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Social insurance as a mechanism for minimizing the income gap between workers: comparative analysis and European experience

La seguridad social como mecanismo para reducir al mínimo las diferencias de ingresos entre los trabajadores: análisis comparativo y experiencia europea

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Abstract: Introduction: The aim of this study is to determine the extent to which social insurance can reduce income inequality among workers. This study explores the role of social insurance as a tool for minimizing income inequality among workers. **Methodology**: The study adopts a comparative approach to examining differences in social insurance systems in Norway, the Netherlands, Germany, Latvia, Romania, and Bulgaria. By comparing the selected countries, the research examines the correlation between the level of social insurance and the disparity in workers' incomes. **Results**: The analysis identifies key indicators such as social insurance expenditures as a percentage of GDP, population coverage, minimum wage levels, and the Gini index to evaluate the effectiveness of social insurance systems. The findings highlight significant differences in how social insurance is implemented and its impact on income distribution across these countries. In particular, the study provides insights into the mechanisms through which social insurance can mitigate economic inequality and offers a comprehensive understanding of the strengths and weaknesses of various social insurance models. **Conclusion**: This detailed examination allows for a nuanced comparison that can inform policy decisions and improvements in social insurance practices aimed at achieving greater economic equality and social justice. By analyzing different models and approaches within the selected countries, the study seeks to identify best practices and provide recommendations for policy improvements in social insurance systems.

Keywords: Gini index, social policy, economic disparity, social protection

Resumen: Introducción: El objetivo de este estudio es determinar en qué medida la seguridad social puede reducir las desigualdades de ingresos entre los trabajadores. Este estudio explora el papel del seguro social como herramienta para minimizar la desigualdad de ingresos entre los trabajadores. **Metodología**: Al realizar un análisis comparativo de seis países europeos - Noruega, Países Bajos, Alemania, Letonia, Rumanía y Bulgaria - la investigación examina la correlación entre el nivel de seguridad social y la disparidad en los ingresos de los trabajadores. **Resultados**: El análisis identifica indicadores clave como los gastos de la seguridad social en porcentaje del PIB, la cobertura de la población, los niveles de salarios mínimos y el índice de Gini para evaluar la eficacia de los sistemas de seguridad social. Los resultados ponen de manifiesto diferencias significativas en la forma en que se aplica el seguro social y su impacto sobre la distribución del ingreso en estos países. En particular, el estudio proporciona información sobre los mecanismos a través de los cuales la seguridad social puede mitigar la desigualdad económica y ofrece una comprensión completa de las fortalezas y debilidades de varios modelos de seguro social. **Conclusiones**: Este examen detallado permite una comparación matizada que puede informar las decisiones políticas y mejoras en las prácticas de los seguros sociales destinadas a lograr una mayor igualdad económica y justicia social. Mediante el análisis de diferentes modelos y enfoques dentro de los países seleccionados, el estudio busca identificar las mejores prácticas y proporcionar recomendaciones para mejorar las políticas en los sistemas de seguridad social.

Palabras clave: índice de Gini, política social, disparidad económica, protección social

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Volume 22, issue 2, Sci. Art. January-June 2025

1. Introduction

In today's environment of growing economic and social inequality, the issue of social insurance is of particular relevance. Social risks can have a significant impact on the welfare of citizens, reducing their incomes and living standards. In this regard, ensuring an effective social insurance system becomes critical to maintaining social stability and protecting the most vulnerable segments of the population. Social insurance is an important element of social protection in modern society (Jumaniyazov & Xaydarov, 2023). It is a system of measures aimed at protecting citizens from various social risks, such as illness, disability, unemployment, old age and maternity, by providing financial support. Its main goal is to ensure social security of the population and reduce the negative consequences of life risks (Xu, 2022).

This study explores the contribution of social insurance to reducing inequality in the income of workers, focusing on six European countries such as Norway, the Netherlands, Germany, Latvia, Romania, and Bulgaria. Although social insurance is collective and based on the principle of solidarity, it differs significantly across countries (Yaroshenko et al., 2021). The institution of social insurance is the result of the conscious use of insurance relations for the purpose of state regulation of social risks (Nechuporenko, 2017). In many countries, social insurance is compulsory for all working citizens, which guarantees broad coverage and sustainability of the system (Ansari et al, 2019). Studying the European experience is important for countries seeking to improve their social insurance systems, including Ukraine, where reforms in this area are one of the priorities of government policy.

