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ABSTRACT

of the dissertation for the degree of Doctor of Science

**MEASURING INFORMATION SERVICES LIBERALISM
DEGREE AND ASSESMENT OF ITS ECONOMIC
CONSEQUENCES**

Speciality: 5307.01-«Economic theory»

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Applicant: **Leyli Ali Allakhverdiyeva**

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The work was performed at the department of “Development problems of services area” of the Institute of Economics of ANAS

Scientific consultant: Doctor of Economic Science, Prof.
Nazim Muzaffar Imanov

Official opponents: Doctor of Economic Science, Prof.
Umudvar Qanbar Aliyev

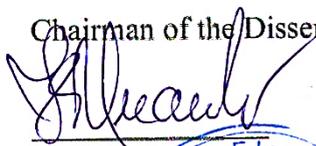
Doctor of Economic Science, Prof.
Veysal Seyfal Ayyubov

Doctor of Economic Science, Prof.
Rufat Atakishi Quliyev

Doctor of Economic Science, Prof.
Givi Valeryanovich Bedianashvili

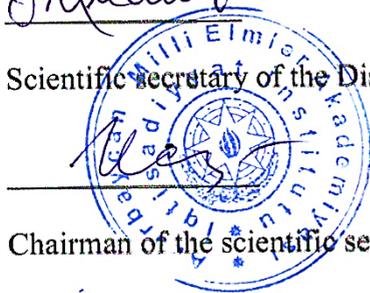
Dissertation council ED 1.10 of Supreme Attestation Commission under the President of the Republic of Azerbaijan operating at the Institute of Economics of ANAS

Chairman of the Dissertation council:



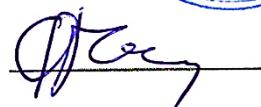
Doctor of Economic Science, Prof.
Nazim Muzaffar Imanov

Scientific secretary of the Dissertation council:



Doctor of Philosophy in Economics
Sevda Mammad Seyidova

Chairman of the scientific seminar:



Doctor of Economic Science, Prof.
Fuad Alinaghi Qanbarov

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INTRODUCTION

Relevance and development of the topic

One of the obvious requirements of the current stage of the development of society is its informatization, which is a set of measures aimed at creating favorable conditions for meeting the information needs of an individual. The information society is characterized by the leading role of information resources in the progressive development of society, the massive use of information technologies, the increase in the opportunities for more and more people to access information, the growth in the volume of provided information services, accelerating the pace of development of the information economy. In the formation and development of the information society, in the formation and development of the information economy, it is important to ensure the availability and accessibility of information, services for its provision.

Reliable and timely information is the main guideline for an entrepreneur, gives him a competitive advantage; reduces financial risks and threats to its image; makes it possible to coordinate the strategy, as well as evaluate the effectiveness of entrepreneurial activity. The more the accessibility of information, the more success can be achieved in the implementation of economic activities. Countries whose population is more provided with access to information have great advantages over those countries in which information is less accessible.

The availability and accessibility of information in the country is an important factor in raising the level of education and improving the skills of personnel. Ensuring access to information plays an indispensable role in the formation of human capital, which is one of the main factors in the country's economic development.

Of course, in order to ensure the availability and accessibility of information in the country, it is important, first of all, to create favorable conditions for enterprises engaged in the production and provision of information services, it is important to ensure the development of the information services sector. The state of Azerbaijan is interested in ensuring the accessibility of information, in the development of the information economy in the country. This is

confirmed by a number of legal acts adopted in recent years (more detailed – in dissert.). Thus, the document “Azerbaijan 2030: national priorities for social and economic development”, approved by the decree of the President of the Republic of Azerbaijan, points out the importance of forming modern human capital in the country and expanding the digital economy.¹ As you know, the main factor in achieving these goals is information. Accordingly, the implementation of the goals set, of course, requires ensuring the accessibility of information.

Despite the fact that the pace of development of the information economy in individual countries varies significantly, from the point of view of the formation of an effective, competitive information services sector that makes a serious contribution to the development of the country's economy, the measures taken by the state in this area are of paramount importance.

State regulation of the information services sector, as well as regulation of other sectors of the economy, includes a wide range of measures. Its mechanisms include the development and improvement, taking into account national priorities for the development of the legal framework, the establishment of state duties, taxes, rules for issuing licenses, etc. In countries where the mechanisms of state regulation of the sector are more stringent, the information services sector is less liberal (more dirigiste). And, vice versa, the use of less stringent regulatory mechanisms by the state indicates a greater liberalism of the sector. It can be assumed that a high degree of state regulation of the sector, or interference in the sector (creation of barriers to the provision of information services), can harm enterprises engaged in the provision of information services. It is impossible to deny the negative consequences of the complete absence of state regulation of the sector. It is important to determine the necessary degree of liberalism of the information services sector, which will contribute to its development, while increasing its role in the country's economy.

¹ Azərbaycan 2030: sosial-iqtisadi inkişafa dair Milli Prioritetlər: [Elektron resurs] / President.az. – 02 fevral, 2021. URL: <https://president.az/az/articles/view/50474>

Given the low level of development of the information services sector in Azerbaijan, such a study for our country is particularly important.

Works of both Azerbaijani and foreign scientists are devoted to the study of informatization of society, various aspects of the development of the information services sector. So, the scientific and theoretical problems of the formation of the information society are studied in the works of R.M.Aliguliyev and R.Sh.Makhmudov. (40)² The problem of creating favorable conditions for the use of modern information and communication technologies based on the creation of modern business entities in the liberated territories of Azerbaijan is touched upon in the work of T.N.Aliyev. (42) The dissertation work of L.S.Namazova is devoted to the study of issues of improving the statistics of the information society. (60) The works of M.E.Haji-zade (44), S.E.Ahmedova and A.G.Garibov (39), G.I.Ismayilov (48) are devoted to the issues of formation of the information economy, its content, peculiarities of activities in various sectors and countries of the world, and in Azerbaijan. A.N. Muradov in his research touches upon the problems of the formation of an information-based knowledge economy. (124) A.G.Aliyev explores the features of the formation of an information economy based on ICT, as well as possible risks to its development, studies the problems of ensuring cybersecurity in the context of the development of the information economy. (41)

The information services sector was studied by such scientists as K.Clark (163), D.Bell (93) and others. Features of the functioning of the information services market are studied by E.V.Popov and I.S.Kats (129), E.S.Spiridonov, M.S.Klykov and others (118), N.V.Bereza (94). The development of the digital economy, as one of the main mechanisms for reducing the volume of the shadow economy, is explored in writings by prof. A.F.Musayev and others. (57) The theoretical foundations of the digital economy, its evolution are studied by E.A.Brendeleva, M.I.Stolbov and others (128), A.N.Starkov and E.V.Storozheva (139).

² This and subsequent similar numbers in this section of the abstract indicate the numbers of the relevant literature used in the dissertation (see "List of used literature" in the dissertation)

Developed in the dissertation work on the basis of the philosophy of measuring the degree of state intervention in the economy of prof. N.Muzaffarli (58), the methodology for measuring liberalism degree of information services is based on taking into account economic indicators that reflect the barriers set by the state on the way to the provision of information services through various means of their provision, which fundamentally distinguishes this work from a large number of studies assessing freedom of information and studying its significance for countries.

So, for example, the Soros Foundation (308), Freedom House (194), Friedrich Ebert Foundation (299) can be attributed to the number of organizations evaluating freedom of information. Freedom of information assessments are also carried out in Australia, Sweden, South Africa, the USA and Thailand. (231) The Open Data Barometer Index is also known. (254) There are also organizations that explore the freedom of the Internet, as well as information provided through the Internet (for example, Internet Freedom Index). (195) The Economist Intelligence Unit, a research and analytical organization, calculates the Inclusive Internet Index. (298) One of the reports prepared by the World Wide Web Foundation calculates the Driver Accessibility Index, which evaluates various Internet accessibility factors. (152) Previously, the organization calculated the Index, assessing the degree of freedom and openness of the Internet, which reflected the political and legal aspects of ensuring the freedom of the Internet. (316) "Ericsson" developed the Network Society City Index, which ranks cities rather than countries. (247) The European Commission calculates the Digital Economy and Digital Society Index. (222) There is also a considerable amount of research devoted to the study of the consequences that freedom of information generates (under "freedom of information", in most cases, freedom of speech, freedom of the press is meant), for example, works on the analysis of the impact of laws on freedom of information on bureaucratic efficiency (311); on studying the impact of freedom of information law on government transparency and on the free flow of government information (213; 281).

Since one of the main indicators reflecting the liberalism (dirigisme) degree of the information services provision process via various means of their provision is value added tax (VAT), it is no less important to review studies devoted to studying the consequences of changing the VAT rate. The results of these studies are different. (236; 252; 151; 155)

There are also works on the analysis of the influence of the degree of state intervention in the media on the activities of the media. It should be noted that most of these works are devoted to the analysis of the impact of changing the degree of state intervention in the information services provision process through digital media.

The organizations, researchers listed above approach the problem of measuring state intervention in the information services sector from only one aspect - from the standpoint of the degree to which freedom of speech, freedom of journalists, transparency of the state etc. are provided in the country. Such an approach to measuring state intervention in the information services sector indicates the need to develop a methodology that is different from the listed methodologies and reflects the degree of softness (rigidity) of the economic mechanisms of state regulation of the information services sector.

The object and the subject of the research

The object of the study is information services of a different nature, provided through the print media, television and radio, via mail, advertising and the Internet, the provision process of which is regulated by the state and is of a commercial nature. The subject of the study is the relationship between the degree of state intervention in the information services provision process via various means of their provision and the country's economic indicators.

