



“Sustainable socio-economic development and Rainbow Europe Index”

AUTHORS


Yuriy Petrushenko 




Fedir Zhuravka 



Vladyslav Shapoval

Lyudmila Khomutenko 



Olena Zhuravka 



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Vladyslav Shapoval, Lyudmila
Khomutenko, Olena Zhuravka, 2021

Yuriy Petrushenko, Doctor of
Economics, Professor, Department
of International Economic Relations,
Sumy State University, Ukraine.

Fedir Zhuravka, Doctor of Economics,
Professor, Department of International
Economic Relations, Sumy State
University, Ukraine. (Corresponding
author)

Vladyslav Shapoval, Master Student,
Sumy State University, Ukraine.

Lyudmila Khomutenko, Ph.D.,
Associate Professor, Department of
International Economic Relations,
Sumy State University, Ukraine.

Olena Zhuravka, Ph.D., Associate
Professor, Department of Financial
Technologies and Entrepreneurship,
Sumy State University, Ukraine.



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Yuriy Petrushenko (Ukraine), Fedir Zhuravka (Ukraine), Vladyslav Shapoval (Ukraine),
Lyudmila Khomutenko (Ukraine), Olena Zhuravka (Ukraine)

SUSTAINABLE SOCIO- ECONOMIC DEVELOPMENT AND RAINBOW EUROPE INDEX

Abstract

The issues of recognizing the rights of the LGBTQ+ community around the world and developing appropriate anti-discrimination policies and laws are one of the main topics for discussion in the global agenda. This is due to the commitment of the world community to protect human rights and meet the needs of society. The paper aims to assess the relationship between socio-economic development indicators of some European countries and the Rainbow Europe Index. To find out how discrimination against the LGBTQ+ community affects various social and economic development indicators of some European countries, a data matrix was developed and the Spearman rank correlation coefficient was calculated. The obtained results confirmed a positive relationship between the Rainbow Europe Index and GDP per capita, the Human Development Index, the Corruption Index, and the Index of Happiness. Calculations have shown that the Rainbow Europe Index had a significant impact on these indicators. The study proved the dependence of indicators and demonstrated the need to provide freedoms and rights for LGBTQ+ affiliated members in Ukraine and other European countries.

Keywords

LGBTQ+, social-economic development, indicators,
Rainbow Europe Index, GDP per capita, Human
Development Index, Index of Happiness

JEL Classification

E60, E71, F22, F62

INTRODUCTION

The issue of discrimination against the LGBTQ+ community has recently become highly relevant in the world community. It is one of the most important problems to be acknowledged and solved nowadays, along with the environmental crisis, sustainable development issues, and disarming. Special attention to the topic was paid after the proclamation of the Human Rights Charter (HRC) when the search for possible strategies and mechanisms to support their implementation began. One aspect of the HRC is the non-discrimination policy based on all grounds, including sexual orientation and gender identity.

The movement for the recognition of homosexuality and other manifestations of sexuality began to appear more active in the sixties of the last century. Lobbying for legal rights that were enshrined in the Charter of Human Rights by the LGBTQ+ community has also become more active due to some discriminatory events at that time. One of the most famous ones was the Stonewall Riots that happened in 1969 in the United States and led to a populated demonstration and lobbying of LGBTQ+ rights in the United States and the world. As a result of tireless fighting, most European and American countries have passed a law recognizing same-sex marriage, and most importantly, unacceptable discrimination against LGBTQ+ people.

Currently, the issue of recognition and development of anti-discrimination policies and laws is essential in Ukraine due to the nation's desire to be a member of the European community. The problem needs to be solved not only because of the commitments that Ukraine has undertaken since the signing of the Association with the European Union, but also in its own interests of national security. After all, discrimination against members of the LGBTQ+ community affects the development of economic and social prosperity of countries and regions of the world. It is also a cause of migration tendencies as people tend to choose countries with a high level of freedom and implementation of human rights.

1. LITERATURE REVIEW

Nowadays many researchers devoted their studies to the issues of social and economic inequality, as well as the rights and freedoms of the population in different regions and countries. Particularly, Chugunov and Nasibova (2021) studied the influence of state funding on social indicators on the example of EU countries. The study proved that social indicators are determined not just by the amount of funding of social spending, but also by the structure of the social protection system.

Kolluru and Semenenko (2021) and Kuzmenko et al. (2021) profoundly investigated income inequalities among the working population in EU countries and Ukraine using GINI indicator analysis. Barannyk et al. (2021) identified general problems of personal income tax and its implementation directions as a tool of social policy based on Laffer's tax theory.

Kolodiziev et al. (2021) investigated the effect of pension assets on economic growth on the example of post-socialist countries, e.g. Hungary, Slovenia, the Slovak Republic, Poland, and the Czech Republic. Oliynyk et al. (2017) studied the possibilities of life insurance as a financial tool to fight gender and age inequalities among the population in developed countries.

A special focus is put on the recognition of the LGBTQ+ community rights all around the world. Shelukhin (2017) discusses how discrimination against LGBTQ+ in the form of lacking legal guarantees has a negative impact on the countries' economic development. The study describes the example of researchers at the Williams Institute who correlated the data of the Global Index of Legal Recognition of Homosexual Orientation (GILRHO) with GDP per capita and the Human Development Index. They found an extremely

high correlation, which was confirmed by the results of regression analysis: one additional point of the GILRHO index (i.e., +1 additional right for LGBTQ+) is associated with an increase in GDP per capita by an average of 1,440 US dollars. Factors such as an unhealthy atmosphere in society (school, workplace, etc.), associated with the reproduction of prejudice and the promotion of discrimination, contribute to the reduction of the quality of human capital and create formal and informal barriers, in particular in economic relations.

In addition, Prozhoga and Shelupin (2016) described discrimination in the workplace. Two main types were distinguished: 1) discrimination by a boss and 2) mobbing (discrimination by colleagues). In addition, they concluded that homophobia affects LGBTQ+ representatives from an economic point of view, finding the following arguments:

1. Inequality at work – members of the LGBTQ community receive lower wages than their heterosexual counterparts, which leads to reduced tax revenues and the outflow of skilled workers abroad.
2. A high level of gay poverty leads to increased spending on social programs to combat poverty and social inequality.
3. Poor health of discriminated workers causes a spread of diseases, increasing levels of depression and suicidal tendencies among workers at times, as well as a decrease in overall productivity. Hence, significant costs should be allocated to tackling healthcare problems, combating the spread of HIV, etc.
4. Much of the country's GDP could be lost through homophobic policies.

In addition to Ukrainian researchers, this topic is raised by foreign scholars, in particular, the studies compared the relationship with economic indicators. For example, Hossain et al. (2020) found that there is a huge positive relationship between Human Rights Campaign's Corporate Equality Index and firm innovation. Companies that have inclusive workplace diversity policies perform better are more innovative.