The experience of countries that have already reformed their social insurance systems will be useful for Ukraine which is undergoing serious transformations in the sphere of social insurance. European countries have considerable experience in implementing various models of social insurance that demonstrate high efficiency in reducing income inequality and ensuring social protection of citizens (Yaroshenko et al., 2018).

The role of social insurance in ensuring social security is undeniable. It helps to reduce social inequality, ensures income stability in the event of social risks, and contributes to the overall well-being of the population (Yaroshenko et al, 2019). With the help of social insurance, citizens have the opportunity to reduce financial losses associated with unforeseen life circumstances and maintain an acceptable standard of living even in difficult situations (Romanovska & Solonenko, 2017).

Social insurance is not only an instrument of financial support for citizens, but also an important factor of social cohesion and stability. It provides equal access to basic social services such as health insurance, pensions, and unemployment benefits. This, in turn, reduces social tension and inequality, raising the living standards. As a result, citizens can get guaranteed protection in case of unforeseen circumstances, which benefits their well-being and reduces the risk of social conflicts. Social security also stimulates participation of citizens in public life, promoting the integration of marginalized

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Volume 22, issue 2, Sci. Art. January-June 2025

groups, and creating a more equal environment for all citizens. It helps reduce social tensions, improve living standards, and create conditions for equal access to basic social services (Melnychuk et al, 2022).

An efficiently functioning social insurance system can significantly reduce the risks of poverty and social exclusion, and contribute to economic growth and sustainable development of society. The success of social health insurance schemes is heavily reliant on strong political support for their compulsory nature. This reliance on political commitment for enforcement and compliance introduces a political risk that can impact the sustainability of these schemes. With robust political backing, it is possible to achieve extensive coverage through social health insurance, but this process requires significant time. In numerous countries, the primary challenge lies in the short-term extension of coverage to the informal economy (Coheur, et al, 2008).

The role of social insurance in supporting social welfare policies is undeniable. However, the study of its impact on minimizing the gap between workers is extremely important for the development of evidence-based recommendations for improving national social protection systems (Yokobori et al, 2023). Thus, the topic of social insurance as a tool for minimizing the income gap between workers is extremely relevant and requires further research to ensure effective social policy and improve the welfare of the population. Social insurance is a powerful social policy tool that minimizes the income gap among workers and contributes to social justice and stability in society.

The novelty of this study stems from comparing social insurance systems in various European countries in order to identify how the design and implementation of these systems affect income inequality between employees. Although the role of social insurance in social welfare is recognized, its direct impact on reducing income inequality has not been sufficiently investigated within various national models. By investigating how social insurance systems work in the selected countries, the article aims to identify how social insurance can be used as an effective tool to minimize inequality in the labor income. Therefore, the research hypothesis is that a high level of social insurance minimizes the income gap, while a low level of social insurance leads to its widening. Accordingly, this study provides evidence-based recommendations that can inform national policy decisions and improve the effectiveness of social insurance systems in reducing income inequality. Thus, the study contributes to a broader discourse on social protection and economic justice.

2. Methodology

To achieve the research objectives and provide a comprehensive analysis of the impact of social insurance on minimizing the income gap among workers, a number of methods were used. The use of these methods allowed for a multifaceted approach to the study of the problem, taking into account both theoretical aspects and practical experience of social insurance implementation in different countries.

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Volume 22, issue 2, Sci. Art. January-June 2025

The method of synthesis involves combining individual elements into a single whole to form general conclusions. This method was used for a detailed study of the constituent elements of the social insurance system, including spending levels, population coverage, minimum wage policy, and the Gini index. The synthesis method is also used to identify best practices and draw general conclusions about the effectiveness of different models of social insurance to mitigate economic inequality.

To assess the level of social insurance in a country, five main criteria were identified to find out how social insurance affects economic inequality, namely:

1) social insurance expenditures as a percentage of GDP. A high percentage of GDP invested in social insurance indicates significant attention from the state to the social protection of its citizens;

2) population coverage by social insurance. A high percentage of the population covered by social insurance indicates the effectiveness and accessibility of social programs;

3) minimum wage level. A high minimum wage ensures sufficient income levels for workers, contributing to economic stability;

4) high health care expenditures per capita indicate the accessibility and quality of medical services, which is an important component of social protection;

5) economic inequality index (Gini index). A low Gini index indicates an even distribution of income in society, often resulting from effective social programs.

