

# Data collection tool for survey monitoring and analysis

Marija Hinda and Nebojša Tolić (Statistical Office of the Republic of Serbia [SORS])

Expert Meeting on Statistical Data Collection, Online, 27-30 September 2021

# Modern data visualization metods

Power BI



Statistical office

Policymakers

Government

Business menagers

Leadership

- Data selection
- Collecting
- Analyzing
- Normalizes
- Syntesizes
- Clarifies

Direct Query or Import data

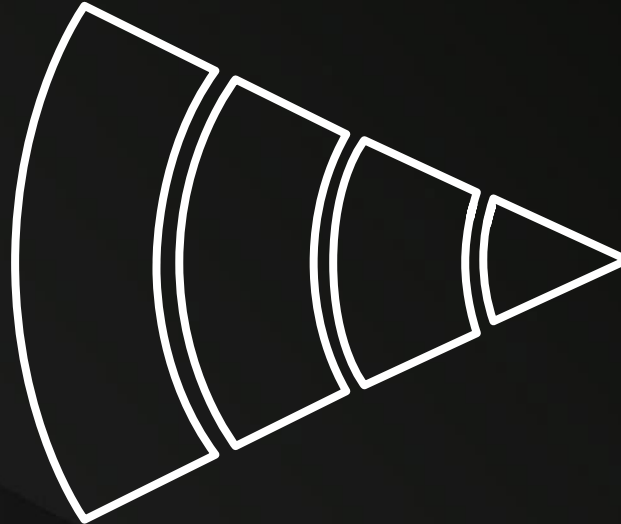
Monitoring

Analysis

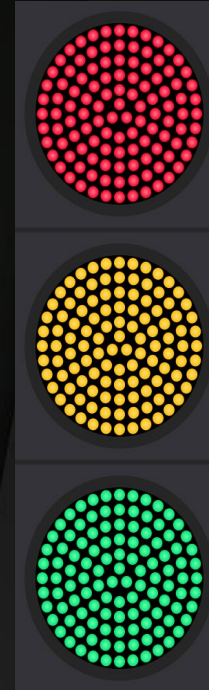
# Power Bi report – DAX (Data Analysis Expressions)

