Quality Report for STRUCTURAL BUSINESS STATISTICS (ANNEXES I – IV), 2016

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TABLE OF CONTENTS

1   INTRODUCTION INTO THE STATISTICAL SURVEY

1.1 Purpose of the survey

The aim of statistical activities carried out as part of structural business statistics (SBS) is to provide annual indicators necessary for the analysis and monitoring of business activities of market producers. Produced data are used for the analysis of structure of active market business entities (enterprises and entrepreneurs) by activity, and structure of factors used in the production process, as well as for the analysis of business profit and losses and competitiveness of enterprises and entrepreneurs and the analysis of business developments at the level of Republika Srpska and internationally.

Structural Business Statistics data represent important inputs for estimates and calculation of macroeconomic aggregates in the National Accounts, for weights calculation for calculation of indices in short-term statistics, as well as for data updating in the Statistical Business Register (SBR).

The compilation of SBS items and indicators, i.e. the production of structural business statistics in the sections of services, industry, trade and construction (Annexes I, II, III and IV) has been carried out regularly since 2010, in accordance with the basic EU Regulation 295/2008 and implementing regulations 250/2009, 251/2009 and 275/2010.

1.2 Legal basis and responsibility of statistical institutions

Structural Business Statistics (SBS) activities are carried out in accordance with the Law on Statistics of Republika Srpska ("Official Gazette of Republika Srpska, No. 85/03) and pursuant to the Statistical Programme for the period 2018-2021 and the current annual Work Plan of the Republika Srpska Institute of Statistics.

The obligation to submit data to the Republika Srpska Institute of Statistics (the Institute) is based on Article 8 of the Law on Statistics of Republika Srpska.

1.3 Applicable classifications

Statistical data on structural indicators of business activities of enterprises and entrepreneurs are observed, processed and presented in accordance with the Classification of Economic Activities KD BiH 2010, which in its content and structure fully complies with the EU Statistical Classification of Economic Activities NACE Rev 2.

1.4 Reporting unit

Reporting units for the Structural Business Statistics are economically active, market-oriented enterprises with headquarters in the territory of Republika Srpska.

1.5 Statistical observation unit

Observation units in the SBS survey are enterprises and entrepreneurs of non-financial business economy, whose activity status is defined in the SBR. These enterprises and entrepreneurs achieve over 50% of operating income from sale of goods and services on the market.

1.6 Scope and coverage

Structural business statistics cover the following sections of economic activity[1]:
B – Mining and quarrying;
C - Manufacturing;
D – Electricity, gas, steam and air-conditioning supply;
E - Water supply; sewerage, waste management and remediation activities;

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[1]Sections of economic activity are defined in accordance with the Classification of Economic Activities KD BiH 2010 (NACE Rev. 2)

F - Construction;
G – Wholesale and retail trade; repair of motor vehicles and motorcycles;
H – Transportation and storage;
I - Accommodation and food service activities;
J- Information and communication;
L- Real estate activities;
M - Professional, scientific and technical activities;
N - Administrative and support service activities;
P - Education (private sector);
Q - Human health and social work activities (private sector);
S - Other service activities (except division 94 which is excluded in accordance with the EU Regulation).

The framework for the survey implementation is the Statistical Business Register.

1.7 Statistical concepts and definitions

All definitions used in the domain of structural business statistics are fully harmonised with definitions stipulated in the EU Regulation 250/2009. Some of significant definitions are listed below:

Number of enterpises and entrepreneurs covers entities from the SBR in the population which is subject to observation, which operate commercially and which were active at least for part of the observation year (with either realised turnover or employees). All temporarily inactive (quiescent) and actually inactive enterprises and entrepreneurs are excluded.

Number of employees covers persons who are employed on a temporary or permanent basis, working in full or part time. Number of employees includes seasonal workers, apprentices, people working from home and persons on strike or on short-term leave. This number does not cover persons on long-term leave. Employees are paid by the employer for performed work, and payments can be in the form of wage, salary, fee, gratuity, piecework pay or remuneration in kind.

Number of persons employed includes number of employees on the payroll and unpaid employed persons such as proprietors, partners, family members, volunteers, etc.

Operating revenues represent the results of enterprises' business operations expressed as a value. These include revenues from the sale of goods, products and services, revenues from the use of own goods, other operating revenues, and changes in stocks of finished goods and ongoing production. They are expressed without value added tax.

Operating expenditure represents costs of business operations expressed as a value. These include purchase value of sold goods, intermediate consumption (costs of materials and energy, costs of production services, non-material costs), depreciation and provision costs and personnel costs.

Inventories represent a form of working capital. Their value is a state on the first and last day of the year, expressed in monetary terms. Structural business statistics monitor inventories in terms of materials, energy, goods, ongoing production and finished products.

Gross fixed capital formation into material and non-material fixed assets (new and used) represents the value invested in acquisition of assets and costs of maintenance and emergency repairs of acquired capital assets. This category does not include regular repair and maintenance costs.