The main selection criteria were social insurance costs as a percentage of GDP, social insurance coverage, minimum wage level, health care costs per capita, and the Gini index (an indicator of economic inequality). These criteria were chosen because of their importance in assessing social protection and the impact on economic inequality because they have a direct impact on the level of inequality in society. Thus, the analysis of the chosen indicators allows to determine the effectiveness of different models of social insurance, identify their strengths and weaknesses, and establish the best practices for reducing economic inequality among employees.

The comparative method is one of the key tools used in this study, as it allows us to analyze different social insurance systems in different countries in order to identify commonalities and differences. This method permitted to specify how different socioeconomic and political contexts influence the design and operation of social insurance systems. The comparative method helped understand which elements of different social insurance systems are most effective in reducing income inequality and improving the overall level of social protection.

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In this connection, six European countries were chosen to analyze the impact of social insurance on the income gap: Norway, the Netherlands, and Germany as countries with the best social insurance level and Latvia, Romania, and Bulgaria as those with the worst one. These countries were selected because of the different levels of development of their social insurance systems, which allowed for a variety of data for analysis. The selection of the countries with the best and worst levels of social security was intended to focus on the extremes of the spectrum to provide a clearer contrast and highlight key differences in their systems. The comparative method allowed us to draw important conclusions about the effectiveness of different social insurance models.

The statistical method is also an integral part of this study, as it allows us to quantify the impact of social insurance on the income gap of workers. The use of statistical data makes it possible to objectively analyze the state of social insurance systems in different countries and compare their effectiveness. The statistical method ensures the accuracy and reliability of the research results, which is critical for drawing reasonable conclusions. Our study used several key statistical indicators to analyze the level of social insurance and its impact on economic inequality.

Thus, various statistical methods were applied to analyze the impact of social insurance on economic inequality. The main procedures included the calculation of the income gap between the average and minimum income using the formula: (Average income − Minimum income)/Average income × 100, which allowed to quantify the level of income inequality. The Gini index was also used to measure the overall level of inequality in each country, where lower values indicate a more even distribution of income. Data on social insurance costs as a percentage of GDP, social insurance coverage of the population, minimum wage level, and per capita health care costs were obtained from official sources such as Eurostat, the World Bank and the Organization for Economic Cooperation and Development.

The application of the systematic method allowed us to create a holistic picture of the functioning of social insurance systems in different countries. This allowed us to identify how changes in one component of the system can affect other components and the overall level of social protection (Britchenko et al., 2022). For example, increased spending on health care can lead to improved health of the population, which in turn reduces spending on other types of social insurance, such as sickness and disability insurance. The systems approach also helped identify weaknesses in the functioning of social insurance systems and develop recommendations for their improvement. Thus, the research methodology included a comprehensive approach that combines theoretical and empirical methods to analyze in detail the impact of social insurance on economic inequality and identify ways to improve the efficiency of social insurance.

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Volume 22, issue 2, Sci. Art. January-June 2025

3. Results

3.1 Criteria for assessing the level of social insurance of the state

Social insurance is one of the key components of social policy that affects the economic security and stability of workers. It not only provides protection against various social risks, such as illness, unemployment, or old age, but also plays an important role in equalizing incomes and reducing economic inequality. In this section, we will take a closer look at how social insurance affects workers' incomes, its positive and negative aspects. The extent of social insurance coverage reflects the sustainability of social security policies, which can be accessed through several key indicators. These include the percentage of the population covered by social insurance relative to the total population, the disparity between the average pension and the statutory minimum wage, and the ratio of social insurance expenditures to social insurance revenues (International Labour Organization, 2014).

In order to test the impact of social insurance on minimizing the income gap at the empirical level, we need to clearly define the criteria that classify a country as a country with a high level of social protection and a country with a low level of social protection, respectively. First of all, we should note that an important indicator that reflects the level of government investment in social protection is social insurance expenditures as a percentage of GDP. The basic idea of a welfare state is that the government is responsible for the welfare of citizens (Koliada, 2017). A high percentage indicates a high level of governmental attention to social protection and a well-developed social insurance system. A low percentage indicates less government attention to this issue and a lower level of social security (Yaroshenko et al., 2021). This includes spending on pensions, health insurance, unemployment insurance, and other types of social protection. In addition, countries with high social security expenditures usually have a more stable social structure where citizens feel protected from economic risks such as illness, unemployment, or old age.