The purpose and objectives of the study

The purpose of the dissertation is a development of a new theoretical and methodological approach to measuring state intervention in the information services sector – a development of a methodology for measuring the degree of state intervention in the information services provision process through print media, television, radio, mail, Internet and advertising; measuring information services

liberalism degree and assessing its economic consequences (assessing its impact on the development indicators of the information services sector and its relationship with other (some) economic indicators of the country).

In accordance with the intended goal, the following objectives were set in the dissertation work:

1. Research the definitions of the information economy and information services, develop a methodology for measuring liberalism degree of the information services sector

To solve the problem, the definitions of the information economy and information services will be explored; the theoretical aspects of measuring state intervention in the information services sector will be explored; having studied the world's existing methodologies for measuring state intervention in media, the Internet, a methodology for measuring state intervention degree in the information services provision process through various means of their provision will be developed.

2. Analyze the impact of information services on the digitalization of the economy, analyze the digital transformation of the economy

To solve this problem, the importance of information services in the development of the digital economy will be indicated, the current state of the digital economy will be investigated; the importance of cybersecurity in the development of the digital economy will be revealed; the impact of the digitalization of the economy on employment will be analyzed.

3. Analyze the current state and development indicators of the information services sector

To solve this problem, the economic significance of the Network readiness index as one of the indicators of the development of the information services sector will be noted; indicators of the Network readiness index which should be improved in Azerbaijan in the first place will be analyzed; other available indicators of the development of the information services sector in Azerbaijan will be explored; the significance of liberalism degree of foreign trade for the development of the information services sector will be investigated.

4. Measure information services liberalism degree using the developed methodology

To solve the problem, by measuring media, electronic services, postal services, advertising liberalism degree, the Integral index will be calculated; countries will be classified according to the Integral Index.

5. Assess the economic consequences of the individual information services liberalism degree

To solve this problem, the impact of postal services, electronic services, media, advertising services liberalism degree on the development indicators of the information services sector will be assessed; the interaction of the Integral index with the Index of leftness (rightness) of the economy and other economic indicators will be analyzed.

6. Identify the ways to enhance the positive economic consequences of information services liberalism in Azerbaijan

To solve this problem, ways to strengthen the positive impact in Azerbaijan of postal services liberalism degree on the activities of post offices to provide information services; of electronic services liberalism degree on the indicators of the use of the Internet, as the main factor in the development of electronic information services; of media liberalism degree on the activities of print media, television and radio; of advertising liberalism degree on the development of the advertising market will be indicated.

Research methods

The following research methods are used in the work: analysis and synthesis, scientific abstraction, comparative and system analysis, economic and statistical generalization, correlation analysis, regression analysis, inductive and deductive methods.

The principal theses of the defense

1. A methodology for measuring information services liberalism degree has been developed, the Indices of liberalism (dirigisme) of information services (IL(D)IS) for 32 countries have been calculated.

[5, p. 7-13; 22, p. 4-14]³ The classification of countries according to the Index has been carried out.

2. An assessment of the economic consequences of the degree of state intervention in the information services provision process via post allows us to state that an increase of postal services dirigisme degree does not lead to a decrease in the development indicators of the information services sector. On the contrary, in most countries (there are exceptions) with a higher degree of state intervention in this process, the indicators of the development of the information services sector are higher. At the same time, countries with a higher degree of dirigisme of postal services are more developed countries. Liberalization of postal services in Azerbaijan can make the information services provision process via post more profitable. [12, p. 57-67]

3. As a result of assessing the economic consequences of the degree of state intervention in the information services provision process via the Internet, it was revealed that ensuring full competition in the field of the Internet and telephony can positively affect the development of the information services sector (in particular, in developing countries). It is recommended to ensure full competition in this area in Azerbaijan as well. [12, p. 57-67]

4. As a result of assessing the economic consequences of the degree of state intervention in the information services provision process via media, it was found that changes in media liberalism degree do not affect the indicators of the development of the information services sector. However, given that countries with a higher level of economic development have more liberal media policies, and that the media in these countries are more developed, continuing media liberalization in Azerbaijan is important.

5. An assessment of the economic consequences of the degree of state intervention in the information services provision process via advertising indicates that changes in the liberalism degree of the process do not affect the development of the advertising market. Given the level of development of important for the development of the

³ This and subsequent similar numbers in the abstract indicate the corresponding work of the applicant (See the “Scientific works of the author” in the abstract)

information services sector advertising market of liberal by Advertising liberalism sub-index Azerbaijan, it is important to continue adhering liberal policy in this area in the country.

6. An analysis of the relationship between the degree of state intervention in the information services provision process and the degree of state intervention in the economy indicates the absence of any relationship between them.

7. After analyzing the relationship between the information services liberalism degree and the Human development index, it was found that there is no relationship between the indicators.

8. An analysis of the impact of IL(D)IS on the Global competitiveness index' workforce skills indicators show that the degree of state intervention in the information services sector, which determines the availability of information services in the country, does not affect the skills of the workforce.

9. An analysis of the relationship between IL(D)IS and indicators of the development of the tourism sector was carried out. It was revealed that there is no relationship between information services liberalism degree and indicators of the development of the tourism sector.

Scientific novelty of the research

The scientific novelty of the dissertation work is as follows:

– A new theoretical and methodological approach to measure the state intervention in the information services sector has been put forward, Index of liberalism (dirigisme) of information services measuring the information services liberalism degree and consisting of 4 Sub-indices (Media liberalism, E-services liberalism, Postal services liberalism, Advertising liberalism sub-indices) has been developed. [5, p. 7-13; 22, p. 4-14]

– Based on the calculation and analysis of the Index of liberalism (dirigisme) of information services by countries, it has been proved that most countries with a relatively dirigiste information services sector are countries with a higher level of economic development. In Azerbaijan, the information services sector is moderately dirigiste. [5, p. 7-13]

- On the basis of measuring and evaluating the economic consequences of the degree of state intervention in the information services provision process via media, it was found that Azerbaijan needs to continue liberal reforms in this area.

- On the basis of measuring and evaluating the economic consequences of electronic information services liberalism degree, the need to ensure complete liberalization in the field of Internet and telephony in Azerbaijan is substantiated. [12, p. 57-67]

- On the basis of measuring and evaluating the economic consequences of the degree of state intervention in the information services provision process via post, the importance of liberalizing this area in Azerbaijan is substantiated. [12, p. 57-67]

Theoretical and practical significance of the research

The development of a methodology for calculating the Index of liberalism (dirigisme) of information services makes it possible to measure the degree of state intervention in the information services provision process. Measuring the degree of liberalism (dirigisme) of information services, analyzing changes in the development indicators of the information services sector and other (some) economic indicators of the country depending on the degree of its regulation by the state, determining to what extent the state should interfere in the sector in order to ensure its development and the development of the country's economy is an important subject of research, which can be useful in the formation of strategic priorities for the development of the sector, in the development of state programs for its development. The results of the study can also be used in the preparation of curricula for a number of courses in economic disciplines.

Approbation and application of the results of the research

The results of the dissertation work were presented at the international conference on "Cooperation between China and Azerbaijan: new opportunities and new challenges", held in China on May 14, 2019; at the international conference on "Azerbaijan-China: social issues of the economy", held in Azerbaijan on July 4, 2019; as well as at the Scientific online seminar of the Institute of Economics of ANAS, held on January 18, 2021.

According to the decisions of the Presidium of the Russian Academy of Natural Sciences, taking into account the relevance, scientific and pedagogical significance, scientific articles reflecting the results of the dissertation (“Comparative analysis of the Network readiness index in Azerbaijan and China”, “Index of liberalism (dirigisme) of information services”, “The influence of liberalism degree of foreign trade on the level of development of the information services sector”) were selected for presentation and discussion at the international book exhibition in Austria (135) and at the online exhibition held in Moscow (123). The scientific article "The influence of liberalism degree of foreign trade on the level of development of the information services sector" was also selected for presentation and discussion at the international book exhibition in America (110) and at the international book exhibition in Hong Kong (111).

In addition to the works that directly reflect the results of the dissertation work, the author's researches, affecting state regulation, but already of the tourism sector, also aroused some interest. So, in the Competition of scientific articles among young researchers held at the Institute of Economics of ANAS, the author's article "Model-shaping state intervention in the economy and tourism development" was awarded the first place. (61) Annotation of "Tourism 2016. Bulletin" was included in the catalog Frankfurter Buchmesse 2020 - Special Edition 2020. (112) The Bulletin was presented at the international exhibition (117), at online Education Week (121) and at the international book fair in Moscow (120). Information about him was included in the annotated catalog of the Week of Education MMSE-2021. (122) In addition, the Bulletin and the monograph "Formation of competitive tourism in Azerbaijan" were selected and presented at a distance international exhibition. (149)

Name of the organization where the dissertation work is performed

The dissertation work was carried out at the Institute of Economics of the National Academy of Sciences of Azerbaijan.

The scope of the dissertation

The dissertation work, with a volume of 422 910 characters, consists of an introduction (22 010 characters), 6 chapters (1st chapter

- 74 402 characters; 2nd chapter - 43 121 characters; 3rd chapter - 120 723 characters; 4th chapter - 37 273 characters; 5th chapter - 51 343 characters; 6th chapter - 34 346 characters), conclusions (36 051 characters) and list of references.

MAIN SCIENTIFIC THESES FOR DEFENSE

Thesis 1. A methodology for measuring information services liberalism degree has been developed, the Indices of liberalism (dirigisme) of information services for 32 countries have been calculated. [5, p. 7-13; 22, p. 4-14] The classification of countries according to the Index has been carried out.

The methodology for measuring liberalism degree of information services is based on the methodology for measuring the degree of state intervention in the economy, proposed by prof. N.Muzaffarli. So, in order to measure the degree of state intervention in the information services provision process, the Index of liberalism (dirigisme) of information services was formed. The sub-indices of the Index and their indices are shown in the table below (Table 1).