Turnover covers calculated revenues from sale of own products, revenues from provided services and revenues from sale of goods for resale, during the observation period. Calculation of turnover covers all billed taxes, except VAT and excise.

Value added at factor costs is given as the gross amount (without depreciation deduction), calculated by adding subsidies to production value at basic prices, and subtracting product and production tax costs and value of intermediate production from it.

Personnel costs are defined as total compensation of employees during the observation period, in money or in kind. These consist of gross wages and salaries, and other personnel costs having the character of personal income.

Turnover per person employed is obtained by dividing total turnover by total number of persons employed. This indicator expresses the selling capacity of an enterprise or entrepreneur from specific activity.

Value added per person employed is a basic indicator for *labour productivity* measuring. This indicator shows the amount of value added produced per person employed.

Share of value added in production value is obtained by dividing total value added by total achieved production value.

Labour costs per employee show the average costs of employees in certain activities and these are obtained by dividing total labour costs by number of employees, that is, by number of persons who were paid for performed work.

Profitability represents percentage share of gross operating surplus in turnover. This indicator shows earning capacity of an enterprise or entrepreneur, or of certain activities.

2   RELEVANCE, ASSESSMENT OF USERS' NEEDS AND PERCEPTIONS

2.1 Users of the statistical survey data

2.1.1 Key users of the statistical survey data

Structural business statistics data for the level of Republika Srpska, in the form of microdata, are submitted to the Agency for Statistics of Bosnia and Herzegovina, the institution responsible for the aggregation of data to the state level and reporting to the Statistical Office of the European Union, Eurostat.

Key users of the SBS data are:
- Ministry of Finance, Ministry of Economic Relations and Regional Cooperation, Ministry of Trade and Tourism, Ministry of Energy, Industry and Mining, Economics Institute, Directorate for Economic Planning, Directorate for European Integration, Chamber of Commerce, republic and municipal agencies for the development of small and medium-sized enterprises;
- science, research and education: Economics Institute;
- general public: individuals;
- the media: news agencies;
- internal users: Statistical Business Register, national accounts and short-term statistics.

2.1.2 Assessment of users' needs

Basic structural items and indicators of market operations of enterprises and entrepreneurs are provided by section of economic activities and by size (by number of employees).

Produced data are used for the analysis of structure of active market enterprises and entrepreneurs and structure of factors used in the production process, as well as for the analysis of business profit and losses and competitiveness of enterprises and entrepreneurs and the analysis of business developments at the level of Republika Srpska and internationally.

2.1.3 Measuring users' perceptions and user satisfaction

Satisfaction of users with statistical data is measured through the User Satisfaction Survey relating to the data produced by the Republika Srpska Institute of Statistics. The results of the latest survey are available at the Institute's website, in the section Quality in statistics:
http://www.rzs.rs.ba/front/article/2699/?left_mi=306&add=306
User satisfaction with the SBR data is not measured separately.

2.2 Data completeness

2.2.1 Quality and performance indicator – <u>Data completeness - rate (R1)</u>

SBS results for the Republika Srpska level are submitted to the Agency for Statistics of Bosnia and Herzegovina, the institution responsible for reporting to Eurostat. Annual structural business statistics of enterprises and entrepreneurs, by section of economic activities of KD BiH 2010, sections B to J, L to N and

divisions 95 and 96 are submitted as part of series 1A, 2A, 3A and 4A, while broken down by size class of employees and by activity of KD BiH 2010 of the sections B to J, L to N and divisions 95 and 95 these are submitted as part of series 1B, 2B, 3B and 4B, as laid down in the EU Regulation 251/2009.

The data obtained through the implementation of this survey allow the calculation of all statistics required by EU Regulation 295/2008 at the level of the observation unit for Annexes I-IV, regardless of these being annual or multi-annual statistics. The rate of data completeness is 100%.

3   ACCURACY AND RELIABILITY

3.1 Sampling error

SBS survey uses a combined method of sample and full coverage. The method of full coverage is applied for enterprises with 20 or more employees, while sampling method is applied for enterprises with fewer than 20 employees.

3.1.1 Quality and performance indicator – Sampling error (A1)

In accordance with the EU Regulation 275/2010, sampling errors are expressed by the coefficient of variation for number of enterprises, turnover, value added at factor costs, personnel costs, number of employees, and gross fixed capital formation into material assets.
The assessment of variance is made using the "Survey" package of programming environment R, taking as the basis the initial sample design.
The coefficient of variation (CV), as a relative standard error, is calculated as the standard deviation (error) divided by the value of estimated parameter. As such, it represents the measure of deviation which is comparable for various indicators and domains.

$$CV = \frac{\text{SE}}{\hat{\theta}}$$

Table 1. Coefficients of variation (CV %) for basic indicators by section of economic activities