Lee Badgett et al. (2019) showed new and interesting data on how the implementation of LGBTQ+ human rights can contribute to the economic development of countries around the world. Thus, they analyzed the relationship between the social integration of the LGBTQ+ community and economic development, based on legal and economic data from 132 countries between 1966 and 2011. The analysis used a regression approach with fixed effects and created data set – the Global Index of Legal Recognition of Homosexual Orientation (GILRHO) – to assess how these losses relate to macroeconomics. The study found that an additional 8-point GILRHO scale of legal rights for LGBTQ+ individuals was associated with an increase in real GDP per capita of almost USD 2,000. It is seen that more accurate data showed an even higher result than previous studies.

Furthermore, together with the GILRHO indicator, the Rainbow Europe Index was used, which was developed by ILGA-Europe. Paternotte (2016) examined the Europeanisation of civil society organizations on the example of ILGA-Europe in Europe. In addition, the study analyzed the impact of Article 13 of the Amsterdam Treaty, which prohibits discrimination on the grounds of sexual orientation, and focused on three fixed dynamics that ILGA-Europe has quickly experienced: NGOization, institutionalization, and professionalization. It was argued that the establishment of ILGA-Europe is not only a response to institutional and political change but the result of specific ways to identify active activities. It is the interaction between the identity of the movement and the emerging institutional opportunities that have allowed the organization to transform.

Other solid points were made by Box (2015) who pointed out the economic losses on the example of local governments and states in the US. It was con-

cluded that LGBTQ+ rights, same-sex marriage in his case, has a strong correlation between a location's wealth, prospects for economic investment, and ability to recruit talent, with its level of inclusiveness for LGBT people.

The issue of the economic and social impact of discrimination against LGBTQ+ is also being addressed by various non-governmental institutions, which are lobbying for this issue and trying to provide evidence of a significant correlation between harassment and its impact on the economy. For example, Zane (2018) reported that in 2016, the US Treasury Department found that same-sex (male) couples had an average household income of \$176,000, about \$63,000 more than pairs of opposite sexes. Lesbian couples earn \$11,000 more than couples of the opposite sex, confirming that there is some truth in the age-old myth that gays, especially gay men (whites), have higher income. If the LGBT community were a country, it would be the world's fourth-largest economy with a GDP of \$ 4.6 trillion. Such indicators are impressive and make individuals pay attention to the significant economic and social benefits of LGBTQ+ representatives.

Moreover, Vu (2021) proved that social tolerance toward homosexuality is positively correlated with the economic complexity index, a novel measure of cross-country differences in innovative capabilities. It means that the more a nation is tolerant of the community, the more innovative technologically and advanced it can be.

The discrimination against the minority can affect the touristic field as well. Ram et al. (2019) found the interconnection between gay-friendly cities and tourists. The inclusive policy raises a positive attitude in the incoming tourists despite their affiliation with the LGBTQ+ community and LGBTQ+ members do not spend more money, especially during the Pride Month. Moreover, Hahm and Ro (2019) discuss factors that influence attendance of LGBTQ+-friendly touristic destinations as this segment of the market is growing every day.

In addition, the discrimination against the LGBTQ+ community has an impact on migration tendencies. Bayramoğlu and Lünenborg (2018)

discussed the issue of refugees' migration from several Middle Eastern countries via Turkey to Germany. It is believed that social media and dating applications can help create a sense of belonging and find a smooth way to integrate into new societies with a new approach to embrace their sexuality. Therefore, those tools can create a "picture" that attracts members of the community, so they find ways to migrate to the desired country. On the contrary, Bhagat (2018) points another issue for LGBTQ+ people who look for asylum in Cape Town, South Africa. The study discusses new trends in the city that are negatively affecting LGBTQ+ people like access to shelter and employment due to the rise of hatred and xenophobia as well as the decrease of neo-liberal direction. According to Ayoub and Bauman (2019), migration contributes to new and unique continental ties between multi-national queer organizations. Thus, it is important to see how these ties are built and how they can be beneficial in terms of migration tendencies to understand why people choose a specific country or region to migrate to. Moreover, Okada (2020) discussed the life of transgender women from the Philippines who migrate to Japan for work in the entertainment field. As a result, working and living in Japan had a positive influence on their gender identity affirmation as to when they were coming back to their home countries, they were feeling marginalized and not accepted. These studies can explain the migration tendencies as people choose to live in countries where they feel accepted.

In addition, some examples of statistics about the publication of articles can be given. For example, among the leading countries, where this topic is researched, are the United States of America, which has 125 scientific papers, and that also makes up more than half of all studies. Canada has 25 works, and the third place is taken by England with 21 works. The countries where research is conducted are almost all in Europe, for instance, Spain, Italy, Croatia, Germany, France, etc. Among the Asian countries are China and Singapore, which have a total of 7 articles and that is about 3 percent of the total number (Web of Science).

Another way to analyze the research data is to understand what foundations and organizations provided their financial support to the studied topic.

It was possible to highlight the TOP-5 ones such as National Institutes of Health NIH USA, United States Department of Health Human Services, NIH Eunice Kennedy Shriver National Institute of Child Health Human Development NICHD, NIH National Institute on Drug Abuse NIDA, and NIH National Institute of Mental Health NIMH. Hence, it can be concluded that most of the sponsors are located in the United States. The national agencies, funded by the federal budget, are most interested in helping to study the impact of socio-economic development indicators on representatives of LGBTQ+ because the government is interested in creating an inclusive society where everyone has the right to have freedom and the right to be themselves. In addition, meeting the needs of this group of people would help create a positive climate for economic and social prosperity, which would contribute to the further development of the country and strengthen its prestige at the international level. The largest grant providers were the National Institutes of Health NIH USA and the United States Department of Health Human Services. Together, they contributed 30 work in this area, accounting for 12% of all donor organizations. Other organizations have sponsored 14 research papers, which is about 6% (Web of Science). Thus, based on the abovementioned, it is possible to conclude that the topic of LGBTQ+ discrimination and its impact on countries' socio-economic indicators is relevant.

2. AIM

The paper aims to assess the relationship between socio-economic development indicators of some European countries and the Rainbow Europe Index.

3. METHODOLOGY

To find out how discrimination against the LGBTQ+ community affects various social and economic development indicators in the world and regions, it was decided to develop a data matrix and calculate the Spearman rank correlation coefficient. It shows the significance or insignificance of a particular economic and social indicator to the Rainbow Europe Index or tolerance and em-

powerment of the LGBTQ+ community in different countries in the period of 7 years (2013–2019).

Considering the data obtained during the analysis, it was decided to include the following indicators for the study:

- **Rainbow Europe Index:** An indicator published annually since 2009 that examines the human rights situation, including the level and availability of anti-discrimination laws, family recognition, hate speech, gender, freedom of assembly, association and expression, laws on asylum, and assesses what life is like for LGBTQ+ affiliated members in each European country. It was taken as an independent variable during the creation of the models.
- **GDP per capita:** An indicator that is determined by dividing a country's GDP by its population and shows how much a country's population is richer or poorer than another. It is a dependent variable.
- **Human Development Index:** An indicator that measures human development based on the following indicators: GDP per capita, literacy rate, and life expectancy. It is a dependent variable.
- **Tourism Development Index:** An indicator of the number of arrived tourists in a particular country for one year. It is a dependent variable.
- **International Migrant Index:** A total number of migrants staying in a country during a year. It is a dependent variable.
- **Index of Happiness:** An indicator that shows the well-being of people in different countries. It is a dependent variable.
- **Gini Coefficient:** An indicator that shows income inequality in a specific society. It is a dependent variable.

