

# RESPONSE BURDEN MEASUREMENT FOR BUSINESS SURVEYS AND THE SWISS COORDINATION SYSTEM

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**Summary.** The Swiss Federal Statistical Office (SFSO) is willing and needs to put in place a procedure for systematically measuring the burden that stems from its different surveys. A first evaluation of that burden, in terms of time and cost imposed on businesses was carried out in 2013 by external specialists at the University of St.Gallen, Switzerland. A working group within SFSO has recently examined the existing literature and the dispositions taken by other national statistical institutes. A decision was taken to expand and improve on the 2013 works.

This paper presents an overview of the difficulties encountered when measuring actual response burden, of the principal challenges that need to be met and of the different options available. It lists measures that have already been adopted so as to reduce the global survey burden, such as mandatory use of administrative data, online questionnaires, profiling of large and multi-establishment companies. Also is to mention the coordinated selection of samples, from 2009 on, that allows to spread the response burden on businesses. Among other benefits, it allows to track unit selections over time and thus facilitates survey burden evaluation.

**Keywords.** Response burden, Sample Coordination.

## 1 Context

Measuring the survey burden is one of the principal objectives of the Swiss Federal Statistical Office (SFSO) assigned within the federal statistical multiannual programme (see Schütz 2016, p.15). Specifically, the burden on enterprises was evaluated in 2013 by external specialists from the university of St. Gallen (see Müller et Bergmann 2013). According to this study, the cost that stems from business statistics produced at SFSO and the KOF Swiss economic institute is approximately 9.3 million swiss francs, of which 7.3 millions concern surveys for which participation is mandatory. Recently, two parliamentary motions which aim to exclude from the statistical returns businesses of less than 50 employees were accepted by the first chamber before being rejected by the second chamber <sup>1</sup>. The initiators were questioning the workload imposed by the statistical

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<sup>1</sup>see: <https://www.parlament.ch/en/ratsbetrieb/amtliches-bulletin/amtliches-bulletin-die-verhandlungen?SubjectId=36634>

system. If these motions were accepted, there would have been severe consequences on the production of business statistics, excluding 98% of the businesses, employing 44% of the active employed population. Some economic activity sectors would have been entirely removed from the surveys with impact, for instance, on measuring the gross domestic product or the consumer price index. The possibility of comparing the load generated by the statistical production system with the load due to regulations, evaluated to 50 billion Swiss francs per year was essential (see Savary, 2016).

Thus, an investment in measuring response burden would allow to improve and maintain the quality of the produced statistics in the domain of business statistics. SFSO has engaged in projects which aim to reduce and spread the burden generated by its surveys. For instance, systematically we recur to the use of register data, when this data is adapted for the production of the specific statistics (see also Schütz 2016). In certain cases, the SFSO is participating in the process of harmonizing register data in order to make them statistically relevant. In business statistics, from 2009 on, the system for drawing and coordinating samples is used in order to spread effectively the samples, select and update samples in panels and rotated panels. However, a large effort is put in order to reduce burden on businesses through profiling of large enterprises, which are included in most of SFSO's surveys. The profiling guarantees a personalized contact and an unique procedure in order to deliver the necessary information for producing the statistics. The SFSO pursues also in a larger use of register data, such as the social security register.

## 2 Major challenges

The SFSO has the chance to be able to select its samples within two rich sampling frames - one for the households (persons) and the other one for the businesses. For the businesses, the sampling frame represents a snapshot of the business register (BR) made each semester. The BR is itself continuously updated. All information for coordinated surveys (inclusion probabilities, joint selection probabilities for two different surveys, effective selections) are centralized in what we call "a system of coordination". There is a considerable amount of information available to us which allows to evaluate the selection frequencies, such as kind of activity, unit sizes, etc. However, not all surveys are selected in this sampling frame. One such example is the survey on the border traffic of goods. On the other hand, some samples are drawn in our sampling frame for the needs of our external partners and are not directly linked to the statistics produced by SFSO. Thus, our first objective is to define the field of the surveys which are included in the measurement of response burden: only these produced by SFSO, surveys ordered by the federal administration, extension of samples for the needs of the Swiss cantons, surveys for research institutes or universities? The definition of burden needs to be examined too. In Müller et Bergmann (2013), the survey burden of a business is expressed in terms of duration and financial cost.

Measuring response burden is not straightforward and depends on the data collection mode. Most of the business surveys at SFSO are done by a paper questionnaire or through electronic data transmission. The results of Müller et Bergmann (2013) are obtained by predicting survey burden using experts's opinion. If we would like to replace these predictions by a statistical return, we need to find a solution that is acceptable for all the businesses. Some businesses are capable of giving an estimation of the duration but not of the cost and inversely. For some, neither one nor the other have a direct meaning: how to account for a software that permits to answer an indefinite number of times to SFSO's surveys? It seems difficult to imagine a situation where statistics are entirely based on the statistical returns.