Section of economic activities	Number of enterprises and entrepreneurs	Turnover	Value added at factor costs	Gross fixed capital formation	Personnel costs	Number of employees
B	0.0	0.1	0.1	0.1	0.0	0.1
C	0.0	0.4	0.8	7.7	0.4	0.3
D	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.3	0.6	5.8	0.4	0.2
F	0.0	0.6	1.3	10.5	0.9	1.0
G	0.0	0.5	2.2	12.0	1.1	0.7
H	0.0	1.0	1.5	4.7	0.8	0.5
I	0.0	1.1	0.7	5.0	0.4	0.5
J	0.0	0.4	0.1	0.2	0.2	0.2
L	0.0	0.5	1.1	25.7	1.0	0.9
M	0.0	17.9	5.0	4.1	1.9	0.9
N	0.0	0.7	0.7	2.6	0.5	0.2
P	0.0	0.2	0.3	0.0	0.3	1.2
Q	0.0	0.5	0.7	7.1	0.8	0.9
S	0.0	0.5	0.8	4.6	0.7	0.9

Coefficients of variation provided in the table are very low, with some exceptions.

Table 2. Coefficients of variation (CV %) for basic indicators by section of economic activities and by size class

Section of economic activities and size class	Number of enterprises and entrepreneurs	Turnover	Value added at factor costs	Number of persons employed
B_1	0.0	0.8	1.5	1.4
B_2	0.0	0.0	0.0	0.0
B_3	0.0	0.0	0.0	0.0
C_1	0.0	2.6	4.4	2.2
C_2	0.0	0.0	0.0	0.0
C_3	0.0	0.0	0.0	0.0
D_1	0.0	0.0	0.0	0.0
D_2	0.0	0.0	0.0	0.0
D_3	0.0	0.0	0.0	0.0
E_1	0.0	1.2	4.8	2.1
E_2	0.0	0.0	0.0	0.0
E_3	0.0	0.0	0.0	0.0
F_1	0.0	2.7	7.1	4.1
F_2	0.0	0.0	0.0	0.0
F_3	0.0	0.0	0.0	0.0
G_1	0.0	5.8	8.2	3.0
G_2	0.0	2.4	8.0	2.8
G_3	0.0	0.9	6.9	3.0
G_4	0.0	0.0	0.0	0.0
G_5	0.0	0.0	0.0	0.0
G_6	0.0	0.0	0.0	0.0
H_1	0.0	1.8	4.0	1.7
H_2	0.0	0.0	0.0	0.0
H_3	0.0	0.0	0.0	0.0
I_1	0.0	3.3	2.5	1.7
I_2	0.0	0.0	0.0	0.0
I_3	0.0	0.0	0.0	0.0
J_1	0.0	3.6	1.0	1.2
J_2	0.0	0.0	0.0	0.0
J_3	0.0	0.0	0.0	0.0
L_1	0.0	0.6	1.2	1.2
L_2	0.0	0.0	0.0	0.0
L_3	0.0	0.0	0.0	0.0
M_1	0.0	24.3	7.6	1.4
M_2	0.0	0.0	0.0	0.0
M_3	0.0	0.0	0.0	0.0
N_1	0.0	1.4	2.1	0.9
N_2	0.0	0.0	0.0	0.0
N_3	0.0	0.0	0.0	0.0
P_1	0.0	1.1	1.6	3.5
P_2	0.0	0.0	0.0	0.0
P_3	0.0	0.0	0.0	0.0
Q_1	0.0	1.2	1.6	1.4
Q_2	0.0	0.0	0.0	0.0
Q_3	0.0	0.0	0.0	0.0
S_1	0.0	1.6	3.5	3.0
S_2	0.0	0.0	0.0	0.0
S_3	0.0	0.0	0.0	0.0

3.1.2 Activities to reduce sampling errors

Sampling errors occur as a result of conducting the survey on a sample, i.e. the survey is not carried out on the entire target population, but on a part of it. Inclusion of the entire population, that is, census taking, would require much more time and significantly increased financial resources for the implementation. Given that a number of possible samples can be selected for the survey, each sample would result in more or less different estimates of key indicators. Unlike non-sampling errors, sampling errors are measurable and they serve to show the level of reliability of obtained indicators. They also provide a measure of the variation of indicator assessments from all possible samples. Coefficient of variation (CV) and confidence interval are used as a test of reliability of assessed indicators.

Sampling errors on key indicators are completely acceptable. Therefore, measures to reduce these are not considered.

3.2 Non-sampling errors

3.2.1 Non-sampling errors – Coverage errors

Coverage errors represent differences between target population and population covered by the sample. These deviations are rare, but possible.

3.2.1.1 Quality and performance indicator – Over-coverage rate (A2)

If there is no timely information about the change of principal (prevailing) activity, it may happen that the SBS survey covers an enterprise from a section of activities which, in accordance with the methodology, is not subject of observation of structural business statistics. This is possible because enterprises which have submitted statements of accounts for the previous year are included in the survey framework, in accordance with the principal activity recorded in the previous year.