- Formula expression language
- Function language

Calculating  
Deviations  
Substituting  
Filtering  
Finding errors



Traffic light



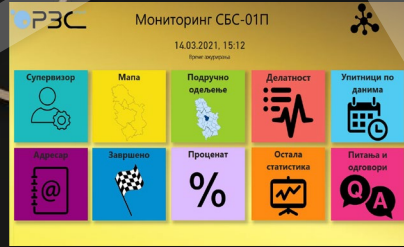
1030 %

95.0 %

77.0 %

# Power Bi report – monitoring and analysis

Monitoring

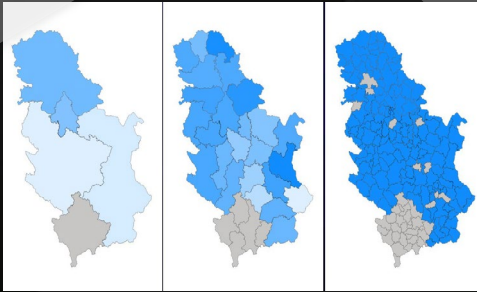


Analysis



# Most used PBI visualizations in SORS

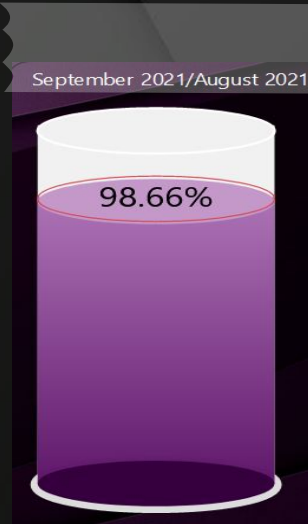
## Shape map



## Bar chart



## Cylinder



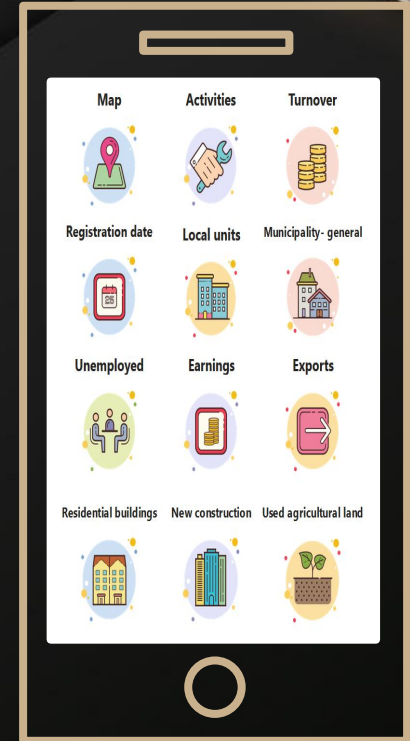
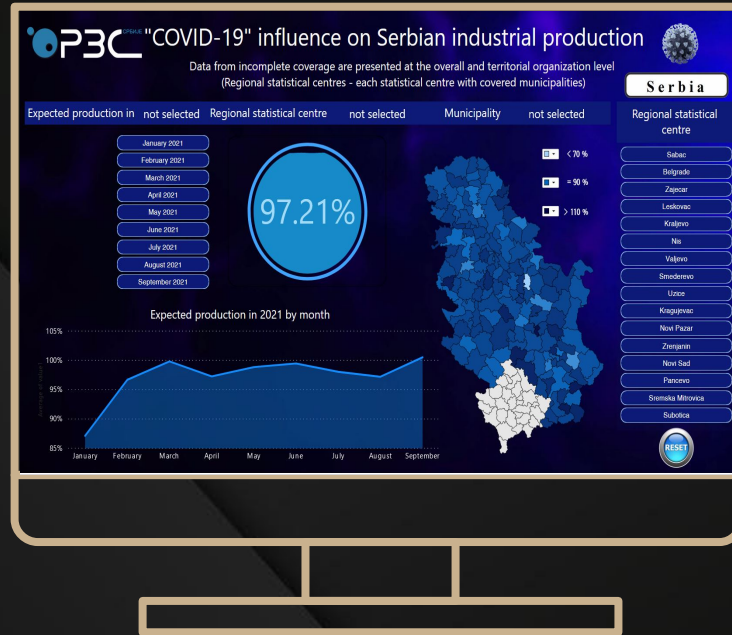
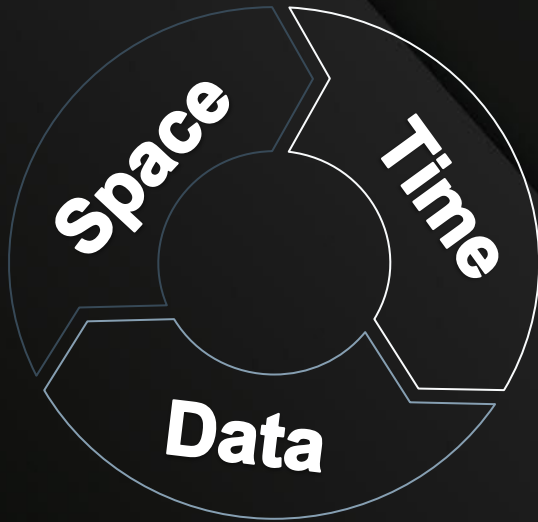
## Bing map