- **Corruption Index:** An index that reflects the level of corruption in a country according to entrepreneurs and analysts. It is a dependent variable.

The first step was to create a matrix chart to understand whether the indicators have a certain correlation and relationship between several variables simultaneously based on all data for each country in Microsoft Excel 2020.

The next step was the calculation of the Spearman rank correlation coefficient to check the relationship between two variables. The close relationship between the phenomena depends on their significance (Table 1). The weak relationship is between 0.1 and 0.3, and the highest is from 0.9 to 1.0.

Spearman rank correlation coefficient helped to choose the most significant social and economic indicators for further analysis in the regression model.

Data for mentioned indicators were collected from statistical resources in the period of 7 years (2013–2019) from such organizations as the United Nations, World Bank, Transparency International, Ilga Europe, etc. For the analysis, 10 different countries were selected, the data of which were analyzed. Initially, the matrix graph was developed for the selected data, where most of the squares showed a positive relationship, as it was possible to draw a line connecting the first point and the last one. The greatest dependence was shown with the Corruption Index, the Human Development Index, the Gini Coefficient, the Index of Happiness, and GDP per capita. This result allowed making further calculations. The next step was to calculate the Spearman rank correlation coefficient, which helped to see the relationship between the two variables. The following socioeconomic indicators were found to have a high positive relationship: GDP per capita, the Human Development Index, the Corruption Index; the Index of Happiness had a noticeable positive connection; the Tourism

Table 1. Relationship between phenomena

Source: Seleznyova et al. (2012).

Characteristics	Medium		Perceptible	Strong	
	Weak	Moderate		Strong	Very Strong
Description of relation density					
The value of correlation coefficients	0.1-0.3	0.3-0.5	0.5-0.7	0.7-0.9	0.9-1.0

Development Index (number of arrivals) and the Gini Coefficient were in a positive moderate range; the International Migrant Index had a positive weak connection. This calculation helped to prioritize further analysis in the regression model. After calculations using multiple linear regression with fixed X_s for Year, the Rainbow Europe Index, and country code, and with variables Y for GDP per capita, the Human Development Index, the Corruption Index, and Index of Happiness, it was found that the Rainbow Europe Index had a significant impact on the above indicators, as they had a positive relationship, which was also confirmed by other studies.

4. RESULTS AND DISCUSSION

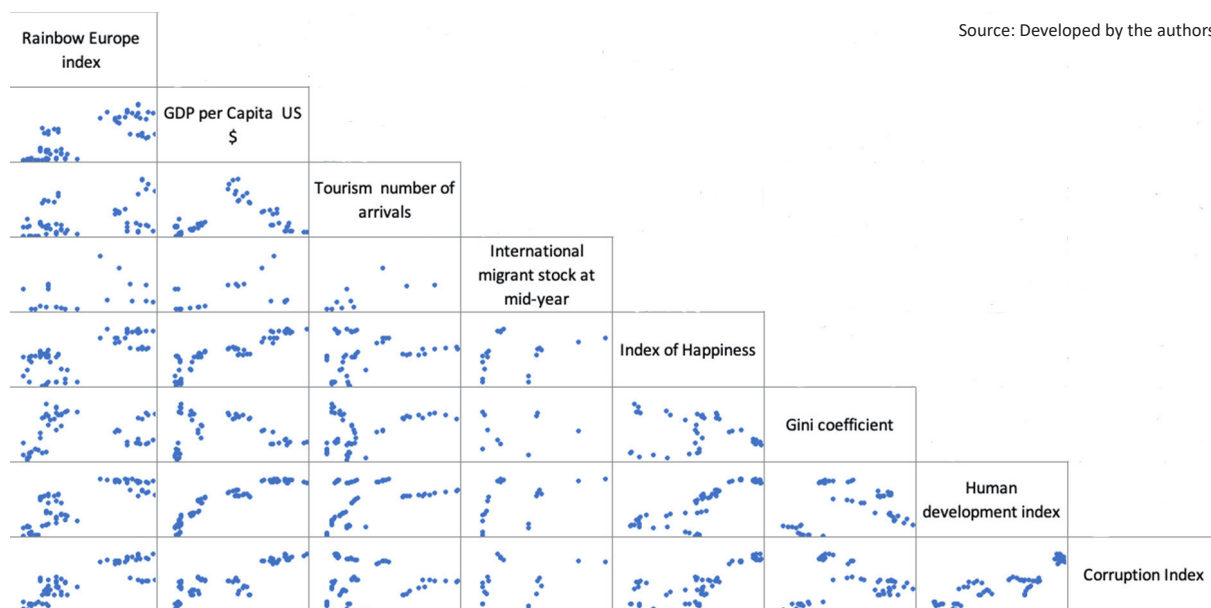
One of the fundamental principals of the European Union is equality under the laws, including different minority groups, e.g. LGBTQ+. Therefore, it was decided to collect needed data from the European countries, especially to investigate how the anti-discriminatory laws can help Ukraine become close to the EU and make changes in society. For this purpose, the data (Table 2) were taken from the official websites of organizations and institutions involved in the development and calculation of indicators that were mentioned before: the United Nations, the World Bank, Transparency International, Ilga Europe, etc. 10 countries were taken that had different histories of development

and formation: Ukraine (the country number is 1), Georgia (8), Moldova (7), Romania (10), Poland (9), Sweden (3), Germany (2), Netherlands (4), Spain (5), and Italy (6). It should be noted that the main indicator, the Rainbow Europe Index, was developed for European countries only. As a result, it is another reason why these countries were chosen for the analysis.

The abovementioned countries were divided into subgroups depending on their economic development and common history for better analysis. Ukraine and Georgia are former Soviet republics (group 1). Germany and Poland have a long history and almost identical formation of democratic institutions (group 2). Sweden and the Netherlands are representatives of northern European countries and their ideology (group 3). Spain and Italy are the southern countries of Europe (group 4). Moldova and Romania were in the Eastern Bloc and have a common history (group 5).

To understand whether the indicators have a certain correlation and relationship, a matrix chart was first created in Microsoft Excel 2020 (Figure 1).

An important column is the first one because the Rainbow Europe Index (x-axis) affects other indicators. Most of the squares (indicators) show a positive relationship because it is possible to draw a line that would connect the first point and the last. The greatest dependence is presented in the



Source: Developed by the authors.

Figure 1. Relationship between the Rainbow Europe Index and other indicators, 2013–2019

Table 2. Primary data and indicators for some European countries (The World Bank. (n.d.a), The World Bank. (n.d.b), The World Bank. (n.d.c)).