Knowing the number of sent and returned questionnaires, as well as response burden, allows for better quantifying the total survey burden. But there are some hidden disparities in this total burden: not all the units are asked to participate in the survey with the same frequency or burden. In order to successfully obtain a relevant description of survey burden, we need to look at a specific population and study the burden in terms of the characteristics of the population, such as the size or the economic activity domain of the enterprise.

The definition of the population of study is also a matter of choice. Indeed, businesses change over time, we need to account for births, deaths, mergers and splits. A certain number of rules were established in order to treat the natural evolution of the population in the SFSO's coordination system. They were chosen in order to satisfy our first objective which is to spread the survey burden in the best possible way. For businesses that take part into mutations and when it makes sense, all the past of a unit (recorded selections, sampling probabilities, etc.) is transferred to the new statistical unit. Annually, for a few hundred of units, we need to carry out a complete analysis of the enterprise's structure, its establishments and their size in order to choose what transitions to apply. For the time being we do not have a final definition of the types of transitions when following a business over time. These transfers of identity indicators and past selections are determining for the response burden measurement at SFSO. We can argue on the choice we make for following the changes in the structure of the businesses. However, the sampling method we use for drawing the samples guarantees that the cross-sectional design for each survey is duly upheld (see Qualité 2009). In particular, a group of units that was over-represented in a given survey does not risk to be absent from the sample of a subsequent survey and a unit which inherits a "wrong past" will not have an inclusion probability for a future survey that is not respected .

### **3 Initial solution**

In 2016, the working group on measuring response burden has succeeded to meet its primary objective and define a first draft of a system for measuring survey burden. The

surveys drawn in the SFSO's coordination system, represent around two thirds of the selections of the surveys considered in Müller et Bergmann (2013). For these surveys, selection indicators are readily obtainable. Other information, such as activation indicators (when we try to establish contact with the surveyed unit), response indicators, estimated or observed individual response burdens are not all available at the unit level. These surveys along with surveys which are not selected in the coordination system are taken into account for the calculation of the total survey burden.

Some results are presented in Tables 1 and 2. In Table 1 we have the number of unique and multiple selections for the samples of the business surveys drawn in the SFSO's coordination system between 2009 and 2016 with negative coordination and Poisson sampling design. Some of the samples belong to panels. These samples are splitted in two time periods: 2009-2012 (10 samples) and 2013-2016 (16 samples). All the enterprises taken in account for these calculations are present in the last sampling frame from 12.12.2016, in total 873'801 enterprises. For the total (2009-2016) we have reported in Table 1 the number of multiple selections until 11 and 12 or more. It should be noted that there were 22 enterprises which were selected 19 times and 4 enterprises which were selected 20 times - the observed maximal number of selections for the whole period. These are probably the largest enterprises as it could be seen also from Table 2 where we have reported the unique and multiple selections by unit size classes. The unit size classes are defined in Table 3 according to the total number of employees of a business denoted by EMPTOT.

Years	1 sel.	2 sel.	3 sel.	4 sel.	5 sel.	6 sel.
2009 - 2012	40'279	7'316	5'671	4'207	3'022	1'585
2013 - 2016	79'001	14'236	8'132	4'829	3'163	3'029
<i>2009-2016</i>	<i>92'417</i>	<i>15'418</i>	<i>9'721</i>	<i>6'748</i>	<i>4'796</i>	<i>2'620</i>
Years	7 sel.	8 sel.	9 sel.	10 sel.	11 sel.	12 sel.
2009 - 2012	995	146	3	0	0	0
2013 - 2016	2'714	2'036	1'259	589	183	14
Years	7 sel.	8 sel.	9 sel.	10 sel.	11 sel.	12+ sel.
<i>2009-2016</i>	<i>2'014</i>	<i>1'899</i>	<i>1'249</i>	<i>1'310</i>	<i>1'745</i>	<i>4'977</i>

Table 1: Selections of businesses which appear in the sampling frame from december 2016

These statistics can also be calculated by canton, kind of activity, etc. Our next objective is to replace the selection indicator used for these calculations by activation indicator or response indicator or some other response burden measure.

Number of selections	Unit size classes					
	1	2	3	4	5	6
1	16'987	55'422	16'068	3'745	124	71
2	1'744	6'098	3'984	3'293	215	84
3	967	3'376	2'062	2'765	417	134
4	637	1'966	1'209	2'083	525	328
5	323	1'649	959	1'296	333	236
6	124	591	496	871	378	160
7	59	345	320	765	357	168
8	33	233	217	798	306	312
9	23	103	113	511	295	204
10	7	89	121	450	461	182
11	8	50	76	304	739	568
12	8	14	39	182	458	460
13	7	3	13	114	641	469
14	1	2	5	67	374	426
15	0	2	2	61	147	557
16	0	1	1	25	53	339
17	0	0	0	7	15	290
18	0	0	0	1	1	166
19	0	0	0	0	0	22
20	0	0	0	0	0	4

Table 2: Selections of businesses by unit size classes

	1	2	3	4	5	6
EMPTOT	$\leq 2$	[3;9]	[10;19]	[20;49]	[50;99]	$\geq 100$

Table 3: Unit size classes

## References

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