## Matrix

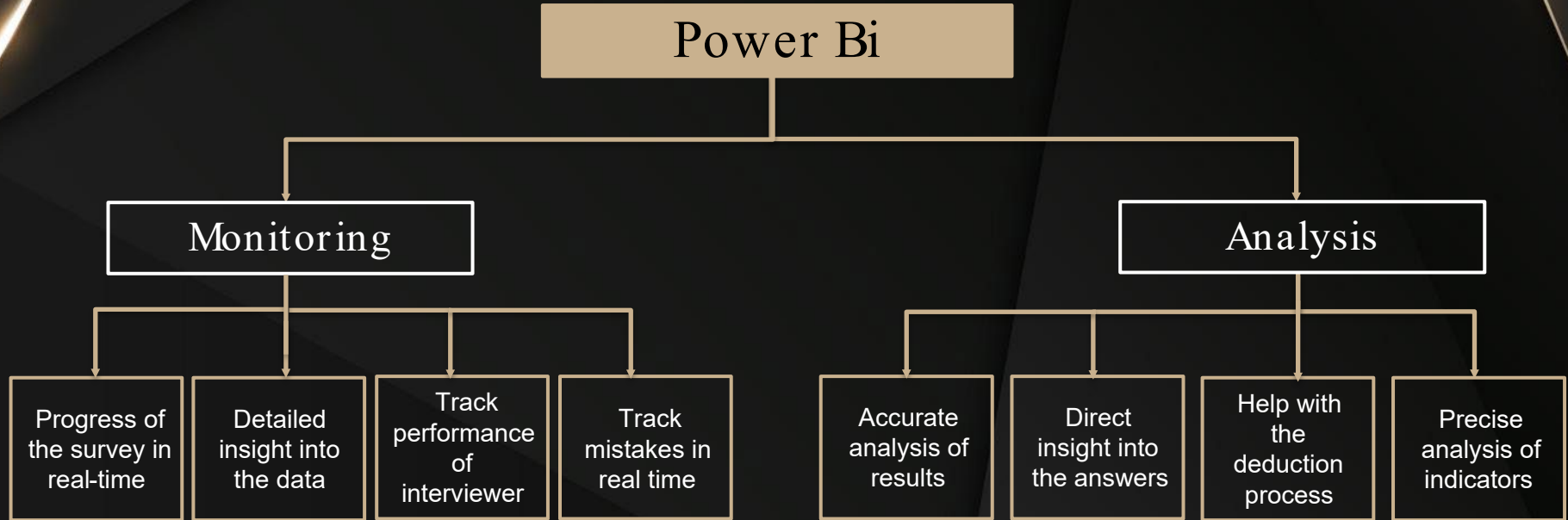
Месеци / Полугодишње одељење	Планирани број упитника	Z1	Z2	Z3	Z4	Број урађених упитника	Урађено%	Z1	Z1%	Z2	Z2%	Z3	Z3%	Z4	Z4%
Јун	540	268	164	74	34	455	84.26%	232	86.57%	140	85.37%	55	74.32%	28	82.35%
Јул	1085	556	293	142	94	1020	94.01%	536	96.40%	276	94.20%	126	88.73%	82	87.23%
Август	1841	855	541	320	125	1810	98.32%	873	102.11%	552	102.03%	277	86.56%	108	86.40%
Септембар	1169	589	328	176	76	931	79.64%	455	77.25%	303	92.38%	103	58.52%	70	92.11%
Октобар	263	109	82	46	26	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Новембар	102	71	21	10	0	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Укупно	5000	2448	1429	768	355	4216	84.32%	2096	85.82%	1271	88.94%	561	73.85%	288	81.13%

# „Power BI“ in the future





# Power Bi report - monitoring and analysis



# Power Bi report – monitoring and analysis



Address book



Data entry bay days



Completed and blanks  
reports



Performance of  
interviewers



Analysis by sectors  
and activities



Analysis by  
territories



Include data from other  
survey



Easily detect errors  
and deviations



Update time

23.09.2021, 11:13

Number of questionnaires in the address book

400

Number of completed questionnaires

400

Number of blank questionnaires

0

Percentage of completed questionnaires

100,00%

# Monitoring

## Influence of "COVID-19" on the enterprises business

Regional statistical centre	Number of questionnaires in the address book	Number of blank questionnaires	Percentage of blank questionnaires	Number of started questionnaires	Number of completed questionnaires	Percentage of completed questionnaires
Belgrade	108	0	0,00%	0	108	100,00%
Kragujevac	25	0	0,00%	0	25	100,00%
Kraljevo	34	0	0,00%	0	34	100,00%
Leskovac	16	0	0,00%	0	16	100,00%
Nis	24	0	0,00%	0	24	100,00%
Novi Pazar	7	0	0,00%	0	7	100,00%
Novi Sad	51	0	0,00%	0	51	100,00%
Pancevo	14	0	0,00%	0	14	100,00%
Sabac	14	0	0,00%	0	14	100,00%
Smederevo	14	0	0,00%	0	14	100,00%
Sremska Mitrovica	21	0	0,00%	0	21	100,00%
Subotica	21	0	0,00%	0	21	100,00%
Uzice	19	0	0,00%	0	19	100,00%
Valjevo	11	0	0,00%	0	11	100,00%
Zajecar	9	0	0,00%	0	9	100,00%
Zrenjanin	12	0	0,00%	0	12	100,00%
<b>Total</b>	<b>400</b>	<b>0</b>	<b>0,00%</b>	<b>0</b>	<b>400</b>	<b>100,00%</b>