Table 1. Sub-indices and indices of IL(D)IS

Media liberalism sub-index (MLi)	1/2 Taxes and various fees (1/6 (VAT on printed publications; VAT on TV and radio broadcasting; TV license fee; VAT on TV license fee; VAT late payment penalty; Corporate tax)) 1/2 Ratio of private and state TV channels (share of state TV channels in the total number of TV channels)
E-services liberalism sub-index (ESLi)	1/2 VAT on e-services 1/2 Internet and telephony competition
Advertising liberalism sub-index (ALi)	1/2 VAT on outdoor and media advertising 1/2 VAT on internet advertising
Postal services liberalism sub-index (PSLi)	1/2 VAT on postal services 1/2 VAT on stamps

Source: table compiled by the author [5, p. 7-13]

The developed formulas for calculating the Sub-indices of IL(D)IS are presented below [5, p. 7-13]:

Media liberalism sub – index =

$$= 0,5 \times \text{Taxes and various fees} + 0,5 \times \\ \times \text{Ratio of private and state TV channels}$$

(1)

where:

$$\text{Taxes and various fees} = \frac{1}{6} (\text{VAT on printed publications} + \\ + \text{VAT on TV and radio broadcasting} + \text{TV license fee} + \\ + \text{VAT on TV license fee} + \text{VAT late payment penalty} + \\ \text{Corporate tax})$$

(2)

$$\text{E – services liberalism sub – index} \\ = 0,5 \times \text{VAT on e – services} + 0,5 \times \\ \times \text{Internet and telephony competition}$$

(3)

$$\text{Advertising liberalism sub – index} = 0,5 \times \times \\ \text{VAT on outdoor and media advertising} + 0,5 \times \\ \text{VAT on internet advertising}$$

(4)

$$\text{Postal services liberalism sub – index} \\ = 0,5 \times \text{VAT on postal services} + 0,5 \\ \times \text{VAT on stamps}$$

(5)

Thus, IL(D)IS, which allows to determine the degree of state intervention in the information services sector, is calculated by the formula:

$$\text{IL(D)IS} = 0,4 \times \text{MLi} + 0,2 \times \text{ESLi} + 0,2 \times \text{ALi} + 0,2 \times \text{PSLi}$$

(6)

where MLi – Media liberalism sub-index; ESLi – E-services liberalism sub-index; ALi – Advertising liberalism sub-index; PSLi – Postal services liberalism sub-index.

The study was conducted in 32 countries. Let's consider the obtained results.

Media liberalism sub-index [22, p. 4-14]

Let's consider Media liberalism sub-indices in the studied countries (Table 2., Fig. 1.).

Table 2. Media liberalism sub-indices for the group of countries studied (from dirigiste to liberal)

№	Countries	MLi	№	Countries	MLi
1	France	0,304	17	Portugal	0,136
2	Croatia	0,258	18	Italy	0,133
3	Estonia	0,251	19	Greece	0,13
4	Bulgaria	0,242	20	Armenia	0,13
5	Azerbaijan	0,232	21	Belgium	0,129
6	Spain	0,214	22	Czech Rep.	0,127
7	Georgia	0,199	23	Lithuania	0,125
8	Hungary	0,198	24	Netherlands	0,123
9	Great Britain	0,197	25	Poland	0,122
10	Denmark	0,195	26	Finland	0,119
11	Russia	0,184	27	Slovakia	0,116
12	Ireland	0,182	28	Turkey	0,113
13	Slovenia	0,165	29	Sweden	0,108
14	Malta	0,152	30	Latvia	0,108
15	Germany	0,149	31	Romania	0,099
16	Austria	0,136	32	Cyprus	0,097

Source: calculated by the author on the basis of relevant data (see dissertation, Table 4.1.10.)

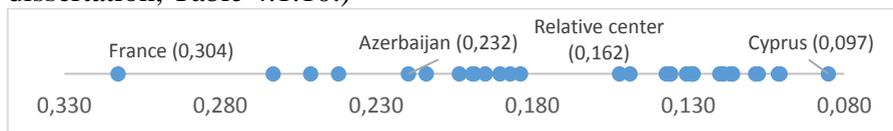


Figure 1. Media liberalism sub-indices in the studied group of countries

Note: compiled by the author

As can be seen, Cyprus is the most liberal in terms of the Media liberalism sub-index (0.097), France is the most dirigiste (0.304). In most of the countries studied, the media are more liberal than the relative center shows. Azerbaijan is in the group of dirigiste by Sub-index countries (the 5th most dirigiste country by the Sub-index).

The following table shows how GDP per capita indicators change depending on media liberalism (dirigisme) degree (Table 3.).

Table 3. Changes in the minimum, maximum and average indicators of GDP per capita depending on media liberalism (dirigisme) degree

<i>MLi</i>	<i>Minimum GDP per capita, int. Doll.</i>	<i>Maximum GDP per capita, int. Doll.</i>	<i>Average GDP per capita, int. Doll.</i>	<i>Number of countries</i>
<i>0 - 0.129 (1-st group of countries)</i>	28 134	59 554	42 157	12
<i>0.130 - 0.159 (2-nd group of countries)</i>	14 258	58 946	41 053	7
<i>0.160 - 0.199 (3-d group of countries)</i>	15 656	88 241	45 349	7
<i>0.200 and higher (4-th group of countries)</i>	15 041	49 435	33 420	6

Source: based on data obtained by the author and data from the World Bank

(<https://data.worldbank.org/indicator/NY.GDP.PCAP.PP.CD?end=2019&start=2016>)

In general, more dirigiste countries by the Sub-index are countries with a lower level of economic development. At the same time, there are countries to which this "regularity" does not apply. For example, the highest GDP per capita among the countries studied is observed in Ireland (88,241 int. dollars), while the country according to Media liberalism sub-index is among the countries belonging to the 3rd group. If not for Ireland, then the average GDP per capita in this group of countries would be 38,201 int. dollars, which is even lower than the corresponding indicator of the 1st and 2nd group of countries.

E-Services liberalism sub-index

Let's consider E-services liberalism sub-indices in the studied group of countries (Table 4., Fig. 2.).

Table 4. E-services liberalism sub-index (from dirigiste to liberal)

№	Countries	ESLi	№	Countries	ESLi
1	Bulgaria	0,368	17	Lithuania	0,21
2	Greece	0,293	18	Armenia	0,2
3	Denmark	0,28	19	Estonia	0,2
4	Latvia	0,273	20	Hungary	0,193
5	Cyprus	0,263	21	Romania	0,19
6	Russia	0,259	22	Czech Rep.	0,188
7	Croatia	0,25	23	Georgia	0,18
8	Sweden	0,25	24	Turkey	0,18
9	Great Britain	0,23	25	Finland	0,17
10	Slovakia	0,23	26	Italy	0,166
11	Ireland	0,23	27	Austria	0,15
12	Poland	0,23	28	Netherlands	0,15
13	Portugal	0,23	29	Germany	0,13
14	Slovenia	0,22	30	Malta	0,115
15	Belgium	0,21	31	France	0,092
16	Spain	0,21	32	Azerbaijan	0,068

Source: calculated by the author based on relevant data (see dissertation, Table 4.2.3.)

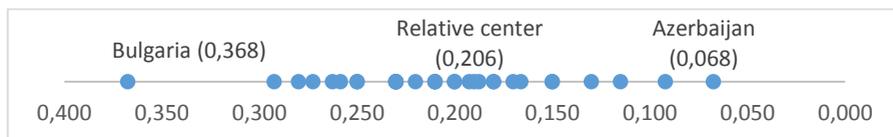


Figure 2. E-services liberalism sub-index

Note: compiled by the author

The minimum Sub-index is observed in Azerbaijan (0.068). Bulgaria is the most dirigiste by E-services liberalism sub-index. 15 countries are righter, 17 countries are lefter than the relative center (0.206).

The following table shows how GDP per capita indicators change depending on e-services liberalism (dirigisme) degree (Table 5).

Table 5. Changes in the minimum, maximum and average indicators of GDP per capita depending on e-services liberalism (dirigisme) degree

<i>ESLi</i>	<i>Minimum GDP per capita, int. Doll.</i>	<i>Maximum GDP per capita, int. Doll.</i>	<i>Average GDP per capita, int. Doll.</i>	<i>Number of countries</i>
<i>0 - 0.150 (1-st group of countries)</i>	15 041	59 554	47 589	6
<i>0.151 - 0.200 (2-nd group of countries)</i>	14 258	51 426	33 638	9
<i>0.201 - 0.250 (3-d group of countries)</i>	30 141	88 241	45 875	11
<i>0.251 and higher (4- th group of countries)</i>	24 790	60 179	36 386	6

Source: based on data obtained by the author and World Bank indicators
<https://data.worldbank.org/indicator/NY.GDP.PCAP.PP.CD?end=2019&start=2016>

There is no relationship between the level of economic development of countries and e-services liberalism (dirigisme) degree. Among the countries where electronic services are more strictly regulated by the state, there are both countries with higher GDP per capita and countries with a lower level of economic development. The same can be said about countries with more liberal e-services.

Postal services liberalism sub-index

Let's consider Postal services liberalism sub-indices for the studied countries (Table 6., Fig. 3.).

Table 6. Postal services liberalism sub-index (from dirigiste to liberal)

№	Countries	PSLi	№	Countries	PSLi
1	Denmark	0,500	17	Great Britain	0,300
2	Sweden	0,500	18	Hungary	0,270
3	Portugal	0,460	19	Italy	0,250
4	Slovenia	0,440	20	Croatia	0,250
5	Belgium	0,420	21	Greece	0,240
6	Netherlands	0,420	22	Finland	0,240
7	Armenia	0,400	23	Ireland	0,230
8	Bulgaria	0,400	24	Poland	0,230
9	France	0,400	25	Spain	0,210
10	Germany	0,380	26	Latvia	0,210
11	Cyprus	0,380	27	Lithuania	0,210
12	Romania	0,380	28	Czech Rep.	0,210
13	Azerbaijan	0,360	29	Russia	0,200
14	Georgia	0,360	30	Slovakia	0,200
15	Turkey	0,360	31	Estonia	0,200
16	Austria	0,300	32	Malta	0,180

Source: calculated by the author based on relevant data (see dissertation, Table 4.3.3.)

