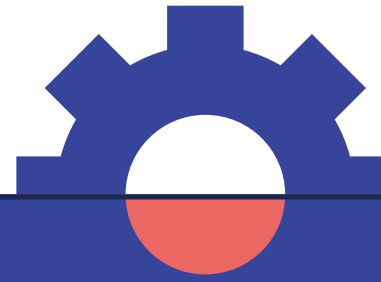




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# OPEN GOVERNMENT DATA NEEDS ASSESSMENT STUDY

INSTITUTE FOR DEVELOPMENT OF FREEDOM OF INFORMATION (IDFI)  
THE USAID ECONOMIC GOVERNANCE PROGRAM GRANT:  
OPEN GOVERNMENT DATA (OGD) SURVEY

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# ACRONYMS

GDP	GROSS DOMESTIC PRODUCT
GEOSTAT	NATIONAL STATISTICS OFFICE OF GEORGIA
LEPL	LEGAL ENTITY OF PUBLIC LAW
API	APPLICATION PROGRAMMING INTERFACE
CRM	CUSTOMER RELATIONSHIP MANAGEMENT
CSV	COMMA-SEPARATED VALUES
EU	EUROPEAN UNION
ERP	ENTERPRISE RESOURCE PLANNING
GVA	GROSS VALUE ADDED
ICT	INFORMATION AND COMMUNICATION TECHNOLOGIES
IDFI	INSTITUTE FOR DEVELOPMENT OF FREEDOM OF INFORMATION
IT	INFORMATION TECHNOLOGIES
NACE	STATISTICAL CLASSIFICATION OF ECONOMIC ACTIVITIES
ODM	OPEN DATA MATURITY
ODRA	OPEN DATA READINESS ASSESSMENT
PSI	PUBLIC SECTOR INFORMATION
USAID	UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT

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# EXECUTIVE SUMMARY




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The digital transformation and the development of new technologies have given rise to new opportunities to enhance public welfare through the utilization of data. Over the past decade, alongside the discourse on the social and public benefits stemming from data availability, the economic advantages derived from the private sector's use of available data have become a prominent topic. International experience suggests that the private sector gains significant profits not only from data generated through business and economic activities but also from open government data.

In recent years, studies assessing the possible economic benefits derived from the availability of open data were conducted actively in European Union countries. The present study is one of the first analytical works to estimate the economic aspects of open data by adapting the methodologies used in the EU countries and taking into account Georgia's economic indicators. The study also highlights the sectors with high impact and high potential and identifies datasets whose availability is especially important and economically beneficial for private companies operating in Georgia.


**The following activities were carried out** to study the economic potential of open government data in Georgia:


-  **Review of international literature** - The existing literature on the development and economic benefits of the open data ecosystem was studied.
-  **Development of the methodology** - By adapting the methodologies used in EU countries, a methodology and methods were developed to determine the open data market size, including the direct and indirect market and the amount of new jobs created through the availability of open data, and to identify sectors with high impact and high potential in terms of open data use.
-  **Quantitative and qualitative research** - A combination of qualitative and quantitative data collection methods were used to identify the needs of the private sector, including an online survey, focus group meetings, and in-depth interviews. A total of 100 companies were interviewed.


 **Examples of international practice** - For specific sectors, in order to raise awareness on the importance of open data, examples of international best practice were provided. Among them, applications/services created by stakeholders with the use of data portals were identified.


 **Facilitating public-private dialogue (PPD)** - A public-private dialogue was held on the issues of open government data needs, within the framework of which the main findings and recommendations of the study were presented.

The research identified a number of **challenges** in terms of open government data legislation and practice:

 The country does not have a unified vision and strategy for improving access to open government data, as well as a unified regulatory legal framework for open government data.

 Despite the presence of an official open data portal, public institutions have not been publishing or updating data on it for years due to the lack of enforcement mechanisms.

 Due to the inadequate enforcement of the Law on the Unified State Registry of Information, it is difficult to determine what datasets are kept in public institutions.

 There is a need to raise awareness among the private, public, and civil sector representatives about the economic and other public welfare benefits of open government data.

By adapting EU methodologies within the framework of the research, IDFI was able to make important calculations about open government data in Georgia. In particular, the research team determined that the approximate open data market size of Georgia is 0.9% of the GDP, which, taking into account the expected GDP of 2023, is equal to 714.2 million GEL. The direct market size of open data is 153.9 million GEL, and the indirect market size is 560.3 million GEL. In 2023, approximately 800 people were directly employed in open data in Georgia, and approximately 2,912 jobs were created indirectly by open data.





According to the basic scenario of the development of the open data market, by 2030, the size of the Georgian open data market will be approximately 1 billion GEL, and in the case of high progress - 1.4 billion GEL. According to the basic scenario, 268 people will be additionally employed in open data in Georgia by 2030, and 3,802 people will be employed in the case of high progress.

According to the methodology adapted to Georgia, financial and insurance activities, public administration, and information and communication sectors were identified as the sectors with the highest potential and impact in terms of the use of open data. Trade, transport, and industrial sectors were assessed as having medium potential and impact.

After identifying the sectors with the highest potential and impact on open data, within the framework of the study, taking into account the needs of the representatives of said sectors, datasets that are important for them were identified. The survey showed that companies most often process and are interested in data related to business, finance, and economics.

However, at least one respondent from each sector expressed interest in data related to tourism, agriculture, demographic and social issues, transport, and geospatial data/-maps, identifying such data as necessary.

**Among the most important open government datasets named by each sector were the registries of the National Agency of Public Registry, the website of the Public Procurement Agency, and the Reporting portal.** According to the majority of the respondents, if these datasets became available through APIs (application programming interface), they would be able to easily process data and create desired applications.

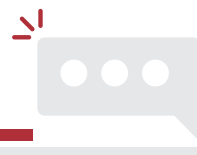
-  Much of the data desired by the **banking sector** is related to the ability to access additional personal information about their customers. Nevertheless, their list includes datasets that, in their content, represent open government data and cover issues such as education, healthcare, agriculture, environmental protection, transport, construction, and others.
-  The datasets desired by the **insurance sector** are related to comprehensive health service and medication consumption statistics, comprehensive death statistics, real estate market prices, identification of insured and uninsured properties by cadastral codes, meteorological data, and more.
-  Desired datasets for representatives of the **information and communication sector** are related to cadastral maps, infrastructure projects, communication data of business entities and civil servants, public procurement, tourism and transport data, and others.
-  For the **trade and transport sector**, datasets containing detailed exports-imports data, detailed statistics on the production and consumption of individual products, information on the flow of passengers in vehicles, and more were identified.



Recommendations were prepared based on the research findings, primarily focusing on the development of a national strategy and a legal framework to regulate open government data in the country, the availability of datasets prioritized for the private sector in an open format by public institutions, conducting awareness campaigns regarding open government data, and enhancing the qualifications of civil servants.

# INTRODUCTION

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Digital transformation and the development of new technologies has given rise to new opportunities to increase public welfare through the use of data. Innovative approaches/mechanisms in the collection, management, and processing of data have yielded positive results in a number of directions: data is used in the development, implementation, and evaluation of public policies; private companies and service providers have unique opportunities to increase the quality of their activities and introduce innovative services; citizens and local stakeholders have the opportunity to easily acquire desired information and become involved in the decision-making process. Research institutions and representatives of academic circles have opportunities to conduct research enriched with data. Efficient production and wide availability of data benefits everyone. By embracing evidence-based approaches, public institutions can improve the quality of government programs and public service. Access to data produced by public institutions across various sectors empowers private companies to develop and improve innovative business models, create new services, and increase profits. Public data plays a crucial role for citizens, civil society, and media representatives in effectively overseeing government activities.<sup>1</sup>

The significance of data availability for public welfare has become increasingly apparent amid the spread of the novel coronavirus. International experiences have demonstrated that countries have successfully implemented initiatives and applications aimed at preventing the spread of the pandemic, accurately informing citizens, and resolving challenges through innovative approaches. This success was largely facilitated by the existence of robust systems for processing and disseminating data available in an open and processable format.<sup>2</sup>

Public information plays an important role in enhancing public welfare, modernizing the public sector, and implementing governance reforms. In this context, open data—freely accessible to any interested party and, importantly, easy to process and utilize for various purposes—holds significant potential. Through open data, it becomes feasible to identify

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<sup>1</sup> World Bank Group. “*World Development Report 2021: Data for Better Lives*”. Available at: <https://wdr2021.worldbank.org/>

<sup>2</sup> Institute for Development of Freedom of Information. “*The Importance of Open Data in the Fight against the Pandemic: International Best Practice and Georgia*”. Available at: <https://bit.ly/3sOq96Z>

and predict important trends and circumstances, while also ensuring government accountability, enhancing services, and fostering the development of new and innovative applications.

From the outset, organizations working on the availability of data produced by the government focused on the issue of universal access to information as a human right. Subsequently, attention was also directed towards the format of data publication. It is widely recognized that, to promote data reuse by interested parties, it is necessary to make data available in an open, machine-readable format (the so-called 'open by default' principle). For clarification, it should be noted that not all types of published information qualify as open data. According to Georgian legislation, public information can be a drawing, layout, plan, diagram, photograph, electronic information, or video- and audio-recording.<sup>3</sup> Therefore, open data refers specifically to structured electronic information, commonly in raw, primary form, published in a suitable spreadsheet format (e.g., CSV, Open XML), or accessible via an API (Application Programming Interface).<sup>4</sup> Open government data pertains to the production and availability of data generated by public institutions and stored in public repositories in an open format.

Over the past decade, along with the argument of the social and public good resulting from the availability of data, the economic benefits derived from the use of available data by the public sector has become a prominent topic. This is made possible by the format of data publication and the ease with which companies can reuse it. Specifically, with the availability of data in an open, machine-readable format, it is easy for technical specialists to work with data and create new services and applications based on said data, as well as to improve existing services and integrate data with their own platforms or business or entertainment services. It should be noted that, along with the availability of data in an open format, it is equally important to update the published data with accuracy and predetermined periodicity.

One of the key prerequisites for ensuring the availability of open government data is to have a common vision in the country, a legal framework, and standardized practices regarding open data. Unfortunately, Georgia has not enacted dedicated legislation on freedom of information or implemented uniform open data standards.

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<sup>3</sup> General Administrative Code of Georgia, Article 2, paragraph 1, sub-paragraph „l“.

<sup>4</sup> Application Program Interface - is a set of functions, methods, classes, and protocols that allows different software applications to communicate with each other. APIs enable the exchange of commands and data between various components of a program or between different software systems, facilitating interoperability and integration.

Against the background of integration with the European Union, it is important to consider the Open Data Directive<sup>5</sup> in the context of harmonizing Georgian legislation with European regulations. It should be highlighted that the 2023 EU enlargement package report prepared by the European Commission on Georgia observes that the country's legislation only partially meets the requirements of the mentioned directive.<sup>6</sup> The EU directive is largely focused on the economic and public welfare aspects of the use of public information. It calls on EU member countries to make as much public data available to stakeholders for reuse as possible. Furthermore, it calls for documents and information to be produced and published in an open format, promoting the principles of 'open by design' and 'open by default'. In addition, to bolster innovation and enhance the accessibility and reusability of open government data, investments in implementing data-driven software are encouraged. The Act was later extended to cover new bodies (for example, libraries, museums, archives), also establishing a limit on fees and requirements for government information to be in a machine-readable format. Unlike the preceding regulation, the new directive encompasses a broader spectrum of public information. This includes data of high public interest held by entities operating in the water, energy, transport, and postal services sectors, as well as studies and data generated from public funding.

As for usage fees, the directive stipulates that the data should be available free of charge except in pre-defined cases, but even in such cases, the revenue received in the reporting period should not exceed the cost of data processing and disclosure by the public agency.

The directive specifically singles out "high-value datasets" and accordingly defines six priority categories:

- Geospatial data
- Earth observation and environment
- Meteorological data
- Statistical data
- Companies and company ownership
- Mobility

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<sup>5</sup> Directive (EU) 2019/1024 of the European Parliament and of the Council of 20 June 2019 on open data and the re-use of public sector information. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1561563110433&uri=CELEX:32019L1024>

<sup>6</sup> European Commission. Georgia 2023 Report. Available at: [https://neighbourhood-enlargement.ec.europa.eu/georgia-report-2023\\_en](https://neighbourhood-enlargement.ec.europa.eu/georgia-report-2023_en)

Accordingly, the following requirements are set regarding the availability of these categories of data: a) available free of charge; b) available in a machine-readable format; c) accessible via API; d) provided as a bulk download.

According to the explanation given in the directive, the aforementioned list contains data categories associated with significant social, ecological, and economic benefits to the public. In recent years, there has been active research in European Union countries assessing the potential economic benefits stemming from the availability of open data. This study is one of the first analytical papers aimed at estimating the economic impact of open data by adapting the methodologies used in the EU countries and taking into account Georgia's economic indicators. The study also highlights the sectors with high impact and potential and identifies datasets whose availability is particularly crucial and economically beneficial for private companies operating in Georgia, based on the opinions and needs of the private sector representatives.

# METHODOLOGY

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The open government data needs assessment study was intended to determine the economic impact of open data in Georgia and the needs of companies operating in Georgia. The study was conducted by adapting methodologies used in EU countries, with special attention given to a study conducted by the European Data Portal (European Data Portal, 2020),<sup>7</sup> which stands out as one of the most recent and comprehensive works concerning the study of the open data ecosystem and associated economic indicators. The adaptation of the individual methods used in the research to the realities of Georgia is based on the reasoning and assumptions of the authors of the study, a detailed description of which is presented below, along with a content analysis.

Considering the topics addressed, a broad overview of the methods employed is provided below:

## ESTIMATING THE OPEN DATA MARKET SIZE

Two methods were used to estimate the Georgian open data market size. A slight variance in the results was observed, enhancing the credibility of the methods.

**METHOD #1** - Determining the indicator of the open data market size of the EU countries during the period that corresponds to the current state of development of the open data ecosystem in Georgia, by selecting relevant research results.

**METHOD #2** - By determining the approximate indicator of the open data market size of the EU countries in 2020 (1.19%), estimating the approximate indicator of the countries that are at the matching level of open data development of Georgia (according to the Open Data Maturity Index).

## ESTIMATING THE DIRECT AND INDIRECT MARKET SIZES

The direct and indirect open data market sizes were determined according to the proportions established by the Vickery (2011)<sup>8</sup> and Shakespeare (2013)<sup>9</sup> studies.

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<sup>7</sup> E. Huyer et. al, "The Economic Impact of Open Data Opportunities for Value Creation in Europe", European Data Portal, January 2020, p. 22. Available at: <https://shorturl.at/lswD3>

<sup>8</sup> G. Vickery, "Open Data Maturity "Review of Recent Studies on PSI Re-Use and Related Market Development", Information Economics, Paris, October 2011. Available at: <https://shorturl.at/uHJY7>

<sup>9</sup> S. Shakespeare, "Shakespeare Review: An Independent Review of Public Sector Information". May 2013. Available at: <https://shorturl.at/sxEG5>

## **ESTIMATING OPEN DATA EMPLOYMENT**

To calculate jobs created by open data, the assumption tested in EU research is used that the percentage of employment in the open data market in a country with a low level of open data maturity is 20% lower than the employment rate in a country at a higher step of the assessment.

## **DETERMINING THE SECTORS WITH HIGH IMPACT AND POTENTIAL IN TERMS OF USING OPEN DATA**

The potential of open data according to economic sectors (NACE) was evaluated by taking into account the European Union methodology, according to which sectors with high impact and high potential are evaluated according to three different indicators: a) level of digitization; b) the ability to provide open data to meet demand; and c) the potential economic impact.

## **STUDY OF THE NEEDS OF COMPANIES OPERATING IN GEORGIA**

A combination of qualitative and quantitative data collection methods were used to identify the needs of the private sector. The study was based on the World Bank's Open Data Readiness Assessment (ODRA) <sup>10</sup> and European Open Data Portal Open Data Re-using study methodology,<sup>11</sup> adapted to the Georgian context.

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<sup>10</sup> "Open Data Readiness Assessment User's Guide", World Bank Group, April 2015. Available at: [http://opendatatoolkit.world-bank.org/docs/odra/odra\\_v3.1\\_userguide-en.pdf](http://opendatatoolkit.world-bank.org/docs/odra/odra_v3.1_userguide-en.pdf)

<sup>11</sup> J. Berend et. al, "Re-using Open Data: A study on Companies Transforming Open Data into economic & societal value", European Data Portal, Luxembourg, July 2020. Available at: [https://data.europa.eu/sites/default/files/re-using\\_open\\_data.pdf](https://data.europa.eu/sites/default/files/re-using_open_data.pdf)

# ESTIMATING OPEN DATA MARKET SIZE AND GEORGIA'S RESULTS



The overview of the studies carried out to estimate the open data market size shows that the methodologies of the studies at different times differ. The studies contain macro and microeconomic approaches with the aim of estimating the size of the open data market quantitatively based on primary and secondary data. To estimate the open data market size of EU countries, the extrapolation method is used, while the initial assessment is taken from the data given in the MEPSIR (2006)<sup>12</sup> and Vickery (2011)<sup>13</sup> studies. Determining its share in relation to the gross domestic product is actively used when estimating the open data market size.<sup>14</sup>

In different periods, the results derived from studies with varying methodologies differ significantly from each other.