Update time

Ratio of total and completed questionnaires

23.09.2021, 11:13

Number of questionnaires in the address book

400

Number of completed questionnaires

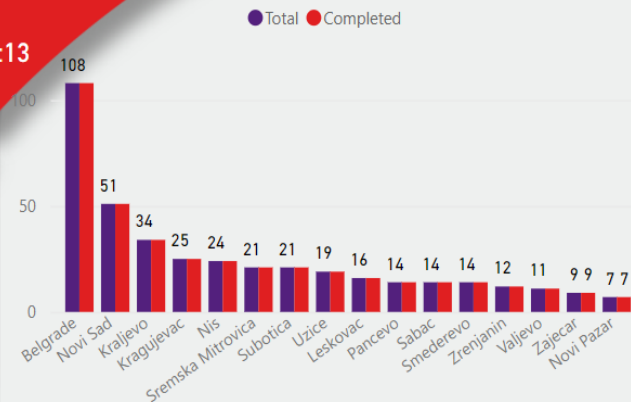
400

Number of blank questionnaires

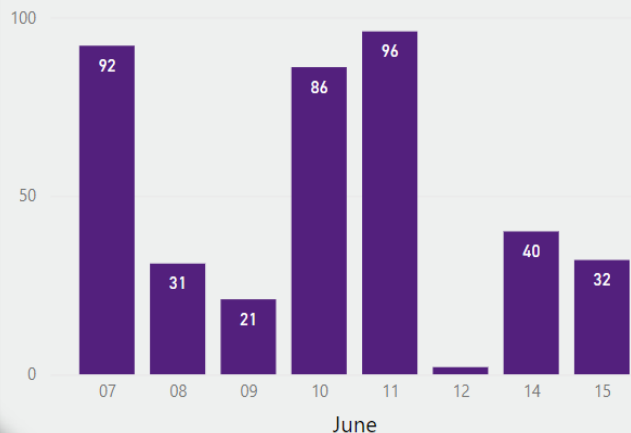
0

Percentage of completed questionnaires

100,00%



Number of completed questionnaires per day



Percentage of completed questionnaires per Regional statistical centre



Serbia

Beograd

Kragujevac

Kraljevo

Leskovac

Niš

Novi Pazar

Novi Sad

Pančevo

Šabac

Smederevo

Sremska Mitrovica

Subotica

Užice

Valjevo

Zaječar

Zrenjanin

# Monitoring Completed questionnaires

400

Serbia

Name of company	Note
9. SEPTEMBAR MEDICAL DOO VELEREČ	
A & T BADEX	71
A.N.A.U.	
ACIMOBIĆ TURS DOO	Ugostiteljstvo je direktno finansijski pogođeno u prethodnom periodu pa bi trebalo na neki način konkretno pomoći ovoj grani privrede. Ako bismo se nekim slučajem obratili i bank Bavimo se ugostiteljstvom. Znam da ovo neće imati nikakvog efekta nego nije loše da se pomene. Srdačan pozdrav
AD MLIN BELA CRKVA	
ADLERITAL PLASTIC DOO KRAGUJEVAC	
AERO-EAST-EUROPE DOO JAGODINA	
AF HLADNJAČA SISTEM DOO APATIN	85
AFIX DOO	
AGRANELA DOO VALJEVO - POSLOVNA JEDINICA ŠUŠEOKA	76
AGROKOŽAR DOO VRANJSKA BANJA	73
AGROUP DOO	75 Anketa popunjena on line telefonski, lakše je bilo sagovorniku da mu se postavljaju pitanja samo da daje odgovore.
AIS SHOES	
AL STAKLO PLUS DOO	
ALPIS DOO	
ANGORA DOO JAGODINA	Nema pitanja o troškovima u toku pandemije već samo o prihode, sva preduzeća su imale povećanje vanrednih troškova, povećale su se cene repromaterijala., transporta i cene rada Covid-19 i to na teret poslodavca uglavnom... Statistika i time treba da se bavi.
<b>Ukupno</b>	

Beograd

Kragujevac

Kraljevo

Leskovac

Niš

Novi Pazar

Novi Sad

Pančevo

Šabac

Smederevo

Sremska Mitrovica

Subotica

Užice

Valjevo

Zaječar

Zrenjanin

## Time of last synchronization

Enumerator	Last synchronization
85083	9.4.2019 16:43:07
72019	18.4.2019 12:37:33
78051	19.4.2019 20:31:06
75038	19.4.2019 23:35:47
71014	20.4.2019 15:45:29
70003	21.4.2019 13:45:29
73024	21.4.2019 16:27:07
71009	21.4.2019 19:52:43
70002	22.4.2019 18:16:51
72022	22.4.2019 18:48:20
78053	22.4.2019 21:58:16
78050	22.4.2019 23:24:21
74031	23.4.2019 0:14:41