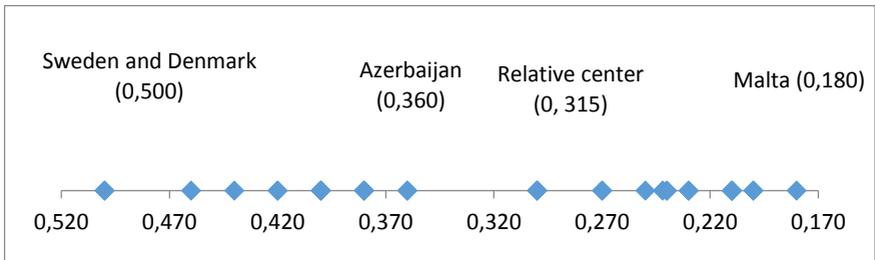


Figure 3. Postal services liberalism sub-index

Note: compiled by the author

The most liberal country by Postal services liberalism sub-index is Malta (0.180). Azerbaijan is on the same level by the Sub-index with

Georgia and Turkey (0.360) and is located to the left of the relative center. The most dirigiste countries by the Sub-index are Sweden and Denmark (0.500).

The following table shows changes in GDP per capita indicators depending on postal services liberalism (dirigisme) degree (Table 7.).

Table 7. Changes in the minimum, maximum and average indicators of GDP per capita depending postal services liberalism (dirigisme) degree

<i>PSLi</i>	<i>Minimum GDP per capita, int. Doll.</i>	<i>Maximum GDP per capita, int. Doll.</i>	<i>Average GDP per capita, int. Doll.</i>	<i>Number of countries</i>
<i>0 - 0.209 (1-st group of countries)</i>	29 181	46 279	37 111	4
<i>0.210 - 0.299 (2-nd group of countries)</i>	30 141	88 241	42 719	11
<i>0.300 - 0.399 (3-d group of countries)</i>	15 041	58 946	37 038	8
<i>0.400 and higher (4-th group of countries)</i>	14 258	60 179	44 063	9

Source: based on data obtained by the author and World Bank indicators

(<https://data.worldbank.org/indicator/NY.GDP.PCAP.PP.CD?end=2019&start=2016>)

It can be noted that in general, with an increase in the degree of dirigisme of postal services, the average GDP per capita also increases. The presence of some countries (for example, Azerbaijan, Georgia, Armenia) makes it possible to judge that there are countries with a low GDP per capita, but a relatively high Sub-index, and vice versa.

Advertising liberalism sub-index

Consider the Advertising liberalism sub-indices in the group of countries under study (Table 8., Fig. 4.).

Table 8. Advertising liberalism sub-index (from dirigiste to liberal)

№	Countries	ALi	№	Countries	ALi
1	Hungary	0,540	17	Czech Rep.	0,420
2	Denmark	0,500	18	Austria	0,400
3	Italy	0,500	19	Armenia	0,400
4	Croatia	0,500	20	Bulgaria	0,400
5	Sweden	0,500	21	Great Britain	0,400
6	Greece	0,480	22	Russia	0,400
7	Finland	0,480	23	Slovakia	0,400
8	Ireland	0,460	24	France	0,400
9	Poland	0,460	25	Estonia	0,400
10	Portugal	0,460	26	Germany	0,380
11	Slovenia	0,440	27	Cyprus	0,380
12	Belgium	0,420	28	Romania	0,380
13	Spain	0,420	29	Azerbaijan	0,360
14	Latvia	0,420	30	Malta	0,360
15	Lithuania	0,420	31	Turkey	0,360
16	Netherlands	0,420	32	Georgia	0,270

Source: Calculated by the author based on relevant data (see dissertation, Table 4.3.7.)

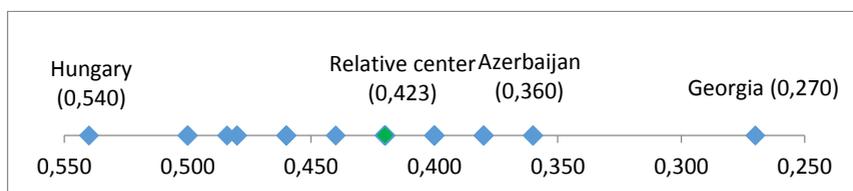


Figure 4. Advertising liberalism sub-index

Note: compiled by the author

The most liberal country according to the Sub-index is Georgia (0.270). The second most liberal country is Azerbaijan, along with Turkey and Malta (0.360). Hungary is the most dirigiste country by the Sub-index (0.540).

The table below shows changes in GDP per capita indicators depending on advertising liberalism (dirigisme) degree (Table 9.).

Table 9. Changes in the minimum, maximum and average indicators of GDP per capita depending on advertising liberalism (dirigisme) degree

<i>ALi</i>	<i>Minimum GDP per capita, int. Doll.</i>	<i>Maximum GDP per capita, int. Doll.</i>	<i>Average GDP per capita, int. Doll.</i>	<i>Number of countries</i>
<i>0 - 0.380 (1st group of countries)</i>	15 041	56 278	33 563	7
<i>0.381 - 0.400 (2nd group of countries)</i>	14 258	58 946	37 286	8
<i>0.401 - 0.450 (3d group of countries)</i>	32 191	59 554	44 519	7
<i>0.451 and higher (4th group of countries)</i>	30 141	88 241	46 635	10

Source: based on data obtained by the author and World Bank indicators

(<https://data.worldbank.org/indicator/NY.GDP.PCAP.PP.CD?end=2019&start=2016>)

The only Sub-Index that has a relationship with GDP per capita is the Advertising liberalism sub-index ($R=0.341$). This is confirmed by the fact that countries with a higher Sub-index also have a higher maximum GDP per capita. The same could be said about the minimum GDP per capita, if not for the minimum indicator observed in the second group of countries - the indicator of Armenia (14,258 int. dollars). Otherwise, the minimum GDP per capita would belong to Bulgaria (24,790 int. dollars).

Integral index

The Integral index for the studied countries is presented in the table and on the figure below (Table 10., Fig. 5.).

Table 10. Index of liberalism (dirigisme) of information services (from dirigiste to liberal) and its Sub-indices, group of countries studied

	MLi	ESLi	ALi	PSLi	IL(D)IS
Denmark	0,195	0,280	0,500	0,500	0,334
Bulgaria	0,242	0,368	0,400	0,400	0,330
Croatia	0,258	0,250	0,500	0,250	0,303
France	0,304	0,092	0,400	0,400	0,300
Sweden	0,108	0,250	0,500	0,500	0,293
Slovenia	0,165	0,220	0,440	0,440	0,286
Portugal	0,136	0,230	0,460	0,460	0,284
Hungary	0,198	0,193	0,540	0,270	0,280
Great Britain	0,197	0,230	0,400	0,300	0,265
Belgium	0,129	0,210	0,420	0,420	0,262
Estonia	0,251	0,200	0,400	0,200	0,260
Ireland	0,182	0,230	0,460	0,230	0,257
Greece	0,130	0,293	0,480	0,240	0,255
Spain	0,214	0,210	0,420	0,210	0,254
Armenia	0,130	0,200	0,400	0,400	0,252
<i>Azerbaijan</i>	<i>0,232</i>	<i>0,068</i>	<i>0,360</i>	<i>0,360</i>	<i>0,251</i>
Netherlands	0,123	0,150	0,420	0,420	0,247
Russia	0,184	0,259	0,400	0,200	0,245
Cyprus	0,097	0,263	0,380	0,380	0,243
Georgia	0,199	0,180	0,270	0,360	0,242
Germany	0,149	0,130	0,380	0,380	0,238
Italy	0,133	0,166	0,500	0,250	0,236
Poland	0,122	0,230	0,460	0,230	0,233
Romania	0,099	0,190	0,380	0,380	0,230
Finland	0,119	0,170	0,480	0,240	0,226
Turkey	0,113	0,180	0,360	0,360	0,225
Austria	0,136	0,150	0,400	0,300	0,224
Latvia	0,108	0,273	0,420	0,210	0,224
Lithuania	0,125	0,210	0,420	0,210	0,218
Czech Rep.	0,127	0,188	0,420	0,210	0,214
Slovakia	0,116	0,230	0,400	0,200	0,212
Malta	0,152	0,115	0,360	0,180	0,192

Source: based on author's calculations

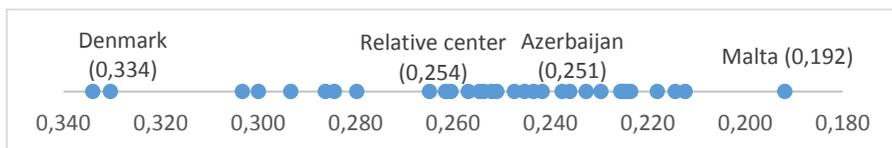


Figure 5. Index of liberalism (dirigisme) of information services

Note: compiled by the author

It is established that the country with the most liberal information services is Malta (0.192). The most dirigiste country is Denmark (0.334).

In Azerbaijan, the Index is 0.251. At the same time, the country has the potential for further liberalization of information services. The reason for this is relatively tight regulation of media and postal services.

Classification of countries by the Index

Countries according to the Integral Index can be classified as follows:

- countries whose Index is in the range from 0 to 0.220 are countries with liberal information services sector, which means that the state in these countries interferes to the least extent in the information services provision process;
- countries where the Index is in the range from 0.221 to 0.250 - countries with a moderately liberal information services sector;
- countries where the Index is in the range from 0.251 to 0.290 - countries with a moderately dirigiste information services sector;
- countries where IL(D)IS takes a value from 0.291 and higher - are countries whose state interferes in the information services provision process to the greatest extent, respectively, the information services sector in these countries is dirigiste.

