EXPLORING PATTERNS OF ECONOMIC SECURITY AND SUSTAINABILITY ACROSS DEMOGRAPHIC GROUPS

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Abstract

This study analyses income dynamics and economic vulnerability in the Republic of Moldova between 2019 and 2023, using data on income and expenditures from the Household Budget Survey conducted by the National Bureau of Statistics. The findings reveal significant socio-demographic disparities, with self-employed agricultural workers, pensioners, and low-education households being the most vulnerable. Urban areas demonstrated faster income growth than rural regions, exacerbating regional inequalities. Age and education also emerged as critical factors influencing economic security, with older adults and individuals with limited education facing higher risks of financial exclusion. The results underline the necessity of targeted policies to enhance educational access, reduce labour market insecurity, and address regional disparities to foster economic resilience and social inclusion.

Keywords: income, social groups, vulnerability, financial inclusion

JEL Classification: D31, R20, E21, O15

1. Introduction

Material and financial security are essential for individual and collective well-being, encompassing both objective measures and subjective perceptions. While material security offers a critical framework for assessing vulnerabilities among social groups, its analysis is complicated by the interplay of these objective and subjective factors. Income stands out as a key objective indicator for evaluating material security.

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This study examines income distribution across population groups, aiming to identify those most vulnerable to economic and financial exclusion. As a vital measure of material and financial security, income distribution reveals patterns of inequality that are crucial for addressing socioeconomic disparities.

At the macro level, indicators such as Gross Domestic Product (GDP) offer a broad view of national economic health and resource availability. While useful for assessing economic trends and policy outcomes, macro indicators often fail to capture the nuanced realities of inequality within specific population subgroups. Their limitations make them insufficient for identifying vulnerable households or addressing deeply rooted disparities. By contrast, the micro-level analysis focuses on household and individual income distribution, providing a more detailed perspective on inequality and economic opportunity. This approach highlights how age, education, employment status, and place of residence influence income levels. The micro-level analysis offers valuable insights into the socioeconomic conditions perpetuating inequality and exclusion by identifying groups whose income falls below the thresholds necessary for resilience and inclusion.

2. Literature review

To better understand the dynamics of income and exclusion, this study builds on existing theoretical and empirical research, as outlined below. The existing research has identified interdependencies between financial and social exclusion (Lewis & AV Lewis, 2014; Németh, Zsótér, & Béres, 2020; Fernández-Olit, Martín Martín, & Porras González, 2020). Hungarian researcher Dorjnyambuu examined the causal relationship between financial and social exclusion in Eastern and Central Europe, identifying the interdependence between these two phenomena (Dorjnyambuu, 2023). Furthermore, income influences the adoption of digital financial practices, as lower income levels often hinder access to such services. Other research has underlined that household income is a determining factor in adopting and promoting certain digital financial practices (Vik, Kamerāde, & Dayson, 2024). A significant aspect emphasised by foreign researchers is the correlation between financial vulnerability, income, and other socio-demographic characteristics (Buleca, Šubová, & Maličká, 2022). For instance, the education level of individuals is one of the critical characteristics (Daud, Marzuki, Ahmad, & Kefeli, 2019; Németh, Zsótér, & Béres, 2020; Šubová, Mura, & Buleca, 2021), which impacts income levels on the one hand and indicates or creates risks related to the knowledge required for promoting financial inclusion on the other. In addition to education, the literature highlights other factors, such as unemployment or periods of joblessness (Rhine & Greene, 2013; Lee & Sabri, 2017; Hamid, Loke, & Chin, 2023). Another critical aspect highlighted in studies on financial exclusion is the relationship between the risk of exclusion and individuals' residential environment. Researchers have noted a gap and a higher risk of financial exclusion in rural areas compared to urban areas (Yusof, Rokis, & Jusoh, 2015; Németh, Zsótér, & Béres, 2020).

Research in this field provides a broad and diverse theoretical and empirical framework regarding the correlations between financial exclusion, income, and socio-demographic characteristics. Thus, this study will be guided by the theoretical parameters identified at a general level and outline the population's risk profiles based on income at the national level.