STUDY	STUDY RESULTS	CALCULATION YEAR	SHARE IN GDP
PIRA 2000	€68 billion - PSI direct market size of 15 EU countries	1999	2.69%
MEPSIR 2006	€27 billion - PSI direct market size of 27 EU countries and Norway	2005	0.91%
Pollock 2010	£4.5 billion - PSI market size of Great Britain	2007	1.09%
Vickery 2011	€140 billion - PSI market size of 27 EU countries	2009	1.10%

<sup>12</sup> M. Dekkers et. al "MEPSIR Measuring European Public Sector Information Resources", March 2006. Available at: <https://shorturl.at/cruKN>

<sup>13</sup> G. Vickery, "Open Data Maturity "Review of Recent Studies on PSI Re-Use and Related Market Development", Information Economics, Paris, October 2011. Available at: <https://shorturl.at/uHJY7>

<sup>14</sup> E. Huyer et. al, "The Economic Impact of Open Data Opportunities for Value Creation in Europe", European Data Portal, January 2020, p. 22. Available at: <https://shorturl.at/lswD3>



Buergi Schmelz 2013	2.2. billion CHF - Open government data market size in Switzerland	2013	1.27%
Deloitte 2013	£6 billion - Open government data market size of Great Britain	2011	1.42%
McKinsey 2013	\$3.380.8 billion - Global open data market size	Year not indicated	4.26%
Lateral Economics 2014	\$22 billion (AUD) - Size of the Australian open data market	2013	1.40%
DemosEuropa and WISE 2014	€200 billion data market and €10 billion open government data market in 28 EU countries	2020	0.07%
DotEcon 2015	£1.1 billion - PSI market size of Great Britain	2005	0.29%
EDP 2015	€193-209 billion - Open data market sum of 28 EU countries	2016	1.35%
ODI and Lateral Economics 2016	The added value linked to open data varies from 0.4% of GDP to 1.4%	Year not indicated	1.20%
ASEDIE 2019	€1.7 billion - The amount of trade turnover obtained from the sale of PSI goods and services in Spain	2016	0.53%
IDC Data Landscape 2019	€50.4 billion - direct size of EU open data market; €335.5 billion - indirect size of EU open data market	2017	2.18%
World Wide Web Foundation 2018 (Open Data Barometer)	€477.3 billion - for 28 EU 28 countries	2020	0.13%

**SOURCE:** European Data Portal (2020)

Studies on this topic employed diverse methodological approaches. Therefore, to estimate the open data market size in EU countries in 2020, we used the average of results obtained from various periods. Specifically, according to the studies, the average share in GDP was 1.33%, while the median share was 1.19%. One of the reasons for employing the averaging method is the absence of clear indication from studies conducted at different times regarding an increase in the open data market's share in GDP over the years.

Due to limitations in adapting existing methodologies (for example, MEPSIR (2005) and Vickery (2011)) to the Georgian context to estimate the open data market size, we used established indicators of the open data market share in relation to the gross domestic product (GDP) of the EU countries, which are relevant to the current stage of development of Georgia's open data ecosystem. Two methods were used for this purpose:

**METHOD #1** - Determining the indicator of the open data market size of the EU countries during the period that corresponds to the current state of development of the open data ecosystem in Georgia, by selecting relevant research results.

**METHOD #2** - By determining the approximate indicator of the open data market size of the EU countries in 2020 (1.19%), estimating the approximate indicator of the countries that are at the matching level of open data development of Georgia (according to the Open Data Maturity Index).

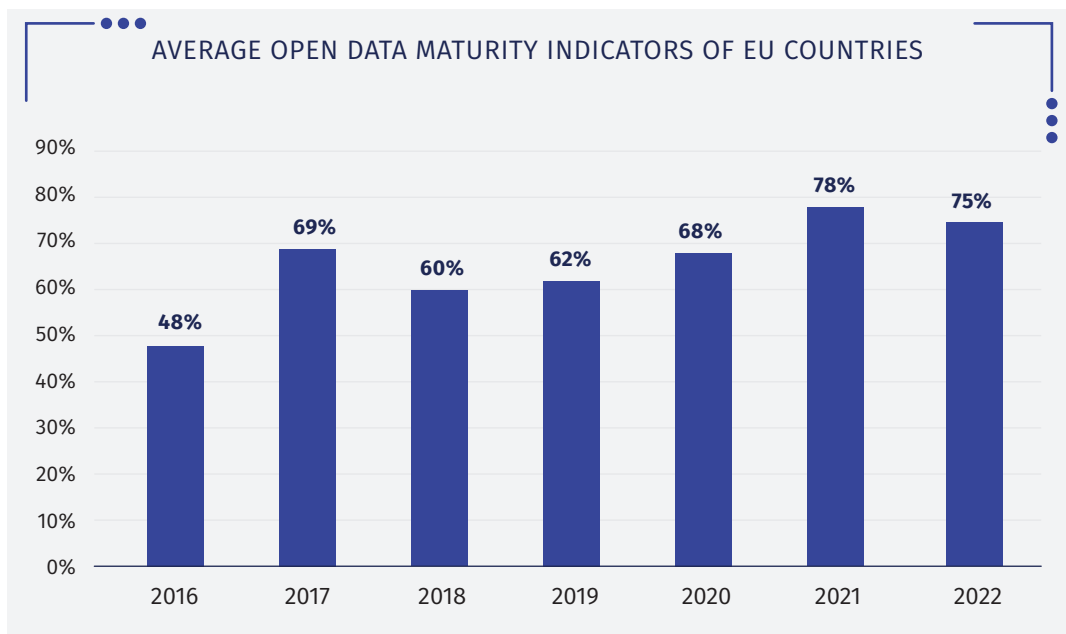
Finally, the Georgian open data market size was determined by averaging the results obtained using these two methods.

**METHOD #1** - Currently, the open data ecosystem in EU member states is considerably more advanced compared to Georgia. To illustrate this, in the 2021 Open Data Maturity Report,<sup>15</sup> Georgia scored only 17%, placing it at the lowest position among the evaluated 34 countries. In contrast, the EU countries, as indicated by the same report, had an average open data maturity index result of 78%. Given that open data maturity across Europe has been assessed since 2015, and considering that EU countries were significantly further along in the development of their open data ecosystems than Georgia in 2015, it is

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<sup>15</sup> D. Hesteren et. al, "Open Data Maturity Report 2021", European Commission, January 2022. Available at: <https://shorturl.at/h-HJ59>

currently not viable to make direct comparisons to determine Georgia's open data market size. Nevertheless, by taking into consideration the growth rate of open data maturity indicators, as well as economic metrics such as gross domestic product (GDP) per capita, Georgia's current open data ecosystem can be correlated to the development stage of EU countries during the period from 2002 to 2004.<sup>16</sup> For instance, between 2016 and 2022, the open data maturity score of EU countries increased from 48% to 75%. If we assume a similar growth rate in previous years, Georgia's current position of open data development is well-aligned with EU countries in 2003. Furthermore, Georgia's current economic indicators closely align with the figures from 2002 to 2004 in EU countries with relatively low economic development. For example, Georgia's 2022 GDP per capita (\$6,671) is comparable to the 2004 figures of Lithuania (\$6,700), Latvia (\$6,379), Poland (\$6,681), and Estonia's 2003 figure (\$7,204), as well as the 2002 metrics of Croatia (\$6,219), Slovakia (\$6,565), and Hungary (\$6,655).



**SOURCE:** Open Data Maturity Report (2022)

<sup>16</sup> W. Carrara et. al, "Creating Value Through Open Data", European Data Portal (EDP), November 2015. p. 9. Available at: [https://data.europa.eu/sites/default/files/edp\\_creating\\_value\\_through\\_open\\_data\\_0.pdf](https://data.europa.eu/sites/default/files/edp_creating_value_through_open_data_0.pdf) Note: According to the study, by 2005, 63% of EU members could be qualified as beginners, although the report does not specify the countries.

The MEPSIR (2006) study, which examined the size of the Public-Sector Information (PSI) market for the EU and Norway, is well-aligned with the established timeframe and is regarded as a prominent study in this area. The findings from this particular research have served as the foundation for numerous studies that applied extrapolation methods. Accordingly, to determine the current size of Georgia's open data market in the context of this study, we will rely on the core finding from MEPSIR (2006), which indicates that in 2005, the entire open data market size of the European Union amounted to 0.91%.

**METHOD #2** - The reviewed literature lacks sufficient information about countries with varying scores in Open Data Maturity reports regarding the proportion of the open data market within GDP. However, the European Data Portal (2020) estimates that countries with lower levels in open data maturity employ 20% fewer employees due to open data than the superior groups, supported by the argument that countries with advanced open data development offer more opportunities for employment in this sector. Following a similar line of reasoning, it is intuitive that countries with greater open data development also possess a greater potential for a larger open data market, leading to a higher share in their gross domestic product (GDP).

If we assume that, similar to employment rates, the open data market shares in GDP are 20% lower for countries in each of the lower open data maturity groups, then we can calculate open data market size for countries of different groups based on the formula below. In this formula, the open data market size within the GDP of European countries is considered to be 1.19%, as determined by European Data Portal (2020).<sup>17</sup> Country scores with different open data maturity groups are derived from the Open Data Maturity (ODM) results of the same year.

Based on the most recent Open Data Maturity Report (2021),<sup>18</sup> Georgia ranked last among the 34 countries evaluated in all four ODM components and was classified as a Beginner. According to the formula mentioned above, countries at the Beginner level have an open data market size of 0.89%.

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<sup>17</sup> E. Huyer et. al, "The Economic Impact of Open Data Opportunities for Value Creation in Europe", European Data Portal, January 2020, p. 22. Available at: <https://data.europa.eu/sites/default/files/the-economic-impact-of-open-data.pdf>

<sup>18</sup> In the case of Georgia, this represents the latest results, as Georgia did not participate in the 2022 and 2023 open data readiness assessment.

$$\frac{n(\text{Trendsetters})X+n(\text{Fast-trackers})(0.8X)+n(\text{Followers})(0.64X) + n(\text{Beginners})(0.51X)}{n(\text{Trendsetters}) +n(\text{Fast-trackers})+n(\text{Followers})+n(\text{Beginners})} = 1,19\%$$

Beginners market size % = 0.51x

Beginners market size = **0.89%**

Considering the slight difference between the results derived from two different methods (method #1 - 0.91%, method #2 - 0.89%), the mentioned indicators to determine the size of the Georgian open data market are lent more legitimacy. The average of the results estimated by the two different methods - 0.9% - is taken as the final result of open data market size in Georgia's GDP.

#### CALCULATIONS FOR GEORGIA

Taking into account Georgia's GDP, **the open data market of Georgia, as of 2022, is 655.7 million GEL. Considering the forecasted GDP for 2023, the market size will be 714.2 million GEL.**

## ESTIMATING DIRECT AND INDIRECT OPEN DATA MARKET SIZE AND GEORGIA'S RESULTS

Measuring the share of the total open data market size in the total gross domestic product enables us to analyze the direct and indirect market size of open data. Direct benefits encompass monetized gains realized through market transactions, including revenues, Gross Value Added (GVA), and the number of jobs involved in producing a service or product. Indirect economic benefits include the creation of new goods and services, time saved for users of applications created using open data, increased efficiency in public services, and the growth of related markets.

The Vickery (2011) and Shakespeare (2013)<sup>19</sup> studies provide valuable insights for estimating both direct and indirect market sizes based on the proportions established by these studies. Vickery calculated a ratio of 3.5 between the direct market and the total market, while Shakespeare came to a ratio of 3.78. To aggregate the direct and indirect market sizes of European Union countries, the average ratio derived from Vickery and Shakespeare's studies - **3.64** - was used. The same ratio for measuring the direct and indirect open data market size is applied within EU countries across various phases of open data development. Consequently, it can be assumed that the differences between the direct and indirect impacts of open data remain rather stable at different phases of development. Thus, the use of this coefficient in the Georgian context remains relevant.

### CALCULATIONS FOR GEORGIA

**Assuming that the total open data market in Georgia in 2022 was 655.7 million GEL, then the direct market size of open data will be 141.3 million GEL, while the indirect market size would be 514.4 million GEL.**

**Considering the expected GDP for 2023, the direct open data market size will be 153.9 million GEL, while the indirect market size would be 560.3 million GEL.**

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<sup>19</sup>S. Shakespeare, "Shakespeare Review: An Independent Review of Public Sector Information". May 2013. Available at: <https://shorturl.at/sxEG5>

## ESTIMATING OPEN DATA EMPLOYMENT AND GEORGIA'S RESULTS

To estimate the number of direct open data employees in the EU, a series of Spanish studies researching the number of people directly employed in the Spanish private open data sector (ASEDIE, 2019) in 2017 was used as an initial reference point.<sup>20</sup> The study covers companies that reuse both public and private sector data to generate added value for their products or services. According to the study, the share of open data employees in Spain was 0.11%. There is an assumption that countries in lower open data maturity groups employ 20% fewer employees in open data than the superior group. Therefore, the share of 0.11% will only be applied to countries that were - like Spain - considered to be open data trendsetters. Considering the 20% difference for countries at the lowest maturity level (Beginners), the direct employment rate for open data becomes 0.06%. Based on the most recent Open Data Maturity Report (2021),<sup>21</sup> Georgia ranked last among the evaluated 34 countries in all four ODM components and was classified as a Beginner. Consequently, the share of 0.06% open data employment is aligned with the Georgian context, as the country is included in the “Beginners” cluster.

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<sup>20</sup>“*Infomediary Sector 2019*”, ASEDIE. Available at: <https://data.europa.eu/en/news-events/news/asedie-publishes-annual-infomediary-sector-report>

<sup>21</sup> In the case of Georgia, this represents the latest results, as Georgia did not participate in the 2022 and 2023 Open Data Maturity assessment.

OPEN DATA MATURITY CLUSTER	SHARE OF OPEN DATA EMPLOYMENT	EXAMPLES
TRENDSSETTERS	0.11%	IRELAND, SPAIN
FAST-TRACKERS	0.09%	CYPRUS, POLAND
FOLLOWERS	0.07%	ESTONIA, LITHUANIA
BEGINNERS	0.06%	LIECHTENSTEIN

**SOURCE:** European Data Portal (2020)

#### CALCULATIONS FOR GEORGIA

Considering the employment numbers in Georgia (Geostat data showed that 1.28 million people were employed in Georgia in 2022 and 1.33 million in 2023), 770 people were directly employed in open data in 2022, and 800 in 2023.

Similar to the open data market size, the coefficient of 3.64 established from the Vickery (2011) and Shakespeare (2013) studies was taken as a measure of the proportion of direct and indirect employment in open data. Therefore, **as of 2022, open data had indirectly generated 2,802 jobs, and in 2023 - 2,912.**



## OPEN DATA MARKET GROWTH SCENARIOS IN GEORGIA

International practices for estimating the growth of the open data market size consider various forecast scenarios based on market size. The European Data Portal's study (2020) outlines both baseline and optimistic growth scenarios for the open data market. The baseline scenario assumes that the size of open data only grows at the same pace as GDP.

Open data experts and several studies often assume higher growth rates for the open data market size than GDP growth when forecasting open data market growth rate. However, calculations from past years do not verify this growth potential for open data. The International Data Corporation (IDC, 2019) suggests three growth rate scenarios, ranging between 4% and 16%, depending on the open data growth potential of different countries.<sup>22</sup> The scenario differs according to the open data growth potential of a country. This potential is assessed using indicators of open data maturity and its growth rate. Countries are categorized as lower-growth (4.3% growth rate), medium-growth (7.5% growth rate), or high-growth (15.7% growth rates). For instance, according to the Open Data Maturity Index 2021, Georgia is classified as a low-growth country<sup>23</sup> with a maturity level below 60 and with a growth rate of 4.3%.

In Georgia's case, this growth rate lags behind the planned GDP growth rate, and is therefore less useful for forecasting an optimistic scenario. For example, Georgia's GDP is forecasted to grow by 5.2% in 2024 and by 5% in the subsequent years.

