

# Statistical survey on the use of information and communication technologies in enterprises

IS\_IKT.1\_A\_EN\_2021\_1

## Reference Metadata in ESMS 2.0 structure

<b>1</b>	<b>Contact</b>
<b>1.1</b>	<b>Contact organisation</b>
State Statistical Office	
<b>1.2</b>	<b>Contact organisation unit</b>
Department for research and development, innovation and ICT	
<b>1.3</b>	<b>Contact name</b>
Ranko Stojanovski	
<b>1.4</b>	<b>Contact person function</b>
Junior associate	
<b>1.5</b>	<b>Contact mail address</b>
Dame Gruev 4, 1000 Skopje, Republic of North Macedonia	
<b>1.6</b>	<b>Contact email address</b>
ranko.stojanovski@stat.gov.mk	
<b>1.7</b>	<b>Contact phone number</b>
+389(02)3295-652	
<b>1.8</b>	<b>Contact fax number</b>
<b>2</b>	<b>Metadata update</b>
<b>2.1</b>	<b>Metadata last certified</b>
20/10/2022	
<b>2.2</b>	<b>Metadata last posted</b>
20/10/2022	
<b>2.3</b>	<b>Metadata last update</b>

20/10/2022

<b>3</b>	<b>Statistical presentation</b>
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<b>3.1</b>	<b>Data description</b>
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The data refer to the: usage of computer, computers networks, Internet (type of the Internet connection, purpose of the internet usage), barriers to the use of ICT, the Internet or e-business processes, ICT security and trust.

<b>3.2</b>	<b>Classification system</b>
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National Classification of Activities - NKD Rev.2.

<b>3.3</b>	<b>Sector coverage</b>
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Section C: Manufacturing activities, division 10-33; Section D: Electricity, gas, water supply, sewerage, waste management and remediation, division 35-39; Section F: Construction, division 41-43; Section G: Trade, repair of motor vehicles and motorcycles, division 45-47; Section H: Transportation and storage, division 49-53; Section I: Accommodation, division 55; Section I: Food and beverage service activities, division 56; Section J: Information and communication, division 58-63; Section L: Real estate activities, division 68; Section M: Professional, scientific and technical activities, division 69-74; Section N: Administrative and support service activities, division 77-82; Section S: Repair of computers and communication equipment, group 95.1; Section K: Financial and insurance activities: classes 64.19 and 64.92; classes 66.12 and 66.19 and groups 65.1 and 65.2:

<b>3.4</b>	<b>Statistical concepts and definitions</b>
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The definitions refer to the general areas: General information about ICT systems; Access to and use of the Internet; E-commerce and e-business and new themes (modules) are added according to the regulations. Detailed definitions can be found on link given in concept 10.6

<b>3.5</b>	<b>Statistical unit</b>
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Statistical units are enterprises according to the activities in NACE Rev. 2, defined in concept 3.3.

<b>3.6</b>	<b>Statistical population</b>
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Enterprises registered on the territory of the Republic of Macedonia, which are classified by main economic activities by NACE Rev. 2 and by number of persons employed.

<b>3.7</b>	<b>Reference area</b>
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Republic of North Macedonia

<b>3.8</b>	<b>Time coverage</b>
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Since 2007.

<b>3.9</b>	<b>Base period</b>
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<b>4</b>	<b>Unit of measure</b>
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Percentages.

<b>5</b>	<b>Reference period</b>
A year (current year and a previous year for e-commerce and usage of e-government services).	
<b>6</b>	<b>Institutional mandate</b>
<b>6.1</b>	<b>Legal acts and other agreements</b>
National: Law on State Statistics ("Official Gazette of the Republic of Macedonia" No. 54/1997, 21/2007, 51/2011, 104/2013, 42/2014, 192/2015, 27/16, 83/18 and 220/18), Programme of Statistical Surveys 2013-2017 ("Official Gazette of the Republic of Macedonia" No. 20/13, 24/14 and 13/15); International: Regulation (EC) No 808/2004 is Regulation (EC) No 1006/2009 of the European Parliament and of the Council of 16 September 2009 (OJ L286, 31.10.2009, p. 31 ).	
<b>6.2</b>	<b>Data sharing</b>
Time series for annual data: from 2007 transmitted to Eurostat via eDAMIS.	
<b>7</b>	<b>Confidentiality</b>
<b>7.1</b>	<b>Confidentiality - policy</b>
Individual data are protected by the Law on State Statistics. Data collected with statistical surveys from the reporting units or indirectly from administrative or other sources are confidential data and are used only for statistical purposes. Results from the statistical processing may also generate information considered as confidential, for example: anonymised individual data, tables with low level of aggregation, as well as unreleased data. The Policy on Statistical Confidentiality contains the basic principles used in the SSO.	
<b>7.2</b>	<b>Confidentiality - data treatment</b>
All individual or personal data, in each phase of statistical processing, are treated as confidential data and may be used only for statistical purposes. When releasing data from this survey at an aggregated level, there is no need for additional data treatment for the purpose of ensuring confidentiality.	
<b>8</b>	<b>Release policy</b>
<b>8.1</b>	<b>Release calendar</b>
Data are released in accordance with the Release Calendar, which is published on the web site of the State Statistical Office. The Release Calendar is prepared annually before the beginning of each year and is updated quarterly.	
<b>8.2</b>	<b>Release calendar access</b>
<a href="http://www.stat.gov.mk/Kalendar_nov.aspx">http://www.stat.gov.mk/Kalendar_nov.aspx</a>	
<b>8.3</b>	<b>User access</b>