## Comparative overview of persons 2011-...

Enumerator	Persons 2011	Persons 2019
40060	665	472
40061	589	563
70001	563	481
70002	611	507
70003	549	390
70004	619	399
71005	606	390
71006	890	245
71007	689	468
71008	1294	362
71009	577	454
71010	629	599
<b>Ukupno</b>	<b>7577816</b>	<b>36439</b>

## Comparative overview of households 2011-2019

Enumerator	HH 2011	HH 2019
85085	253	140
85084	277	170
85083	165	90
85082	249	108
84081	196	109
84080	212	174
84079	340	150
84078	230	150
83077	211	186
83076	224	169
83075	242	155
83074	263	217
<b>Ukupno</b>	<b>3302907</b>	<b>12604</b>

Regional ...	Controlor	Enumerator
<input type="text" value="Pretraži"/>	<input type="text" value="Pretraži"/>	<input type="text" value="Pretraži"/>
<input type="checkbox"/> 70	<input type="checkbox"/> 4014	<input type="checkbox"/> 40060
<input type="checkbox"/> 71	<input type="checkbox"/> 7001	<input type="checkbox"/> 40061
<input type="checkbox"/> 72	<input type="checkbox"/> 7121	<input type="checkbox"/> 70001
<input type="checkbox"/> 73	<input type="checkbox"/> 7122	<input type="checkbox"/> 70002
<input type="checkbox"/> 74	<input type="checkbox"/> 7123	<input type="checkbox"/> 70003
<input type="checkbox"/> 75	<input type="checkbox"/> 7124	<input type="checkbox"/> 70004
<input type="checkbox"/> 76	<input type="checkbox"/> 7125	<input type="checkbox"/> 71005
<input type="checkbox"/> 77	<input type="checkbox"/> 7202	<input type="checkbox"/> 71006
<input type="checkbox"/> 78	<input type="checkbox"/> 7303	<input type="checkbox"/> 71007
<input type="checkbox"/> 79	<input type="checkbox"/> 7304	<input type="checkbox"/> 71008
<input type="checkbox"/> 7A	<input type="checkbox"/> 7405	<input type="checkbox"/> 71009
<input type="checkbox"/> 81	<input type="checkbox"/> 7406	<input type="checkbox"/> 71010
<input type="checkbox"/> 82	<input type="checkbox"/> 7507	<input type="checkbox"/> 71011

## Number of households per day

Enumerator	1	2	3	4	5	6	7	8	9	10	11	12	13
40060	2	7		8	4	5	6	8	3	8	5	3	10
40061	2	2	3	5	6	9	4	2	3				
70001	4	9	3	12		10	7	5		5	10	10	1
70002	5	8	10	13	9			21	11	15	6	6	
70003	10	6	9	13				13	14	11	6	4	
70004	5	5	5	2	5	4		10	6	11	6	12	
71005								5	14	8	8	9	
71006								3		12	6		
71007								12	17	17	21	11	10
71008								12		19	6		
71009								16	17	15	23		1
71010								7	7	14	19	17	
71011								6	5		11		
<b>Ukupno</b>	<b>459</b>	<b>560</b>	<b>549</b>	<b>514</b>	<b>476</b>	<b>387</b>	<b>357</b>	<b>595</b>	<b>575</b>	<b>664</b>	<b>642</b>	<b>546</b>	<b>401</b>

## Average number of households per day

Enumerator	Total	Average
71013	31	4
71016	43	6
82071	53	6
71017	65	11
71014	83	8
85083	90	18
76045	92	10
77047	95	10
73023	98	5
71006	100	9
85082	108	8
74034	109	6
84081	109	8
40061	118	5

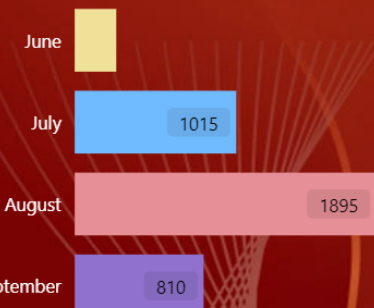
## Enumerator data

<b>40060</b> Enumerator	<b>Славица Величковић</b> Name and surname
<b>2127</b> ID number	<b>Нови Пазар</b> Municipality
<b>020371268</b> Phone	<b>0653389202</b> Cell phone
<b>40061</b> Enumerator	<b>Ријад Икић</b> Name and surname
<b>2143</b> ID number	<b>Нови Пазар</b> Municipality
<b>020314430</b> Phone	<b>0637367515</b> Cell phone