3. Data and methods

This study utilised statistical indicators from the National Bureau of Statistics (NBS) to analyse income and expenditure patterns between 2019 and 2023. The analysis was based on the availability of comparable data, with the primary source being the Household Budget Survey (HBS). The HBS is a nationally representative survey covering 12,612 households annually, with data collected monthly using a two-stage sampling process. In 2019, significant methodological improvements were introduced to enhance accuracy and representativeness, including recalibrating the sample to reflect current population dynamics and transitioning from a panel design to sampling new households annually. These updates align with international standards and improve data robustness (BNS, 2024).

Due to the 2019 methodological changes, data from earlier periods were excluded from the analysis as they were incompatible for comparison. The 2019–2023 data were extrapolated to the total population based on socio-demographic characteristics, such as age, education, and labour market status.

The research focused on disaggregated income and expenditure indicators, enabling a dynamic analysis of these metrics and their ratio across socio-demographic factors, including household head characteristics and area of residence. This approach highlighted key trends and variations within the population.

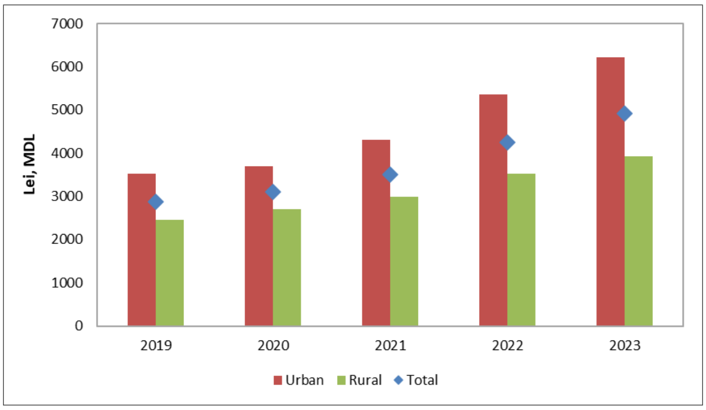
While the HBS provides reliable data, it is subject to limitations, including non-response rates in sensitive areas like income reporting and potential sampling errors. However, the NBS mitigates these issues through continuous methodological refinements, such as the 2019 recalibration. Despite these challenges, the HBS remains a vital tool for understanding income and expenditure trends in socio-demographic contexts.

4. Main results

In recent years, population income in the Republic of Moldova has shown a notable increase, with urban areas experiencing a more pronounced increase compared to rural regions (Figure 1).By 2023, incomes in urban areas had risen by 1.8 times and in rural areas by 1.6 times relative to the beginning of the analysis period. Salaries, contributing roughly 50% of total income, remain the primary source of income, complemented by a growing share of social benefits, which reached 20% by 2023. Together, these components account for about 70% of the population's total income, reflecting governmental efforts to address socioeconomic instability through measures such as social benefits and assistance for utility bills amid rising costs of gas and electricity.

Figure 1

Dynamics of available population income by area of residence



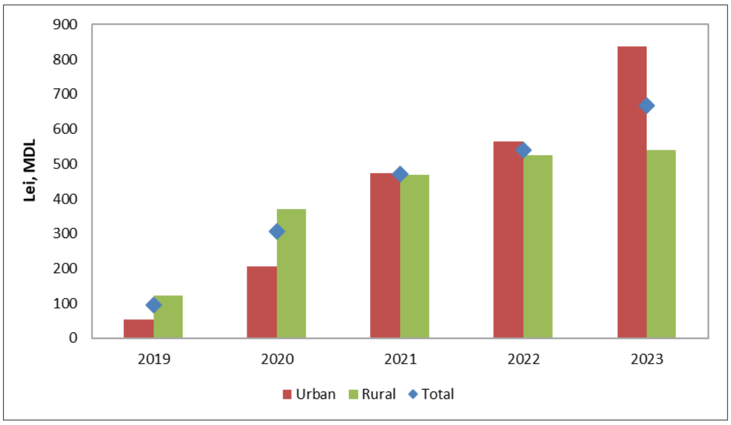
Source: Based on the NBS data

The disparity between urban and rural areas is further highlighted by income-to-expenditure dynamics (Figure 2). At the beginning of the study, urban households had smaller gaps between income and expenditures than rural ones. However, by 2023, urban households reported a significant positive difference, with incomes averaging 800 MDL compared to 500 MDL in rural areas. This gap underscores stagnation in rural income growth, which has constrained spending primarily to essential needs like food and utilities. In contrast, urban households have shown stronger financial resilience, enabling discretionary spending and widening the urban-rural divide.