In accordance with the dissemination policy, all users have equal access to statistical data at the same time. Data are released on the web site at the same time for all users, which are informed with the Release Calendar, and no user has privileged access.

<b>9</b>	<b>Frequency of dissemination</b>
Yearly.	
<b>10</b>	<b>Accessibility and clarity</b>
<b>10.1</b>	<b>News release</b>
<p>"Yearly news release "" Usage of information and communication technologies in the enterprises, 2022"".</p> <p><a href="https://www.stat.gov.mk/pdf/2022/8.1.22.32_mk.pdf">https://www.stat.gov.mk/pdf/2022/8.1.22.32_mk.pdf</a></p>	
<b>10.2</b>	<b>Publications</b>
<b>10.3</b>	<b>On-line database</b>
<p>MakStat database is available on the web site. Number of views of the tables in the MakStat database: 120. <a href="http://makstat.stat.gov.mk/PXWeb/pxweb/en/MakStat/?rxid=46ee0f64-2992-4b45-a2d9-cb4e5f7ec5ef">http://makstat.stat.gov.mk/PXWeb/pxweb/en/MakStat/?rxid=46ee0f64-2992-4b45-a2d9-cb4e5f7ec5ef</a></p>	
<b>10.4</b>	<b>Micro-data access</b>
<p>According to the Law on State Statistics (Article 41) and the Policy on Access to Anonymised Microdata for scientific purposes, data collected for the purpose of official statistics may be used for scientific purposes if there is no risk of direct or indirect identification, i.e. disclosure of data individuality. Access to microdata is possible only in the safe ro Regulated with the policy for access to microdata.</p>	
<b>10.5</b>	<b>Other</b>
<p>Survey data are sent to Eurostat and they are released on the web site of this institution.</p>	
<b>10.6</b>	<b>Documentation on methodology</b>
<p>The methodological notes are available on the web site of the State Statistical Office. <a href="http://www.stat.gov.mk/MetodoloskiObjasSoop_en.aspx?id=76&amp;rbrObl=27">http://www.stat.gov.mk/MetodoloskiObjasSoop_en.aspx?id=76&amp;rbrObl=27</a></p>	
<b>10.7</b>	<b>Quality documentation</b>
<p>Quality report is making by fulfilling Eurostat's form - Report template, that is not available in public, it is only sent to Eurostat via eDAMIS.</p>	
<b>11</b>	<b>Quality management</b>
<b>11.1</b>	<b>Quality assurance</b>

The commitment of the SSO to ensuring quality of products and services is described in the Law on State Statistics, the Strategy of the State Statistical Office ([http://www.stat.gov.mk/ZaNas\\_en.aspx?id=6](http://www.stat.gov.mk/ZaNas_en.aspx?id=6)) and the Quality Policy of the State Statistical Office ([http://www.stat.gov.mk/pdf/Politika\\_za\\_kvalitet\\_en.pdf](http://www.stat.gov.mk/pdf/Politika_za_kvalitet_en.pdf)), as well as in the continuous efforts for harmonisation with the European Statistics Code of Practice. The main aspects and procedures for quality management in the phases and sub-phases of the Statistical Business Process Model, as well as the good practices for ensuring quality are documented in the internal document called "Guide for ensuring quality of statistical processes". Input and output metadata, as well as relevant quality indicators for certain sub-processes are described in the document "Guide for survey managers".

## 11.2 Quality assessment

## 12 Relevance

### 12.1 User needs

Data are used by various users: citizens, government institutions, Eurostat and other international organizations. Data are served for following the information society development.

### 12.2 User satisfaction

The State Statistical Office conducts the User Satisfaction Survey at the domain level. This Survey is conducted every three years and the last one was in 2015.