In terms of enterprises' activities, coverage errors occur when the survey covers enterprises for which it was recorded that they were not active in the observation year (bankruptcy, liquidation, closure, etc.).

OCr_w = 0.26%

In 2016, the sampling frame included 0.26% of units that did not belong to the target population of SBS.

3.2.1.2 Quality and performance indicator – Common units - proportion (A3)

SBS survey does not use multiple sources; instead, the data are obtained from the surveys carried out directly by the Institute.

3.2.1.3 Undercoverage error

Undercoverage error may occur if the survey does not include all enterprises which were active in the previous year. This occurrence is associated with the submission of statements of accounts. Though rarely, it does happen that an enterprise does not submit a statement of accounts, even though it was active.

There were no such cases in 2016.

3.2.1.4 Measures to reduce coverage errors

Measures being taken to reduce coverage errors include timely and regular exchange of information between statistical surveys and the SBR.

3.2.2 Non-sampling errors – Measurement errors

Data editing process begins after data from all collected reports are entered. Measurement errors are detected and prevented through computational and logical controls built into the application for data entry and processing. The application was developed in the NET environment. It is a web ASP application with a code written in Visual Basic. Data are stored in a custom-made MS SQL database.

The control implies monitoring of the accuracy, logic, completeness and consistency of data at the level of observation unit. The application contains around fifty logical and computational controls, some of which are cautionary (soft), while some indicate mandatory corrections (hard).

3.2.2.1 Reasons for the occurrence of measurement errors

The most common reasons for the occurrence of measurement errors are:
- Superficial or incomplete completion of the report;
- Lack of understanding of the methodology by the person filling in the report;
- Random errors occurring while data are entered in the report (questionnaire);
- Data are entered in the wrong amount (i.e. amount with decimal places, two zeros, etc.).

3.2.2.2 Measures to reduce measurement errors

If measurement errors are detected, computational and logical controls are applied to make corrections after collected data are compared with the SBS data from the previous year and with the data obtained through other statistical surveys. If major errors are detected, the person who completed the report is contacted. There is no automatic data editing.

The most important instrument used to reduce errors occurring while the reports are completed are the Instructions for completing the report, which are sent to reporting units once a year. These instructions describe in detail the method of completing the report. For this reason, notes provided in the form Annual report on structural business statistics are brief and very precise. In order to reduce measurement errors, persons who complete the report must be familiar with the survey methodology, which is provided in the instructions and in the questionnaire. In that way, the person is able to complete the report as accurately as possible.

In order to reduce measurement errors, the letter to reporting units provides contact information of the persons in charge of the survey. These persons are able to provide all the necessary explanations for completing the questionnaire.

3.2.3 Non-sampling errors – Non-response errors

3.2.3.1 Quality and performance indicator – Unit non-response - rate (A4)

Table 3. Non-response rate in 2015

Section of economic activities	Number of observation units	Number of units for which the report was not submitted	Non-response rate, %	Weighted non-response rate, %	Share of non-response in number of employees, %	Share of non-response in turnover, %
Total	3,913	567	14.5	16.1	4.5	3.3
B	71	9	12.7	14.0	1.2	0.8
C	978	131	13.4	15.7	3.8	2.1
D	61	8	13.1	13.1	0.2	0.3
E	115	5	4.3	5.1	0.4	0.6
F	335	53	15.8	20.8	8.8	6.3
G	1,003	144	14.4	14.9	5.3	3.4
H	218	42	19.3	22.6	5.7	11.6
I	92	15	16.3	18.0	9.0	5.2
J	186	33	17.7	17.5	2.5	1.0
L	108	13	12.0	11.9	9.4	19.7
M	341	58	17.0	18.9	7.7	6.7
N	117	20	17.1	17.5	4.8	12.8
P	69	13	18.8	20.5	12.9	7.6
Q	172	12	7.0	5.2	5.6	4.2
S	47	11	23.4	24.9	6.9	3.7

3.2.3.2 Quality and performance indicator – Item non-response - rate (A5)

There is no information that allows calculating the rate of item non-response.

3.2.3.3 Procedures in cases on non-response

In case of non-response to individual questions and in cases of discrepancies, inconsistencies and errors which cannot be corrected after repeated contact with the reporting unit, data are corrected based on available data from statements of accounts or from other statistical surveys (e.g. hours worked can be estimated based on data from labour statistics).

In case an entire report is missing, in spite of the enterprise being active in the observation year, the enterprise is contacted by telephone, in some cases the questionnaire is sent to the enterprise again, and finally, written warnings are sent. If a case of non-response is not solved, initial weights for the stratum the enterprise belongs to are corrected, starting from the basic assumption that these units are, by key parametres of the survey, similar to those that have submitted the report.

3.2.3.4 Procedures to reduce non-response rate

In order to reduce non-response rates, multiple contacts with reporting units are established, forms are sent repeatedly via email, several different methods of data collection (telephone, email) are combined, deadlines for report submission are flexible (delays in the submission of data are allowed), etc.