These dynamics are reflected in overall expenditure patterns across the population. More than 40% of household expenditures are directed toward food and non-alcoholic beverages, while approximately 20% is spent on utilities. These figures illustrate the financial constraints faced by many households, whose budgets are predominantly consumed by basic necessities. This limitation is particularly acute in rural areas, where slow income growth exacerbates financial vulnerability. These patterns align with broader socioeconomic challenges, where income disparities and instability continue to shape the financial realities of different population groups.

Figure 2

Dynamics of differences between income and expenditures by area and overall

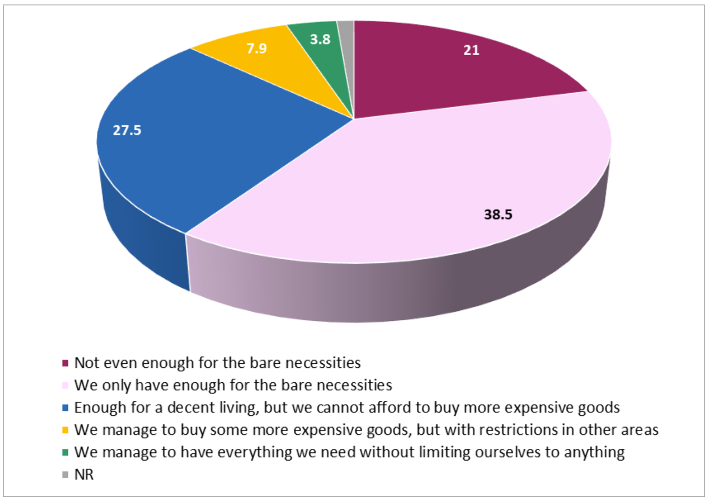


Source: Based on the NBS data

Building on these observed trends – the low difference between income and expenditures - the majority of the population is restricted to meeting only basic needs. Data from the Public Opinion Barometer further support this conclusion, showing that 40% of respondents consider their income sufficient only for basic needs, while 21% report that their income is inadequate even for these essential needs (Figure 3). These findings emphasise widespread financial constraints and underline the systemic economic deficiencies affecting large segments of the population.

Figure 3

Self-assessment of income level



Source: BPO data for August 2023, http://bop.ipp.md/

Economic deficiencies become much more apparent when analysing data across specific population categories. The analysis of Figure 4 demonstrates notable disparities in income levels across different socioeconomic groups over the 2019–2023 period. Salaried employees consistently report the highest income levels, with a significant upward trend observed over time. By 2023, their average income exceeded 5,000 MDL, far outpacing other groups. This highlights the financial advantage of individuals with formal employment, driven by stable wages and potential access to benefits.

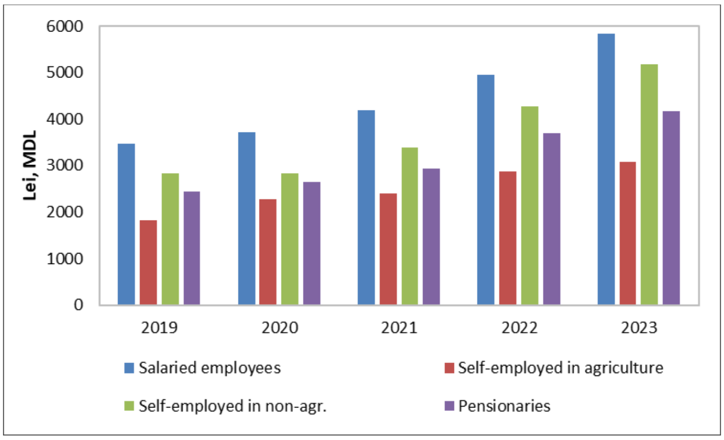
Self-employed workers in non-agricultural activities exhibit moderate income levels, positioned between salaried employees and agricultural workers. Their income shows a gradual increase over time, albeit at a slower pace compared to salaried employees, suggesting moderate economic resilience in non-agricultural sectors.