[http://www.stat.gov.mk/Dokumenti/izvestai/IzvestajAnketaZadovNaKorisnici2015\\_en.pdf](http://www.stat.gov.mk/Dokumenti/izvestai/IzvestajAnketaZadovNaKorisnici2015_en.pdf)

### 12.3 Completeness

Concerning the indicators required by the Regulation 808/2004, the SSO provides all mandatory data ( 100% ).

## 13 Accuracy and reliability

### 13.1 Overall accuracy

Data accuracy is ensured by working on decreasing sampling and/or non-sampling errors, as well as with additional data comparisons and analysis before dissemination. Data accuracy is ensured by working on decreasing sampling and/or non-sampling errors, as well as with additional data comparisons and analysis before dissemination.

### 13.2 Sampling error

Sampling errors could be standard errors and coefficients of variation. The coefficient of variation are calculated for determining the accuracy of data sent to EUROSTAT as well as standard errors for certain topics in standard quality report. Coefficients of variation for some variables are as follows: Enterprises which use computers: 1.135; Enterprises with internet access: 1.358, Enterprises with internet users:1.358, Enterprises with web pages: 4.182, Employees who use computer: 3.848, Employees with internet access:2.624 Employees who use internet: 3.949

<b>13.3</b>	<b>Non-sampling error</b>
<p>Non-sampling errors are eliminated as much as possible by eliminating of non-sampling errors with some measures such as: defining of population including the enterprises with 10+ employees; respecting the information for non-response from the previous year; comparing the number of employees from different sources and resolving the differences, if any; comparing the data from administrative and statistical business registrar; adding the additional contact information in the sample. The measurement errors and processing errors are eliminating during the questionnaire revisions and by data collection in eStat: by clear wording of a new questions and with revisions of unclear one; by avoiding of sensitive questions and with basic validation rules in eStat system; with on-line response controls; by controlling the response rate and making additional contacts with the respondents and other validation rules and statistical methods in SAS. Undercoverage errors: 14.3%; Overcoverage errors: 0.6%; Unit non response: 35%.</p>	
<b>14</b>	<b>Timeliness and punctuality</b>
<b>14.1</b>	<b>Timeliness</b>
T+200.	
<b>14.2</b>	<b>Punctuality</b>
Data are disseminated within the established deadlines in accordance with the Release Calendar.	
<b>15</b>	<b>Coherence and comparability</b>
<b>15.1</b>	<b>Comparability - geographical</b>
The data are produced at national level. Comparability is provided at international level.	
<b>15.2</b>	<b>Comparability - over time</b>
Comparability over time is provided since 2007 with no gap in the time series (for variables which are constant and not changed in definitions). The number of reference periods in the time series is 9.	
<b>15.3</b>	<b>Coherence - cross domain</b>
Cross domain coherence is not ensured.	
<b>15.4</b>	<b>Coherence - internal</b>
Internal coherence of data is ensured.	
<b>16</b>	<b>Cost and burden</b>
<b>17</b>	<b>Data revision</b>
<b>17.1</b>	<b>Data revision - policy</b>
In accordance with the Statistical Data Revision Policy. <a href="http://www.stat.gov.mk/ZaNas.aspx?id=25">http://www.stat.gov.mk/ZaNas.aspx?id=25</a>	

<b>17.2</b>	<b>Data revision - practice</b>
Survey data are published as final data.	
<b>18</b>	<b>Statistical processing</b>
<b>18.1</b>	<b>Source data</b>
The data are collected through annual survey. It is sample survey. The sample has 2200 statistical units and it is stratified random sample. The stratification of the sample is by groups of activities and by groups of employees. The sample frame is the Statistical Business Register, with situation at the end of previous year.	
<b>18.2</b>	<b>Frequency of data collection</b>
Annually.	
<b>18.3</b>	<b>Data collection</b>
"The data are collected by filling in a questionnaire"" Usage of information and communication technologies in the enterprises (form ICT.1)"" by the enterprises in the sample. The data collection is on-line via eStat system."	
<b>18.4</b>	<b>Data validation</b>
Data validation is made in accordance with defined control criteria. Mathematical and logical checks are integrated in the eStat system, providing initial data control.Data are checked before and after publishing. Validation of data is also done by Eurostat according established validation rules.	
<b>18.5</b>	<b>Data compilation</b>
Weighting of the data obtained from the statistical units is made with the Horwitz-Thompson (HT) estimator of reverse probabilities by strata. SAS statistical procedures were used.	
<b>18.6</b>	<b>Adjustment</b>
There is no data adjustment.	
<b>19</b>	<b>Comment</b>
<b>A.1</b>	<b>Annexes</b>