3.2.4 Revision

3.2.4.1 Quality and performance indicator – Data revision – average size (A6)

Final data are published five months after the publication of preliminary data. Revision of final data for structural business statistics was not implemented or planned.

3.2.5 Imputation

3.2.5.1 Quality and performance indicator – Imputation - rate (A7)

There is no information that allows calculating the rate of imputed data/items. Missing values are imputed for items to which responsible persons from the reporting unit did not know or did not want to provide an answer. In most cases, this applies to the item "Employees by status in employment", where the total number of employed persons is to be broken down by the following categories: managerial and administrative staff, other workers and workers working from home. Also, the number of hours worked should be presented by the same categories.

4   TIMELINESS AND PUNCTUALITY OF PUBLICATION

4.1 Timeliness of publication

4.1.1 Quality and performance indicator – Time lag – first results (TP1)

Table 4. Timeliness of SBS data publication (TP1)

Observation period	1 Jan-31 Dec 2016
Publication date for the first/preliminary results	20 Oct 2017
Time lag (number of months)	T+10

Time lag for the first/preliminary results is T+10 months.

4.1.2 Quality and performance indicator – Time lag – first results (TP2)

Table 5. Timeliness of SBS data publication (TP2)

Observation period	1 Jan-31 Dec 2016
Publication date for the final results	20 Mar.2018
Time lag (number of months)	T+15

Time lag for the final results is T+15 months.

4.2 Punctuality of publication

Punctuality of publication represents an interval between the actual and planned dates of publication, as specified in the Release Calendar.

4.2.1 Quality and performance indicator – Punctuality – delivery and publication (TP3)

The indicator is calculated and presented in two ways – from the aspect of application for producers and for users of statistics.

Indicator for producers of statistics

Table 6. Punctuality of SBS data publication (TP3)

Observation period	1 Jan -31 Dec 2016
Planned date of publication (according to the Release Calendar)	20 Mar 2018
Actual date of publication	20 Mar 2018
Time lag (number of days)	T+0

Punctuality of publication is T+0 days.

Indicator for users of statistics:

The rate of punctuality of SBS data publication for 2016 is 100%.

4.3 Reasons for significant delays and measures to improve timeliness and punctuality

The results were published timely, without delays between planned and actual publication dates.

5   COHERENCE AND COMPARABILITY

5.1 Coherence

Structural business statistics data are compared with data obtained through national accounts statistics, labour statistics, PRODCOM statistics and other statistics associated with structural business statistics.

5.1.1 Quality and performance indicator – Coherence between different data sources (CH1)

The value of the indicator for key items, where possible (if there is a comparable item from a reference source), is calculated using the following formula:

$$CH1 = \frac{Xiref - Xi}{Xi}$$

where:

Xiref ... value of the SBS item

Xi   ... value of the item from another source (national accounts statistics)

i   ... number of data sources

	Number of employees	Turnover
CH1	0.005	0.026

5.1.2 Reasons for major discrepancies

There are no major discrepancies.

5.2 Comparability

5.2.1 Quality and performance indicator – Asymmetry for mirror flows statistics (CC1)

The calculation of this indicator is not applicable in SBS.

5.2.2 *Quality and performance indicator – Length of comparable time series (CC2)*

Structural business statistics have been produced regularly since 2010. With continuous development of the survey, in line with recommendations and regulations of the European Commission, all sections of economic activities according to the KD BiH 2010 have been covered since 2012 for enterprises, and since 2014 for enterprises and entrepreneurs.

Table 7. Sections of economic activities covered by structural business statistics

2010	B	C	D	E	F	G	H	I	-	L	-	-	-	-	-
2011	B	C	D	E	F	G	H	I	J	L	M	N	-	-	S
2012	B	C	D	E	F	G	H	I	J	L	M	N	P	Q	S
2013	B	C	D	E	F	G	H	I	J	L	M	N	P	Q	S
2014	B	C	D	E	F	G	H	I	J	L	M	N	P	Q	S
2015	B	C	D	E	F	G	H	I	J	L	M	N	P	Q	S
2016	B	C	D	E	F	G	H	I	J	L	M	N	P	Q	S

CC2 = (year 2016– year 2014) + 1

CC2 = 3 years

5.2.3 *Breaks in time series*

With the continuous development of SBS and the extension of coverage to include new sections, data by year are not fully comparable, as presented in Table 7.
Due to differences in the coverage of sections of economic activity, SBS data for 2012 and 2013 are not fully comparable with data for the first two years of the survey. A break in the time series occurred in 2014 as well, when entrepreneurs were included in the survey.

There are no specific factors which could affect the comparability of time series, since the recommendation regarding items to be provided has been fully applied. These items are specified in Regulations 295/2008 and 251/2009.