Year	Rainbow Europe Index, %	GDP per Capita, USD	Tourism Development Index, number of arrivals	International Migrant Index, number	Index of Happiness	Gini Coefficient	Human Development Index	Corruption Index	Country	Country code	Group Country Code
2019	22	3659.031		4,964,293	4.332		0.779	30	Ukraine	1	1
2018	21	3096.817	14104000		4.103	26.1	0.774	32	Ukraine	1	1
2017	19	2640.676	14230000		4.096	26	0.771	32	Ukraine	1	1
2016	13	2187.731	13333000		4.324	25	0.768	32	Ukraine	1	1
2015	10	2124.662	12428000	4,915,142	4.681	25.5	0.765	27	Ukraine	1	1
2014	12	3104.643	12712000			24	0.771	26	Ukraine	1	1
2013	12	4029.711	24671000		5.057	24.6	0.767	25	Ukraine	1	1
2019	47	46445.25		13,132,146	6.985		0.947	80	Germany	2	2
2018	59	47810.51	38881000		6.965		0.946	80	Germany	2	2
2017	54	44552.82	37452000		6.951		0.943	81	Germany	2	2
2016	55	42107.52	35555000		6.994	31.9	0.941	81	Germany	2	2
2015	56	41086.73	34970000	10,220,418	6.75	31.7	0.938	81	Germany	2	2
2014	56	47959.99	32999000				0.937	79	Germany	2	2
2013	54	46285.76	31545000		6.672	31.3	0.935	78	Germany	2	2
2019	62	51615.02		2,005,210	7.343		0.945	85	Sweden	3	3
2018	60	54589.06	7440000		7.314		0.943	85	Sweden	3	3
2017	60	53791.51	7054000		7.284	28.8	0.942	84	Sweden	3	3
2016	65	51965.16	6782000		7.291	29.6	0.94	88	Sweden	3	3
2015	72	51545.48	6482000	1,676,264	7.364	29.2	0.938	89	Sweden	3	3
2014	65	60020.36	5660000			28.4	0.935	87	Sweden	3	3
2013	65	61126.94	5229000		7.48	28.8	0.933	89	Sweden	3	3
2019	50	52331.32		2,282,791	7.488		0.944	82	The Netherlands	4	3
2018	60	53044.53	18780000		7.441		0.942	82	The Netherlands	4	3
2017	64	48675.22	17924000		7.377	28.5	0.939	82	The Netherlands	4	3
2016	66	46007.85	15828000		7.339	28.2	0.936	83	The Netherlands	4	3
2015	69	45175.23	15007000	1,996,318	7.378	28.2	0.934	84	The Netherlands	4	3
2014	70	52830.17	13925000			28.6	0.932	83	The Netherlands	4	3
2013	60	52184.06	12783000		7.512	28.1	0.93	83	The Netherlands	4	3
2019	61	29600.38		6,104,203	6.354		0.904	62	Spain	5	4
2018	67	30389.36	82773000		6.31		0.905	58	Spain	5	4
2017	67	28170.17	81869000		6.403	34.7	0.903	57	Spain	5	4
2016	70	26505.34	75315000		6.361	35.8	0.899	58	Spain	5	4

Table 2 (cont.). Primary data and indicators for some European countries (The World Bank. (n.d.a), The World Bank. (n.d.b), The World Bank. (n.d.c)).

Year	Rainbow Europe Index, %	GDP per Capita, USD	Tourism Development Index, number of arrivals	International Migrant Index, number	Index of Happiness	Gini Coefficient	Human Development Index	Corruption Index	Country	Country code	Group Country Code
2015	69	25732.02	68175000	5,891,208	6.329	36.2	0.895	58	Spain	5	4
2014	73	29461.55	64939000			36.1	0.888	60	Spain	5	4
2013	65	29059.55	60675000		6.322	34.9	0.882	59	Spain	5	4
2019	22	33228.24		6,273,722	6.223		0.892	53	Italy	6	4
2018	27	34615.76	61567200		6		0.89	52	Italy	6	4
2017	27	32406.72	58253000		5.964	35.9	0.886	50	Italy	6	4
2016	20	30939.71	52372000		5.977	35.2	0.884	47	Italy	6	4
2015	22	30230.23	50732000	5,805,328	5.948	35.4	0.882	44	Italy	6	4
2014	25	35518.42	48576000			34.7	0.882	43	Italy	6	4
2013	19	35549.97	47704000		6.021	34.9	0.881	43	Italy	6	4
2019	14	4503.517		104,713	5.529		0.75	32	Moldova	7	5
2018	13	4233.743	160000		5.64	25.7	0.746	33	Moldova	7	5
2017	13	3509.693	145000		5.838	25.9	0.743	31	Moldova	7	5
2016	14	2880.439	121000		5.897	26.3	0.738	30	Moldova	7	5
2015	16	2732.457	94400	106,374	5.889	27	0.736	33	Moldova	7	5
2014	17	3328.801	93900			26.8	0.737	35	Moldova	7	5
2013	10	3322.038	95600		5.791	28.5	0.735	35	Moldova	7	5
2019	30	4697.705		79,035	4.519		0.812	56	Georgia	8	1
2018	26	4722.788	4757000		4.34	36.4	0.805	58	Georgia	8	1
2017	26	4357.001	4069400		4.286	37.9	0.799	56	Georgia	8	1
2016	30	4062.17	3297000		4.252	36.6	0.792	57	Georgia	8	1
2015	36	4014.186	3012000	76,685	4.297	36.5	0.79	52	Georgia	8	1
2014	26	4739.188	2939000			37.6	0.783	52	Georgia	8	1
2013	21	4623.746	2884000		4.187	38.6	0.775	49	Georgia	8	1
2019	18	15692.51		655,985	6.182		0.88	58	Poland	9	2
2018	18	15468.48	19622000		6.123		0.877	60	Poland	9	2
2017	18	13864.68	18258000		5.973	29.7	0.873	60	Poland	9	2
2016	18	12447.44	17471000		5.835	31.2	0.869	62	Poland	9	2
2015	26	12578.5	16728000	619,403	5.791	31.8	0.863	63	Poland	9	2
2014	28	14271.31	16000000			32.8	0.858	61	Poland	9	2
2013	22	13696.47	15800000		5.822	33.1	0.856	60	Poland	9	2
2019	21	12919.53		462,552	6.07		0.828	44	Romania	10	5
2018	21	12399.89	11720000		5.945		0.823	47	Romania	10	5
2017	21	10807.8	10926000		5.825	36	0.821	48	Romania	10	5
2016	23	9548.587	10223000		5.528	34.4	0.82	48	Romania	10	5
2015	28	8969.149	9331000	281,048	5.124	35.9	0.815	46	Romania	10	5
2014	28	10043.68	8442000			36	0.811	43	Romania	10	5
2013	31	9547.852	8019000		5.033	36.9	0.808	43	Romania	10	5

Table 3. Relationship between the indicators and Rainbow Europe Index

Indicators	Correlation coefficient
GDP Per Capita	0.730601425
Tourism Development Index	0.34669712
International Migrant Index	0.26214287
Index of Happiness	0.67343332
Gini Coefficient	0.320421005
Human Development Index	0.772975008
Corruption Index	0.779388834

Corruption Index, Human Development Index, the Gini coefficient, the Happiness Index, and GDP per Capita. This result allowed making further calculations. The new indicators were chosen for further study.

