to use the web by interview mode**

<b>mode of interview</b>	<b>Internet access</b>	<b>Willingness to use the web</b>
	<i>Basis: all establishments</i>	<i>Basis: establishments with internet access</i>
	Yes	Yes
Entirely face-to-face	92%	31%
Mainly face-to-face	98%	42%
Mainly self-administered	98%	50%
Entirely self-administered	98%	59%
Printed questionnaire via mail	94%	64%
<b>Overall</b>	<b>92%</b>	<b>38%</b>

Source: IAB Establishment Panel 2012

With regard to a possible mode change in the IAB Establishment Panel we are not talking about an overall web survey but computer aided personal interviews with an additional web mode in case this is the respondent wish. So we are not concerned with all those firms that answer completely face-to-face and are the main source of refusals. The interesting cases are those which answer or complete the questionnaire themselves. All in all there are about

<sup>4</sup> The corresponding question in the IAB Establishment Panel explicitly stated that common safety standards would of course be met in a web survey.

1850 respondents which receive the printed questionnaire either during the interview or via mail and state that they won't (be able to) participate via the internet.

For the mainly face-to-face interview a mode change would mean the loss of answers to a few variables and therefore an increase in item-nonresponse depending on how many questions are left with the respondents to complete by themselves. The mainly or entirely self-completed questionnaires would probably be lost in a CAPI/CAWI survey as would be the mail cases (interestingly the mode which shows the least reluctance to use the internet).

## 2.2 Probit estimation

In a first attempt to find out more about the establishments that signalized to refuse participation in a computer aided survey mode (CAPI/CAWI) we estimated some corresponding probit-models with a 1/0-variable for refusal as dependend variable. Our independent variables were selected according to the conceptual framework used by Janik and Kohaut 2012 (following Groves and Couper 1998 and Willimack *et al.* 2002) explaining the decision of a firm to participate in a survey. In this framework four groups of factors are determined which might have an influence on the probability of the firms' participation: company environment, establishment and respondent characteristics, study design, interviewer characteristics.

**Table 2.2–1**  
**Refusal to participate in a computer aided interview**

Highly significant Variables	Marginal effects
Establishment size (ln)	-0.016***
Independent company (yes=1)	0.063***
Missing value for turnover (yes=1)	0.064***
Missing value for wages (yes=1)	0.032**
Long-time participant (4 years and more =1)	0.047***
First time participant (yes=1)	-0.059***
Mainly f2f-interview (yes=1)	0.227***
Older firm representative (50+ =1)	0.035***
Change of interviewer (yes=1)	-0.106***
Age of interviewer (years)	-0.002***

Source: IAB Establishment Panel 2012

Most of the variables included show the expected results. In table (2.2-1) only the significant variables (5%-level) are presented. We just want to point out a view results:

- Larger firms have less reservation against computer aided surveys.
- Where there is more reluctance to divulge delicate information like total turnover or the wage sum answering a web survey is less an option.
- Long-time participation in a panel survey reduces the willingness to accept a mode change. Obviously it is not a trust issue but one of habit to set firms against the new interview mode.
- Maybe the same stands for the firm representative. Older respondents tend to refuse participation more often confirming the argument that age goes along with a certain 'suspicion' against an unreserved use of computerized means.

- Concerning interviewer characteristics two results are worth mentioning. Firstly: Older interviewers manage to reduce refusal. This might indeed be a matter of trust. Secondly: If it is not the same interviewer as last year the chance of a successful switch to a computer aided interview decreases noticeably – very likely a trust issue.
- The strongest impact on the likelihood of refusal has the interview mode. On first sight the result that it strongly increases the reluctance of the firm (or its representative) to take part in a computer aided survey if the interview is conducted face-to-face might come as a surprise. But again we believe this to be a matter of habit.

A better understanding why establishments (or their representatives) might not continue to take part in a panel survey in case of a mode change can only be the first step. On the one hand further research is necessary to clarify what consequences a ‘real’ drop out would have on the “continuer” sample and the replacement samples with regard to selectivity issues. On the other hand we need empirical data on the actual behavior of establishments (belonging to the panel sample) that are confronted with a mode change. Here especially the group with a switch from PAPI to self-completion is of interest. To gain that data first experiments are already on their way.

### 3. Conclusions

The IAB Establishment Panel can look back at 20 years of successful data collection thereby providing the scientific community and policy makers with high-quality data. As a panel survey the methodological basics and conceptual perspectives were set with its foundation. All efforts to maintain and enhance the analytical power and data quality have to find the fine line between innovation and continuity. Despite the fundamentally ‘conservative’ approach, innovations take place but with caution and often rather in detail.

The future “field of innovation” is a possible change in the survey mode of the IAB Establishment Panel. So far, the mainly face-to-face interviews with paper-and-pencil (PAPI) provide above average response rates (especially for continuers). Still, it is important to look for alternative, more up-to-date survey modes to ensure the potential of the IAB Establishment Panel. As mentioned before a method with many advantages would be a computer-aided-personal interview with a web questionnaire (CAPI/CAWI) that can be completed by the respondent if necessary. To learn more about the ramifications of a possible mode change first experiments are conducted. The results will enable the IAB to decide whether the risk of a change in the survey mode can be taken without endangering the continuity of the panel.

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