It should also be noted that investments in social protection contribute to economic growth by providing a basic level of income for all citizens, which increases overall consumption and economic activity (Lee & Chang, 2006). It is worth noting that the percentage of the population covered by social insurance is also an important high-level indicator. This indicates that most citizens have access to the necessary social protection, which helps to reduce economic inequality and increase social stability (Schanz, 2022). A high coverage rate ensures that citizens have access to necessary services and protection in the event of insured events such as illness, unemployment, or retirement (Furceri & Zdzienicka, 2010). Access to social insurance contributes to poverty reduction as it guarantees a minimum income and essential health care for all segments of the population. In countries with middle and high incomes, where the rates of social insurance coverage are extensive, social insurance plays a substantial role in mitigating income inequality (OECD, 2019).

Another factor that can be identified as a tangential factor is the level of the minimum wage. It determines the lowest number of wages that an employer is obliged to pay to its employees for the

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Volume 22, issue 2, Sci. Art. January-June 2025

work performed. The minimum wage level is an important indicator that reflects the overall level of social protection in a country. A high level indicates that the state actively cares about the welfare of its citizens, providing them with a minimum level of income sufficient to cover their basic needs. This is closely related to the level of social insurance, as high social standards are often accompanied by developed social insurance systems. This helps to reduce economic inequality and create a more equitable society, which gives us the right to classify the following countries as having high levels of social security (Marych, 2022).

Moreover, employees who are paid well for their work tend to be more motivated and productive (Jadoon et al, 2021). This has a positive impact on the overall economic activity and development of the country (Alaniz et al, 2011). In general, we can note that a high level of the minimum wage is an important indicator of a high level of social insurance, as it indicates the state's efforts to ensure a decent standard of living for all citizens and reduce economic inequality (Sotomayor, 2021).

The level of per capita health care expenditures is an important indicator that reflects the quality and accessibility of health care services in a country (Gnatenko et al., 2020). A high level of expenditures indicates significant investment in the health care system, which provides better health care and health of the population. Low expenditures are the opposite. Investments in the health care system ensure that health care services are accessible to all segments of the population, regardless of their socioeconomic status (Kniazieva et al, 2021). This reduces inequalities in access to health care and promotes overall social justice. In addition, a healthy population is more productive and puts less strain on social services (Reeves et al, 2013; Anwar et al, 2023). Thus, high health care spending helps reduce the cost of treating chronic diseases and improves the overall economic stability of the country.

The economic inequality index (or Gini index) is also worth paying attention to. This is an indicator of economic inequality in a society. It measures the degree of inequality in the distribution of income or wealth among the population. The Gini index allows us to assess how evenly economic resources are distributed in a society. A low value of the index indicates an even distribution of income, which is an indicator of social justice. High economic inequality can lead to social conflicts and instability (World Bank, 2023).

It should be noted that a low Gini index is often the result of an effective social policy that includes developed social insurance systems. This indicates that the state is actively working to reduce inequality and ensure a decent standard of living for all citizens. Social insurance is one of the instruments of income redistribution in society. It provides financial support to those who are unable to work due to old age, illness, or unemployment, thereby reducing economic inequality (Sigma, 2022). Social insurance systems ensure that even the most vulnerable segments of the population have access to necessary resources and services, such as health care and pensions, which helps to reduce the gap between rich and poor.

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Volume 22, issue 2, Sci. Art. January-June 2025

Given that five criteria were identified to find out how social insurance affects economic inequality, it is necessary to verify its compliance or non-compliance of each country with the chosen criteria (Table 1).

Table 1

Compliance or non-compliance impact of social insurance on the welfare of the population

Country	Expenditures on social security (% of GDP) (Society at a Glance, 2024)	Coverage of the population by social insurance (%) (World Bank Group, 2023)	Minimum salary (EUR per Purchasing Power Parity/month)	Healthcare expenditure per capita (EUR per Purchasing Power Parity/year) (World Bank Group, 2024)	Gini index
Norway	20.7	100	2283	8152	0.25
Germany	26.7	95	2496	7000	0.29
the Netherlands	17.6	98	2375	6310	0.28
Bulgaria	16.1	70	1287	4839	0.40
Romania	14.7	65	1473	2927	0.35
Latvia	19.7	75	969	2656	0.34

Therefore, Table 1 proves that Norway, Germany and the Netherlands have high social insurance costs, full coverage of the population by social insurance, high minimum wages and a low Gini index. This indicates effective social policy and equal distribution of income. In contrast, Bulgaria, Romania and Latvia have low social insurance costs, limited population coverage, low minimum wages and a high Gini index, indicating significant economic inequality and inadequate social security. This gives us the right to classify Norway, the Netherlands and Germany as countries with a high level of social security, and Latvia, Romania and Bulgaria as countries with a low level, respectively.