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<sup>22</sup> E. Huyer et. al, "The Economic Impact of Open Data Opportunities for Value Creation in Europe", European Data Portal, January 2020, p. 26. Available at: <https://data.europa.eu/sites/default/files/the-economic-impact-of-open-data.pdf>

<sup>23</sup> Georgia is classified as a low-growth country with a maturity below 60

### FORECAST OF OPEN DATA MARKET GROWTH IN GEORGIA - BASIC SCENARIO

	2023	2024	2025	2026	2027	2028	2029	2030
<b>REAL GDP (GROWTH RATE %)</b>	6.5	5.2	5.0	5.0	5.0	5.0	5.0	5.0
<b>OPEN DATA MARKET SIZE (MILLION GEL)</b>	714.2	751.3	788.9	828.4	869.8	913.3	958.9	1,006.9

**SOURCE:** IDFI's calculations

Based on the percentage growth rates estimated for each step of open data maturity, it is possible to develop positive scenarios of open data market development. Specifically, positive scenarios reflect the expected market growth resulting from advancing to the stage of high growth opportunity at different points in time.

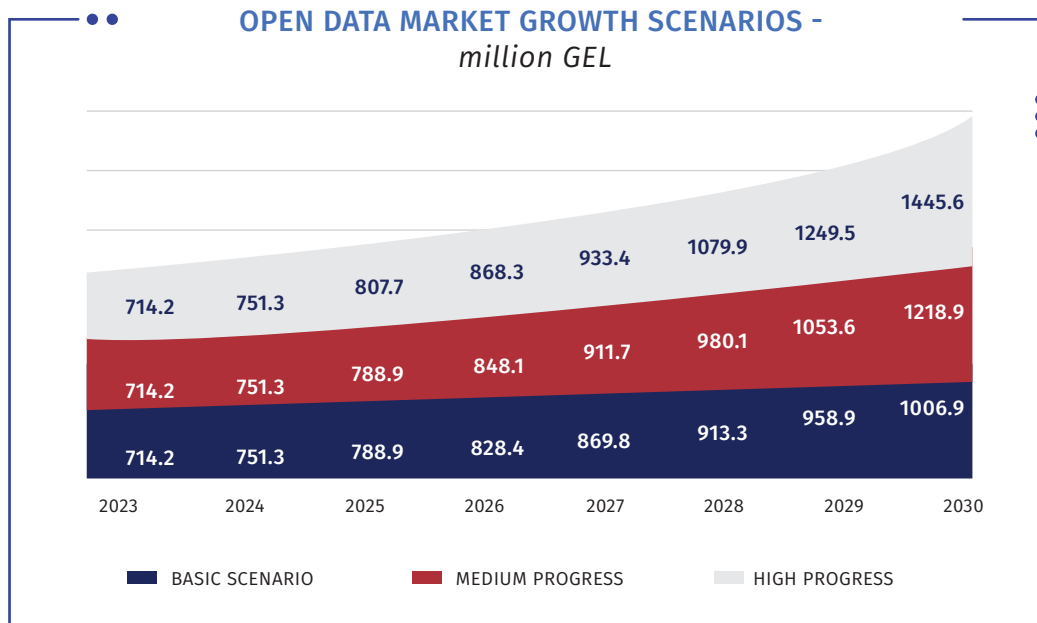
#### CALCULATIONS FOR GEORGIA

According to the basic scenario of open data market growth in Georgia, **by 2030, the open data market will be 1 billion GEL, 1.2 billion GEL in the case of medium progress, and 1.4 billion GEL in the high-progress scenario.**

### GEORGIA'S OPEN DATA MARKET SIZE GROWTH

	2024	2025	2026	2027	2028	2029	2030
<b>BASIC SCENARIO</b>	5.2%	5%	5%	5%	5%	5%	5%
<b>MEDIUM PROGRESS</b>	5.2%	5%	7.5%	7.5%	7.5%	7.5%	15.7%
<b>HIGH PROGRESS</b>	5.2%	7.5%	7.5%	7.5%	15.7%	15.7%	15.7%

**SOURCE:** IDFI's calculations

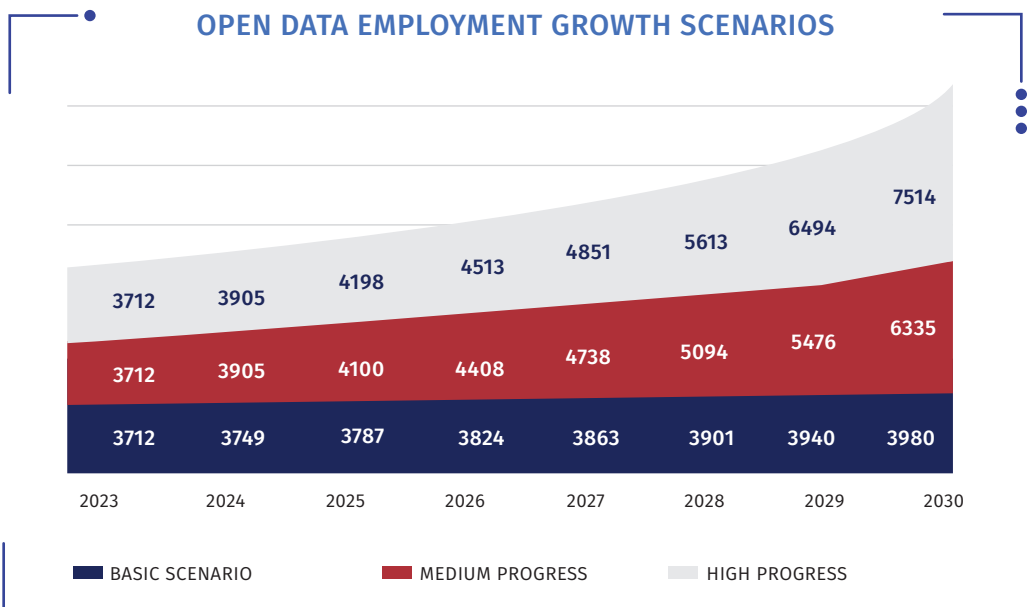


**SOURCE:** IDFI's calculations

Similarly to the open data market development scenarios, international practice also includes open data employment growth scenarios. The study conducted by the European Data Portal (European Data Portal, 2020) presents baseline and optimistic scenarios for open data employment growth. The baseline scenario assumes that open data will grow at the same rate as the overall employment indicator of the country. Based on the figures published by the National Statistics Office of Georgia in recent years, the expected rate of employment growth for research purposes was set at 1%. The optimistic growth scenarios use the same percentage indicators as those used for the open data market size growth scenarios. Therefore, optimistic scenarios are discussed with the underlying assumption that the value of the product created by the employee remains stable across the years.

### CALCULATIONS FOR GEORGIA

According to the **baseline scenario** of open data employment, 268 additional jobs will be created in Georgia by 2030. According to the **optimistic scenarios**, in the case of medium progress, 2,623 additional people will be employed in open data, and in the case of high progress - 3,802 people.



**SOURCE:** IDFI's calculations

# ASSESSMENT OF SECTORS WITH HIGH IMPACT AND POTENTIAL IN TERMS OF OPEN DATA USE

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To assess the impact of open data on the growth of a country's prosperity, it is helpful to determine the potential of different economic sectors. According to international practice, these sectors can be divided into those with **high impact** and **high potential**.

In the case of Georgia, the open data potential across economic sectors (based on NACE code) was assessed using EU methodology. According to this methodology, the sectors with high impact and potential are identified based on three different indicators: a) level of digitization, b) ability of open data supply to meet demand, and c) economic impact of the potential. Each sector is assessed on a scale of 1 to 3 for each of these indicators. Data from various studies (Price Waterhouse Coopers (2011), Harvard Business Review (2016), McKinsey (2015), and the Digital Marketing Institute (2018)) as well as expert opinions were considered for the assessment. Given that the aforementioned studies typically lack specific information about Georgia, the sectoral assessment for Georgia will be based on the following data available for these three indicators:

## A) DIGITIZATION LEVEL

To assess the level of digitization among companies, we utilized statistical data from the National Statistics Office of Georgia (Geostat), which provided information and communication technologies usage in enterprises as of January 1, 2023. This data was not presented on the Geostat website with a sectoral breakdown. Therefore, IDFI submitted a corresponding freedom of information request. Geostat provided the dataset of the “Use of Information-Communications Technologies in Enterprises” study, which contained primary data from a survey of 4,709 enterprises. Unfortunately, said dataset did not cover companies in all sectors. For example, the Geostat survey was not conducted among the companies of 7 different economic sectors (NACE). Among them were: rural forestry and fish farming, mining industry, state administration, and defense; Compulsory social security, education, health, and social service activities, arts, entertainment, and recreation, activities of households as employers; Production of undifferentiated goods and services by households for their own consumption. Therefore, based on the Geostat dataset, the digitization level of 13 sectors was assessed.

For the assessment of the digitization level of companies, the following characteristics were considered:

- **FIXED LINE CONNECTION TO THE INTERNET**

The criterion evaluates the share of enterprises by sector that had access to the Internet through a fixed line connection (DSL connection (ADSL, SDSL, VDSL), fiber optic technology (FTTP), cable technology, etc.).

- **WEBSITE USE**

The criterion evaluates the share of companies with a website.

- **SALES THROUGH WEBSITE OR APPLICATION**

The criterion evaluates the share of companies that had product/service sales through a website or application in the reporting period.

- **USE OF ERP SOFTWARE**

The criterion assesses the share of companies that utilize ERP software. ERP (enterprise resource planning) is software used by enterprises to manage everyday business activities such as accounting, procurement, project management, risk and resource management, etc. ERP software can be off-the-shelf software, tailored to the needs of the enterprise, or software developed independently by the enterprise. Examples include SAP, ORACLE, Microsoft Dynamics AX, Microsoft Dynamics NAV, JD Edwards.

- **CRM USE FOR DATA COLLECTION**

The criterion evaluates the share of enterprises that use CRM to collect data. CRM (Customer Relationship Management) is software that allows information about customers to be collected, stored, and used for various business functions.

According to the mentioned criteria, as a result of the statistical analysis of the dataset the digitization level of the sectors was determined and, accordingly, assigned between 1 and 3 points. The points were assigned based on the mean percentage score of the criteria. In particular, those sectors where the digitization level was less than 20% were assigned 1 point, 20% to 40% - 2 points, and 40% and more - 3 points. **40% and higher score was assigned to only two sectors: financial and insurance activities - 46%, and information and communication - 40%.**

## DIGITIZATION LEVEL OF COMPANIES, BY SECTOR

		FIXED-LINE CONNECTION TO THE INTERNET	WEBSITE	SALES THROUGH WEBSITES OR APPS	USE OF ERP SOFTWARE	CRM USE FOR DATA COLLECTION	AVERAGE
C	MANUFACTURING INDUSTRY	79%	30%	4%	20%	6%	<b>28%</b>
D	SUPPLY OF ELECTRICITY, GAS STEAM, AND CONDITIONED AIR	87%	38%	0%	40%	17%	<b>37%</b>
E	WATER SUPPLY; SEWAGE, WASTE MANAGEMENT, AND DECONTAMINATION ACTIVITIES	91%	28%	3%	22%	9%	<b>31%</b>
F	CONSTRUCTION	70%	23%	3%	13%	5%	<b>23%</b>
G	WHOLESALE AND RETAIL TRADE; VEHICLE AND MOTORCYCLE REPAIR	70%	22%	7%	19%	8%	<b>25%</b>
H	TRANSPORT AND STORAGE	69%	25%	2%	18%	8%	<b>25%</b>
I	ACCOMMODATION AND FOOD DELIVERY ACTIVITIES	76%	35%	17%	25%	13%	<b>33%</b>
J	INFORMATION AND COMMUNICATION	88%	50%	10%	30%	16%	<b>40%</b>
K	FINANCE AND INSURANCE ACTIVITIES	90%	61%	13%	32%	34%	<b>46%</b>
L	ACTIVITIES RELATED TO REAL ESTATE	62%	13%	1%	8%	3%	<b>18%</b>
M	PROFESSIONAL SCIENTIFIC AND TECHNICAL ACTIVITIES	79%	32%	1%	18%	12%	<b>28%</b>
N	ADMINISTRATIVE AND SUPPORT SERVICE ACTIVITIES	76%	31%	8%	16%	3%	<b>27%</b>
S	OTHER SERVICES	69%	23%	8%	23%	23%	<b>29%</b>

**SOURCE:** Geostat

### B) ABILITY OF OPEN DATA SUPPLY TO MEET DEMAND

Regarding the ability of open data supply to meet demand, the currently available datasets, categorized by sector, were evaluated. Specifically, for research purposes, we primarily examined publicly available datasets, as well as data maintained by the public sector. The public sector serves as the primary aggregator of open data, including data from the private sector, in the country. Thus, the public sector possesses greater capabilities and responsibilities to systematically process and supply open data.

Within the scope of the study, electronic resources that potentially held the highest number of datasets were studied. Among them were the Open Data Portal ([data.gov.ge](http://data.gov.ge)), the website of the unified state registry, and the website of the National Statistics Office. In total, the research team studied in detail 1,000 different datasets found at these portals. To assess the capacity to meet demand for open data across sectors, for each identified dataset, the team assessed to which sector the specific dataset belonged, the openness of the format, the timeliness of the dataset, and the completeness (whether the dataset contained metadata). Because the datasets were found on the same portals, their general characteristics were often similar. For example, the datasets found on Geostat's

website were updated and contained metadata. The mentioned fact does not change based on different datasets depending on the sector, and therefore, its impact on the assessment is reflected equally on all sectors. Taking this into account, scores were only influenced by quantitative indicators of datasets published by sector, including datasets published in open, machine-readable format.

Scoring was done based on sector-specific percentages in common and open-format datasets. There were frequent cases when one particular dataset, with its content, was related to two or more different sectors. Therefore, the sum of the percentages could exceed 100%.

Considering the lack of datasets published in open formats, **the maximum scores (3 points) were assigned to the finance and insurance sector, the education sector, and the public administration sector.**

PUBLICLY AVAILABLE DATABASES, BY SECTOR						
		NUMBER	% SHARE IN AVAILABLE DATABASES	DATABASES IN AN OPEN FORMAT	% SHARE IN DATABASES PUBLISHED IN AN OPEN FORMAT	AVERAGE SCORE
A	AGRICULTURE, FORESTRY, AND FISH FARMING	329	33%	3	2%	17%
B	MINING INDUSTRY	206	21%	1	1%	11%
C	MANUFACTURING INDUSTRY	196	20%	1	1%	10%
D	SUPPLY OF ELECTRICITY, GAS STEAM, AND CONDITIONED AIR	203	20%	1	1%	10%
E	WATER SUPPLY; SEWAGE, WASTE MANAGEMENT, AND DECONTAMINATION ACTIVITIES	187	19%	2	1%	10%
F	CONSTRUCTION	190	19%	3	2%	10%
G	WHOLESALE AND RETAIL TRADE; VEHICLE AND MOTORCYCLE REPAIR	175	18%	1	1%	9%
H	TRANSPORT AND STORAGE	176	18%	1	1%	9%
I	ACCOMMODATION AND FOOD DELIVERY ACTIVITIES	167	17%	1	1%	9%
J	INFORMATION AND COMMUNICATION	197	20%	5	3%	11%
K	FINANCIAL AND INSURANCE ACTIVITIES	237	24%	49	31%	27%
L	ACTIVITIES RELATED TO REAL ESTATE	174	17%	1	1%	9%
M	PROFESSIONAL SCIENTIFIC AND TECHNICAL ACTIVITIES	173	17%	15	10%	13%
N	ADMINISTRATIVE AND SUPPORT SERVICE ACTIVITIES	199	20%	25	16%	18%
O	PUBLIC ADMINISTRATION AND DEFENSE; MANDATORY SOCIAL SAFETY	241	24%	39	25%	24%
P	EDUCATION	263	26%	33	21%	24%
Q	HEALTH AND SOCIAL SERVICE ACTIVITIES	315	32%	11	7%	19%
R	ARTS, ENTERTAINMENT, AND RECREATION	230	23%	2	1%	12%
S	OTHER SERVICES	175	18%	1	1%	9%
T	ACTIVITIES OF HOUSEHOLDS AS EMPLOYERS; PRODUCTION OF UNDIFFERENTIATED GOODS AND SERVICES BY HOUSEHOLDS FOR THEIR OWN CONSUMPTION	232	23%	1	1%	12%

**SOURCE:** IDFI's calculations



### C) ECONOMIC IMPACT OF THE POTENTIAL

To assess the economic impact potential of open data, the team considered indicators related to the current economic development of specific sectors and the size of the open data market. Scores ranging from 1 to 3 were assigned, taking into account the open data market's size generated by each sector relative to their respective GDP. The assessment operated on the assumption that sectors with a more substantial contribution to both GDP and the open data market hold a greater potential for economic impact.

The estimation used the weights of each sector determined in the open data market size according to the EU study. In order to bring the mentioned sectoral weights in line with the reality of Georgia, the weights of the country were determined by calculating the proportional share of the specific sector in the gross domestic product of Georgia and the European Union.