## Survey on foreign tourists (Questionnaires by days)

22.09.2021, 08:32

Number of questionnaires per month



Total number of questionnaires

5000

Total number of days

150

Total average per day

33,33

Number of completed

3983

Number of days to date

97

Average to date

41,06

Remaining number

1017

Days until the end of the research

53

Expected average to completion

19,19

Average of the last 7 days

36,57

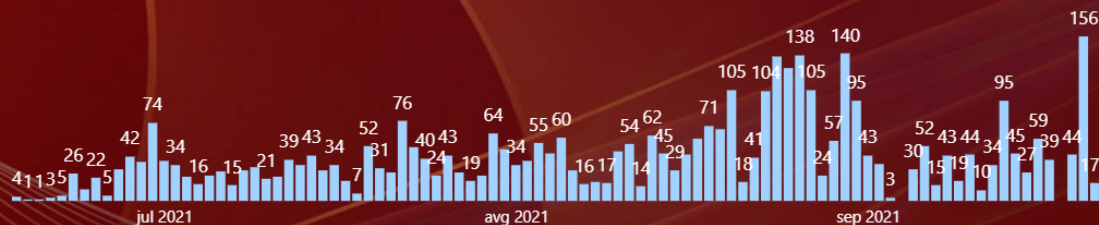
Expected days until the end

28

Expected end date of the survey

10.20.2021

Number of questionnaires per day



Choose the day of the end of the research: 06 18 2021 - 11 15 2021

18.6.2021

15.11.2021

**Serbia**

Sabac

Belgrade

Zajecar

Leskovac

Kraljevo

Nis

Valjevo

Smederevo

Uzice

Kragujevac

Novi Pazar

Zrenjanin

Novi Sad

Pancevo

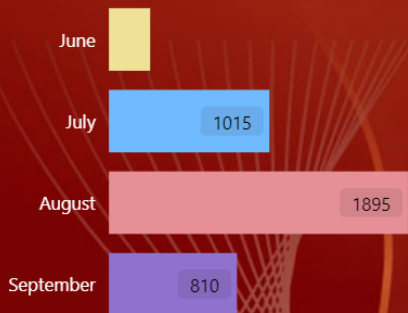
Sremska Mitrovica

Subotica

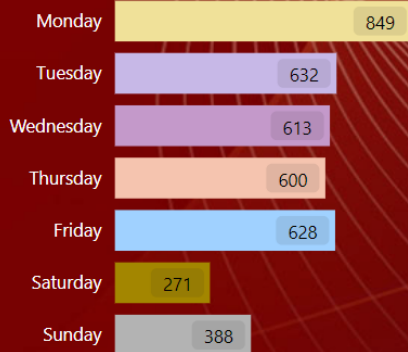
## Survey on foreign tourists (Questionnaires by days)