The next step was the calculation of the Spearman rank correlation coefficient. After its calculating, the following results were obtained for each indicator depending on the Rainbow Europe Index (Table 3).

Analyzing the data, a high positive relationship was got between the indicators: GDP per capita, the Human Development Index, and the Corruption Index. There is a noticeable positive relationship in the Index of Happiness. The Tourism Development Index and the Gini Coefficient are in a positive moderate range. The International Migrant Index has a positive weak relationship.

Thus, the Rainbow Europe Index has a significant impact on the above indicators because there is a

positive relationship between them. For example, if the Rainbow Europe Index rises by 1%, another indicator rises as well, which has a positive effect on the indicators. For instance, the absence level of corruption increases, happiness in the country also increases, the Human Development Index and GDP per capita also raise. Such a relationship is also confirmed by the results of the literature review.

After analyzing and calculating the indicators of socio-economic development of countries, it is possible to compare groups of countries and regions. Average numbers were taken for 5 indicators: GDP per capita, the Human Development Index, the Corruption Index, the Index of Happiness, and the Rainbow Europe Index. For better illustration, the Human Development Index was multiplied by 100; the Rainbow Europe Index – by 100 too; the Index of Happiness – by 10; for GDP per capita, a variable was found in the previous year, i.e. there was an increase or decrease; the Corruption Index has remained unchanged.

Source: Developed by the authors.

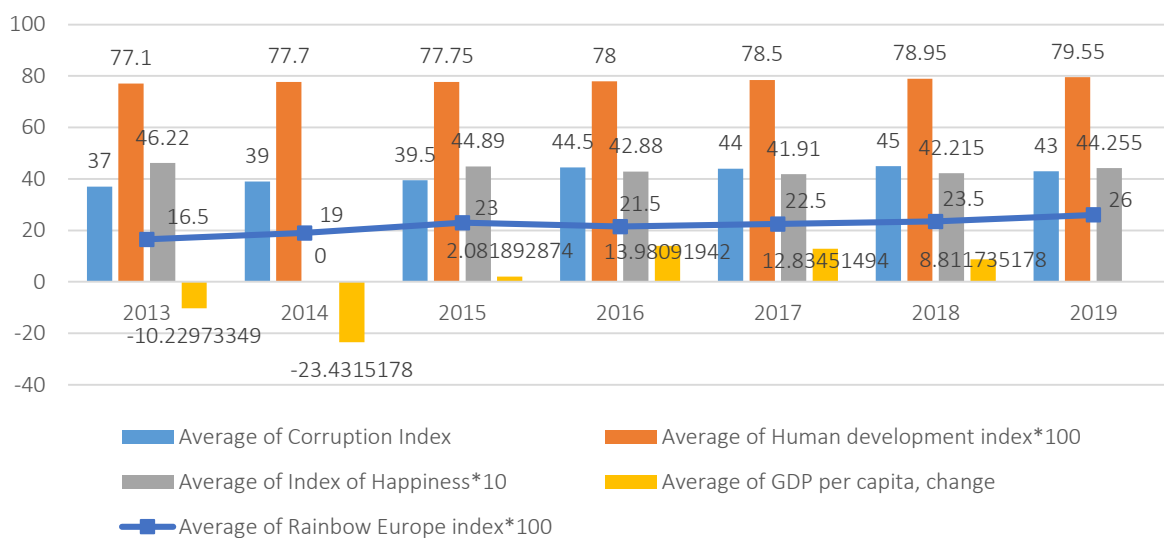


Figure 2. Average values of given indicators with a clear line of Rainbow Europe Index for Ukraine and Georgia

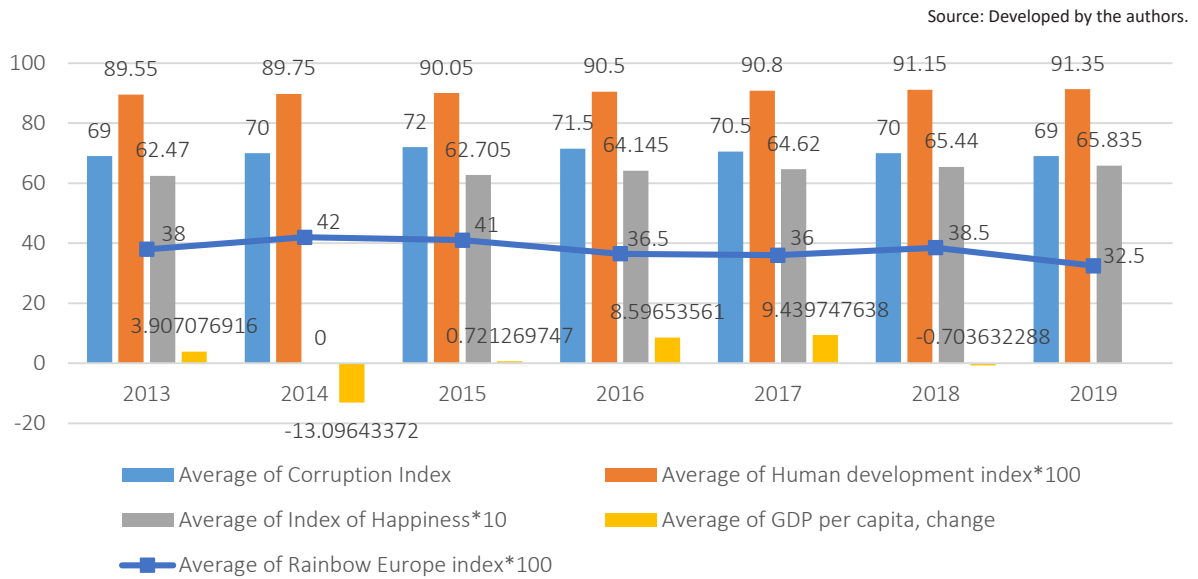


Figure 3. Average values of given indicators with a clear line of Rainbow Europe Index for Germany and Poland

For the first group of countries, a low level of all indicators with moderate growth was found (Figure 2).

cline in the Happiness and Corruption Indexes (Figure 4).

For the second group of countries, there was a significant decline in the index, but there was also a decline in GDP per capita and the Corruption Index (Figure 3).

For the fourth group, there was also a slight decline with other indicators. It is clear that the recession ends when the Rainbow Europe Index rises (Figure 5).

For the third group of countries, one could also see a significant decline. Since 2015, the Rainbow Europe Index has fallen by 14.5 points with a de-

In the fifth group, there is a slight decline along with other indices and the leveling off when the decline in the Rainbow Europe Index disappears (Figure 6).