According to the EU study, content-wise the sectors are divided into 10 large sectors, and the weights in the open data market size are determined according to these groups. For example, the industry sector includes the mining and processing industry sectors. Trade and transport combines three sectors: 1) wholesale and retail trade; automobile and motorcycle repair, 2) transportation and storage, 3) accommodation and food supply activities.

To ensure the accuracy of the research methodology, the weight of the sectors in the open data market size for the example of Georgia is calculated according to the sectoral division proposed by the European Union. According to the mentioned calculation, the largest weight (25.8%) in the size of the open data market belongs to the public administration sector.

To ensure the accuracy of the study methodology, in the example of Georgia, the weight of sectors in the size of the open data market is calculated according to the sectoral division proposed by the European Union as well. According to this calculation, **the largest weight (25.8%) in the open data market is allocated to the public administration sector.**

## SECTOR WEIGHT IN THE OPEN DATA MARKET SIZE

AGRICULTURE, FORESTRY, AND FISH FARMING	2%
INDUSTRY	11.3%
CONSTRUCTION	6.2%
TRADE AND TRANSPORT	19%
INFORMATION AND COMMUNICATION	8.7%
FINANCE AND INSURANCE ACTIVITIES	10.1%
ACTIVITIES RELATED TO REAL ESTATE	12.5%
PROFESSIONAL, SCIENTIFIC, AND TECHNICAL ACTIVITIES	3.4%
PUBLIC ADMINISTRATION	25.8%
ARTS, ENTERTAINMENT, RECREATION, ETC.	1%

**SOURCE:** IDFI's calculations

## SECTORS WITH HIGH IMPACT AND POTENTIAL IN TERMS OF OPEN DATA USE IN GEORGIA

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The results of the assessment of sectors with high impact and potential in open data according to the defined indicators are presented in the table below. Final assessment results are grouped by sectors according to the level of digitization and potential economic impact assessment. The table presents final assessment results by groups of sectors according to the level of digitization and potential economic impact assessment. For example, the digitization level did not cover every sector, and weights of sectors in the open data market size were determined according to grouped sectors.

Based on the cumulative data of all three criteria, **the finance and insurance sector received the highest assessment score.** Although the public administration sector was evaluated based on only two criteria due to a lack of data for assessing its digitization level, even with the assumption of the lowest possible score, it would still rank among the sectors with the highest impact and potential. Therefore, **the methodology adapted for Georgia identified financial and insurance activities, public administration, and information and communication sectors as sectors with the highest potential and impact in terms of open data use, and trade, transport and industry as sectors with medium potential and impact.**

OPEN DATA POTENTIAL ASSESSMENT (NACE) BY SECTORS	A	B	C	SUM
<b><i>Sectors with high impact and potential</i></b>				
FINANCE AND INSURANCE ACTIVITIES	3	3	2	<b>8</b>
PUBLIC ADMINISTRATION	-	3	3	<b>6</b>
INFORMATION AND COMMUNICATION	3	2	1	<b>6</b>
<b><i>Sectors with medium impact and potential</i></b>				
TRADE AND TRANSPORT	2	1	2	<b>5</b>
INDUSTRY	2	1	2	<b>5</b>
<b><i>Sectors with low impact and potential</i></b>				
CONSTRUCTION	2	1	1	<b>4</b>
ACTIVITIES RELATED TO REAL ESTATE	1	1	2	<b>4</b>
PROFESSIONAL, SCIENTIFIC, AND TECHNICAL ACTIVITIES	2	2	1	<b>4</b>
ARTS, ENTERTAINMENT, RECREATION, AND OTHER SERVICES	2	1	1	<b>4</b>
AGRICULTURE, FORESTRY, AND FISH FARMING	-	1	2	<b>3</b>

**SOURCE:** IDFI's calculations

# NEEDS AND OPINIONS OF COMPANIES OPERATING IN GEORGIA ON THE ECONOMIC POTENTIAL OF OPEN DATA - QUESTIONNAIRE RESULTS

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For the purpose of studying the existing needs, opportunities, and potential with regard to the use of open government data by private companies, IDFI additionally conducted an online survey, focus group meetings and interviews. Consequently, a combination of qualitative and quantitative data gathering methods were used. The study was based on the World Bank's Open Data Readiness Assessment User's Guide (ODRA)<sup>24</sup> and the European Data Portal's Re-using Open Data study<sup>25</sup> methodology adapted to the Georgian context.

The sectors with high impact and potential, as revealed by IDFI, were chosen for the quantitative study, and an online questionnaire consisting of 25 questions was prepared, aimed at collecting information on the attitudes of private companies with regard to open data in the following directions:

a) Private sector capacities; b) High-value data; c) Barriers to data use; d) Engagement and cooperation.

To ensure a high rate of participation in filling out the online questionnaire, the research group sent it to up to 7,000 companies via various communication methods. In the end, through the online dissemination of the questionnaire and individual online interviews, 100 companies participated in the survey. Additionally, up to 40 company representatives shared more detailed thoughts and opinions on the importance, needs, and specific useful datasets with the researchers through online interviews and focus group meetings.

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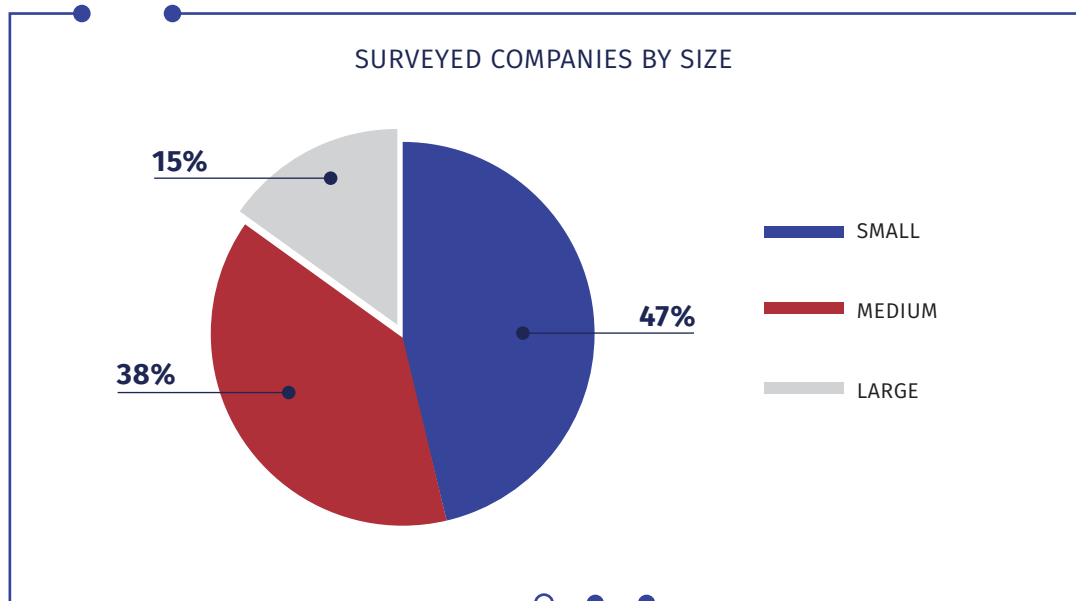
<sup>24</sup> "Open Data Readiness Assessment User's Guide", World Bank Group, April 2015. Available at: [http://opendatatoolkit.world-bank.org/docs/odra/odra\\_v3.1\\_userguide-en.pdf](http://opendatatoolkit.world-bank.org/docs/odra/odra_v3.1_userguide-en.pdf)

<sup>25</sup> J. Berend et. al, "Re-using Open Data: A study on Companies Transforming Open Data into economic & societal value", European Data Portal, Luxembourg, July 2020. Available at: [https://data.europa.eu/sites/default/files/re-using\\_open\\_data.pdf](https://data.europa.eu/sites/default/files/re-using_open_data.pdf)

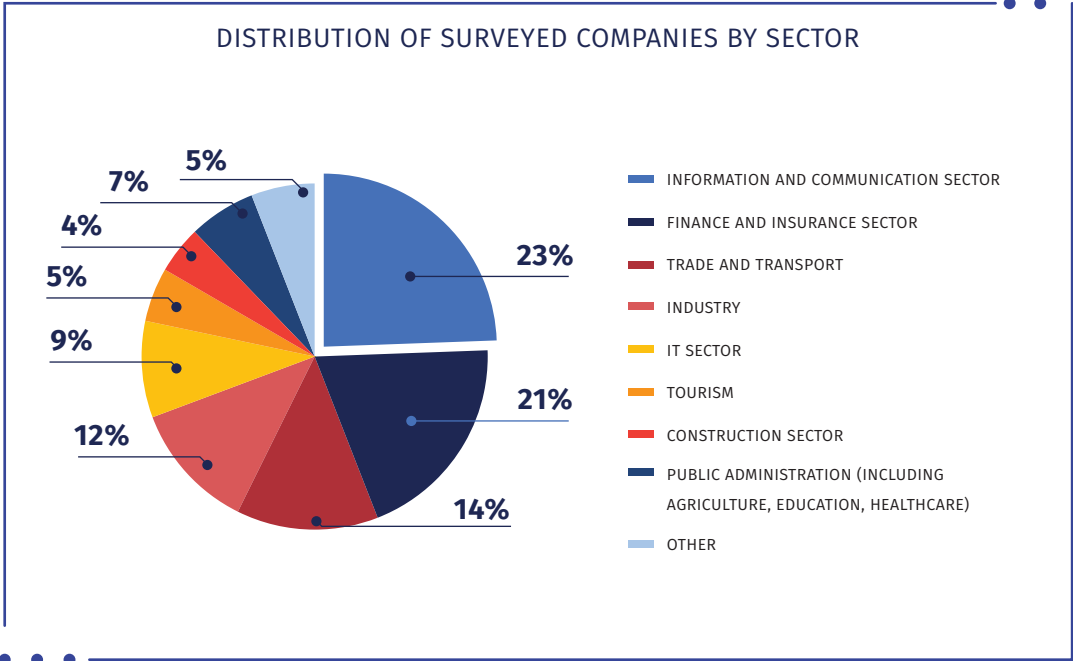
Due to a low rate of participation in the survey by the private sector, the results of the quantitative study cannot be considered representative and cannot be generalized, especially in the cases of individual target sectors. Nevertheless, the results are useful for showing general trends. Additionally, various company representatives from such sectors named similar problems, needs, and desired datasets during the interviews, which indicates that the trends revealed as a result of the study are relevant with regard to individual sectors and appropriately reflect the needs of sector representatives.

### GENERAL DATA ON SURVEY PARTICIPANTS

47% of survey participants stated that they represented small enterprises, 38% - medium-size enterprises, and 15% represented large companies. Among the respondents, the largest share were from the information and communication sector (23%) and the finance and insurance sector (21%).



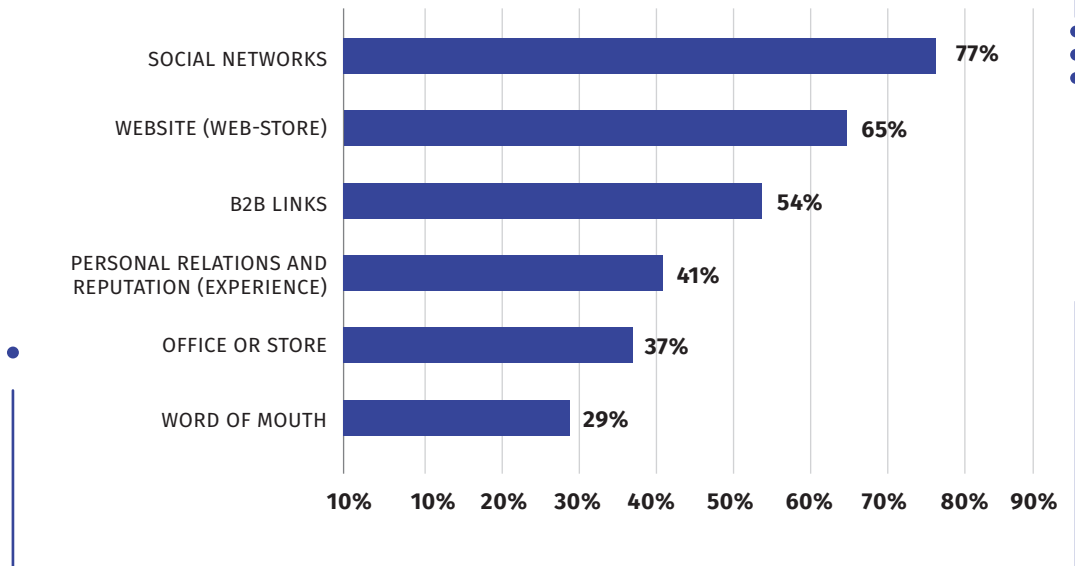
**SOURCE:** IDFI's online survey



**SOURCE:** IDFI's online survey

Aside from the sector and size of companies, the survey also aimed to gather information on various characteristics of their activities that could have an impact on the open data needs study, such as the main source of income of the company, the means used for product advertisement, services and products created by the company, and others. For example, according to survey results, the largest share of companies used social networks to advertise their products.

## WHAT MEDIUMS DO YOU USE TO ADVERTISE PRODUCTS?

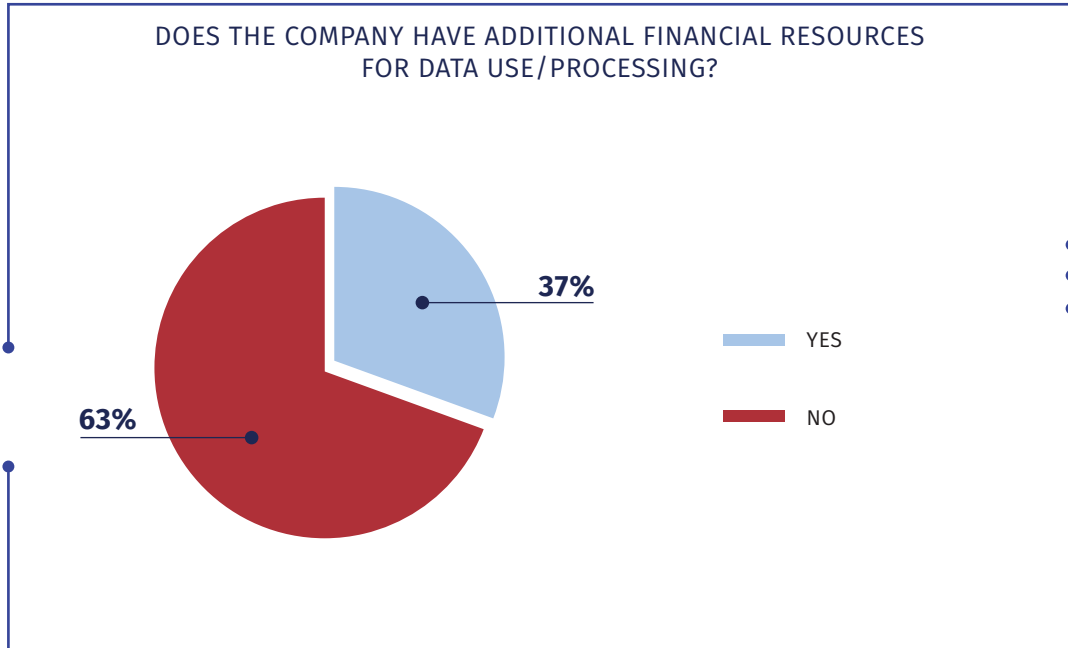


**SOURCE:** IDFI's online survey

An important indicator for evaluating the capacities of companies with regard to open data is how much financial or human resources the company has allocated in this direction.

63% of surveyed companies stated that they had not allocated any additional resources to the use or processing of data. The remaining respondents (37%) stated that their company had allocated additional financial resources, the source of which, in most cases, were internal funds. Only a media representative noted that their company had sought external financial resources for this purpose.



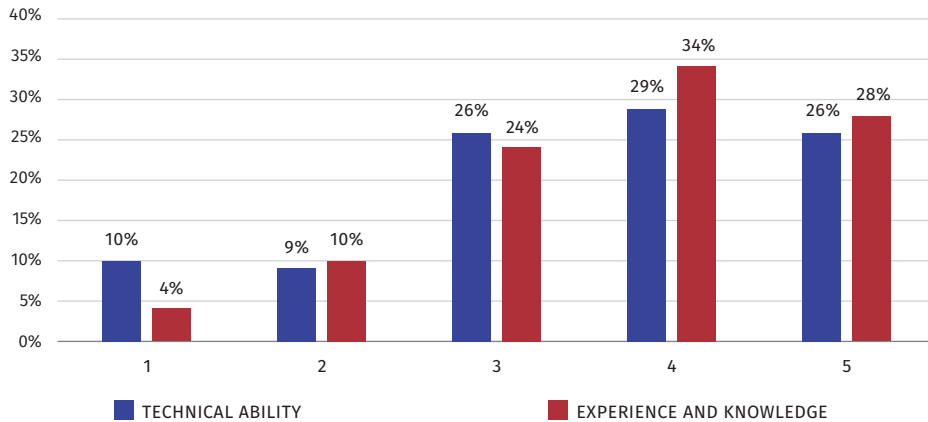


**SOURCE:** IDFI's online survey

### COMPANIES ON THEIR CAPACITIES WITH REGARD TO OPEN DATA

According to the results, a large part of company representatives have a high self-assessment on the technical capacities, experience, and knowledge in their companies with regard to open data. For example, on a 5-point scale, 55% of the respondents rated the technical capacities of their companies at 4-5, while 62% rated their experience and knowledge in the processing of data with 4-5 points.