3.2 The level of social insurance and its impact on economic inequality: a comparative analysis of European countries

To analyze the impact of the level of social insurance on the gap in workers' incomes, six European countries were chosen: three with the best level of social insurance and three with the worst according to the criteria we derived in the previous paragraph of the article. The countries with the best social security have some of the best social security systems in Europe. A high level of social protection ensures a stable income for workers and minimizes the income gap (Ivashchenko et al., 2018). They invest a lot of money in social insurance, which is more than 25% of GDP (The Netherlands is an exception, but the data can vary significantly depending on the year of the study, and the Netherlands is among the countries with the best level of social insurance according to the other criteria given). The income gap is calculated using a formula that shows how much the average income exceeds the minimum income. The calculation formula we used is as follows:

ISSN-1659-0201
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Volume 22, issue 2, Sci. Art. January-June 2025

$$\text{Income gap (\%)} = \left(\frac{\text{Average income} - \text{Minimum income}}{\text{Average income}}\right) \times 100 \quad (1)$$

Using this formula, we will calculate the income gap for each of the selected countries:

Norway: $\left(\frac{5500-2100}{5500}\right) \times 100 = 61,8\%$ (2)

Germany: $\left(\frac{4100-1997}{4100}\right) \times 100 = 51,2\%$ (3)

The Netherlands: $\left(\frac{3520-1995}{3520}\right) \times 100 = 43,3\ \%$ (4)

Bulgaria: $\left(\frac{1100-399}{1100}\right) \times 100 = 63,7\%$ (5)

Romania: $\left(\frac{1250-604}{1250}\right) \times 100 = 51,6\%$ (6)

Latvia: $\left(\frac{1500-620}{1500}\right) \times 100 = 58,6\%$ (7)

The obtained data in presented in Table 2.

Table 2

Income gap for each of the selected countries

Country	Level of social insurance	Average income (€/month) (Eurostat, 2023a)	Average income (€/month) (Eurostat, 2023b)	Income gap
Norway	High	5500	2100	61. 8%
Germany	High	4100	1997	51. 2%
the Netherlands	High	3520	1995	43. 3%
Bulgaria	Low	1100	399	63. 7%
Romania	Low	1250	604	51. 6%
Latvia	Low	1500	620	58. 6%

Although a high level of social security contributes to reducing the income gap, data show that it is not always the decisive factor. For example, Norway has a high level of social insurance, but the income gap here is quite large (61.8%). This may be due to other economic factors, such as the general level of income and the economic structure of the country. At the same time, Romania, having a low level of social insurance, shows an income gap similar to that in Germany (51.6% vs. 51.2%). This suggests that there are other important factors that affect the level of economic inequality besides social security.

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Volume 22, issue 2, Sci. Art. January-June 2025

Thus, although a high level of social insurance is an important tool for reducing economic inequality, it is not always the decisive factor. Other economic and social factors also play a significant role in determining the income gap. Therefore, to achieve maximum efficiency, social insurance policies must be comprehensive and take into account the broader context of economic development and social policy. On the other hand, if we take into account the Gini index, a different picture is observed, clearly demonstrated in Table 3.

Table 3

Level of social insurance and Gini index for each of the selected countries

Country	Level of social insurance	Gini index (World Bank, 2023)
Norway	High	0.25
Germany	High	0.29
the Netherlands	High	0.28
Bulgaria	Low	0.40
Romania	Low	0.35
Latvia	Low	0.34

Gini index data show that countries with high levels of social insurance (Norway, Germany, the Netherlands) have significantly lower levels of economic inequality compared to countries with low levels of social insurance (Bulgaria, Romania, Latvia). The statistical analysis ($t (2.88) = -4.07$, $p = 0.021$) confirms that this difference is statistically significant. Thus, a high level of social insurance facilitates reducing economic inequality, which is consistent with the empirical data obtained. Although a high level of social insurance is associated with lower overall economic inequality (as indicated by the lower Gini index in countries with strong social insurance systems), statistical testing ($\chi^2 = 2.67$, $p = 0.102$) does not confirm a significant relationship. Similarly, there is no statistically significant difference in the income gap between high and low social insurance countries ($t(2.88) = -0.92$, $p = 0.419$). These results suggest that while social insurance may contribute to reducing inequality, other factors also play a crucial role in shaping income distribution.