If we consider countries according to IL(D)IS, depending on the level of their economic development, the following picture emerges (Table 11.):

Table 11. Intervals of IL(D)IS and the number of countries with different levels of economic development

<i>IL(D)IS intervals</i>	<i>Number of countries with GDP per capita higher than 40 thou. int. Doll.</i>	<i>Number of countries with GDP per capita from 15 thousand.int. Doll. up to 40 thousand int. Doll.</i>	<i>Number of countries with GDP per capita less than 15 thousand int. Doll.</i>	<i>Total number of countries</i>	<i>Average GDP per capita, int. Doll.</i>
<i>0 – 0.220 (liberal sector)</i>	2	2	0	4	40 537
<i>0.221 – 0.250 (moderately liberal sector)</i>	6	6	0	12	40 300
<i>0.251 – 0.290 (moderately dirigiste sector)</i>	5	5	1	11	40 464
<i>0.291 and higher (dirigiste sector)</i>	3	2	0	5	44 073

Source: based on data obtained by the author and data from the World Bank

(<https://data.worldbank.org/indicator/NY.GDP.PCAP.PP.CD?end=2019&start=2016>)

As can be seen from the table, the largest number of countries according to the Integral index is in the range from 0.221 to 0.250 and in the range from 0.251 to 0.290. Information services there are moderately liberal and moderately dirigiste. Despite the fact that most countries with GDP per capita above 40 thousand int. dollars are in the 2nd and 3rd group of countries, the highest average GDP per capita – 44,073 int. dollars – is observed in countries where the sector is dirigiste (Sweden, France, Denmark, etc.). If Malta – a country with a fairly high GDP per capita (46,279 int. dollars) - would not belong to the 1st group of countries, then the average GDP per capita in it would be equal to 38,623 int. dollars, which is less than the corresponding indicator of other groups of countries according to the Integral Index.

Azerbaijan belongs to the 3rd group of countries (0.251), which means that the information services sector in the country is moderately

dirigiste, while being close to the moderately liberal group of countries.

In general, with the exception of some countries (Malta is a prime example), more developed countries interfere more in the information services sector.

Let's consider how some indicators of the development of the sector change depending on the IL(D)IS (Table 12.).

In most of more developed countries the indicators of the development of the information services sector are higher, and they adhere to a more dirigiste policy. For example, in countries where the average GDP per capita is 44,839 int. dollars (6 countries (Netherlands, Sweden, Bulgaria, Great Britain, Cyprus and Estonia), the share of ICT services in GDP exceeds 4.5%. In 5 of these countries, GDP per capita exceeds 38 thousand int. dollars, and only Bulgaria is developing (24,790 int. dollars). At the same time, the information services sector in Sweden and Bulgaria is dirigiste, 2 countries (Great Britain and Estonia) - moderately dirigiste and 2 - Cyprus and the Netherlands - moderately liberal. There are no liberal countries among them according to the Index. Developed Denmark, with a fairly high share of ICT services in GDP (4.42%), also adheres to a dirigiste policy in the sector.

At the same time, it is necessary to note those developed countries, the share of ICT services in GDP in which is below 4.5%, but still not less than 3.8%. These are dirigiste according to the Index France (3.88%), moderately dirigiste Belgium (3.8%). Among these developed countries there are also only two moderately liberal countries – Germany (3.97%) and Finland (4.47%) – and one liberal Czech Republic (4.18%).

The share of ICT services in GDP below 3.2% is observed in moderately dirigiste Portugal (3.1%) and Greece (2.5% (minimum indicator)), in moderately liberal Austria (3.1%) and Italy (3.1%) and in liberal Lithuania (3%) (which indicates the expedient choice of the degree of state intervention in the sector in the last three countries). There is no corresponding indicator for Azerbaijan and neighboring countries.

Table 12. Profit from the export of information services, per 1 thousand people, the share of ICT services in GDP and IL(D)IS (from dirigiste to liberal countries), 2019

	Profit from the export of information services, per 1 thousand people, USD, 2019	Share of ICT services in GDP, %, 2018	IL(D)IS
Denmark	83393	4,42	0,334
Bulgaria	48730	5,79	0,330
Croatia	8347	4,07	0,303
France	14085	3,88	0,300
Sweden	43618	5,78	0,293
Slovenia	35740	3,21	0,286
Portugal	4274	3,14	0,284
Hungary	12272	4,3	0,280
Great Britain	87450	5,94	0,265
Belgium	62797	3,75	0,262
Estonia	39761	4,67	0,260
Ireland	352962	-	0,257
Greece	12742	2,45	0,255
Spain	10486	3,2	0,254
Armenia	6713	-	0,252
Azerbaijan	1860	-	0,251
Netherlands	459967	4,71	0,247
Russia	1028	-	0,245
Cyprus	1075	6,29	0,243
Georgia	1326	-	0,242
Germany	24586	3,97	0,238
Italy	1654	3,05	0,236
Poland	13154	3,28	0,233
Romania	36826	3,5	0,230
Finland	16917	4,47	0,226
Turkey	1103	-	0,225
Austria	43027	3,07	0,224
Latvia	34100	4,52	0,224
Lithuania	3399	3,03	0,218
Czech Rep.	12250	4,18	0,214
Slovakia	19645	3,67	0,212
Malta	-	-	0,192

Source: based on relevant data (see dissertation, Table 4.3.11.)

https://www.trademap.org/tradestat/Country_SelService_TS.aspx?nvpm=1|||||S09|1|3|1|2|2|1|2|1|1 ; <https://data.worldbank.org/indicator/sp.pop.totl?end=2019&start=2016> ; <https://ec.europa.eu/eurostat/databrowser/view/tin00074/default/table?lang=en> ; <https://data.worldbank.org/indicator/NY.GDP.PCAP.PP.CD?end=2019&start=2016>

The fact that in general, in more developed countries, the information services sector is more developed can also be judged by the indicator of profit from the export of information services per 1 thousand people. Average profit from the export of information services per 1 thousand people. across all countries is 48,236 US doll., and profit above this figure is seen in dirigist by the Index Denmark (83,393 US doll.) and Bulgaria (48,730 US doll.), as well as in the moderately dirigiste Ireland (352,962 US doll.), Great Britain (87,450 US doll.) and Belgium (62,797 US doll.). These countries include only one country with a moderately liberal information services sector - the Netherlands (maximum profit - 459,967 US dollars). The average GDP per capita of these 6 countries is 56,061 int. dollars, which is higher than in countries with lower profit from the export of information services (in countries where the profit is in the range from 0 to 10 thousand US dollars, the average GDP per capita is 29,305 int. dollars, from 10 thousand US dollars to 45 thousand US dollars - 42,368 int. dollars).

Despite this, there are developed countries (GDP per capita is over 35 thousand int. dollars), where the profit indicator is quite low (within 10 thousand US dollars), and the state actively intervenes in the information services sector. These are moderately dirigiste by the Index Spain (10,486 US doll.) and Portugal (4,274 US doll.).

In Azerbaijan, with a rather low profit of 1,860 US doll., the information services sector is moderately dirigiste (close to moderately liberal).

The presence of developed countries with low profit (less than 2 thousand US dollars) and a low Integral index (the sector is moderately liberal), at the same time, indicates that the state of these countries has chosen the right policy in the information services sector (or is moving in the right direction, since it is possible to liberalize the sector even more), because active state intervention in the sector at a low level of its development is not advisable. These countries are Italy (1,654 US doll.) and Cyprus (1,075 US doll.).

Given the above, consider Azerbaijan's position in the same group with such countries as Great Britain and Belgium, where the information services sector is quite developed (profit from the export

of information services per 1 thousand people is above 62 thousand US dollars; the share of ICT services in GDP of 3.8% and above), inappropriate. The use of certain restrictions in the information services sector hinders its development.

2. An assessment of the economic consequences of the degree of state intervention in the information services provision process via post allows us to state that an increase of postal services dirigisme degree does not lead to a decrease in the development indicators of the information services sector. On the contrary, in most countries (there are exceptions) with a higher degree of state intervention in this process, the indicators of the development of the information services sector are higher. At the same time, countries with a higher degree of dirigisme of postal services are more developed countries. Liberalization of postal services in Azerbaijan can make the information services provision process via post more profitable. [12, p. 57-67]

As the result of the assessments it was revealed that an increase in the degree of state intervention in the information services provision process via post does not lead to a reduction in the number of services provided for sending letters by post abroad and within the country. Moreover, in most (but a few) countries with a more dirigiste information services provision process via post, the number of services provided for sending letters is higher than in countries with less state intervention in this process. [12, p. 57-67]

The absence of negative impact of the increase in the degree of dirigisme of the information services provision process via post on the development of information services sector is also confirmed by the fact that an increase in the VAT rate on postal services and stamps does not lead to a decrease in the turnover from the provision of services for sending letters by post within the country. On the contrary, in most countries (there are exceptions) with a high degree of state intervention in this process, turnover from the provision of services for sending letters by post within the country is greater than in countries where the process is more liberal. [12, p. 57-67]

At the same time, it is important to note that the reason for the higher rates of the number of services provided for sending letters by

post abroad and within the country, per 1 inhabitant, in countries (in most countries) with higher PSLi, compared with countries with more liberal postal services, may be that in the group of countries under study more dirigiste countries according to the Sub-index are countries with a higher level of economic development, therefore, an increase in the cost of postal services as a result of an increase in the VAT rate on them, on stamps, does not reduce their consumption. In addition, a study of the activities of post offices in providing information services in Azerbaijan and Armenia, where postal services are moderately dirigiste (Azerbaijan) and dirigiste (Armenia), once again confirms that, despite the fact that in European countries with an increase in the degree of state intervention in postal services, the number of letters sent by post does not decrease, however, in the CIS countries, perhaps in order to form and develop information services sector, and also taking into account the lower solvency of the population, postal services should still be more liberal (more profitable). This is also confirmed by the fact that among these CIS countries, the indicators of postal services in Russia, which is liberal according to the Sub-index, are higher than in Azerbaijan and Armenia.