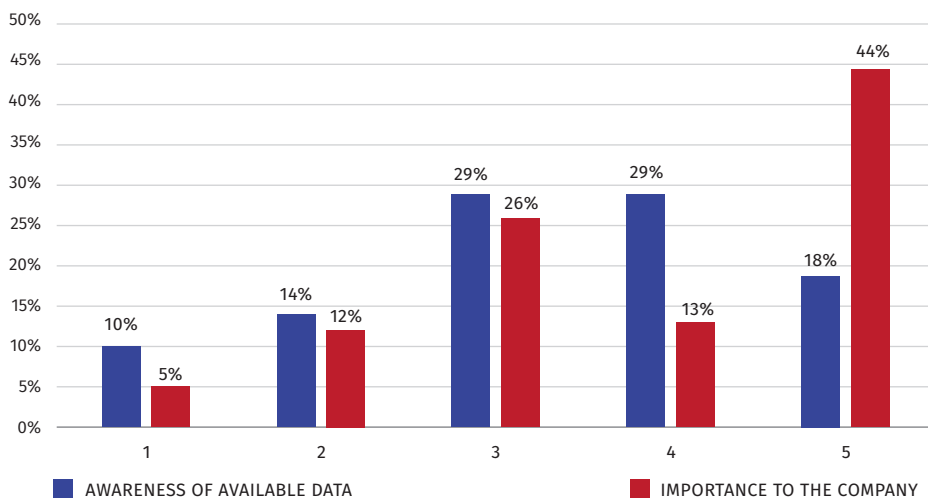
EVALUATION OF COMPANIES ON THEIR TECHNICAL ABILITY, EXPERIENCE, AND KNOWLEDGE IN TERMS OF PROCESSING OF DATA, ON A 1-5 SCORE



**SOURCE:** IDFI's online survey

44% of the surveyed companies state that the availability of government data is very important to them (5 points), although only 18% are fully informed about the available data.

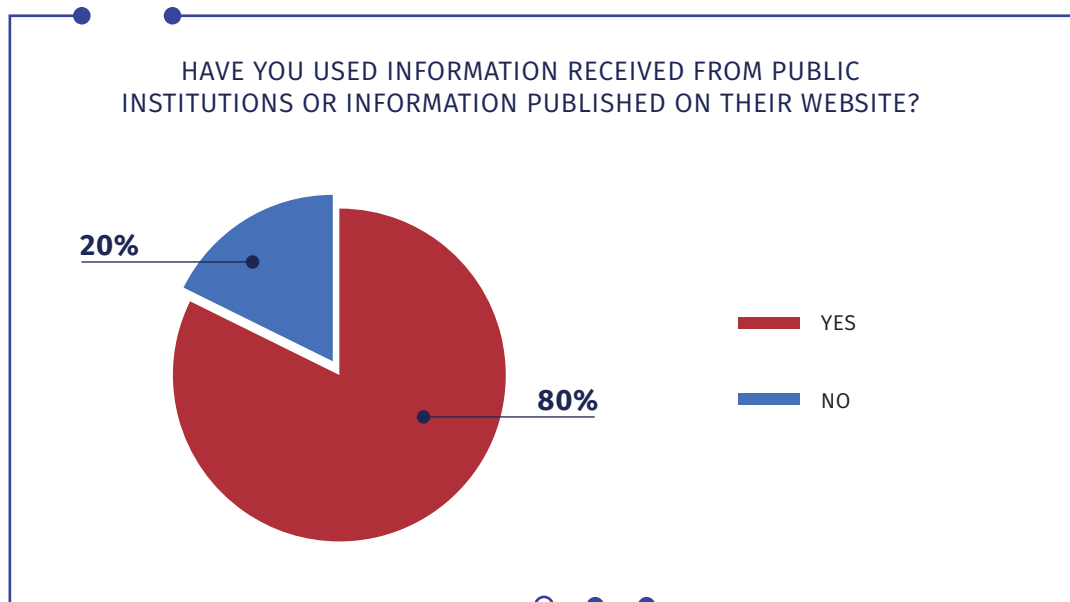
EVALUATION OF COMPANIES ON WHETHER THEY HAVE INFORMATION ABOUT GOVERNMENT DATA AVAILABLE IN GEORGIA AND WHETHER IT IS SIGNIFICANT FOR THEM, ON A 1-5 SCALE



**SOURCE:** IDFI's online survey

## OPEN DATA USE PRACTICE IN COMPANIES

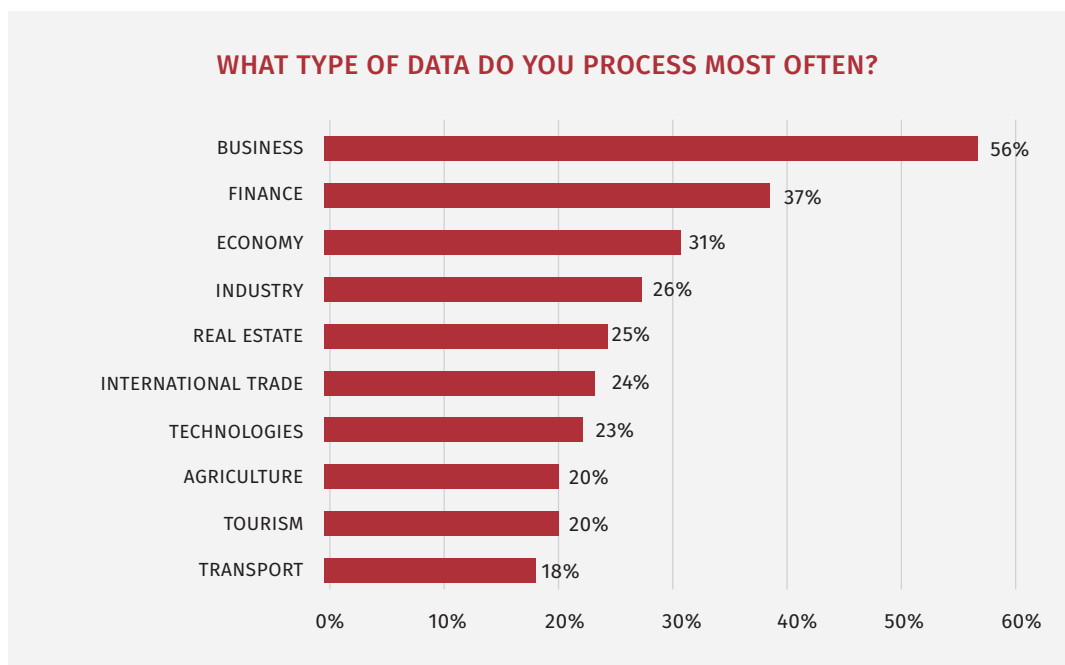
The survey results reflecting the existing practice with regard to the use of open government data are of interest. Around 20% of the respondents stated that their company did not use open data received from public institutions or published on the websites of public institutions at all.



**SOURCE:** IDFI's online survey

According to survey results, **respondent companies most frequently process and are interested in data related to business, finances, and the economy. Additionally, company interest in data varies by sector.** For example, companies in the agriculture and industrial sectors expressed the most interest in open government data concerning agriculture. Databases related to finances, real estate, healthcare, as well as agriculture were the most important to the **finance and insurance sector**. The categories noted by respondents representing the **information and communication sector** are relatively diverse. A majority expressed an interest in and noted that they work frequently with data of almost every category offered in the survey. Among the information and communication sector, companies that operate in the **IT direction** are more interested in data related to technology. The **trade and transport sector** most often uses international trade (export/import) as well as transport data.

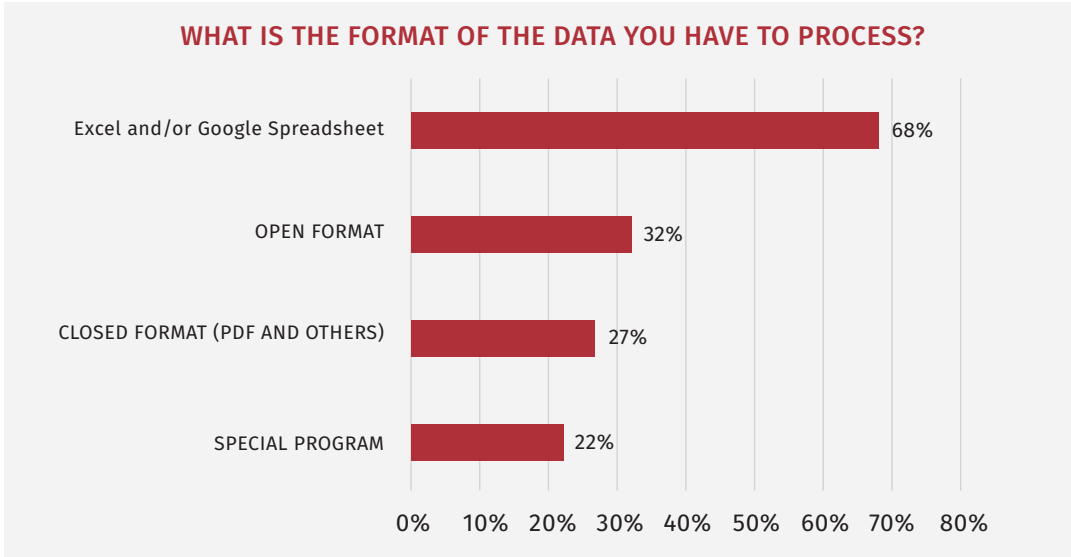
It should be noted that, apart from open government data related to business, finances, or the economy, at least one respondent of each sector in the survey expressed an interest in tourism, agriculture, geospatial/maps, demographic and social issues, and transport data.



**SOURCE:** IDFI's online survey

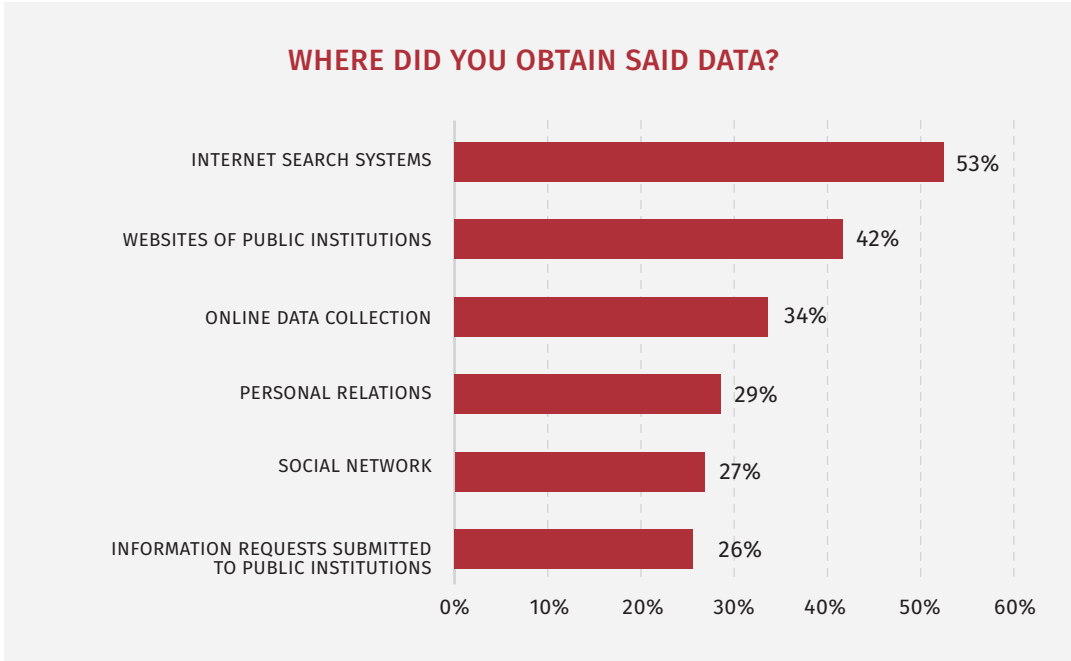
Within the scope of the study, respondents were asked to name specific kinds of data that they had processed or used recently, in addition to general directions. The majority of the named datasets are related to the specifics of their activities, company finances, product/service surveys with customers, and other datasets for internal use. In terms of the use of open government data, **the companies used data from the National Statistics Office, the State Procurement Agency, and the Public Registry with the most frequency in the recent period.** Among these, the Geostat imports-exports dataset, data from the public and business subject registries, and the public procurement data were sought after the most. Representatives of various sectors also named the datasets of the National Bank, the Public Service Development Agency, and the Service for Accounting, Reporting and Auditing Supervision. There are frequent cases when companies had used their own resources to find and process identification and contact information of various legal entities in the recent period.

A large part (68%) of the surveyed companies noted that they work with data in the EXCEL format. Approximately one in three respondents stated that they work with data in open formats. Specifically, processing primary data, produced and published for the corresponding calculation of the electronic table, in an electronically processable format, for example CSV, XML. A majority of the respondents who stated that they work with data in open formats belong to the information and communication and IT sectors.



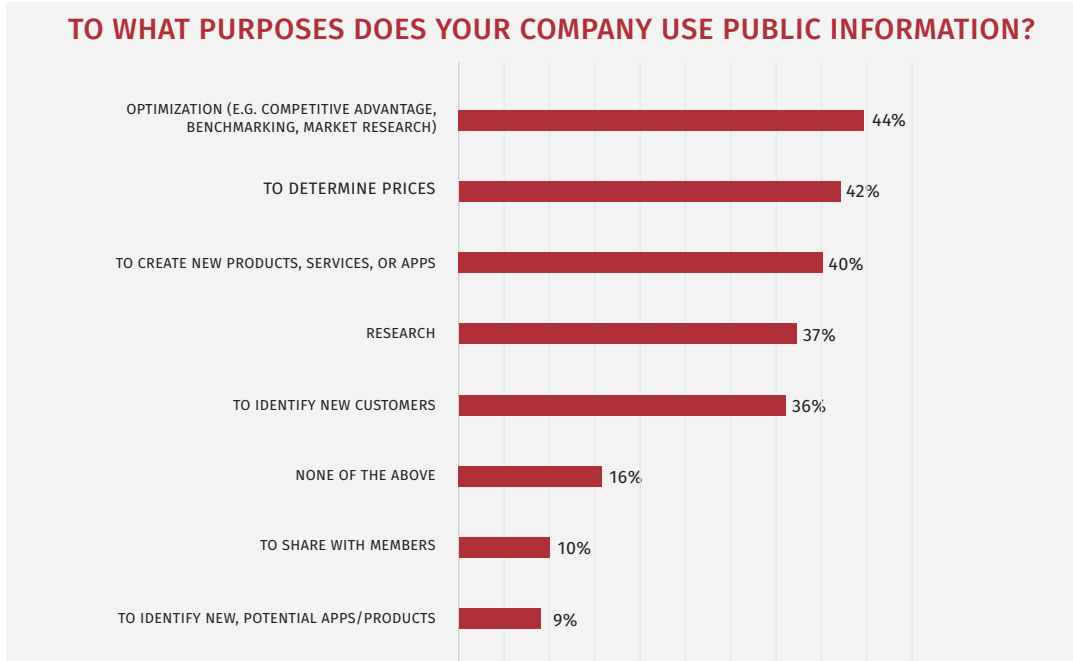
**SOURCE:** IDFI's online survey

Respondents named internet search systems and gathering data online as the main source of data. Only 42% used the websites of public institutions for the purpose of gathering data. Additionally, one in four respondents stated that they had never utilized data received from or found on the websites of public institutions.



**SOURCE:** IDFI's online survey

A large part of the surveyed companies (44%) uses information obtained from public institutions for market research, benchmarking, and generating competitive advantage. 42% of the companies stated that government data assists them in setting prices, 36-40% use the data to identify new products and customers.



**SOURCE:** IDFI's online survey

### DATASETS IMPORTANT TO THE PRIVATE SECTOR

Within the framework of in-depth interviews and focus groups, IDFI identified datasets that companies desired to be available to them based on their business needs. For the named datasets to be available, public institutions will need to carry out a number of actions: canceling paid services for access to datasets, making existing datasets available in open format (with API access), enriching existing datasets with additional categories, allowing access to datasets containing personal information, processing new data, structuring data into datasets, and others.