The discrepancies between our income gap data and the Gini index data may be due to several factors. First of all, the calculation of the income gap is based on the difference between the average and the minimum income, while the Gini index measures the overall inequality in the distribution of income among the entire population. These two indicators use different methodologies and take into account different aspects of economic inequality. The influence of other economic factors cannot be ignored either.

The Gini index takes into account a wide range of factors, including income from capital, social benefits, taxation and other forms of economic support, which can significantly affect the overall level of inequality. The income gap between the average and the minimum income may not take into account all these aspects. Thus, although a high level of social insurance does not always lead

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Volume 22, issue 2, Sci. Art. January-June 2025

to a reduction in the income gap between the average and the minimum income level, it significantly affects the reduction of overall economic inequality, which is confirmed by the low Gini index.

3.3 Advantages and disadvantages of social insurance systems on the example of the considered countries

Social insurance systems play a key role in ensuring social stability and economic well-being of the population. These systems are designed to provide financial support to citizens in cases of unemployment, illness, disability or retirement, which reduces economic inequality and increases the quality of life. However, the effectiveness of these systems varies considerably between countries, depending on the level of social insurance, spending on social services and other economic factors. For a more detailed analysis, we will consider the advantages and disadvantages of social insurance systems using the example of six previously selected European countries with different levels of social insurance.

Thus, thanks to significant social insurance spending (20.7% of GDP) and full population coverage, Norwegian citizens have access to quality social services, including health care and pensions (Society at a Glance, 2024). The Gini index in Norway is 0.25, which indicates an even distribution of income (World Bank, 2023), and the high level of health care spending (€7,500/year) contributes to the improvement of the quality of medical services and life expectancy (World Bank Group, 2024). However, financing such advanced social insurance systems requires high taxes, which can be a burden on taxpayers, and significant public expenditures can lead to bureaucratic delays and reduced efficiency.

The situation is similar with the Netherlands and Germany. On the one hand, 98% and 95%, respectively, of the citizens of these states are covered by the social insurance system, which provides access to a wide range of social services (World Bank Group, 2023). Health care expenditures are €5,300/year and €5,600/year per capita, respectively, which ensures a high level of health services (World Bank Group, 2024). In general, a high level of social insurance contributes to the stability of the economy and the reduction of risks for citizens. At the same time, certain shortcomings are also highlighted, namely:

- contributions to social insurance can be high for entrepreneurs and businesses, as well as create additional budget burdens;

- with the aging of the population, the problem of financing the pension system arises;

- a complex social insurance system can be difficult to understand and manage.

At the same time, the example of Bulgaria, Latvia and Romania demonstrates that a lower level of social spending can reduce the burden on the budget and the financial burden on enterprises and

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Volume 22, issue 2, Sci. Art. January-June 2025

taxpayers. At the same time, the low level of social insurance coverage means that a significant part of the population does not have access to necessary social services. In addition, low health care costs negatively affect the quality of medical services.

Thus, the analysis of advantages and disadvantages of social insurance systems on the example of selected countries demonstrates that a high level of social insurance partially contributes to the reduction of economic inequality, but at the same time ensures a high level of social protection. Norway, Germany and the Netherlands have a low Gini index, indicating an even distribution of income and a high level of social protection. At the same time, these countries face challenges related to high taxes and bureaucracy.

Countries with low levels of social insurance, such as Bulgaria, Romania and Latvia, have higher levels of economic inequality and limited access to social services. Despite the low costs of social insurance, these countries face problems in providing quality health care and sufficient social protection for the population. Such conclusions were obtained on the basis of political, social, and economic issues that are cross-cutting for the analyzed EU countries.

4. Discussion

These indicators were used for comparative analysis of six European countries (Norway, Germany, the Netherlands, Bulgaria, Romania, and Latvia), which revealed patterns and trends. For example, countries with high social insurance costs (more than 20% of GDP) and full coverage of the population (more than 95%) showed a lower level of inequality (Gini index < 0.30) and a smaller income gap. The statistical analysis confirms the hypothesis that social insurance reduces inequality, thus influencing the income gap.

The results of this study highlight significant differences in the effectiveness of social insurance systems in six European countries. Accordingly, countries with high levels of social insurance such as Norway, Germany, and the Netherlands show lower economic inequality, as reflected in their lower Gini indices. Meanwhile, countries with lower social insurance coverage such as Bulgaria, Romania, and Latvia have higher levels of inequality. However, statistical testing shows that although social insurance reduces inequality, its impact on the income difference between minimum and average wages is not statistically significant.