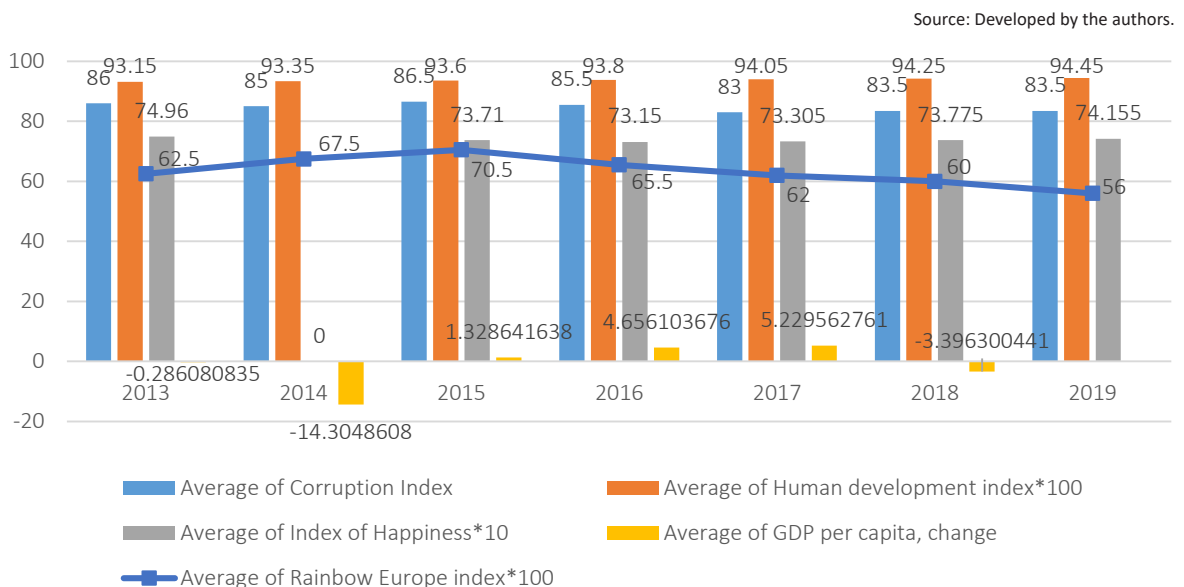


Figure 4. Average values of given indicators with a clear line of Rainbow Europe Index for Sweden and the Netherlands

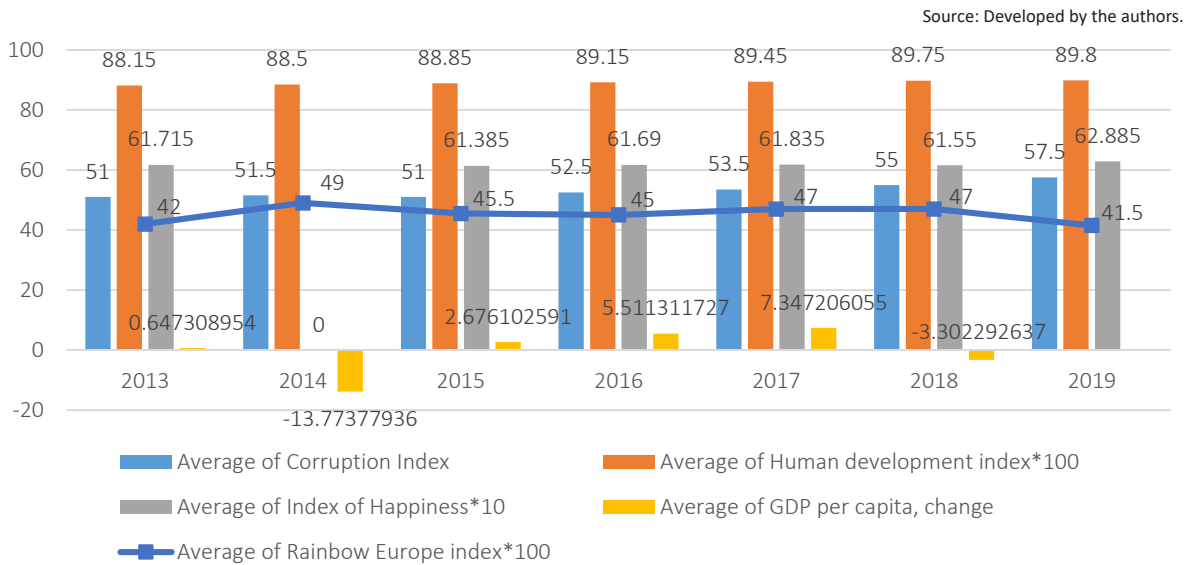


Figure 5. Average values of given indicators with a clear line of Rainbow Europe Index for Spain and Italy

Thus, the relationship can be traced not only in previous studies and calculations of socio-economic development indicators of countries but also on real examples as well. Thus, group 3 has one of the highest welfare rates along with one of the highest Rainbow Europe indices. Such post-Soviet countries as group 1, Ukraine and Georgia, has some of the lowest socio-economic indicators, including in the Rainbow Europe index. This can also be seen in other countries: if there is a decline for the Rainbow Europe Index, other indices are also affected; when the index rises, so do other indicators.

However, migration was not included as it did not show a strong relationship with the Rainbow Europe Index, only 0.26214287, but it does not mean migration is not a factor that should not be discussed because of the low relation. In fact, it is the opposite. It was seen that countries that had a high Rainbow Europe Index, had also a high level of social and economic indicators. Nowadays, scientists are trying to find a “real” number for how many gay people are in the world and each society and they are trying to move on from the accepted by the society “10%” of people who are gays (Spiegelhalter,

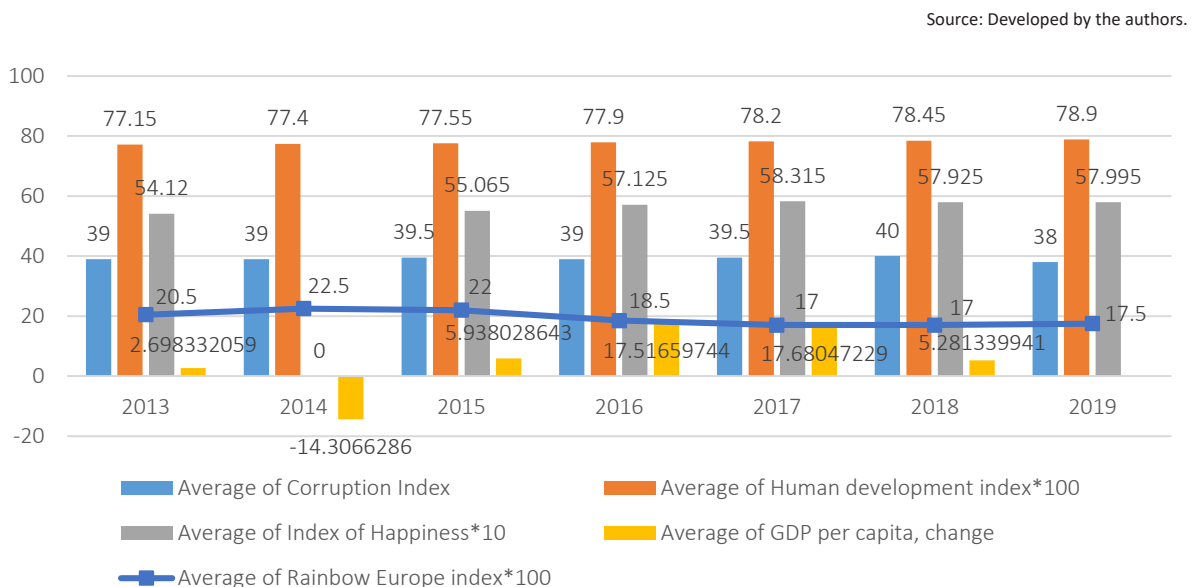


Figure 6. Average values of given indicators with a clear line of Rainbow Europe Index for Moldova and Romania