During the presentation of the study's results with the representatives of the public and private sectors, additional opinions were expressed emphasizing the importance of publishing data that is public according to legislation in open formats. Aligned with the goals of personal data protection, the significance of anonymizing personally identifiable data when datasets and registries are made accessible was emphasized. To achieve this, it was proposed that if datasets are accessible through an API, it would automatically facilitate granting access to the datasets to other interested parties while safeguarding personal data. During the in-depth interviews and focus groups, along with the datasets considered a priority for the private sector, the significance of public auctions and the

availability of data from the Legislative Herald of Georgia in an open format were additionally highlighted. It was also noted that the contemporary trend today focuses on the availability of transactional level data, and it would be beneficial to implement these approaches in Georgia as well. Furthermore, it was opined that along with publishing the datasets in a machine-readable format, they should be provided as bulk downloads so that third parties have complete access to data/information.

The banking sector shared the most detailed information with the research team on their needs with regard to the availability of government datasets. Its representatives sent IDFI a document jointly developed by individual companies, where the data to which they need access to improve banking services and protect the interests of customers are described in a structured way, by public institution (Public Registry, Ministry of Health, Ministry of Education and Science, Ministry of Environment and Agriculture, Ministry of Internal Affairs, Ministry of Justice, Revenue Service, State Procurement Agency, National Wine Agency, Geostat, Tbilisi City Hall, Ministry of Finance, Judicial System, Chamber of Notaries, National Enforcement Bureau). The majority of the data desired by the banking sector is related to the ability to have access to additional personal information of their customers.

Nevertheless, the information reflected in the document also covers datasets, the content of which represents open government data, with their availability being important both for the banking sector and for the development of the country's open data ecosystem in general.



As part of the qualitative study, datasets that would benefit companies across various sectors, but are currently difficult to access, were identified in addition to those in the banking sector. Representatives from the insurance sector highlighted during interviews the importance of accessing detailed healthcare, demographic, property, meteorological, tourism, finance, and other economic parameter data. For instance, they emphasized the challenges in obtaining comprehensive statistics regarding healthcare service usage and medication consumption. This difficulty primarily stems from restricted access to the healthcare portal, which is predominantly available to the medical sector due to technical constraints. Regarding demographic data, the insurance sector underscored the need for comprehensive mortality statistics, advocating for more detailed insights into the causes of mortality. In terms of property data, they expressed challenges in determining real estate market prices across different regions and in distinguishing between insured and uninsured properties based on cadastral codes, as multiple properties can be registered under the same code. Moreover, they stressed the importance of meteorological data for insurance products, noting the limited access to such data within the country.

*"In one of our agriculture projects, we required weather information from meteorological centers, which proved to be quite challenging to obtain. It remains unclear whether meteorological maps, which are already well-developed in other countries, are produced here. These maps are essential for any insurance product." - Opinion expressed by one of the respondents.*

Representatives of relatively **small businesses in the finance and insurance sector** emphasized the significance of gaining detailed access to economic indicators with demographic characteristics. According to their assessment, only large companies have collected such data over their long-term operations, making it challenging for startup businesses to develop services/products tailored to specific age groups, regions, and different market segments.

The datasets mentioned by representatives of the **information and communication sector** pertain to cadastral maps, infrastructure projects, information on communications between business entities and public officials, public procurement, and tourist and transport data. For instance, a representative of the telecommunications sector highlighted the absence of general plans for individual neighborhoods and comprehensive zonal divisions. They also noted the lack of demarcation for archaeological zones and cultural monuments. Additionally, it was mentioned that no strategic plan exists containing data on planned street rehabilitation works, bridge constructions, and other state and municipal infrastructure projects. Representatives from the **IT sector** mentioned during inter-

views that, for the purpose of attracting professional staff in their field, it is crucial to have access to information about specialists and average salaries categorized by regions, cities, and villages. Furthermore, they emphasized the importance of having maximally detailed information on tourists, passenger flows in transport, and POS (Point-of-Sale) terminals based on their operational requirements.

For representatives of the **trade sector**, data on international trade (exports/imports) was deemed the most crucial. They mentioned that the dataset provided by the National Statistics Office lacks important information regarding specific products, and obtaining the required data in the desired format is a paid service. Additionally, sector representatives largely identified datasets related to the production and consumption of products relevant to their businesses. For instance, one company representative highlighted the significance of having access to data related to fishing (especially in the Black Sea) and the sales of fish products during the startup phase of their business. They emphasized the importance of making informed decisions based on specific information.

Representatives from various sectors highlighted the significant challenge of accessing government data, particularly when it was only available through paid services. For instance, datasets from Geostat related to specific products and municipalities, as well as various data and registries from the Public Registry, including those concerning property and income declarations, were cited as examples. It's worth noting that the perspectives of large and small companies differed on this issue. Large companies prioritized access to specific datasets, even if it required payment, as it ensured data quality and timely updates. However, for small companies, paid services represented a considerable expense.

**The most critical open government datasets identified by each sector include the registries of the National Public Registry Agency, the portal of the State Procurement Agency, and the Reporting Portal.** Many respondents emphasized that making these datasets and portals available via Application Programming Interfaces (APIs) would simplify data processing for companies and facilitate the development of desired applications.

## THE DATASETS IDENTIFIED THROUGH INTERVIEWS, THE AVAILABILITY/ DEVELOPMENT OF WHICH IS DESIRED BY COMPANIES

### FINANCE AND INSURANCE SECTOR

DATASET	LIKELY ADDRESSEE INSTITUTION	COMMENTS
Complete statistics on the use of healthcare services and medication	Ministry of Health	The insurance sector has a limited access to the healthcare portal, where this kind of data could be found/processed
Complete mortality statistics	Ministry of Health/National Statistics Office	With a detailed classification of cause of mortality
Market prices dataset of real estate by regions	National Bank/National Statistics Office	
Dataset of insured and uninsured properties	National Agency of Public Registry	The ability to discern the identification of insured and uninsured properties by cadastral codes
Meteorological data	LEPL National Environmental Agency	
Detailed availability of economic indicators according to demographic characteristics	Ministry of Economy and Sustainable Development/ National Statistics Office	
Public safety data	Ministry of Internal Affairs	Crime statistics by regions and settlements
Money laundering and financing of terrorism risk assessment report	Financial Monitoring Service/ National Bank	
Dataset of non-resident persons that are beneficiaries of the company	National Agency of Public Registry	
Regional distribution of persons with disabilities, by type of disability	Ministry of Health	

Detailed dataset of educational institutions	Ministry of Education and Science	With indication of accreditation status, numbers of students and teachers
Farming dataset	Ministry of Environmental Protection and Agriculture	
Cattle dataset	Ministry of Environmental Protection and Agriculture	
Slaughterhouses dataset	Ministry of Environmental Protection and Agriculture	
Veterinary vaccination dataset	Ministry of Environmental Protection and Agriculture	
Dairy producers dataset	Ministry of Environmental Protection and Agriculture	
Registry according to plots/villages (Kindzmarauli, Kvanchkara zone, etc.)	Ministry of Environmental Protection and Agriculture	
Registry of irrigation plots	Ministry of Environmental Protection and Agriculture	
Registry of mountainous regions	Ministry of Environmental Protection and Agriculture	
Parking spots of Tbilisi parking	Tbilisi City Hall	
Minibus dataset	Municipality	
Food facilities dataset	National Food Agency	
Dentist clinics dataset	Ministry of Health	
Beauty salons dataset	Municipality	
National resources dataset	Ministry of Environmental Protection and Agriculture	
Construction permits dataset	Municipality	
Audit reports dataset	Service for Accounting, Reporting and Auditing Supervision	

Detailed statistics on emigrants	Ministry of Internal Affairs	Emigrant statistics by countries and emigration timeline. Entry of non-residents by month
Dataset on permits issued to petrol and gas stations	Ministry of Finance	
Construction status of construction projects	Tbilisi City Hall	
Information on zonal parking services	Tbilisi City Hall	
Statistics on passengers of municipal transport, by routes	Tbilisi City Hall	
Number of passengers waiting at municipal stops, by stops	Tbilisi City Hall	
The number of vehicles moving on the central streets and central highways of Tbilisi, by calendar months	Tbilisi City Hall	
Passenger numbers at metro stations, by weekdays and hours	Tbilisi City Hall	
Traffic movement statistics	Tbilisi City Hall	Density by days, hours
Detailed statistics of kindergartens	Tbilisi City Hall	Number of registered children, as well as the number of staff employed in kindergartens
Dataset of registered domestic pets	Municipalities	Species, breed
Bioagriculture dataset		

## INFORMATION AND COMMUNICATION SECTOR

DATASET	LIKELY ADDRESSEE INSTITUTION	COMMENTS
General plans and complete zonal divisions, by individual neighborhoods	National Agency of Public Registry	
Dataset of archaeological sites and buildings in the protection zone of the Cultural Protection Agency	Ministry of Culture and Monument Protection, National Agency of Public Registry	
Dataset of planned infrastructure projects	Ministry of Infrastructure, Municipality	(Strategic plan outlining street renovation, bridge construction, etc.)
State buildings dataset	National Agency of State Property/National Agency of Public Registry	
Business subjects dataset	National Agency of Public Registry, National Statistics Office	Geostat data is oftentimes in need of updating and does not contain precise information on active companies
Statistics of IT specialists and average salaries	National Statistics Office	By villages, cities, and regions
Tourism data by regions	National Tourism Administration	Which region is visited by citizens of which country
Information on the passenger flows in transport	Municipality	
The most detailed possible information on mobile terminals	Municipality	
Communication data of civil servants	Civil Service Bureau	
Dataset of changes in categories of land plots	National Agency of Public Registry/ Municipality	

## TRADE AND TRANSPORT SECTOR

DATASET	LIKELY ADDRESSEE INSTITUTION	COMMENTS
Data on international trade (exports/imports)	National Statistics Office	The most detailed overview by products
Detailed information on inflation	National Bank	
Detailed statistics on the production and purchasing of individual products	National Statistics Office	An example provided was the statistics on fishing in the Black Sea and statistics related to the sale of fish products
Information on the passenger flows in transport	Municipalities	
Intercity transport schedule	Municipalities	

## INDUSTRIAL SECTOR

DATASET	LIKELY ADDRESSEE INSTITUTION
Dataset of enterprises, warehouses, and distribution companies	National Statistics Office
Detailed dataset of freight turnover	Revenue Service/National Statistics Office
Direct foreign investment dataset	National Statistics Office
Construction permits dataset	Municipality

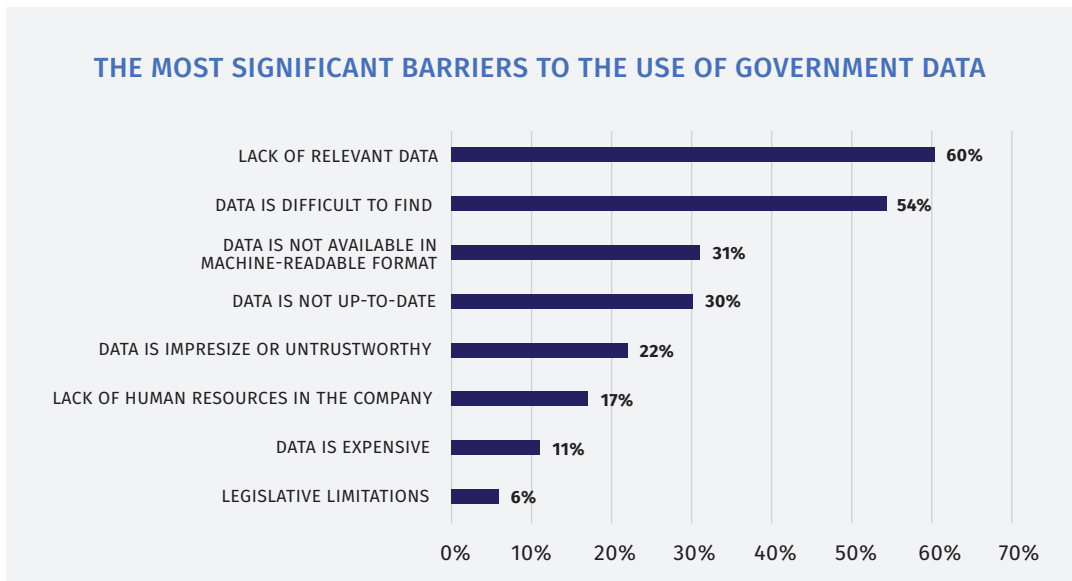
## DATASETS DESIRABLE FOR COMPANIES AVAILABLE VIA API

State Procurement Portal
Real estate and entrepreneur/legal entities registries of the National Agency of Public Registry
Financial and Management Reporting Portal (reportal.ge)



## BARRIERS TO USING OPEN DATA IN COMPANIES AND STRATEGIES FOR OVERCOMING THEM

The survey results indicate that the primary obstacles encountered by companies in using open data include the absence of relevant government datasets (58%) and challenges associated with searching for such data (60%). Moreover, respondents identified the format of available government data as a significant barrier to open data use. Specifically, 32% of participants noted that data of interest was frequently unavailable in a machine-readable format.



**SOURCE:** IDFI's online survey

The majority of respondents highlighted that these barriers have a negative impact on their businesses. According to their responses, barriers related to accessing government data create problems in several ways:

- → Delayed business processes and increased expenses;
- → Complication of the market research and analysis process;
- → Delays in discovering / developing new opportunities.

For instance, one respondent mentioned during the interview that their inability to obtain necessary data fully affects the quality and accuracy of processed data. Searching for and processing additional information requires more time and resources, ultimately impacting the company's service quality.

During the presentation of research results to representatives of the public and private sectors, additional opinions were expressed. Companies expressed concerns about the risks associated with creating new services or applications based on particular datasets, as they lacked sufficient guarantees of future access to relevant data.

*"We are able to compensate for the information gap we experience by relying on personal and professional experiences and contacts" - Statement shared by one of the respondents.*

Around 14% of the respondents answered that the existing barriers to access to government data either has no influence on their business, or the impact on their business is insignificant enough that it does not affect its success.

Respondents offered the following possible solutions for eliminating the existing barriers:

- Improving practices in gathering and managing data and increasing their availability;
- Ensuring legislative guarantees related to the availability of information;
- Raising awareness on open government data;
- Providing human/financial resources and raising competencies;
- Increasing the engagement and role of private companies;
- Reducing competition between the state and private sectors.

Importantly, respondents noted the necessity of a unified policy and corresponding legal framework regarding open data.

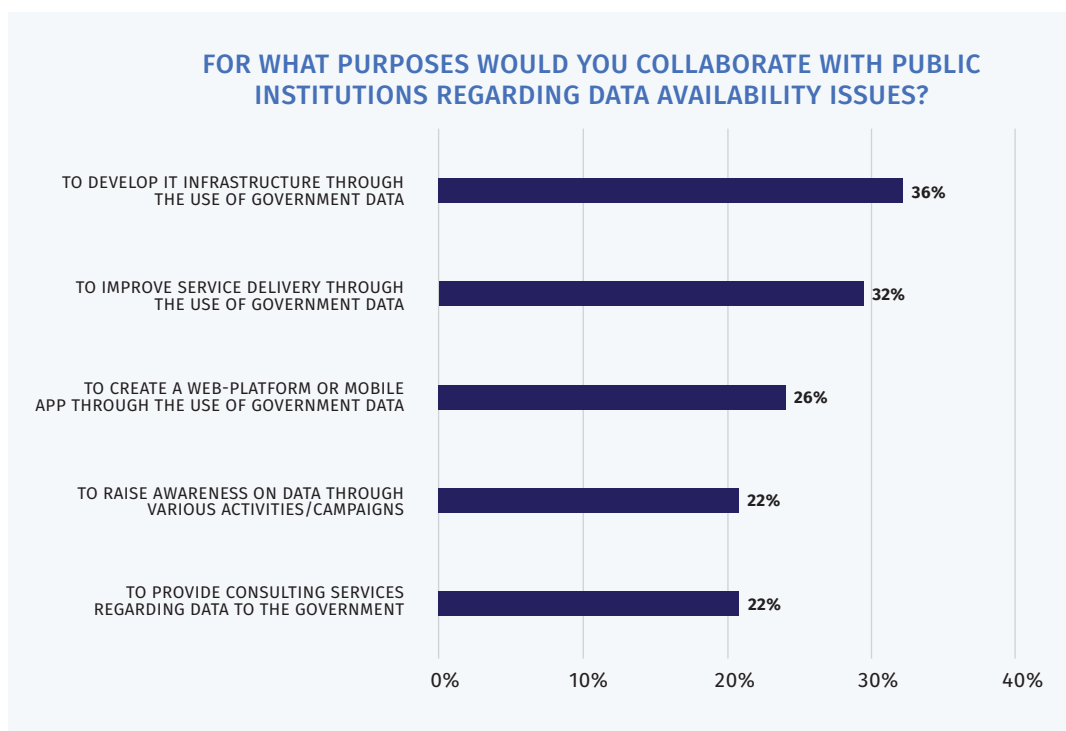
*"The state should adopt a unified approach, establish an institutional vision, and implement a unified policy that is not dependent on individual leaders. A unified legislative framework and a systemic approach are vital, along with the existence of corresponding regulations and a unified policy." - Opinion shared by one of the respondents.*

## COLLABORATION IN RELATION TO OPEN DATA

A significant portion of the respondents envision collaborating with public institutions concerning open data to develop corresponding IT infrastructure, improve their services through the use of government data, or create mobile applications. However, approximately 14% of respondents hold a negative attitude toward the prospect of collaboration with public institutions in this regard. Among them, 5% state that they would not collaborate, while 9% believe that the government would not be interested in collaborating with them.