In stark contrast, self-employed workers in agriculture consistently exhibit the lowest income levels, remaining stagnant throughout the analysis period. By 2023, their income was less than half that of salaried employees, illustrating the persistent economic challenges faced by this group. This stagnation reflects structural barriers such as limited market access, low productivity, and the absence of financial safeguards.

While similarly constrained, pensioners show slightly higher income levels compared to self-employed agricultural workers. However, their income remains significantly lower than other groups, with limited improvements observed over time. This reflects their reliance on fixed pensions, which are inadequate to match rising living costs.

Figure 4

Dynamics of income based on the socioeconomic status of the household head



Source: Based on the NBS data

Income-to-expenditure differences further illustrate financial disparities across groups (Figure 5). Salaried employees consistently exhibit positive income-to-expenditure differences throughout the analysis period. This trend reflects their relative financial stability, likely due to consistent wage earnings and better access to financial resources. By 2023, the income surplus for this group reached its highest level, exceeding 800 MDL. This improvement demonstrates their capacity to generate savings or allocate funds toward discretionary spending, highlighting the benefits of formal employment.

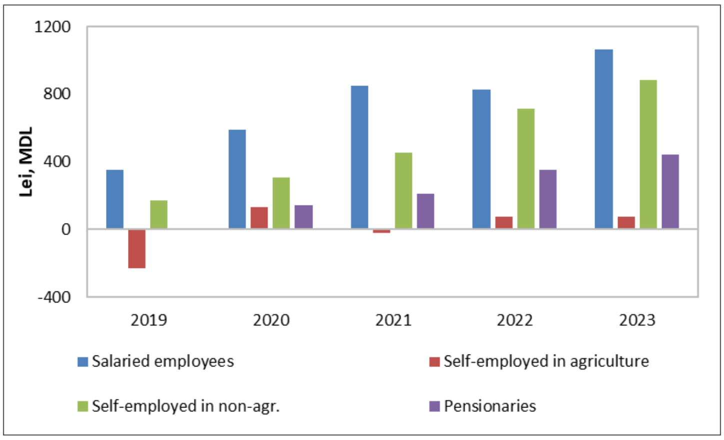
Self-employed workers in non-agricultural sectors demonstrate moderate financial resilience, with consistently positive income-to-expenditure differences. Their financial position improves steadily over time, reaching a surplus of around 800 MDL by 2023. This reflects the relative stability and growth potential of non-agricultural activities compared to agricultural work, suggesting greater income diversification and market integration opportunities in this group.

Self-employed workers in agriculture face persistent financial difficulties, with negative income-to-expenditure differences recorded in most years. This trend indicates that their expenditures often exceed their income, underscoring their precarious financial situation. While a slight improvement is observed in later years, their overall financial position remains the weakest among all groups, reflecting structural challenges such as low agricultural productivity, limited market access, and vulnerability to external shocks.

Pensioners maintain modest but positive income-to-expenditure differences, indicating a slight financial surplus. However, their position shows little improvement over time, with their surplus remaining significantly lower than that of employees or non-agricultural workers. This stagnation reflects their heavy reliance on fixed pensions, which limit their capacity to adapt to rising living costs or improve their economic situation.

Figure 5

The dynamics of the difference between income and expenditure by socio-economic status of the household head