2015). New studies show that this percentage can be even higher so more people can be identified with the LGBTQ+ community. Therefore, the migration in such countries as Ukraine, Moldova, and Georgia toward more gay-friendly countries as Germany and the Netherlands can be explained by this ground of discrimination. Nevertheless, people can migrate by their own will to seek job opportunities, studies, research possibilities, etc. Thus, it is hard to tell what is the reason for migration as people have their thoughts and do not necessarily declare it at the border control or when they receive a visa. Thus, it might explain why a strong relationship was not detected between migration stock and the Rainbow Europe Index.

Yet, people still migrate, and they also migrate for the reason of discrimination or persecution they have in their countries because of their sexualities or gender identities. Some government programs assist people with it. Most of them are referred to asylum seekers when a person has already arrived in a specific country and is looking for documents to stay there. The most popular destinations would be the United States, the European Union (e.g. Germany, Sweden, Spain, and the Netherlands), etc., and the United Kingdom. In fact, in some countries, there is a high percentage of LGBTQ+ migrants that add up to the total number of LGBTQ+ population of a country.

CONCLUSION

Based on the study results, an indisputable link can be seen between discrimination against the LGBTQ+ community and the economic and social development of society and regions. For illustration, examples of European countries were taken, where it was observed that the more tolerant society is and the more freedoms and rights are provided, the more economically and socially developed it is.

This study reaffirmed the positive relationship between the Rainbow Europe Index and GDP per capita, the Human Development Index, the Corruption Index, and the Index of Happiness. The results were proved based on graphs for groups of countries where the key index was compared with others. As International Migrant Index was not included due to the low level of relation, still the country and its level of human rights protection or social inclusion of LGBTQ+ play a significant role in choosing a new home where they can find a feeling of peace with themselves and come in terms with society. Therefore, it is essential to understand how some countries that give more rights and freedom to people might seem more attractive in terms of considering a country for living and moving out from a discriminating place.

This analysis proved the dependence of indicators and demonstrated the need to provide freedoms and rights for LGBTQ+ affiliated members in Ukraine and other European countries. It will help increase GDP per capita, the Index of Happiness, the Human Development Index, increase other indicators of socio-economic development, and reduce corruption. It should also help Ukraine successfully integrate with the European community, where human values and dignity are a top priority, to increase the level of freedoms and rights in the world and to give people the right to be themselves, which was proclaimed by the Universal Declaration of Human Rights in 1948.

AUTHOR CONTRIBUTIONS

Conceptualization: Yuriy Petrushenko, Fedir Zhuravka.

Data curation: Vladyslav Shapoval.

Formal analysis: Lyudmila Khomutenko, Olena Zhuravka.

Investigation: Fedir Zhuravka, Lyudmila Khomutenko.

Methodology: Vladyslav Shapoval.

Resources: Yuriy Petrushenko, Olena Zhuravka.

Software: Vladyslav Shapoval.

Supervision: Fedir Zhuravka.

Validation: Yuriy Petrushenko, Lyudmila Khomutenko.

Visualization: Vladyslav Shapoval, Olena Zhuravka.

Writing – original draft: Vladyslav Shapoval.

Writing – review & editing: Fedir Zhuravka.

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REFERENCES

1. Ayoub, P. M., & Bauman, L. (2019). Migration and queer mobilisations: How migration facilitates cross-border LGBTQ activism. *Journal of Ethnic and Migration Studies*, 45(15), 2758-2778. <https://doi.org/10.1080/1369183X.2018.1497955>
2. Barannyk, L., Dobrovolska, O., Taranenko, V., Koriahina, T., & Rybalchenko, L. (2021). Personal income tax as a tool for implementing state social policy. *Investment Management and Financial Innovations*, 18(2), 287-297. [https://doi.org/10.21511/imfi.18\(2\).2021.23](https://doi.org/10.21511/imfi.18(2).2021.23)
3. Bayramoğlu, Y., & Lünenborg, M. (2018). Queer migration and Digital Affects: Refugees navigating from the Middle East via Turkey to Germany. *Sexuality & Culture*, 22, 1019-1036. <https://doi.org/10.1007/s12119-018-9510-x>
4. Bhagat, A. (2018). Forced (Queer) migration and everyday violence: The geographies of life, death, and access in Cape Town. *Geoforum*, 89, 155-163. <https://doi.org/10.1016/j.geoforum.2017.07.028>
5. Box, L. (2015). It's Not Personal, It's Just Business: The Economic Impact Of LGBT Legislation. *Indiana Law Review*, 48(3). <http://dx.doi.org/10.18060/4806.0016>
6. Chugunov, I., & Nasibova, O. (2021). Public funding of social protection: Impact on social indicators in Eurozone countries. *Investment Management and Financial Innovations*, 18(2), 181-192. [https://doi.org/10.21511/imfi.18\(2\).2021.15](https://doi.org/10.21511/imfi.18(2).2021.15)
7. Founders for LGBTQ Issues. (n.d.). *Immigration*. Retrieved April 02, 2021, from <https://lgbtfunders.org/resources/issues/immigration/>
8. Hahm, J., & Ro, H. (2019). LGBT Events: Sense of Belonging for LGBT Travelers. *Rosen Research Review*, 1(2), 2. Retrieved April 02, 2021, from <https://stars.library.ucf.edu/rosen-research-review/vol1/iss2/2/>
9. Hossain, M., Atif, M., Ahmed, A., & Mia, L. (2020). Do LGBT workplace diversity policies create value for firms? *Journal of Business Ethics*, 167(4), 775-791. Retrieved December 6, 2021, from <https://researchers.mq.edu.au/en/publications/do-lgbt-workplace-diversity-policies-create-value-for-firms>
10. Ilga-Europe. (n.d.). *Rainbow Europe*. Retrieved April 02, 2021, from <https://www.ilga-europe.org/rainboweurope/>
11. Kolluru, M., & Semenenko, T. (2021). Income inequalities in EU countries: GINI indicator analysis. *Economics*, 9(1), 125-142. <https://doi.org/10.2478/eoik-2021-0007>
12. Kolodiziev, O., Telnova, H., Krupka, I., Kulchytsky, M., & Sochynska-Sybirseva, I. (2021). Pension assets as an investment in economic growth: The case of post-socialist countries and Ukraine. *Investment Management and Financial Innovations*, 18(3), 166-174. [https://doi.org/10.21511/imfi.18\(3\).2021.15](https://doi.org/10.21511/imfi.18(3).2021.15)
13. Kuzmenko, H., Yahelska, K., Artyukh, O., Babich I., Volenshchuk, N., & Sulimenko, L. (2021). Improved methodology of accounting and audit of payments to employees in Ukraine. *Universal Journal of Accounting and Finance*, 9(1), 44-53. https://doi.org/10.13189/ujaf.2021.090105_
14. Lee Badgett, M. V., Waaldijk, K., & van der Meulen Rodgers, Y. (2019). The relationship between LGBT inclusion and economic development: Macro-level evidence. *World Development*, 120, 1-14. <https://doi.org/10.1016/j.worlddev.2019.03.011>
15. NGO “GATE”. (n.d.). *Home*. Retrieved April 02, 2021, from <https://gate.ngo/>
16. NGO “IGLYO”. (n.d.). *Home*. Retrieved April 02, 2021, from <https://www.iglyo.com/>
17. NGO “LGBT Asylum Support”. (n.d.). *Home*. Retrieved April 02, 2021, from <https://lgbtasyilmsupport.nl/en/>
18. Okada, T. (2020). Gender performance and migration experience of Filipino transgender women entertainers in Japan. *International Journal of Transgender Health*. <https://doi.org/10.1080/26895269.2020.1838390>
19. Oliynyk, V., Zhuravka, F., Bolgar, T., & Yevtushenko, O. (2017). Optimal control of continuous life insurance model. *Investment Management and Financial Innovations*, 14(4), 21-29. [https://doi.org/10.21511/imfi.14\(4\).2017.03](https://doi.org/10.21511/imfi.14(4).2017.03)