Additionally, the opinion was expressed that when the government participates in certain sectors as an actor and not a regulator, it becomes a competitor in the sector.

*"Once competition is removed and the state is not involved in enforcement, but rather solely responsible for creating policy, all the necessary data will become more public and available to everyone. Under these conditions, the public sector will be obliged to make certain data public and accessible, whereas currently, the private sector has no leverage to demand that the government publish the data." - Opinion shared by one of the respondents.*



**SOURCE:** IDFI's online survey

# GEORGIAN LEGISLATIVE FRAMEWORK AND PRACTICE REGARDING ACCESS TO DATASETS

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## UNIFIED STATE REGISTRY OF INFORMATION

Currently, Georgia does not have an independent legislative act on freedom of information. Instead, the regulations related to access to information are laid out in the General Administrative Code of Georgia. The Code explains that public information is: an official document (including a drawing, layout, plan, diagram, photograph, electronic information, or video- and audio-recording), i.e. information stored at a public institution, and information received, processed, created or sent by a public institution or public servant in connection with official activities; also information proactively published by a public institution.<sup>26</sup> It should be noted that the General Administrative Code does not contain a definition of open data, nor the obligation of public institutions to publish data in their possession in a machine-readable format.

The role of the Registry of Public Information in the protection of the principle of openness of information is important to emphasize. In 2011, the Law of Georgia on Unified State Registry of Information entered into force. The goal of this law was to create a Unified State Registry for all public registries, datasets, service and information systems, as well as to develop the main principles for the creation, usage, and amendments to public registries, datasets, services, and information systems, to standardize the rules of production for them, and to define the general directions of state information policy in regards to registries, datasets, services, and informational systems. The legal entity of public law operating in the sphere of governance of the Ministry of Justice of Georgia - the Digital Governance Agency - is responsible for producing the registry. It is important to highlight that the authority of the Agency includes the management and development of the unified data exchange system (infrastructure), as well as the establishment of the unified data exchange standard.<sup>27</sup>

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<sup>26</sup> General Administrative Code of Georgia, Article 2, Paragraph 1, Sub-paragraph „I“.

<sup>27</sup> Law of Georgia on Legal Entity of Public Law - Digital Governance Agency

According to the current legislation, a public institution is obligated to enter the public information existing in this institution into the public registry.<sup>28</sup> This means that public institutions run a public information registry where the data in the possession of the institution is entered with the indication of the name of the public information and dates it was received, created, processed, or published. Said article does not obligate the institution to store the information/data electronically or publish it in an open format. Current legislation defines only the authority (and not the obligation) of administrative bodies to use software and unified automated management tools for the purposes of conducting proceedings and providing access to information, including storing and issuing electronic copies of any documents created by them or kept by them.<sup>29</sup>

More specifically, the law established a number of terms that are crucial for defining unified standards in the country and the state information policy. For example, according to the definitions of the terms in the law:

**A dataset** is a systemically or methodically organized collection of products and/or other data and material that are individually accessible electronically or in another way. It does not comprise a computer program used for the creation and retrieval of electronically accessible data.

**A registry**, according to the Law of Georgia on Unified State Registry of Information, is defined as “a formal or informal record of things, names, actions, or other information”. Therefore, a registry is a qualitative entity of known facts, measurable units, and indicators, further separation of which makes it unhelpful for business processes.

The Law of Georgia on Unified State Registry of Information also defines an obligation to register significant amendments, expansion, combination, suspension, destruction, archiving, and transfer of registries, datasets, services, or informational systems. According to the law, a public institution has to send a written notification to the LEPL Digital Governance Agency under the Ministry of Justice of Georgia on creation of a dataset or a register no later than 30 days after the event, and in case of destruction - at least 30 days prior to the event.

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<sup>28</sup> General Administrative Code of Georgia, Article 35.

<sup>29</sup> General Administrative Code of Georgia, Article 351.

According to the same law, the Digital Governance Agency has the right to address public institutions with a recommendation to refrain from the creation or destruction of a specific dataset after it receives the notification from the institution. As such, the law defined not only the obligation to run datasets and registries but also contains concrete procedures for the cases of their development, amendment, or destruction. It is also important to note that, according to the law, all administrative bodies are subjects of the registry, and therefore all state or local self-government bodies and institutions, legal entities of public law (apart from political and religious unions), as well as any other persons exercising public legal powers based on the legislation of Georgia are subjects of the registry. Additionally, medical or authorized educational institutions that create, amend, delete, or destroy data, are subjects of the registry. Based on these stipulations, the scope of the law covers almost all public institutions, and if the law were to be implemented to its full extent, the unified state registry would contain full information on the assets in the form of datasets, registries, or services found in the public sector.

The Law on the Unified State Registry of Information was intended to serve as a crucial mechanism for assessing the country's existing resources and potential in terms of open government data. However, monitoring conducted by IDFI to study the current state of affairs regarding the enforcement of the law revealed that it is not being adequately implemented in practice. Moreover, the portal managed by the Digital Governance Agency, through which public institutions should register relevant information, is in need of a technical update.

It is worth noting that according to the Open Government Georgia 2024-2025 Action Plan, as well as the Public Administration Reform Strategy and Action Plan, there are plans to provide proactive access to the list of datasets registered in the unified state registry.<sup>30</sup> The Digital Governance Agency is responsible for fulfilling the mentioned commitment.

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<sup>30</sup> Resolution of the Government of Georgia №555, წმინდ 29 December 2023. Available at: <https://shorturl.at/glENW>

On the approval of the 2023-2026 Public Administration Reform Strategy and the 2023-2024 Public Administration Reform Action Plan. Available at: <https://shorturl.at/tDOS1>

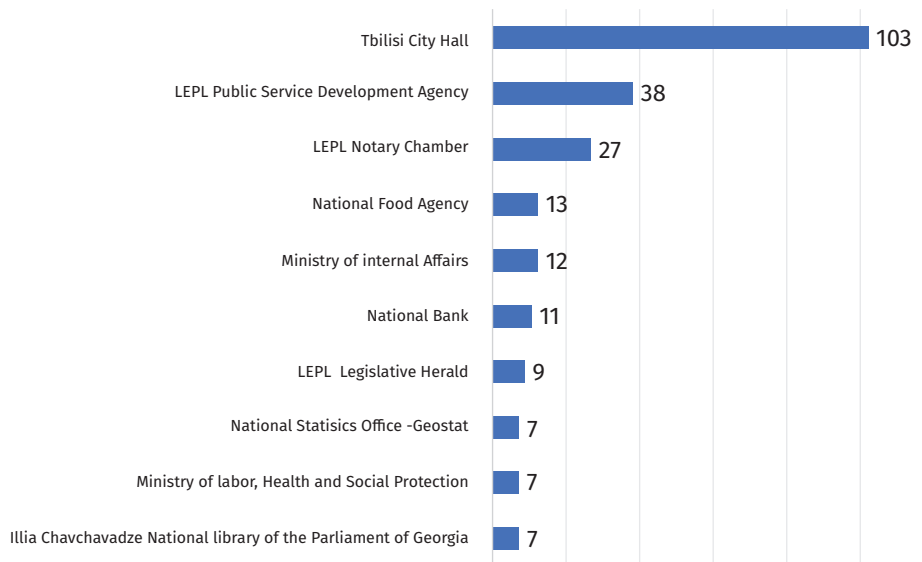
14) According to the Law of Georgia “On the Unified State Registry of Information”, administrative bodies, for the purpose of producing the unified state registry of information in the country, are obligated to register information about various information resources existing in the institution on the portal managed by the Digital Governance Agency.

Because the mentioned portal is facing technical problems, Geostat is limited in its ability to register information on the portal.

*The explanation provided to IDFI by the National Statistics Office of Georgia.*

Within the scope of the present study, IDFI requested information regarding the datasets registered in the unified state registry from the LEPL Digital Governance Agency. However, the Institute was unable to obtain the updated registry from the Agency. The last time IDFI received information about the mentioned registry was in 2018, during which 58 public institutions had registered a total of 358 datasets/registries in the unified state registry. Among them, the largest number of datasets was registered by the Tbilisi City Hall (103), LEPL Public Service Development Agency (38), and LEPL Notary Chamber of Georgia.

#### DATABASES REGISTERED IN THE UNIFIED STATE REGISTRY OF INFORMATION



According to the information received from LEPL Digital Governance Agency in as early as 2018, a number of interesting datasets had been registered in the unified state registry of information. Proactive access to these datasets through the state open data portal ([www.data.gov.ge](http://www.data.gov.ge)) would have diversified the electronic resource and facilitated engagement from society, researchers, and developers in its development. The registries that can be accessed as open data through [www.data.gov.ge](http://www.data.gov.ge) are presented in the form of an appendix. Notably, the Open Government Georgia 2024-2025 Action Plan includes a provision to adopt an “Open Data Act.” Within this framework, close collaboration between the Administration of the Government of Georgia and the LEPL Digital Governance Agency will lead to the preparation of a unified legislative framework on open data, obligating state institutions to publish their open data on the Data.gov.ge portal.<sup>31</sup>

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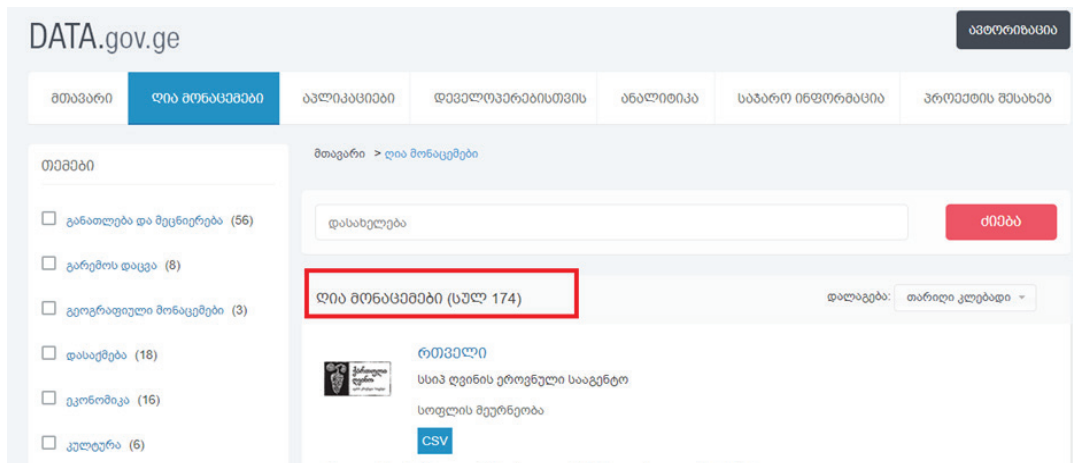
<sup>31</sup> Resolution of the Government of Georgia №555, 29 December 2023. Available at: <https://shorturl.at/glENW>



## OPEN GOVERNMENT DATA PORTAL (DATA.GOV.GE)

The Open Government Data Portal ([data.gov.ge](https://data.gov.ge)) was established in Georgia in 2014 with the aim of enhancing the accessibility of open data in the country and facilitating the development of additional electronic services. Presently, the portal hosts a total of 174 datasets, the majority of which have not undergone updates since 2019. The most recent addition to the portal was made on January 25th, 2022. Notably, the website lacks any applications that have been generated utilizing the datasets available on the portal. Consequently, the portal currently does not offer effective access to the open data resources held by public institutions, as it requires updates and public institutions have not been actively publishing new data or updating existing datasets for several years.

It's worth mentioning that, as per the Open Government Georgia 2024-2025 Action Plan and the Public Administration Reform Strategy and Action Plan, there are plans to update the portal by 2025.<sup>32</sup> The main agency responsible for the fulfillment of the mentioned commitment is the Administration of the Government of Georgia, while LEPL Digital Governance Agency and ministries are defined as partner institutions.



32 Ibid.

On the approval of the 2023-2026 Public Administration Reform Strategy and the 2023-2024 Public Administration Reform Action Plan. Available at: <https://shorturl.at/tDOS1>

# RECOMMENDATIONS

- The Government of Georgia should accelerate the process of elaborating and adopting the legislative framework and national strategy on open data.
- The practice of observing the economic results of open data and measuring the market of open data should be initiated at the national level.
- The country should ensure participation in the Open Data Maturity Index with the involvement of the relevant responsible agency.
- The National Statistics Office of Georgia should ensure the selection of the target population for the survey "Use of information and Communication Technologies in Enterprises" in such a way that makes it possible to generalize the results of the survey according to each sector.
- Review the rationale behind paid services related to the provision of information in the public sector. When making a decision, the expected economic results of disclosing a specific dataset should be taken into account.
- The Government of Georgia should ensure the adoption of policy documents that would define unified standards for the management and mandatory publication of open data in the public sector.
- The Government of Georgia and the LEPL Digital Governance Agency should jointly plan and implement an update of the Open Data Portal and a campaign to raise public awareness of the portal's potential benefits.
- Public institutions should ensure as much as possible the formation and management of existing and planned datasets and registries in such a way that they can be placed on the Open Data Portal.
- Public institutions should ensure the separation of personal and/or other closed information from the datasets and registries at their disposal and their availability to the public in open data format, and in case of technical impossibility of doing so, produce the most detailed statistics on specific issues.
- Develop a uniform guide for civil servants to help them process/publish open data, as well as to improve the publication, updating, and management of open data on [www.data.gov.ge](http://www.data.gov.ge) within the framework of fulfilling the obligations defined by the Law of Georgia on the Unified State Registry.

- Public institutions should create electronic public survey modules that will allow any interested person to express their opinion regarding the openness and availability of data based on the specifics of the activities of the agency.
- All public institutions, to the extent possible, should ensure the placement of datasets and registries identified as a result of the research by the Institute for the Development of Freedom of Information on the open data portal ([www.data.gov.ge](http://www.data.gov.ge)).
- Taking into account the positions of private sector representatives, the availability of following datasets/portals via API is the most important: the registries of the National Agency of Public Registry (including real estate and business registries), the State Procurement Agency ([procurement.gov.ge](http://procurement.gov.ge)), and the Reporting ([reportal.ge](http://reportal.ge)) portals.
- To implement innovative services based on open data, it is important for private sector representatives to actively study international best practices and to identify open government data needed for the development of such services in Georgia.
- It is important for private companies to proactively communicate their needs regarding the availability of open government data with public institutions and engage in activities aimed at collecting and making data of interest to them available in open formats within the framework of public-private dialogue.

## APPENDIX 1: INTERESTING DATASETS REGISTERED IN THE UNIFIED STATE REGISTRY OF INFORMATION

N#	ORGANIZATION <sup>33</sup>	REGISTRIES
1.	Office of the State Minister on Diaspora Issues of Georgia	Dataset of diaspora organizations
2.	Office of the State Minister on Diaspora Issues of Georgia	Dataset of Georgian Sunday and public schools, Georgian language courses abroad
3.	Legal Aid Service	Registry of invited public lawyers
4.	Civil Aviation Agency	National registry of civil aircraft of Georgia
5.	Children and Youth Development Fund of Georgia	Registry of sports organizations, societies, and bases
6.	Ministry of Economy and Sustainable Development of Georgia	Export, import, re-export and transit permit registry of dual purpose products
7.	Ministry of Economy and Sustainable Development of Georgia	Registry of loans disbursed from the state budget
8.	Ministry of Energy and Natural Resources of Georgia	List of potential sources of renewable energy
9.	Ministry of Energy and Natural Resources of Georgia	Ongoing investment projects in Georgia's energy sector
10.	Ministry of Cultural and Monument Protection of Georgia	National registry of non-material cultural heritage monuments
11.	Ministry of Cultural and Monument Protection of Georgia	State registry of immovable cultural heritage monuments

<sup>33</sup> The names of public institutions are given as of 2018, as presented in the form of received public information. Since then, the names of individual ministries and agencies have been changed.