22.09.2021, 08:32

Number of questionnaires per month



Number of questionnaires per day per week



Total number of questionnaires

5000

Total number of days

136

Total average per day

36,76

Number of completed

3983

Number of days to date

98

Average to date

40,64

Remaining number

1017

Days until the end of the research

38

Expected average to completion

26,76

Average of the last 7 days

31,00

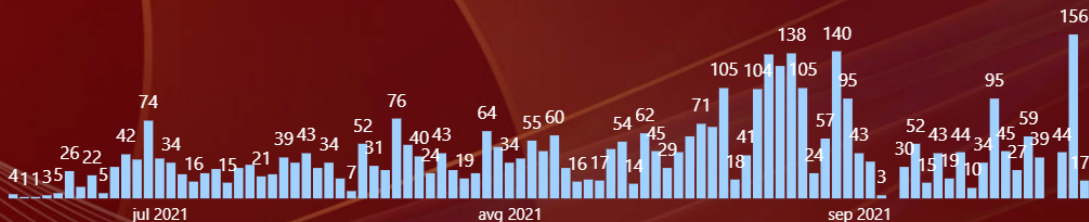
Expected days until the end

33

Expected end date of the survey

10.26.2021

Number of questionnaires per day



Choose the day of the end of the research: 06 18 2021 - 11 01 2021

18.6.2021

1.11.2021

**Serbia**

Sabac

Belgrade

Zajecar

Leskovac

Kraljevo

Nis

Valjevo

Smederevo

Uzice

Kragujevac

Novi Pazar

Zrenjanin

Novi Sad

Pancevo

Sremska Mitrovica

Subotica



# Impact of COVID 19 on the business of micro and small enterprises and entrepreneurs

1

2

3

4

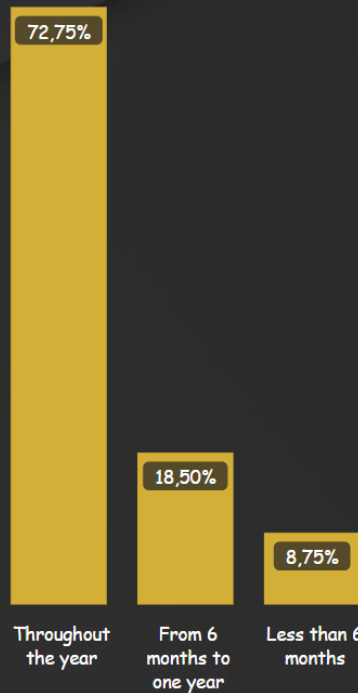
5

6

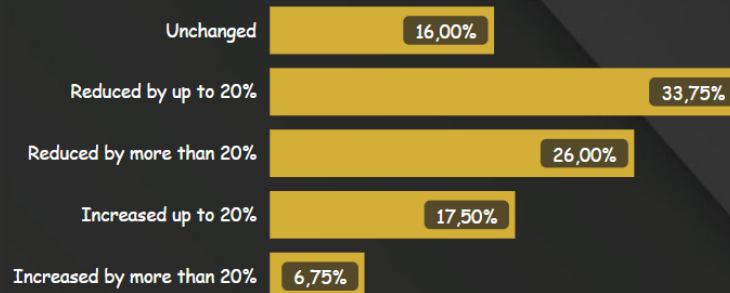
7

8

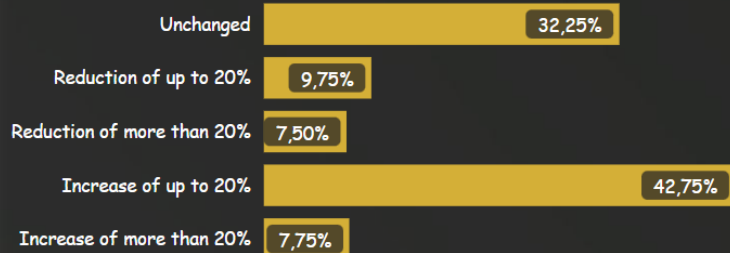
In which period did your company actively perform activities during 2020?



Compared to 2019, what was your total income in 2020?



Do you expect an increase or decrease in the total revenue of your company in 2021 compared to 2020?



Select a territorial level

Region

District

Municipality





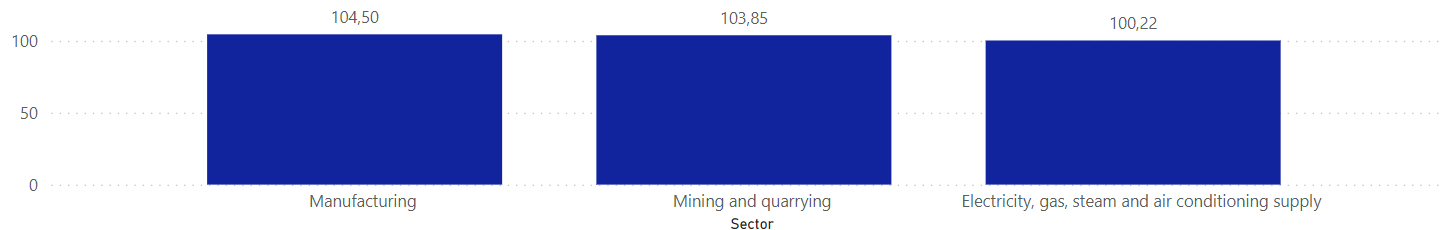
# Rapid survey for the prediction of economic indicators - analysis