Moreover, these findings are consistent with previous studies that emphasize the role of social insurance in reducing economic inequality. Coheur et al. (2008) explore innovative strategies for expanding social health protection through the connections between mandatory social insurance systems and social protection mechanisms at the community level. The authors emphasize that access to social protection and health care are fundamental human rights, which, however, are not always realized in the world. The article examines different financing methods and institutional

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Volume 22, issue 2, Sci. Art. January-June 2025

approaches to increase coverage, such as social health insurance, universal health care systems, private health insurance, and microinsurance schemes. The authors of the paper propose the concept of linkages between different outreach methods as a mechanism to ensure their interaction and avoid duplication or competition. In the context of our research, the mentioned scientific work provides a valuable analysis of the interaction between different systems of social insurance and social protection. It emphasizes the importance of political support for the success of social health insurance schemes, which is a key factor in ensuring the sustainability and effectiveness of these systems.

Interesting conclusions can also be traced in the work of Furceri and Zdzienicka (2010). The latter found that an increase in social spending by 1% leads to an increase in GDP by about 0.1 percentage points, which corresponds to a multiplier of about 0.6. The impact of social spending is most noticeable during periods of severe economic downturns. Among the categories of social spending, spending on health care and unemployment benefits have the greatest impact on economic activity. In addition, social spending has a positive effect on private consumption, while its effect on investment is insignificant. The conclusion made in this work supports our analysis that social insurance has a positive effect on the economy and helps to reduce economic inequality. A high level of social insurance contributes to a more equal distribution of income, which is important for ensuring sustainable economic growth and social justice. The study also highlights the importance of dividing social spending into different categories, such as health care and unemployment benefits, which have the greatest impact on economic activity. This provides us with concrete guidelines for analyzing the effectiveness of social spending in different countries and determining the optimal directions of funding.

The article by researchers Yaroshenko et al. (2018) examines the nature of social insurance in the European Union. It analyzes the historical background, ideological influences and various mechanisms of social insurance existing in the EU countries. Special attention is paid to three types of social security: continental (Germany, France), Scandinavian (Denmark, Sweden) and Anglo-Saxon (Great Britain). The work shows how social insurance can be an effective mechanism for ensuring fiscal stability and social solidarity. In particular, the authors emphasize that social insurance is an important tool for protecting the population from economic crises and demographic changes, such as population aging. They also consider the impact of historical events and economic crises on the development of social insurance and its adaptation to new challenges. The work examines how contemporary challenges, such as the global financial crisis, affect social insurance systems and how EU countries are adapting to these challenges. This provides valuable information for the development of policies that promote the resilience and effectiveness of social systems in a changing economic environment.

It is also worth noting the work of Marych (2022), who examines the theoretical foundations of social insurance, covers the history of its formation and development, its essence, principles, functions, types of mandatory state social insurance, as well as state regulation and management of social insurance funds. The work provides an in-depth analysis of the historical roots of social insurance,

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Volume 22, issue 2, Sci. Art. January-June 2025

helping to understand how different models of social security have developed and adapted over time. This is important for our understanding of current social security systems and their evolution. The work emphasizes the importance of social insurance for ensuring the economic stability of states during economic crises and demographic changes. This supports our findings that social insurance has not only social but also economic benefits, reducing economic inequality and supporting economic growth.

Despite the comprehensive study of social insurance, we believe that its impact on minimizing the gap between citizens' incomes is still a relevant topic, especially in the context of the results we obtained in our study. With this in mind, we offer concrete steps and proposals for reforming the social insurance system to reduce economic inequality. One of the key steps to minimize the income gap is to raise the minimum wage. Regular revision and indexation of the minimum wage in line with inflation and economic growth will ensure a decent standard of living for low-income workers. Establishing a decent minimum wage will help reduce the gap between minimum and average incomes, which is an important factor in social justice (Nemchenko et al., 2018).

Progressive taxation of income and social contributions is another important step. The introduction of progressive income tax rates will ensure a more even distribution of income in society. Differentiation of social contributions, depending on the level of income, will allow to ensure a larger contribution from wealthy citizens and enterprises, which will contribute to an increase in the level of social protection for all. Expanding social insurance coverage is another necessary measure. It is important to develop special programs to attract informal sector workers to the social insurance system. Conducting information campaigns to raise public awareness of the benefits of social insurance and the importance of participating in it will help increase coverage and reduce economic inequality.