<b>12.</b>	National Agency for Cultural Heritage Preservation of Georgia	Registry of permits issued for heritage sites and archaeological works
<b>13.</b>	Ministry of Regional Development and Infrastructure	Data on the intensity of vehicle traffic
<b>14.</b>	Ministry of Regional Development and Infrastructure	International roughness coefficient (IRI)
<b>15.</b>	Ministry of Regional Development and Infrastructure	List of bridges, tunnels, galleries
<b>16.</b>	State Laboratory of Agriculture of Georgia	Registry of issuance of laboratory test results
<b>17.</b>	National Tourism Agency of Georgia	Dataset of hotels, hostels, and guesthouses
<b>18.</b>	Ministry of Labor, Health, and Social Protection of Georgia	Departmental registry of pharmaceutical products of Georgia
<b>19.</b>	National Intellectual Property Center of Georgia	Registry of inventions, design, and new breeds
<b>20.</b>	Land Transport Agency	Registry of (quoted) permits for international road freight transport.
<b>21.</b>	LEPL Agency of Protected Areas	Existing services on the protected areas of Georgia
<b>22.</b>	LEPL Municipal Development Fund of Georgia	Registry of the tenders of the Municipal Development Fund
<b>23.</b>	LEPL National Statistics Office of Georgia - Geostat	Ongoing demographic study
<b>24.</b>	LEPL National Statistics Office of Georgia - Geostat	Foreign trade and foreign direct investment statistics
<b>25.</b>	LEPL National Statistics Office of Georgia - Geostat	Statistics of agriculture and the environment
<b>26.</b>	LEPL Service Agency of Ministry of Finance	Registry of state-owned property
<b>27.</b>	LEPL Service Agency of Ministry of Finance	Electronic registry of property transferred to the agency for management
<b>28.</b>	National Food Agency	Registry of licenses for production and pricing of baby food products and production and pricing of child food products

<b>29.</b>	National Food Agency	Registry of water commodity product category certificates
<b>30.</b>	National Food Agency	Registry of conclusions on the data required for the registration of the use of the designation of origin of mineral water
<b>31.</b>	National Food Agency	Registry of registration of medication for veterinary use
<b>32.</b>	National Food Agency	Registry of registration of pesticides
<b>33.</b>	National Food Agency	Registry of registration of agrochemicals
<b>34.</b>	Property Management Agency	Registry of deeds issued by the Property Management Agency of Tbilisi City Hall

## APPENDIX 2: THE IMPORTANCE OF OPEN DATA TO INDIVIDUAL SECTORS BASED ON INTERNATIONAL PRACTICE AND EXAMPLE OF BEST PRACTICE

The benefits/income derived from the use of open data does not become concentrated around one specific sector or group. The topic of access to and reuse of open government data is of great interest to a wide range of companies focused on the use of data and covers a number of sectors of the economy (World Bank Group, 2015), namely:

**HEALTHCARE SECTOR:** Companies connect consumers with healthcare providers and help assess/monitor the quality of services while promoting fair market policies. The use of open data has a high potential of bringing benefits in the process of disease prevention and proper treatment planning. In the case of providers, these benefits are determined by prescribing a timely and customized treatment plan for each patient.<sup>34</sup> Healthcare companies use clinical and hospital data, medical records of the population, and geospatial data to make it easier for consumers to locate healthcare facilities and pharmacies and compare medication prices.

**FINANCE SECTOR:** Processing information about the economic indicators, market trends, and financial indicators of companies would be practically impossible without access to government data. Therefore, access to open data is of critical importance to the finance sector. Investment companies, representatives of the trade sector, and market researchers use open data to make informed decisions. Open data is also an important resource for newly created businesses/startups searching for fundings, which automatically translates into the creation of additional jobs. Finally, open data is an important resource for the banking sector and for improving the standards of open banking.

**EDUCATION SECTOR:** Open data facilitate access to quality education, increase transparency standards, and support the implementation of innovations. Potentially the greatest benefit comes from identifying effective strategies and mechanisms, which is a prerequisite for the improvement of teaching methods through the use of open data.<sup>35</sup> To control the quality of educational institutions, a number of organizations focused on the education sector have created applications/platforms that help users to choose the right school, kindergarten, or university. In addition, open data has a special place in education for teaching data science and related skills.

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<sup>34</sup> "Open data: Unlocking innovation and performance with liquid information", The McKinsey Global Institute, October 2013, p. 11. Available at: <https://shorturl.at/AKSU3>

<sup>35</sup> Ibid. p.10.

**Agriculture sector:** Open data improves market transparency and efficiency, helping farmers use more productive and efficient techniques. Using open government data helps small farmers and promotes the development of agricultural cooperatives.

**Transport sector:** The use of open data has practically transformed the urban transport system and made it much easier for users to access travel routes. The transportation sector is at the forefront of processing and using open government data, and hundreds of applications are built on it each year. Potentially, the greatest source of benefit from effectively planned travel is increased customer productivity and time saved.

**Energy sector:** Open data facilitates the improvement of energy efficiency to a significant degree and assists customers in identifying the best sources of energy. For the energy sector, government data is indispensable for monitoring energy consumption, renewable energy sources, and environmental impact.

**Real estate and construction sector:** The real estate and urban planning sectors use open government data for determining property prices, as well as analyzing urban trends and infrastructure development.

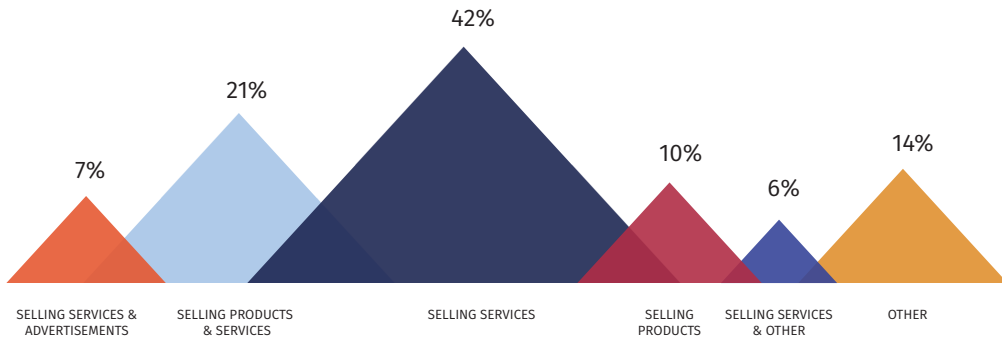
Practice shows that products created on the basis of open data are disseminated through digital methods - websites and applications. It should also be noted that, based on the novelty of using open data for commercial purposes, the majority of companies that work based on open data (mainly information and communication technology (ICT) production sector) are still in the startup phase. However, according to a large-scale study in EU member countries, this type of companies provide services at every link of the open data value chain. Moreover, similar companies predict 11% to 60% economic growth in the coming years as a result of using open data.<sup>36</sup> The diagram below expresses in percentage terms the sources of income of companies that use open data.

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<sup>36</sup> J. Berend et. al, "Re-using Open Data: A study on Companies Transforming Open Data into economic & societal value", European Data Portal, Luxembourg, July 2020, p. 9. Available at: [https://data.europa.eu/sites/default/files/re-using\\_open\\_data.pdf](https://data.europa.eu/sites/default/files/re-using_open_data.pdf)



## SOURCES OF REVENUE



**SOURCE:** Berend (2020)

Considering the relative lack of the use of open government data in Georgia and absence of identified sectors, the sharing of international practice is especially important. Studying the practices of different countries and cities has shown that, as a result of the availability of open public data, there are a number of examples of interesting applications and services created by the private sector. It should be noted that in all cases, **the data that serves as the basis of an application or service introduced in a particular country/city is constantly published/updated by relevant public institutions, and the data is available for electronic processing, in an open format.**

Effective use of open data can generate significant economic value, a fact confirmed by numerous international practice examples. The benefits from processing open data can be evaluated in two ways. First, when developers use open data for creating new and valuable products/services, and second, when they combine open data with existing products or services. In an ideal scenario, a “cycle” is created, where new products create more demand for open data, and vice versa, the data points to the need of creating new products/services. As such, open data can become the basis of establishing an entirely new business. For example, **Dataviva** is **Brazil’s** largest open data portal. The platform contains government data of the country from the past decade, according to economy, education, industry, labor market, and other wide categories. The electronic platform reveals new needs based on up to a billion visualizations and promotes dialogue between the public and private sectors.

A study of the example of the United States healthcare field showed that the benefits generated by the use of open data can bring the country an additional 300 billion dollars.<sup>37</sup> The researchers believe that analysis of open data will help the country in various treatment categories, both in terms of medicine and cost-effectiveness. For example, one initiative presented under Open Health Data in 2012, called **Asthmapolis**, combined asthma inhaler user data with open environmental data (for example, dust counts and other allergen data) to develop personalized treatment plans for asthma patients.

The impact and success stories that have generated significant economic benefits in many countries speak to the importance of reusing open data. In the case of one of the leading countries in the Open Data Maturity study, **Cyprus**, open data policy is primarily focused on information from the public sector. The country constantly updated open data oriented around information of high public interest, as well as information aimed at establishing correct labor practices.<sup>38</sup> For example, the web-platform **Air Quality in Cyprus** provides information regarding atmospheric air quality to users across the entire country. Platform developers use real-time information from air quality measuring stations. A similar platform was created in **Estonia**. Namely, the **Estonian Environmental Research Center** provides real-time information to users regarding atmospheric air pollution in large cities. Combination of open data can have a significant impact on environmental policy-making and decision-making, facilitating interventions aimed at reducing air pollution and mitigating its negative effects. For example, by identifying regions and cities with high levels of pollution, data scientists can target efforts at specific sources, such as transportation or industry, that will ultimately reduce pollutant emissions. It should be noted that the availability of open data has a positive impact on other environmental issues as well. A study of EU Member States also found that access to open government data has the potential to save 1,425 lives per year (5.5% of road accidents), while integrating data with road maps could save EU citizens 629 million hours.<sup>39</sup>

Another impact and success story comes from **Ireland**, where the platform DublinBikes has created the largest bicycle program in Dublin based on open data. DublinBikes, combined with a map of the city, provides users with information about the availability of bicycles. This data can be visualized over a period of time.

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<sup>37</sup> Goldstein, Brett. "Beyond Transparency: Open Data and the Future of Civic Innovation", Code for America, October 2013. Available at: <https://beyondtransparency.org>

<sup>38</sup> L. V. Knippenberg, "Open Data Best Practices in Europe: Examples from Cyprus, France and Ireland", Capgemini Invent, May 2020. p. 8. Available at: [https://data.europa.eu/sites/default/files/report/20200518\\_AR16\\_ODM%20Top%20Performing%20Countries\\_V1.1\\_FINAL.pdf](https://data.europa.eu/sites/default/files/report/20200518_AR16_ODM%20Top%20Performing%20Countries_V1.1_FINAL.pdf)

<sup>39</sup> W. Carrara et. al, "Creating Value Through Open Data", European Data Portal (EDP), November 2015. p. 12. Available at: [https://data.europa.eu/sites/default/files/edp\\_creating\\_value\\_through\\_open\\_data\\_0.pdf](https://data.europa.eu/sites/default/files/edp_creating_value_through_open_data_0.pdf)

The example of good practice in **Ukraine** shows that open data also contributes to better decision-making by users. Specifically, the medication platform [tabletki.ua](https://tabletki.ua), based on the information in the national registry, which gives users the ability to compare the composition and prices of medication and learn of their availability at pharmacies.

Small and medium enterprises with products and services based on open data, such as global positioning systems (GPS) or financial services and software applications, create new businesses and jobs. For example, a study by an industry group found that using GPS data increases the **US** budget by \$100 billion annually and maintains 3.3 million jobs. Additionally, according to a study conducted in **Finland**, companies that reuse publicly available geographic data have 15% more annual profits than countries that do not provide such information for free.<sup>40</sup>

Public institutions publish datasets of the following categories: education, economy, production, environmental protection, healthcare, tourism, transport, architecture, history, and others. **The most widespread and at the same time usable are maps and data containing geographic locations.** In general, if any type of data can be integrated with its geographic coordinates/maps, it becomes possible to create diverse and useful applications/services. International practice shows that **open government data around the transport network is one of the most advanced in terms of economic utility**, as evidenced by the example of the reuse of London transport data. Specifically, open government data is being used by large companies such as Waze, X (formally known as Twitter), Google, Apple, Citymapper, Bus Checker, Bus Times, Mapway, and others<sup>41</sup> to create consumer-focused commercial and non-commercial services. CityMapper - application created based on the data from **Transport for London (TFL)** that provides information to users regarding the transport schedules, cab traffic, and fees. The application is also available offline. The use of such applications makes it easier for passengers to plan their route and saves a lot of time (according to a 2017 study, the time saved was estimated at 70-90 million pounds). A successful example of the use of data concerning the transport network is the **Italian OpenMove**, which allows users to purchase any transport ticket through a mobile application. The use of the application is convenient for users and allows transport or parking facilities to receive information about the use of digital mechanisms by the user.

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<sup>40</sup> D. Tinholt, "The Open Data Economy: Unlocking Economic Value by Opening Government and Public Data", Capgemini Consulting, 2013, p. 8. Available at: [https://www.capgemini.com/wp-content/uploads/2017/07/the\\_open\\_data\\_economy\\_unlocking\\_economic\\_value\\_by\\_opening\\_government\\_and\\_public\\_data.pdf](https://www.capgemini.com/wp-content/uploads/2017/07/the_open_data_economy_unlocking_economic_value_by_opening_government_and_public_data.pdf)

<sup>41</sup> "Assessing the value of TfL's open data and digital partnerships", Deloitte LLP, London, July 2017, p. 15. Available at: <https://content.tfl.gov.uk/deloitte-report-tfl-open-data.pdf>

The case of the municipality of Nijmegen in the Kingdom of the **Netherlands** is another striking example to illustrate how a service useful to citizens can be created by publishing open data. **The municipality uses its own open data portal** to create a map accessible to every citizen that contains train stations, bus stops, parking lots, polling stations, locations of historical and cultural monuments, as well as perennial trees, etc. within the boundaries of the municipality. The municipality also updates the information seasonally. For example, during the winter season, the map shows which road has been and/or is planned to be salted.

## OTHER APPLICATIONS/SERVICES CREATED BY STAKEHOLDERS WITH THE USE OF OPEN DATA PORTALS

**CleanSpot:** An application created using municipal data (Barcelona Open Data Portal) that provides information about special spaces in the city to the user in order to get rid of unwanted items. Through clean containers, a citizen can dispose of batteries, electrical devices, lamps, as well as clothes, books, and other items. The application is focused on the proper collection and recycling of waste.

**Cycle Atlanta** - A mobile application created on the basis of open data, helping citizens to move safely by bicycle. Using the city map, the user designates a safe route for cycling, and can inform the appropriate institution about potholes or other similar obstacles.

**Dort! Wien** - A popular application created as a result of the use of open datasets, combining information on Vienna's sights, cultural monuments, tourist routes, etc. through audiovisual material. Users can mark areas of interest, or by marking their own location, they can get information about nearby interesting objects/monuments directly. The developers of the application used the following types of open data posted on the Vienna Open Data Portal: a list of popular places throughout the city, a list of museums and exhibitions, a list of public art spaces, a list of Christmas markets and New Year's stands, a list of car rental services, information about bicycle paths throughout the city, and others.

**We go to school** - The purpose of the application is to help the user select a nearby educational institution, including schools and kindergartens. The application was created using data from the Barcelona Open Data Portal, such as the list of educational institutions across the city of Barcelona and the geo-information system of Barcelona's street network.

**PulsePoint** (various countries, including the US) and **GoodSAM** (England) - A unique mobile application through which citizens receive first aid from those around them. In the US, the app is directly linked to 911 calls, indicating the location of the incident. Help for a citizen with medical or other needs may be found by the surrounding people before the emergency or rescue services arrive at the scene.

**Ackee – LuckyMe!** - A Czech app available on iPhone and Apple Watch. The app allows the user to avoid theft cases. Specifically, the application evaluates the safety of city streets based on various data. The application notes the risk of crime in a given area (on a scale of 1 to 5 points). The user can record instances of different types of crimes (hooliganism, robbery, assault, etc.). When evaluating the streets, the application uses the analysis of emergency calls, the municipal police, as well as data posted by the users themselves.

**BlindSquare** - A prominent example of encouraging inclusive projects. Through the application, blind people can move around the city using audio instructions. As soon as the location is established, BlindSquare provides the user with information about convenient public transport stops, cafes, libraries, etc.

**HD Scores** - The application integrates information on food safety parameters and relevant inspection frequency of restaurants, schools, hospitals, hotels, shops, and supermarkets and relies on various publicly available sources. The app was developed with the aim of preventing the spread of food-borne diseases. The application relies on data published by public health surveillance services, as well as their local representatives, which are posted on public websites. The data is updated every week.

**Husets Web** - A Danish electronic platform that helps citizens reduce electricity consumption based on open datasets and architectural elements of Danish houses. Based on 200 years of construction statistics and generation of information about heating systems, a system for calculating the optimal consumption of electricity has been created, which reduces the utility bill for each citizen in case of use of the system (citizens can add information about the building and the heating system to the app data).