Number of Companies 1396

## Assessment broken down by Sector

Month ● 09



### Sector, Name of activity

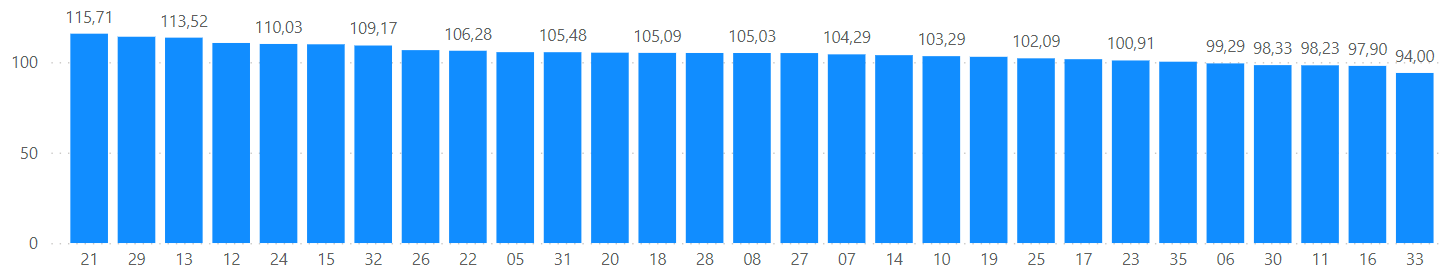
- ☐ B
- ☐ C
- ☐ D

### Assessment

1 999



## Assessment broken down by NACE rev. 2 (double - digit)



### Search by NACE Rev.2

Pretraži

- ☐ 0510
- ☐ 0520
- ☐ 0610
- ☐ 0620
- ☐ 0729

### Surveys

- ☐ Construction activity
- ☒ Industrial capacity
- ☐ Turnover indices



ID of company	IDLU	Survey	RSC	Assessment	NACE Rev.2	NACE Rev.2 new	Company name
06008933	167	Industrial capacity	Beograd	100	1392	1392	DELTATEKS DOO BEOGRA
06046762	811	Industrial capacity	Beograd	125	1082	1082	ART IVAL DOO BEOGRAD
06055982	950	Industrial capacity	Niš	100	1399	1399	AGAVA DOO
06056091	952	Industrial capacity	Kragujevac	120	2030	2030	BANJA KOMERC BEKAMEI

### NOTES

### Month

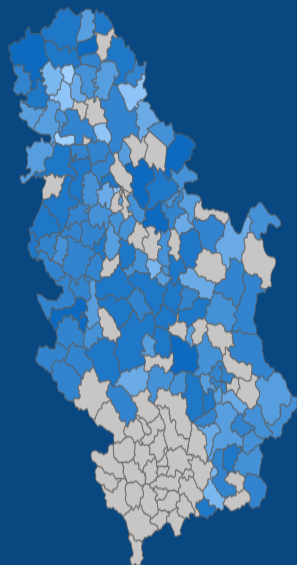
- ☐ 08
- ☒ 09

### Year

- ☐ 2020
- ☒ 2021

(Select municipality with one click)

Municipalities according to the fulfilled number of equipment indicators



Municipality

Ada  
Aleksandrovac  
Aleksinac  
Alibunar  
Apatin  
Arandelovac  
Arijelje  
Babušnica  
Bač  
Bačka Palanka  
Bačka Topola  
Bački Petrovac  
Bajina Bašta  
Barajevo  
Batočina

7186862

Population

Month: 04

Year: 2021

56.579

Average net salaries

615328

Number of unemployed

399

Number of specialized high school

Available infrastructure of the industrial zone (out of a total of 8 industrial requirements)

The indicator of infrastructure equipment of the industrial zone is the number of fulfilled infrastructure requirements out of a total of eight infrastructure requirements (roads, power lines, gas installations, telecommunications, railways, water supply, sewerage and waste management)

374

Number of zones

29006

Surface area (ha)

13414<sup>46%</sup>

Area used (ha)

15592<sup>54%</sup>

Available area for new business entities (ha)

Municipalities without an industrial zone are marked with gray

Data on industrial zones - infrastructural equipment

Municipality	Zone name	Surface area (ha)	Area used (ha)	Last extension	Possibility to add a operation	out of 8 infrastructure requirements fulfilled:	Roads	Electrical lines	Gas	Telecommunications	Railway	Water supply	Sewage	Waste management	Last investment	Number of business entities	Free zone
Ada	Industrijska zona II Mol	36,78	6,15	2020	Yes	4	Have	Have	Don't have	Have	Don't have	Don't have	Don't have	Have	2020	5	Not exist

# Conclusion



The time for each phase in the data collection process is minimized.



The monitoring and analysis allows us to view the results from different perspectives



The realization of the survey is raised to a higher level



Quick and more realistic picture of the state of the economy

# Thank You

## Do you have any questions?

Marija Hinda and Nebojša Tolić (Statistical Office of the Republic of Serbia [SORS])

Expert Meeting on Statistical Data Collection, Online, 27-30 September 2021