5.3   Geographical comparability

5.3.1 *Comparability with members of the European Statistical System*

SBS data for Annexes I-IV are fully comparable with data of the European Statistical System members.

6   ACCESSIBILITY AND CLARITY, DISSEMINATION FORMAT

6.1 Releases providing the data

Users of statistical data can easily access SBS data, as these are published at the Institute's website www.rzs.rs.ba in annual releases:
- Basic structural indicators of business activities of enterprises and entrepreneurs – preliminary results (http://www2.rzs.rs.ba/static/uploads/saopstenja/struktura_poslovne_statistike/2016/SPS_2016_Prethodni_podaci.pdf) и
- Basic structural indicators of business activities of enterprises and entrepreneurs – final results (http://www2.rzs.rs.ba/static/uploads/saopstenja/struktura_poslovne_statistike/2016/SPS_2016.pdf);

The release provides basic structural indicators of business activities of enterprises and entrepreneurs, by section of economic activities and by size class of business entitites, as items and indicators presented as

absolute values, rates and structures. Turnover, value added at factor costs, personnel costs and turnover per person employed, value added per person employed (labour productivity) and average labour costs are presented in Convertible Marks. The results are published in tables and graphs.

6.2 Publications providing the data

Basic structural indicators of business activities of enterprises and entrepreneurs, final results, are published in printed publications:
- Statistical Yearbook
  http://www2.rzs.rs.ba/static/uploads/bilteni/godisnjak/2017/StatistickiGodisnjak_2017_WEB.pdf and
- This is Republika Srpska
  http://www2.rzs.rs.ba/static/uploads/bilteni/ovo_je_rs/2017/Ovo_Je_Republika_Srpska_2017_WEB.pdf

In the Statistical Yearbook, the data are presented by section of economic activities and by size of business entities, in tables and graphs.
The publication "This is Republika Srpska" presents aggregated indicators of business activities of the non-financial business economy, in tables and graphs.

6.3 Online database

SBS data are not available in an online database.

6.4 Access to microdata

Microdata are not available.

6.5 Availability of methodological documentation

In addition to the data, the publications also provide brief methodological explanations and definitions of basic indicators and concepts.
The official website of the Institute, in the part referring to SBS http://www.rzs.rs.ba/front/category/28/237/?&add=None, provides quality reports and the methodology "Structural indicators of business activities of enterprises and entrepreneurs, 2016" http://www2.rzs.rs.ba/static/uploads/metodologije/strukturne_poslovne_statistike/SPS-Metodologija_2016_v2.pdf, as well as basic concepts and definitions http://www.rzs.rs.ba/terms/defs/28/?add=111&left_mi=111.

6.6 Measures to improve clarity of disseminated results
The data are presented clearly.

6.7 Quality and performance indicator – Data tables - consultations (AC1)

No procedure for recording the number of consultations of SBS data sets has been established.

6.8 Quality and performance indicator – Metadata - consultations (AC2)

No procedure for recording the number of consultations of SBS metadata sets has been established.

6.9 Quality and performance indicator – Metadata completeness - rate (AC3)

The rate of metadata completeness for structural business statistics is 100%.

7   SURVEY COSTS AND BURDEN ON RESPONDENTS

7.1 Costs of the statistical survey implementation

Table 8. Annual operating costs by main cost components

Number of hours worked – established data for the following phases of work: - preparation of instruments and delivery to the field, - collection, - data entry and processing, - calculation of SBS results, and - publishing.	5,164 h
Material costs (printing and delivery of forms to the field)	4,300 KM
Annual number of forms submitted to reporting units	7,850[2]

7.2 Burden on respondents

Table 9. Data on annual burden on respondents

Number of respondents that completed the form	3,358
Time required to complete a detailed form with an additional one (SPS-D+SPS-DO) for Annexes II and IV – for a total of 596 observation units (hours)	1.3
Time required to complete a detailed form (SPS-D) for Annexes I and III – for a total of 437 observation units (hours)	1.1
Time required to complete an abbreviated form (SPS-S) for Annexes I - IV for a total of 2,325 observation units (hours)	0.6
Total time spent (SPS-D+SBS-DO) (hours)	1,162[2]
Total time spent (SPS-D) (hours)	721[2]
Total spent time (SPS-S) (hours)	1,515[2]

7.3 Measures to reduce costs and burden

Possible measures to reduce costs and burden on reporting units are:
 -    Use of administrative data sources (or part of administrative data);
 -    Introduction of an electronic questionnaire.

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[2] Two forms are sent to each reporting unit in the sample

8   CONFIDENTIALITY

8.1 Confidentiality - policy

Data collected for SBS surveys are subject to the legal framework of confidentiality and are used for statistical purposes only.

The confidentiality of data and protection of personal information are guaranteed by Articles 25 and 27 of the Law on Statistics of Republika Srpska ("Official Gazette of Republika Srpska", No. 85/03) and the Rules of protection of confidential data of the Republika Srpska Institute of Statistics. The confidentiality of statistical data is also ensured through the Law on the protection of personal data ("Official Gazette of BiH", No. 49/06).