3. As a result of assessing the economic consequences of the degree of state intervention in the information services provision process via the Internet, it was revealed that ensuring full competition in the field of the Internet and telephony can positively affect the development of the information services sector (in particular, in developing countries). It is recommended to ensure full competition in this area in Azerbaijan as well. [12, p. 57-67]

As the result of the assessments carried out, it was revealed that the abolition of restrictions in the regulatory framework in the field of the Internet and telephony that restrict the number of licensees may contribute to an increase in the share of buyers of books, magazines and electronic educational materials via the Internet in the total number of citizens (it should be noted that other unaccounted factors also influence the indicator). [12, p. 57-67]

It was also revealed that an increase in the competition in the field of the Internet and telephony in developing countries may lead to

an increase in mobile and fixed broadband Internet subscriptions, which creates conditions for an increase in the consumption of electronic information services. There is no relationship between indicators in developed countries. At the same time, it should be noted that other unaccounted factors also influence the indicators. A similar study was conducted for the CIS countries separately. It found that, although there is no clear pattern in the impact of increase of competition in the field of the Internet and telephony on the number of subscriptions to broadband Internet (fixed and mobile), given the established relationship between indicators in developing countries, ensuring full competition in this area in Azerbaijan is still recommended.

The abolition of restrictions in the regulatory framework in the field of Internet and telephony in Azerbaijan, which restrict the number of licensees, can to a certain extent increase the number of people buying goods and services, including books, magazines and electronic educational materials via the Internet. [12, p. 57-67]

With all this, it should be noted that developed and developing countries are located stochastically according to the E-services liberalism sub-index.

4. As a result of assessing the economic consequences of the degree of state intervention in the information services provision process via media, it was found that changes in media liberalism degree do not affect the indicators of the development of the information services sector. However, given that countries with a higher level of economic development have more liberal media policies, and that the media in these countries are more developed, continuing media liberalization in Azerbaijan is important.

In the result of assessments it was revealed that:

- tightening (weakening) of the mechanisms of state regulation of media, namely, the increase (decrease) of the VAT rate on printed publications, does not affect the number of publishers in them. The profit of the publishing industry from the sale of publications (not educational) does not change under the influence of changes in media liberalism (dirigisme) degree.

- changes in the VAT rate for TV and radio broadcasting do not lead to changes in profit from television and radio broadcasting. This can be related to the fact that the methodology for calculating the Media liberalism sub-index implies that the consumer of services is located in the territory of the country providing them, and the indicator of profit from television and radio broadcasting includes both profit received from the provision of these services within the country, and abroad.

- since the profit from TV and radio broadcasting implies also the profit from the provision of services abroad, this also explains why the establishment of a higher license fee for watching television does not reduce profit (mainly, these are more developed countries). Profit from television and radio broadcasting, as already noted, can be increased either through the provision of services abroad, or through domestic consumption. Since countries with a higher license fee are more developed countries, an increase in the fee may not affect the consumption of this type of service in the country. In general, countries with higher TV license fee (France, Austria and Italy) apply low VAT on this fee. Sweden does not apply it at all. Only Denmark applies the highest VAT on TV license fees.

- the analysis of the development indicators of information services provided through the print media, TV and radio, taking into account media liberalism (dirigisme) degree in Azerbaijan, revealed the following: considering that most countries with a higher level of economic development adhere to a less dirigiste policy in the field of media, and moreover, the fact that in more developed countries (less dirigiste according to the Sub-index) the media are more developed, Azerbaijan, which belongs to the dirigiste according to the Sub-index countries, should reduce the degree of state intervention in this area in order to allow it to form. Namely: increase the share of private television channels in the total number of television channels, reduce VAT on TV and radio broadcasting, and corporate tax.

5. An assessment of the economic consequences of the degree of state intervention in the information services provision process via advertising indicates that changes in the liberalism degree of the process do not affect the development of the advertising

market. Given the level of development of important for the development of the information services sector advertising market of liberal by Advertising liberalism sub-index Azerbaijan, it is important to continue adhering liberal policy in this area in the country.

The assessment made it possible to establish that:

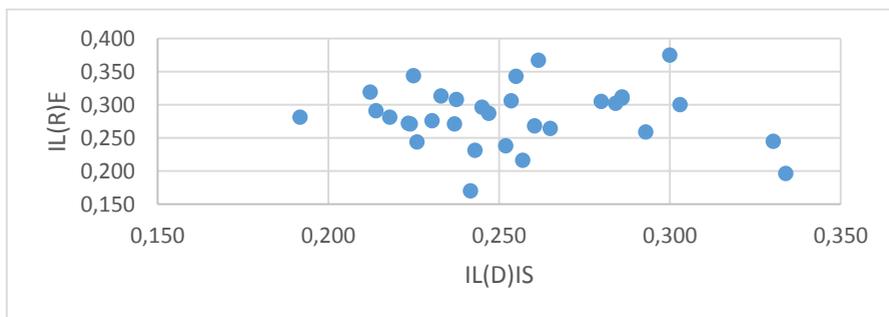
- changes in the degree of state intervention in the information services provision process via advertising do not affect changes in the share of the country's advertising market in the advertising market of the European Union.

- no pattern was found between changes in VAT on advertising in the Internet and the share of the online advertising market in the total advertising market of the country (European countries).

At the same time, according to the Advertising liberalism sub-index Azerbaijan is the second most liberal country. And for developing countries, a low degree of state intervention in the advertising market is important for its formation (in developed countries, the degree of dirigisme is higher; however, due to the level of their economic development and the level of development of the advertising market, an increased degree of state intervention does not interfere with the functioning of the country's advertising market). Why is the advertising market not developing in Azerbaijan, despite its liberalism? Perhaps, due to the fact that the means of distribution of advertising are media, the Internet, etc., the low level of development of these areas in the country is the reason for the low performance of the advertising market.

6. An analysis of the relationship between the degree of state intervention in the information services provision process and the degree of state intervention in the economy indicates the absence of any relationship between them.

Let's explore the relationship between IL(D)IS and Index of leftness (rightness) of the economy (IL(R)E) (Graph 1.).



Graph 1. IL(D)IS and IL(R)E

Source: compiled according to the data of Institute of Economics of ANAS (<http://economics.com.az/ru/index.php/sub-indeksy.html>) and the author's data

This diagram shows IL(D)IS and IL(R)E for 32 countries. There is no correlation between the indicators. In Denmark, the most dirigiste in terms of IL(D)IS (0.334), the economy is one of the most liberal among the countries studied (0.196), and in general, liberal according to the classification of countries according to IL(R)E. France is a country characterized by both a dirigiste information services sector and a predominantly dirigiste economy as a whole (0.300 and 0.375). Azerbaijan belongs to the countries with a moderately dirigiste information services sector (close to moderately liberal) and with an intermediate economy according to IL(R)E etc.

7. After analyzing the relationship between the information services liberalism degree and the Human development index, it was found that there is no relationship between the indicators.

The fact that more developed countries intervene more actively in the information services sector suggests that countries with higher IL(D)IS also have a higher Human development index (HDI), which reflects the level of human development in the country. To determine how the degree of state intervention in the information services provision process interacts with the level of human development of countries, let use the IL(D)IS and the Human development index (Graph 2.).

depending on the change in the degree of state intervention in the information services provision process, which affects the availability of these services in the country. (Table 13.).

Table 13. Regression analysis between IL(D)IS and workforce skills indicators (separately), studied group of countries

	<i>Quality of professional skills</i>	<i>Ease of finding skilled employees</i>	<i>Skillset of graduates</i>
<i>IL(D)IS, coefficient</i>	1,686	4,045	1,631
<i>P-value</i>	0,670	0,235	0,636
<i>V-intercept, coefficient</i>	3,943	3,157	4,016
<i>P-value</i>	0,000	0,001	0,000
<i>Multiple R</i>	0,078	0,216	0,087
<i>R-square</i>	0,006	0,047	0,008
<i>Adjusted R-square</i>	-0,027	0,015	-0,026
<i>F-stat.</i>	0,185	1,471	0,229
<i>P-value</i>	0,670	0,235	0,636
<i>Observations</i>	32	32	32

Source: based on author’s data and data of the World Economic Forum

(http://www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2019.pdf)

As can be seen, changes in the degree of state intervention in the information services provision process via various means of their distribution do not affect any of the listed indicators. If we consider how the average indicators of the quality of professional skills, the ease of finding skilled employees and the skillset of graduates of secondary schools and higher educational institutions change depending on changes in IL(D)IS, then the following picture emerges (Table 14.):

Table 14. Intervals of IL(D)IS and the average indicators of the quality of professional skills, the ease of finding skilled employees and the skillset of graduates of secondary schools and higher educational institutions

<i>Intervals of IL(D)IS</i>	<i>Quality of professional skills</i>	<i>Ease of finding skilled employees</i>	<i>Skillset of graduates</i>
<i>0 - 0.220</i>	4.2	3.4	4.2
<i>0.221 – 0.250</i>	4.4	4.3	4.4
<i>0.251 – 0.290</i>	4.4	4.3	4.5
<i>0.291 and higher</i>	4.5	4.2	4.5

Source: based on author’s data and data of the World Economic Forum

(http://www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2019.pdf)

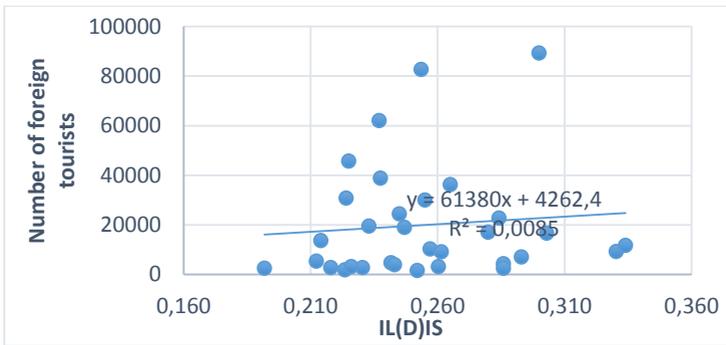
As can be seen, in countries with a more dirigiste policy in the information services sector, the average indicator of quality of professional skills, although slightly, is higher than in countries with a more liberal sector. In countries with a more dirigiste information services sector, the skillset of graduates of secondary schools and higher educational institutions, which they need in business, are estimated by experts slightly higher than in countries with a more liberal sector. There is no “pattern” in the relationship between IL(D)IS and the ease of finding skilled employees.