Social support for vulnerable populations is another important aspect. The development of support programs for large families, including financial assistance, access to quality education and health services, will contribute to reducing economic inequality. Comprehensive support for people with disabilities, including financial assistance, rehabilitation programs and professional training, will help this population to integrate into society and improve their standard of living.

Finally, improving the management and control of social insurance funds is necessary to ensure the efficiency and transparency of the system. The implementation of modern methods of management and control over the use of funds, as well as ensuring transparency and accountability in the use of social insurance funds, will increase public confidence in the system and contribute to reducing economic inequality. Thus, the proposed steps and proposals for reforming the social insurance system are aimed at increasing the efficiency, transparency and accessibility of social insurance, which will ensure social justice and economic stability in society.

Consequently, the effectiveness of social insurance systems in reducing economic inequality is influenced by the complex interaction of political, economic, social, and institutional factors. While countries with high levels of social insurance, such as Norway, Germany and the Netherlands, show

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Volume 22, issue 2, Sci. Art. January-June 2025

lower levels of inequality and better social outcomes, countries with weaker systems, such as Bulgaria, Romania and Latvia, face significant challenges in providing adequate social protection. Addressing these differences requires targeted policy interventions that take into account the unique context of each country. By learning from the best practices of highly efficient systems and addressing the specific challenges faced by weaker systems, policymakers can work to build fairer and more sustainable social insurance systems in the EU.

The study has certain limitations that are important to consider. First, the countries with the best and worst levels of social security are taken into account, but countries with an average level of social security can really offer valuable data in identifying new trends, finding intermediate solutions, and understanding how countries navigate the difficulties of balancing the development of social insurance with economic growth. Moreover, although the study establishes correlations, it does not prove causal relationships, since other factors, such as economic growth or labor market policy, can influence the results. Furthermore, political and institutional factors, such as the quality of governance or support for social programs, have not been addressed in detail. Finally, Ukraine is not included in the main analysis in the article, the mention of it opens up the possibility for further research that could consider in detail the Ukrainian experience in the context of European models of social insurance. This research can be useful for scholars and politicians working on reforms in Ukraine.

Thus, it can be claimed that if the analyzed trends continues, this can have serious consequences. Countries with lower social protection costs may face rising economic inequality, leading to social tensions and increased poverty. It can also cause political instability and populist movements that compromise the existing social order. It may also lead to an increase in migration within the EU, as citizens of countries with weak social protection will seek better conditions in other countries, which will create an additional burden on social services.

5. Conclusions

Thus, the analysis of data from six European countries only partially demonstrates that a high level of social insurance contributes to the reduction of economic inequality and ensures a stable level of income for workers. In countries with high social insurance costs, such as Norway, Germany and the Netherlands, the level of economic inequality is lower. This is due to the fact that the social insurance system in these countries effectively redistributes income, providing the necessary financial support to those who need it.

Countries with low levels of social insurance, such as Bulgaria, Romania and Latvia, face significant economic inequality. The low costs of social insurance in these countries lead to the fact that a large part of the population remains without the necessary social protection. This, in turn, causes a greater level of income disparity between different social groups, which worsens the socio-economic situation in the country and creates additional challenges for the government in ensuring social stability.

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Volume 22, issue 2, Sci. Art. January-June 2025

Although the impact of social insurance on minimizing the income gap between citizens may be less significant than expected, its role in reducing economic inequality remains significant. Social insurance provides a basic level of income for the most vulnerable segments of the population, which reduces the risk of poverty and promotes a more equal distribution of economic resources.

In addition, social insurance systems contribute to economic growth and development. By providing a basic level of income for all citizens, they increase the overall level of consumption, which stimulates economic activity. Social security also improves productivity, as workers who have confidence in their social security are less stressed and more motivated.

Thus, while social insurance may not always have a direct and significant impact on reducing the income gap, its importance in providing social protection, maintaining public health, and stimulating economic growth is undeniable. Developed social insurance systems contribute to the construction of stable and fair societies, which makes them an important element of the social policy of any state.

This study brings novelty to the analysis of social insurance, focusing on its role in reducing the income gap between employees. Unlike previous studies, which mainly analyzed social insurance as a tool of financial support, this work examines its impact on economic inequality through a comparative analysis of countries with different levels of social protection. The results of the study emphasize the importance of a comprehensive approach to reforming social insurance systems, which can be useful for countries that are on the path of reform, such as Ukraine. Future studies could expand the analysis to include more countries, in particular non-European ones, to understand how social insurance functions in different regions of the world. It is also worth investigating the impact of the informal economy on the effectiveness of social insurance, especially in low-income countries.

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