8.2 Confidentiality – data handling

The confidentiality of data and protection of personal information are guaranteed by Articles 25 to 29 of the Law on Statistics of Republika Srpska ("Official Gazette of Republika Srpska", No. 85/03) and the Rules of protection of confidential data of the Republika Srpska Institute of Statistics. The confidentiality of statistical data is also ensured through the Law on the protection of personal data ("Official Gazette of BiH", No. 49/06").

The Institute informs all reporting units that the collected data will be used for statistical purposes only and that confidential data in terms of this Law remain confidential.

Data collected, processed and stored are deemed confidential if they allow direct or indirect identification of the reporting unit, thus disclosing individual data.

Statistical data may not be delivered to users if they contain or disclose confidential data. Confidential data are data referring to a reporting unit or a group consisting of at least three reporting units, where the share of one unit in the group exceeds 85%.

When collecting, processing and delivering data, the Institute and authorised bodies and organisations undertake all organizational, regulatory, administrative and technical measures necessary to protect the confidentiality of data and to prevent unauthorised access, publication or use of data.

Persons who, while carrying out their duties, may have access to confidential data, must comply with the provisions of this Law even after they cease to perform their functions.

9   STATISTICAL PROCESSING

9.1 Source of data

Structural indicators of business activities of enterprises and entrepreneurs are a result of the survey, that is, of the statistical processing of data on enterprises and an estimate of data on entrepreneurs. The survey on enterprises uses a combined method of sampling and full coverage. The method of full coverage is applied for enterprises with 20 or more employees, while the sampling method is applied for enterprises with fewer than 20 employees. For the part of the population for which a sample was selected, values are assessed for the entire set. The method applied to assess the results is Horvitz-Thompson method.

The sample is created on the basis of the SBR data and is designed as a stratified random sample. A stratum must contain at least five sampling units. The stratification of units of the sampling frame for sample selection is done by economic activity of enterprises, the number of employees and the initial census for specific strata. The number of employees is used to determine size classes (class I – 0 to 19 employees, class II – 20 to 49 employees, class III – 50 or more employees). These three classes are used for all sections (Tables 10 and 11), except the section Trade (Table 12), for which six size classes based on the number of employees (class I – 0 to 1, class II – 2 to 9, class III, 10 to 19, class IV – 20 to 49, class V – 50 to 249, class VI – 250+) are used for the stratification. In 2016, of 7,341 enterprises in the frame, 3,913 were selected into the sample. Of 279 strata, 136 included enterprises with 20 or more employees and these were

fully covered by the sample, while in 143 strata with fewer than 20 employees enterprises were selected randomly.

Table 10. Number of enterprises in the sampling frame

Section of economic activities	Size class of employees			Framework, total
	I	II	III	
B	55	14	7	76
C	1,059	201	178	1,438
D	39	7	15	61
E	68	31	31	130
F	473	88	48	609
H	580	34	19	633
I	101	20	7	128
J	217	12	15	244
L	117	1	2	120
M	624	33	8	665
N	126	5	9	140
P	74	12	4	90
Q	410	7	4	421
S	56	3	3	62

Table 11. Number of enterprises in the sample and sampling rate

Section of economic activities	Size class of employees I		Size class of employees II		Size class of employees III		Sample, total	Sampling rate %
	I	sampling rate %	II	sampling rate %	III	sampling rate %		
B	50	90.9	14	100.0	7	100.0	71	93.4
C	599	56.6	201	100.0	178	100.0	978	68.0
D	39	100.0	7	100.0	15	100.0	61	100.0
E	53	77.9	31	100.0	31	100.0	115	88.5
F	199	42.1	88	100.0	48	100.0	335	55.0
H	165	28.4	34	100.0	19	100.0	218	34.4
I	65	64.4	20	100.0	7	100.0	92	71.9
J	159	73.3	12	100.0	15	100.0	186	76.2
L	105	89.7	1	100.0	2	100.0	108	90.0
M	300	48.1	33	100.0	8	100.0	341	51.3
N	103	81.7	5	100.0	9	100.0	117	83.6
P	53	71.6	12	100.0	4	100.0	69	76.7
Q	161	39.3	7	100.0	4	100.0	172	40.9
S	41	73.2	3	100.0	3	100.0	47	75.8

Table 12. Number of enterprises in the sampling frame and in the sample for the section Trade (G)

Size class of employees	I	II	III	IV	V	VI	Total
Sampling frame	572	1,412	286	163	83	8	2,524
Sample	339	296	114	163	83	8	1,003
Sampling rate %	59.3	21.0	39.9	100.0	100.0	100.0	39.7

Based on the available data on entrepreneurs (code of economic activity, number of entrepreneurs and number of persons employes) from the SBR, on one hand, and the collected data on enterprises (all SBS items) on the other, all SBS items for entrepreneurs are estimated.

