Evaluation labour input of filling in statistical forms: sampling methods

Julia Orlova[1]

[1]Belarus State Economics University, Minsk, e-mail: orlova-julia-gen@mail.ru

Abstract

The article substantiates the need for the regular evaluation of the labour input of respondents filling forms of statistical reporting. The intensity measurement approaches are shown, the use of selective monitoring in this area is explored. It also considers the problems of defining the scope and the design of sample survey of labour input associated with filling the forms of statistical reporting.
Key words: labour input, statistical forms, sampling.

1 Introduction

The increasing information needs of users in official statistics requires updating and improvement of existing forms of State statistical surveys and instructions for their filling, approving of new forms and relevant indicators and cancel obsolete ones. Particular attention in the revision of State statistical reporting in Belarus will be given to comments and suggestions of the reporting institutions (respondents) in order to minimize labour input associated with filling the forms of statistical reporting.

In the process of measuring labour input of statistical work, in particular the works of respondents, a range of questions is usually raised: the adequate estimation of elapsed time, its structure, the lack of normative work and as a result, there is difficulty establishing clear boundaries research facility; the absence of the similar survey in national statistical practice, discussions of the use of continuous monitoring techniques (there are 112 statistical reporting forms and 126771 legal entities on June 1, 2012).

This paper discusses the research and the objectives of the labour input studying. Taking into account the available information of State statistics authorities the direction of basics, volume and sampling design is proposed.

A respondents' sample survey is proposed to be the main source of information on the labour input connected with filling State statistical reporting. Until now, the sample survey of labour input associated with filling the forms of State statistical reporting in Belarus has never been carried out. In 2012, a survey has been carried out for the purpose of obtaining empirical data about the labour input of filling State statistical reporting, total and by economic activities of responders. Survey object is legal entities of the Republic of Belarus.

2 Evaluation labour input of filling in statistical forms

In order to form the general population of the respondents they were proposed to fill in such a questionnaire (table 1).

Table 1: Questionnaire study of the response burden associated with completion of forms of state statistical reporting

The operative time costs, hours					
up to 1	1-2	2-4	4-8	8-40	more than 40

In assessing the complexity of time spending on filling in statistical forms it is proposed to distinguish the following categories of the working time: operative time, set-up time, while observing the operation of the equipment. At the same time the operative work must be submitted to time, which is directly aimed at the implementation of the set tasks.

Thus, the operative time includes the time required for registration and reporting forms of state statistical reporting; primary input records to the PC, the union of sets of information received from affiliates or divisions, the checks on the statistical reporting forms: arithmetic, logical, comparison with the previous period and so on, forming the output tables, etc.

The set-up time includes time to prepare for the implementation of a given work and time to perform the operations associated with its ending.

The set-up time includes consultations in the area (businesses) on issues arising in the process of monitoring, the workers' press reports and organization of the materials for controlling details of statistical reporting.

While observing the operation of the equipment there was included the time to perform operations such as monitoring the operation of the equipment when working with input and output information.

On the basis of survey conducted in government statistics and showed in this study, the author proposes the following system of correction factors developed by time consuming on filling in statistical forms:

1. complexity (Kc);
2. occupancy (Ko).

The average occupancy rate for each form of statistical reporting is a known quantity. Thus, as the result of the research we receive the complexity rate for each of the statistical reporting forms.

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3.1 General

To organize specialized sample surveys of labour input associated with filling the statistical forms the general population of the responders must be formed on grounds of the operative time costs at the level of the Republic (area, region). At present, the general population can be formed on the basis of lump-sum continuous questioning conducted by the State statistical bodies in 2012, the questionnaires (table 1) were attached to each statistical form received by legal entities.

3.2 Sample basis

A survey carried out by statistics bodies has allowed forming database, which is used to select the sample units. The sampling frame is formed by legal entities and their separate units, which should be grouped on a territorial basis and on the basis of economic activity.

Table 2: Distribution of legal entities by regions and in Minsk on June 1, 2012

Belarus	Total	Percentage
	126 771	100,0
Including regions:		
Brest	13 762	10,9
Vitebsk	13 085	10,3
Gomel	13 324	10,5
Grodno	11 042	8,7
Minsk city	43 844	34,6
Minsk	20 361	16,1
Mogilev	11 353	9,0

Table 3: Distribution of legal entities by economic activity on June 1, 2012

Belarus	Total	Percentage
	126 771	100,0
agriculture, hunting and forestry	4 731	3,7
fishing, fish farming	212	0,2
mining industry	75	0,1
manufacturing	15 826	12,5
production and distribution of electricity, gas and water	228	0,2
construction	10 071	7,9
trade; repair of motor vehicles, motorcycles and personal and household goods	42 793	33,8
hotels and restaurants	2 487	2,0
transport and communications	8 948	7,1
finance operations	558	0,4
operations with real estate, renting and services to consumers	15 952	12,6
government	4 392	3,5
education	8 788	6,9
health and social services	2 074	1,6
provision of utilities and other services	9 636	7,6

On the basis of the limiting errors calculation, depending on the sample size and values of characteristics (with 95% probability level), the recommended sample size is 22500 entities that makes up 25% of the general population (table 4).

Table 4: Limiting errors in dependence on sampling size

Sample size	Limiting error, %	Limiting error, units
5%	1,13	1 688
10%	0,77	1 162
15%	0,61	922
25%	0,45	671
30%	0,39	592

3.4 Sample design

While evaluating the labour input of filling in statistical reports the general population of Belarus legal entities should be stratified by territorial characteristics of the responders to receive representative estimates at the regional and national levels. The general population of legal entities should be also stratified by the identity of the respondent to the form of economic activity.

References

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