Thus, the degree of state intervention in the information services sector in the countries studied, which determines the availability of these services in the country, does not affect the skills of the workforce, which partially reflects the competitiveness of the country. The higher values of these indicators in countries with a more dirigiste sector can be justified by the fact that most countries adhering to a more dirigiste policy in the information services sector are countries with a higher level of economic development. Perhaps the results of a study conducted in less developed countries would look different.

9. An analysis of the relationship between IL(D)IS and indicators of the development of the tourism sector was carried

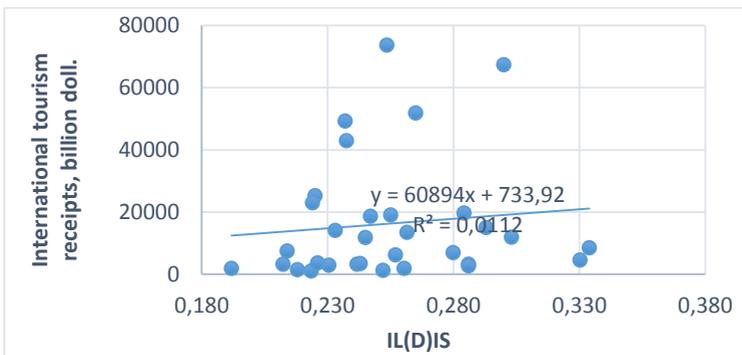
out. It was revealed that there is no relationship between information services liberalism degree and indicators of the development of the tourism sector.

How does the liberalism (dirigisme) degree of the information services sector affect the country's tourism industry? Does greater state intervention in the information services provision process (mainly electronic information services) hinder the advertising of country's tourism potential, the promotion of tourism products on the world market? Let use IL(D)IS and development indicators of the tourism industry in the country (Graph 3. and Graph 4.).



Graph 3. IL(D)IS and number of foreign tourists, 2018

Source: based on author's data and data of UNWTO (<https://www.e-unwto.org/doi/pdf/10.18111/9789284421152>)



Graph 4. IL(D)IS and international tourism receipts, 2018

Source: based on author's data and data of UNWTO (<https://www.e-unwto.org/doi/pdf/10.18111/9789284421152>)

As can be seen, there is no relationship between the degree of state intervention in the information services provision process and the number of foreign tourists, as well as the profit received from foreign tourists. At the same time, it should be noted that most of the studied countries are developed countries, with the sights of which a huge number of foreign citizens want to get acquainted, and the desire to visit them is repeated. Perhaps, in less developed countries, in countries about which little is known to foreign citizens, the ease of dissemination by individual tour operators of information about the country's tourism potential, or information about goods and services on the Internet, produced and provided by individuals or legal entities of the country (for example, creating a page on social networks with the aim of selling the produced kalagai and decorations in the national style), can arouse the interest of foreign citizens to the country and attract more and more of them to the country, and, accordingly, increase the profit received from them.

MAIN CONCLUSIONS

The study carried out in terms of the formation and development of the information services sector, which makes a serious contribution to the country's economy, made it possible to draw the following conclusions:

1. Conclusions on the digital economy

1.1. The study of the impact of cybersecurity degree on the development indicators of digital economy led to the following conclusions [7, p. 41-51]:

- in developing countries, with an increase of security degree in cyberspace, both indicators of ICT “business-to-business” use and Internet “business-to-consumer” use may improve.

- in developed countries, despite the fact that an increase of cybersecurity may contribute to an increase in the use of the Internet by enterprises to sell goods and services to consumers, the adoption of these measures will not affect their use of ICT for transactions with other enterprises. Along with this, it should be noted that the relationship between cybersecurity degree and the degree of Internet

use "from business to consumer" in these countries is weaker than in developing countries.

- with the increase in the degree of security in cyberspace in the country, the number of digital payments made in it increases. And vice versa. This relationship is observed in both developed and developing countries.

At the same time, the number of digital payments made, as well as other development indicators of digital economy listed above, also depends on other factors, the influence of which was not taken into account.

1.2. The study of the impact of digital economy development on employment has led to the following conclusions [14, p. 85-95]:

- in most countries where the values of indicators of the use of information and communication technologies by enterprises to conduct transactions with other enterprises, as well as use of the Internet to sell their goods and services are higher, the values of the share of employed in the total number of working-age population are also higher. At the same time, it should be taken into account that a number of other factors influence the level of employment in the country.

- in most countries where the degree of readiness for the emergence of digital platforms, for the digitalization of the economy is higher, the ratio of the share of women in the total number of employed labor force to the share of men in the total number of employed labor force is also higher (compared to the countries with lower values of the Network readiness index (NRI)). The presence of countries where this "pattern" does not work confirms the fact that many other factors influence the female labor force participation rate.

2. Conclusions on the indicators of the Network readiness index, which have the greatest potential for improvement in Azerbaijan [26]

The analysis carried out in order to determine the economic significance of this Index made it possible to establish that, despite the fact that changes in the Networked readiness index affect GDP per capita (it should be noted that changes in the indicator are also explained by other unaccounted factors), they do not affect dynamics

of economic growth. However, increasing the level of network readiness in a country can stimulate trade, taking into account other factors affecting it. One of the main ones is the country's production potential. At the same time, an increase in the level of network readiness affects (to a certain extent) both trade in services and trade in goods (moreover, more on the export of goods and services than on imports). Along with this, the results of the regression analysis indicate the presence of other influencing factors not taken into account in the regression model.

It is also found that increasing the level of network readiness can stimulate the growth of receipts, both from the export of information services, and from tourism services provided to foreign tourists. At the same time, it is important to note that the indicators also depend on other unaccounted factors.

2.1. Conclusions on the indicator of Tertiary enrollment ratio [11, p. 936-940]:

- in developing countries, by increasing the volume of public funding of primary and secondary schools, it is possible to increase the number of students in the country's universities (of course, along with public funding of primary and secondary education, it is also important to effectively allocate these financial resources). The volume of public funding for universities does not affect the number of students in universities in these countries;

- in developed countries, tertiary enrollment ratio does not depend on changes in the volume of public spendings either on universities or on educational institutions of the first two levels of education.

In fact, many other factors influence people's choice of higher education institutions in a given country.

2.2. Conclusions on the High-tech exports indicator:

The indicator of the share of exported high technologies in the total volume of exported industrial goods depends on the intensity of competition in the local market (taking into account other factors). The results of the regression analysis made it possible to judge that the liberalization of the pricing process, foreign trade, and the licensing process leads to an increase in the intensity of local competition (along

with this, the values of the coefficient of determination indicate that changes in the Intensity of local competition indicator can be caused not only by studied independent variables, but also by other factors not taken into account when building the model). The results of the study on determining the degree of state regulation of these areas, which makes it possible to ensure the economic development of the country, made it possible to establish that, despite the fact that there is no single optimal degree of state intervention in the pricing process, in foreign trade and in the licensing process for all countries, Price regulation sub-index (PRi) should take values from 0 to 0.250, Foreign trade sub-index (FTi) - from 0 to 0.260, and Licensing sub-index (Li) - from 0 to 0.105. [10, p. 223-228]

2.3. Conclusions on the Ease of doing business index (on indicator of tax burden of enterprises) [9, p. 30-37]:

- decreasing the tax burden of enterprises is one of the factors that increase the number of new enterprises. At the same time, as the values of the coefficient of determination revealed during the regression analysis indicate, the indicator is also influenced by other factors that were not taken into account when building the regression model.

- there is a negative moderate relationship between the tax burden of enterprises and the level of employment. This relationship is explained by the fact that with an increase in the tax burden, the number of operating enterprises may decrease, which reduces the number of people employed in the country. Vice versa, a reduction in the tax burden of enterprises can lead to the emergence of new enterprises, which, in turn, will serve to increase the level of employment in the country.

- there is a negative relationship between the tax burden of enterprises and economic growth. However, this does not mean at all that a reduction in the tax burden of enterprises will necessarily have a positive impact on economic growth, since other factors also influence the indicator, and the tax burden of enterprises is just one of them. Among the taxes paid by businesses, social taxes and corporate income tax have the most impact on economic growth. Changes in the

rates of turnover tax and other taxes have no effect on economic growth.

2.4. Conclusions on other indicators of the Network readiness index

- Azerbaijan also has the potential to improve such indicators of the Network readiness index as Software piracy rate sub-index, Government online services sub-index, E-participation sub-index, Socioeconomic gap and rural gap in use of digital payments sub-indices, ICT skills sub-index, R&D expenditures by businesses sub-index, Firms with websites sub-index.