20. Paternotte, D. (2016). The NGOization of LGBT activism: ILGA-europe and the Treaty of Amsterdam. *Social Movement Studies*, 15(4), 388-402. <https://doi.org/10.1080/14742837.2015.1077111>
21. Prozhoga, I. V., & Shelupina, V. O. (2016). LHBT-Hromadiansy Na Rynku Pratsi. Diskryminatsiia Za Oznakoiu Seksualnoi Oriientatsii Ta Hendernoi Identychnosti V Trudovii Sferi [LGBT Citizens On The Labor Market. Discrimination Based On Sexual Orientation And Gender Identity In The Labor Sphere]. *Materialy I Vseukrainskoi naukovo-metodychnoi konferentsii, prysviachenoi 15-y richnytsi zasnuvannia Shostkynskoho instytutu Sumskoho derzhavnoho universytetu – Proceedings of the First All-Ukrainian Scientific and Methodological Conference Dedicated to the 15th Anniversary of Shostka Institute of Sumy State University*, 162-163. Shostka. (In Ukrainian). Retrieved April 02, 2021, from <https://core.ac.uk/download/pdf/141451969.pdf>
22. Ram, Y., Kama, A., Mizrachi, I., & Hall, C. M. (2019). The benefits of an LGBT-inclusive tourist destination. *Journal of Destination Marketing & Management*, 14, 100374. <https://doi.org/10.1016/j.jdmm.2019.100374>
23. Seleznyova, N. P., Seleznyov, N. V., & Seleznyov, S. V. (2012). Koreliatsiyni analiz navchalnoho protsesu na prykladi pidsumkovykh otsinok uchniv [Correlation analysis of educational processes and examples of final grades of students]. *Visnyk NTUU "KPI". Filosofia. Psykholohiia. Pedahohika – Bulletin of NTUU "KPI". Philosophy. Psychology. Pedagogy*, 1, 139-145. (In Ukrainian). Retrieved April 02, 2021, from http://novyn.kpi.ua/2012-1/05-ped-N.Seleznev_N.Selezneva_Seleznev.pdf
24. Shelukhin, V. (2017, June 24). *Inklyuzyvne suspilstvo ta ekonomichne zrostannia, abo chomu diskryminatsiia LHBT shkodyt usim? [Inclusive society and economic growth, or why does LGBT discrimination harm everyone?]*. Vseukrainskyi sotsiolohichnyi chasopys "SVOIE" – All-Ukrainian sociological magazine "SVOE". (In Ukrainian). Retrieved April 02, 2021, from <https://svoje.wordpress.com/tag/%D0%B5%D0%BA%D0%BE%D0%BD%D0%BE%D0%BC%D1%96%D1%87%D0%BD%D0%B8%D0%B9-%D1%80%D0%BE%D0%B7%D0%B2%D0%B8%D1%82%D0%BE%D0%BA-%D0%BB%D0%B3%D0%B1%D1%82-%D0%B4%D0%B8%D1%81%D0%BA%D1%80%D0%B8%D0%BC%D1%96%D0%BD/>
25. Spiegelhalter, D. (2015, April 05). *Is 10% of the population really gay?* The Guardian. Retrieved April 02, 2021, from <https://www.theguardian.com/society/2015/apr/05/10-per-cent-population-gay-alfred-kinsey-statistics>
26. The World Bank. (n.d.a). *GDP per capita, PPP (current international \$)*. Retrieved April 02, 2021, from <https://data.worldbank.org/indicator/NY.GDP.PCAP.PP.CD>
27. The World Bank. (n.d.b). *Gini index (World Bank estimate)*. Retrieved April 02, 2021, from <https://data.worldbank.org/indicator/SI.POV.GINI>
28. The World Bank. (n.d.c). *International tourism, number of arrivals*. Retrieved April 02, 2021, from <https://data.worldbank.org/indicator/ST.INT.ARVL>
29. Transparency International. (n.d.). *Corruption Perceptions Index 2020*. Retrieved April 02, 2021, from <https://www.transparency.org/en/cpi>
30. United Nation Development Programme. (n.d.). *Data Center: Download Data*. Retrieved April 02, 2021, from <http://hdr.undp.org/en/content/download-data>
31. Vu, T. V. (2021). *Does LGBT Inclusion Promote National Innovative Capacity?* (MPRA Paper). <http://dx.doi.org/10.2139/ssrn.3523553>
32. Web of Science. (n.d.). *Countries of the world by the number of publications by keywords LGBT and ECONOM*. Retrieved April 02, 2021, from http://wcs.webofknowledge.com/RA/analyze.do?product=WOS&SID=F5cATDHQbThJxl21jI&field=CU_CountryTerritory_CountryTerritory_en&yearSort=false
33. World Happiness Report. (n.d.). *Home*. Retrieved April 02, 2021, from <https://worldhappiness.report/>
34. Zane, Z. (2018, April 6). *How LGBT Customers Became the Most Undervalued Economy in the World*. Medium. Retrieved April 02, 2021, from <https://medium.com/lgbt-foundation/how-lgbt-customers-became-the-most-undervalued-economy-in-the-world-5ef1a4259161>