Data on entrepreneurs are estimated based on the number of persons employed, using the mathematical and statistical method of regression and correlation. Main assumptions of this model are:
- similarities between enterprises and entrepreneurs in the same economic activity and size class of employees;
- correlation between the number of employees and all other items.

Firstly, data on the number of entrepreneurs, number of persons employed with entrepreneurs and number of employees of entrepreneurs are grouped into homogenous groups according to group (activity code at 3 digits) and size class of employees. The following size classes of employees are used:
- for industry and construction: 1 (0-9), 2 (10-19), 3 (20-49), 4 (50-250) and 5 (250 or more employees);
- for trade and services: 1 (0-1), 2 (2-9), 3 (10-19), 4 (20-49), 5 (50-250) and 6 (250 or more employees).

In the same way, all required data on enterprises are grouped into homogenous groups according to group of ecomomic activities and size class of employees.

У By matching these data sets, we calculate the following two coefficients of correlation:
- Coefficient 1 = number of persons employed, entrepreneurs/number of persons employed, enterprises, and
- Coefficient 2 = number of employees, entrepreneurs / number of employees, enterprises.

By multiplying these coefficients with the corresponding data on enterprises, we obtain data on entrepreneurs.

9.2 Frequency of data collection

Data for structural business statistics are collected annually.

9.3 Data collection

Collection of data for the production of structural business indicators is carried out using the form "Annual report on Structural Business Statistics".

For each Annex (I-IV) of EU Regulation 295/2008, two forms have been created – a detailed one for enterprises with 20 or more employees and an abbreviated one for other enterprises. Thus, the survey uses eight basic forms. In addition to basic forms, additional forms are used for Annexes I, II and IV.

Forms are available at the Institute's website:

http://81.93.77.240/front/category/28/99/?left_mi=41&up_mi=12&add=41

Business entities submit data to the regional offices of the Republika Srpska Institute of Statistics, five months after the observation year.

Data on the characteristics collected using this form are available in the accounting, personnel and other records of enterprises. These include data on revenues, expenditures, inventories, employees, gross fixed capital formation, etc.

9.4 Data validation

Data processing and production of results are carried out at the Production Statistics Division and Services Statistics Division of the Republika Srpska Institute of Statistics. These divisions perform formal, computational and logical controls, treat extreme values of microdata, assess and analyse results, etc.

Data from "Annual reports on structural business statistics" are entered into the application without prior corrections of possible irregularities, i.e. in the "raw" form. Following completion of data entry, it is possible to see a list of all computational and logical errors, for all reporting units, with red-tagged "hard" errors. Currently, it is not possible to record the state of errors after the first entry, i.e. after the entry of raw data. Thus, there are no exact data on how many corrections were made and on which variables. The basis for microdata editing are comparisons with structural business statistics data from the previous year and with data from statements of accounts of the observation year. In addition to the above, data are also compared with labour statistics, "PRODCOM" statistics and other statistics associated with structural business statistics. In case of discrepancies, checks are made with reporting units, via telephone.

Extreme values (outliers), as potential errors in data, are identified using the Hidiroglou-Berthelot algorithm in the programme environment "R".

9.5 Data compilation

The estimate of entire population is made using the calibration method, which uses all known information from the Statistical Business Register, including: number of enterprises per stratum, number of employees per stratum and total turnover per stratum.

Input for the calibration process includes corrected initial weight, known totals of used auxiliary information per stratum, and values of auxiliary variables for units which have responded.

The calibration process serves to find a solution to the optimization problem with additional conditions (seeking related extremes), as specified by the following formula:

$$
\begin{cases}
\min \sum_{j \in r} d(g_j, w_j) \\
\sum_{j \in r_h} g_j = N_h \\
\sum_{j \in r_h} g_j x_j^{emp} = X_h^{emp} \\
\sum_{j \in r_h} g_j x_j^{fin} = X_h^{fin}
\end{cases}
\quad h = 1, \cdots, H
$$

where:

d – function of distance (logarithmic, in this case)

g_j – calibrated weight (output of the calibration process)

w_j – weight calculated by correcting the initial weight for total non-response

N_h – number of elements of the population in the stratum h

r_h – response in the stratum h

x_j^{emp} – number of employees from the register for the unit j (from response)

x_j^{fin} – financial data from the register for the unit j (from response)

X_h^{emp} - number of employees per stratum

X_h^{fin} - total revenue (turnover) per stratum

H - total number of strata.

Calibration is performed using the "Survey" package of the programming environment "R".

Output of the calibration process is a calibrated weight, which varies to a minimum from the corrected initial weight. At the same time, it is aligned with the auxiliary information, which means that it can be used to

calculate assessments of the target population parametres, which are harmonised with the known auxiliary information.

9.6 Adjustment
Adjustment methods are not applied in Structural Business Statistics.

9.6.1 Seasonal adjustment
Structural business statistics are not seasonally adjusted.