3. Conclusions on the state intervention degree in the information services sector

- having calculated the Indices of liberalism (dirigisme) of information services for 32 countries, it was found that Azerbaijan is a country with moderately dirigiste (close to moderately liberal) information services. Most of the more developed countries follow a more dirigiste policy in the information services sector. [5, p. 7-13]

- an increase in the degree of state intervention in the information services provision process via post does not lead to a decrease of the indicators of post offices on the provision of information services. In the group of countries under study, the countries that are more dirigiste by the Sub-index are countries with a higher level of economic development. [12, p. 57-67]

- an increase in the Internet and telephony competition may lead to an increase in the number of subscriptions to mobile and fixed broadband Internet (developing countries), may increase the number of people buying goods and services, including books, magazines and e-learning materials via the Internet [12, p. 57-67]. With all this, it should be noted that developed and developing countries are located stochastically according to the E-services liberalism sub-index.

- changes in the country's VAT rate for printed publications do not affect the number of publishers in them. The profit of the publishing industry from the sale of publications (not educational) does not change under the influence of changes in the media liberalism (dirigisme) degree. Changes in the VAT rate for TV and radio broadcasting do not lead to changes in income from television and

radio broadcasting. Establishing a higher license fee for watching television also does not reduce the profit (mainly in more developed countries) from television and radio broadcasting. Most countries with a higher level of economic development adhere to a less dirigiste policy in the field of media [22, p. 4-14].

- changes in the degree of state intervention in the information services provision process via advertising do not affect the development indicators of the country's advertising market (European countries). In developed countries, dirigisme degree is higher.

- the relationship between IL(D)IS and IL(R)E is not observed.

- a relatively high level of human development is found both in countries with a more dirigiste and a less dirigiste information services sector.

- the degree of state intervention in the information services sector, which determines the availability of these services in the country, does not affect the skills of the workforce, which partially reflects the competitiveness of the country.

- the relationship between the degree of state intervention in the information services provision process and the number of foreign tourists, as well as the profit received from foreign tourists, has not been established.

Proposals over Azerbaijan

1. Proposals on the current state of the information services sector of Azerbaijan and indicators of Internet use

1.1. Proposal to improve the development indicators of the information services sector:

1.1.1. it is necessary to liberalize the foreign trade.

In order to increase the Indices characterizing the level of the development of the information services sector, in the foreign trade policy of the state, liberalism should prevail over administrative regulation. This means that tariff barriers should be low, restrictions on foreign ownership should be low, and the investment environment created for foreign investors should be favorable. It should be especially noted that the Indices, which reflect the level of the development of the sector, in addition to the foreign trade policy of the

state, are also influenced by other unaccounted factors. [3, p. 7-11; 4, p. 91-100; 8, p. 5-7]

In European countries, state intervention in foreign trade to a lesser extent is accompanied by a higher share of information and communication services in GDP. It should also be taken into account that liberalism or dirigisme degree of the state's foreign trade policy there is just one of many factors influencing this indicator. [3, p. 7-11; 8, p. 5-7]

In order for the profit from the export of information services to be higher, foreign trade, taking into account other factors of influence, should be more liberal. [3, p. 7-11; 4, p. 91-100; 8, p. 5-7]

1.2. Suggestions for improving indicators of internet use in Azerbaijan:

1.2.1. it is necessary to increase the number of operators with access to international gateways. [13, p. 57-67; 26]

It is possible to increase the number of subscriptions to high-speed fixed broadband Internet in Azerbaijan by reducing tariffs for it. To do this, it is necessary to increase the number of operators with access to international gateways.

1.2.2. it is necessary to reduce customs duties on imported mobile phones, reduce the VAT rate on mobile phones imported by legal entities and tariffs for mobile Internet by introducing new mobile operators to the market. [13, p. 57-67; 26]

Since Azerbaijan imports mobile phones supporting 3G and 4G (providing access to the Internet), it is necessary to reduce customs duties on imported mobile phones. A reduction in the VAT rate on mobile phones imported by legal entities could also serve to reduce their prices, which could lead to an increase in mobile Internet users. On the other hand, the number of mobile Internet users also depends on mobile Internet tariffs. Reducing mobile internet tariffs may lead to an increase in the number of active mobile broadband internet subscriptions, but at the same time may not be enough for it. Reducing tariffs for mobile Internet can be achieved by introducing new mobile operators to the market.

1.2.3. it is important to liberalize foreign trade. [26]

- increasing the international Internet bandwidth in countries with medium-high income to a certain extent depends on the foreign trade policy of the state. This means that an increase in the indicator can be achieved by improving infrastructure, attracting investments, using modern technologies, increasing the number of channels connected directly to international gateways (at the same time, there are other factors influencing the international Internet bandwidth). An increase in the number of operators with direct access to international gateways, in other words, increased competition in this area, can reduce the tariffs for the Internet coming to Azerbaijan for operators and providers, which, in turn, will reduce the tariffs for the Internet for the population.

1.2.4. level of cybersecurity should be improved. [26; 25, p. 887-896]

- in order to increase the number of secure Internet servers in the country, it is necessary to develop legislation aimed at ensuring cybersecurity; create responsible bodies that will oversee security in cyberspace; increase the number of certified specialists; increase the number of national and international cooperation in the field of cybersecurity (at the same time, the number of secure Internet servers also depends on many other factors). In Azerbaijan, first of all, it is necessary to adopt a national cybersecurity strategy, organize educational events, specialized trainings, carry out research activities, and develop potential in the field of cybersecurity.

2. Proposals for the development of the digital economy

- it is important to improve the level of cybersecurity, as security in cyberspace can lead to increased use of ICTs between businesses (in developing countries) and between businesses and consumers (in developed and developing countries). In addition, it can serve to an increase in the number of digital payments made (both in developed and developing countries). [7, p. 41-51]

3. Proposals for indicators of the Network readiness index with the greatest potential for improvement in Azerbaijan [26]

- to increase the Tertiary enrollment ratio, it is necessary to increase public spending on primary and secondary education (at the

same time, it is necessary to monitor their correct distribution). This will serve to improve the quality of the education provided, which is an important factor in admission to higher education institutions. [11, p. 936-940]

- in order to improve the indicator of High-tech exports, it is necessary to ensure an increased intensity of competition in the local market through the liberalization of foreign trade, pricing, and the licensing process. And Azerbaijan has sufficient potential to carry out further liberal reforms in all three areas. [10, p. 223-228]

- to improve the Ease of doing business indicator, it is necessary to reduce the tax burden of enterprises. This will create favorable conditions for the emergence of new enterprises, increase the level of employment in the country. Reductions in social taxes and corporate income tax will, to a certain extent, have a favorable effect on economic growth. [9, p. 30-37]

- the activities carried out in our country to develop the ICT sector, to ensure cybersecurity, as well as strengthening state control in this area will lead to the further improvement of Azerbaijan's position on Software piracy rate sub-index in the Network readiness index rating.

- in Azerbaijan, it is possible to ensure even greater ease of finding, the degree of accessibility (not functional availability) of information provided in the native language on the national portal, on the e-services portal, on the e-participation portal, including on the websites of the ministries of education, health, social services, finance, environment. In other words, it is possible to make these portals, sites more usable.

- more active online consultations, surveys, voting, research of citizens' opinions, bringing citizens' opinions to the relevant state structures will further improve Azerbaijan's position on the E-participation index.

- given that in Azerbaijan the category of rich people makes digital payments to a greater extent than poor people (in particular, compared to those living in rural areas), who, as a rule, do not have their own account, it is necessary to ensure the same availability of banking services throughout territory of the country. It is also

important to increase the confidence of poorer account holders in the security of digital payments through educational activities. As a result, such indicators of the NRI as the Socioeconomic gap in use of digital payments sub-index and Rural gap in use of digital payments sub-index will increase.

- to improve the ICT skills sub-index, which allows comparing the readiness of people from different countries to use information technologies, it is necessary to organize appropriate courses and conduct trainings in this area.

- it is necessary to increase the expenditures of public and private enterprises for researches, which is important for the development of science in the country. This will improve Azerbaijan's position in the ranking of countries in terms of R&D expenditures by businesses.

- in order to improve Firms with website sub-index, it is necessary to encourage enterprises in our country to create their own Internet pages, it is necessary to create conditions for increasing the number of enterprises engaged in the provision of such services as web page creation, design, etc. Favorable conditions for this include, for example, preferential taxation. This will reduce the price of these types of services to a certain extent, which will ensure the profitability of the process of creating web pages.

Along with this, a reduction in the amount required for domain registration, or the abolition of the payment for the first year of registration of a domain, could be one of the factors that encourage businesses to create a web page.

4. Proposals on liberalism degree of the information services sector in Azerbaijan

In general, taking into account the degree of state intervention in the information services sector and the development of the sector itself in Azerbaijan and other countries under study, the placement of Azerbaijan on the Index of liberalism (dirigisme) of information services in the same group with such countries as Great Britain and Belgium is inappropriate. The use of certain restrictions in the information services sector hinders the development of the sector.

So, taking into account the lower solvency of the population and the rather low indicators of the information services provision in the country compared to more developed countries, it is necessary:

- to ensure the liberalization of postal services, so that the provision of information services by post offices will be more profitable, namely, to reduce VAT on postal services and stamps. [12, p. 57-67]

- to ensure full competition in the field of the Internet and telephony (remove restrictions in the regulatory framework that hinder the increase in the number of licensees in the field of the Internet and telephony), in order to contribute to an increase in the consumption (provision) of electronic information services. [12, p. 57-67]

- increase the share of private television channels in the total number of television channels, reduce VAT on TV and radio broadcasting, and corporate tax in order to enable the development of information services sector in the field of media.

Despite the fact that Azerbaijan adheres to a liberal policy in the field of providing information services via advertising, the advertising market is still not properly developed. Perhaps due to the fact that the means of advertising are the media, the Internet, etc., and the low level of development of these areas themselves in the country is the reason for the low performance of the advertising market. Accordingly, their development will also affect the development of the advertising market in the country.

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Address: AZ1143, Baku, av. H.Javid , 115

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