To conclude, the study showed that two models – logit and probit produce very similar results. However, the estimates of the parameters of the two models are not directly comparable [1, 4]. The advantage of the logit model is the simplicity of its structure form and natural interpretability of the results while probit model allows one to obtained standardized estimates on a regular scale rather than logarithmic values [1]. The choice of whether to use probit or logit models heavily depends on the choice of the link function and therefore depends on the data collected and processed [4]. This leads to the choice being subjective rather than objective and often based on physical knowledge of the data.

## References

- 1. Prentice, R. L. (1976). A Generalization of the Probit and Logit Methods for Dose Response Curves. *Biometrics, Vol. 32, 4,* 761–768.
- 2. Motuzyuk, I., Sydorchuk, O., Kovtun, N., Palian, Z., & Kostiuchenko, Y. (2018). Analysis of trends and factors in breast multiple primary malignant neoplasms. *Breast Cancer: Basic and Clinical Research, Vol. 12*, 1–9.
- 3. Akaike, H. (1986). A new look at the statistical model identification. *IEEE Transactions on Automatic Control. AC-19*, 716–723.
- 4. Alison, P.D. (1999). Comparing logit and probit coefficients across groups. *Sociological Methods and Research*, 28, 186–208.

## A STATISTICAL ANALYSIS OF DIGITAL ECONOMY AND CORRUPTION

Horna Maryna,
Ph. D. in Economics,
assistant professor at the Department of Statistics;
Ishchuk Yaroslava,
Ph. D. in Economics,
assistant professor at the Department of Statistics;
SHEE "Kyiv National Economic University named after Vadym Hetman"

The purpose of the research was is to identify prospective areas for counteracting the corruption under conditions of the digital economy development. The possibility of using new digital technologies to combat the corruption in the context of the overall fight against corruption in the country is justified.

This study reports on the results of statistical analysis in which the relationship between the dependent variable of corruption, as measured by the Transparency International, and the independent variable of development of the Digital Economy, as measured by the European Comission: Digital Single Market. So, the research focuses on studying the prospects of using advanced technologies to eliminate the corruption [1-5].

The components of the digital economy index are analyzed by country and the most significant in terms of value for consumers, user competence, innovation, contribution to the economy are determined. The Digital Economy and Society Index (DESI) is a composite index that summarises relevant indicators on Europe's digital performance and tracks the evolution of EU member states in digital competitiveness. DESI 2019 - Key Findings [6]:

- 1. Connectivity The Connectivity dimension measures the deployment of broadband infrastructure and its quality. Access to fast and ultrafast broadbandenabled services is a necessary condition for competitiveness.
- 2. Human Capital/Digital skills The Human Capital dimension measures the skills needed to take advantage of the possibilities offered by digital.
- 3. Use of Internet Services by citizens The Use of Internet Services dimension accounts for a variety of online activities, such as the consumption of online content (videos, music, games, etc.) video calls as well as online shopping and banking.
- 4. Integration of Digital Technology by businesses The Integration of Digital Technology dimension measures the digitisation of businesses and e-commerce. By adopting digital technologies, businesses can enhance efficiency, reduce costs and better engage customers and business partners. Furthermore, the Internet as a sales outlet offers access to wider markets and potential for growth.
- 5. Digital Public Services The Digital Public Services dimension measures the digitisation of public services, focusing on eGovernment and eHealth. Modernisation and digitisation of public services can lead to efficiency gains for the public administration, citizens and businesses alike.
- 6. Research and Development ICT The Research and Development ICT presents analysis on the trends of ICT Sector and R&D provided by the European Commission as well as external studies conducted at the request of the European Commission.

Over the past year, all EU countries improved their digital performance. Finland, Sweden, the Netherlands, and Denmark scored the highest ratings in DESI 2019 and are among the global leaders in digitalisation. These countries are followed by the United Kingdom, Luxembourg, Ireland, Estonia, and Belgium. Some other countries like Ukraine however still have a long way to go, and the EU as a whole needs improvement to be able to compete on the global stage [6].

The purpose of this study is to apply empirical methods to the debate on corruption and digital economy, in which economic theory predicts that digital economy may retards growth corruption in countries. The specific goals of the study are: specification of a model of corruption based on a theoretical foundation for cross-country analysis. Consistent with the goals of the study, the following hypothesis will be tested:

All things being equal, the impact of digital economy on retards growth corruption differs significantly in countries EU.

The study is based on a panel data set in 2018 for EU countries. This analysis leads to conclusion: different countries display different dynamics when it comes to the fit between corruption and digital economy. It is concluded that

digital technologies can increase the efficiency and transparency of the activities of government bodies and retards growth corruption.

Further research is recommended for determining the relationship between corruption and Digital Economy by utilising 24 datasets to enable trend analysis and comparison of the digital performance of 45 countries (The International Digital Economy and Society Index). Further research is recommended to determine the impact of women's inclusion in digital jobs, careers and entrepreneurship. The WiD scoreboard is one of the actions put in place to assess women's inclusion in digital jobs, careers and entrepreneurship, initiated by the Commissioner for Digital Economy and Society, Mariya Gabriel. The scoreboard assesses Member States' performance in the areas of Internet use, Internet user skills as well as specialist skills and employment based on 13 indicators [6-9].

## References

- 1. Campbell, Kaycea (2013) A Statistical Analysis of Public Sector Corruption and Economic Growth. *LUX: A Journal of Transdisciplinary Writing and Research from Claremont Graduate University: Vol. 2: Iss. 1*, Article 6. Available at: http://scholarship.claremont.edu/lux/vol2/iss1/6
- 2. Corruption Perception Index 2018. URL: https://www.transparency.org/research/cpi/overview
- 3. Eatzaz Ahmad, Muhammad Aman Ullah, Muhammad Irfanullah Arfeen. (2021). Does Corruption Affect Economic Growth? *Latin American Journal Of Economics. Versión On-Line Issn 0719-0433. Lat. Bceam. J. Econ. Vol.49 No.2 Santiago.* Http://Dx.Doi.Org/1o.7764/Laje.49.2
- 4. Horna M., Khalilova T. Global Exchange of statistical data for human development and overcoming the crisis: зб. матеріалів Міжнар. наук.-практ. конф., 19 трав. 2017 р. Київ: КНЕУ, 2017. С. 24–25.
- 5. Horna M., Ishchuk Ya. The analysis of dependence of Eastern Europe countries investment attractiveness on economic, political, legal and sociocultural factors // Цифрова економіка: зб. матеріалів Нац. наук.-метод. конф.— Київ: КНЕУ, 2018. С. 19–22.
- 6. The Digital Economy & Society Index/ European Comission: Digital Single Market [Electronic resource]. 2017.
- 7. The statistical office of the European Union // http://ec.europa.eu/eurostat/UNSD Statistical Databases // https://unstats.un.org/unsd/databases.htm
- 8. Інформаційно-методичне забезпечення функціонування соціальноекономічних систем різного рівня: колективна монографія / за заг. ред. О. К. Єлісєєвої. Дніпро: ЛІРА, 2018.
- 9. Іщук Я. В., Горна М. О. Моніторинг реалізації стратегії сталого розвитку «Україна 2020» // Статистика в Україні та світі: стан, тенденції та перспективи розвитку : матеріали XVI Міжнар. наук.-практ. конф. з нагоди Дня працівників статистики, 5 груд. 2018 р. Київ : «Інформ.-аналіт. агентство», 2018. С. 35–39.