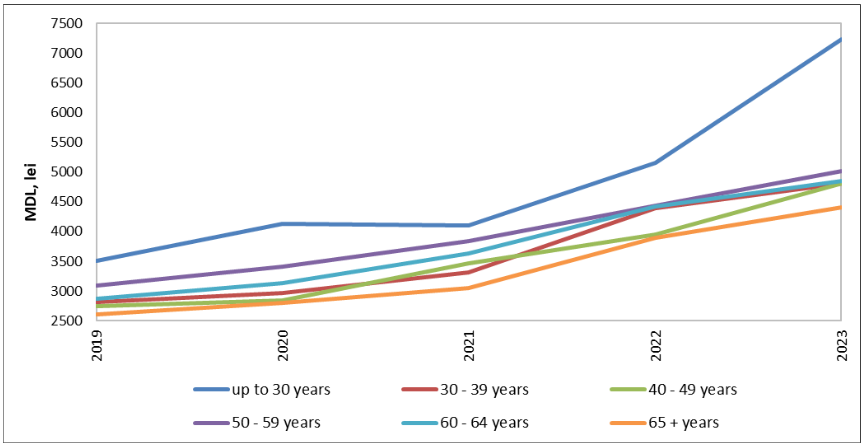
Source: Based on the NBS data

Age also plays a critical role in income disparities. As shown in Figure 6, individuals from households headed by individuals aged 65 years and older consistently report the lowest income levels throughout the observation period (2019–2023). This trend is largely attributable to their reliance on fixed pensions, which provide a stable but insufficient income to meet rising living costs. Despite modest increases over time, the income of this group remains significantly lower than that of younger age groups, highlighting the persistent economic challenges faced by older households.

Conversely, households headed by individuals under the age of 30 exhibit the highest income levels. This group experienced a marked upward trajectory in income, particularly from 2021 onwards, with incomes exceeding 7,000 MDL by 2023. This sharp growth may reflect more significant access to higher-paying employment opportunities and a stronger connection to dynamic sectors of the economy.

Figure 6

Income dynamics by age of household head



Source: Based on the NBS data

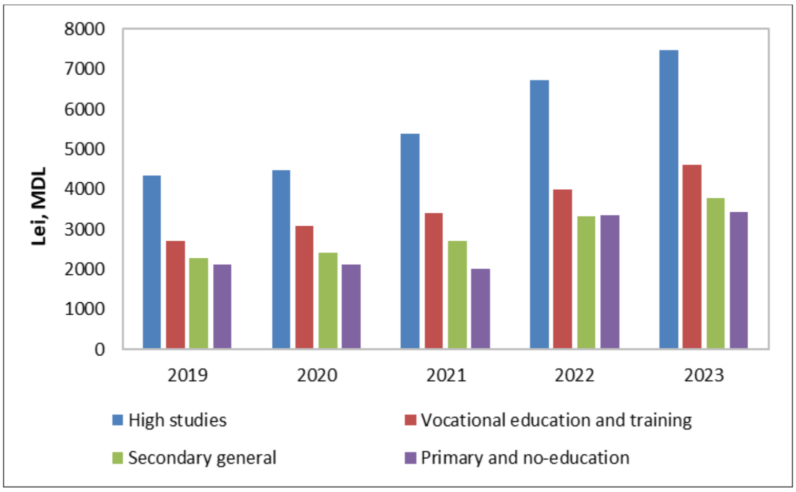
The situation for middle-aged household heads, particularly those aged 30–49 years, is somewhat more complex. While these individuals are typically in their peak productive years, their income levels do not significantly outpace those of older age groups, particularly those aged 50–59.

Interestingly, the income gap between age groups narrows for individuals aged 50–59 years and those in the 60–64 age range. Both groups demonstrate steady income growth but do not exhibit the same rapid increases observed in younger groups. This trend suggests that economic opportunities may plateau as individuals approach retirement age.

Educational attainment emerges as a key determinant of income. On the one hand, higher education levels provide access to more stable and well-paying employment opportunities. On the other, education equips individuals with the skills needed for effective financial management and adaptability in a changing economy. The data in Figure 7 demonstrate a clear and substantial income gap based on educational attainment, highlighting the strong correlation between education and economic resilience.

Figure 7

Income dynamics by education level of the household head



Source: Based on the NBS data

Households headed by individuals with higher education consistently report the highest income levels throughout the 2019–2023 period. By 2023, the average income for this group exceeded 7,000 MDL, showing a steady and substantial increase over time. In contrast, individuals with only primary education or no formal education exhibit the lowest income levels, with an average income that stagnates around 2,500–3,000 MDL throughout the observation period.

Those with general secondary education and technical vocational training occupy intermediate positions. By 2023, households headed by individuals with vocational training reported incomes averaging around 5,000 MDL, reflecting moderate financial improvement over time. Meanwhile, individuals with general secondary education exhibited slower income growth, with their incomes lagging behind vocational graduates.

5. Conclusion

This study highlights significant disparities in income and expenditure dynamics across socio-demographic groups, regions, and educational levels in the Republic of Moldova, offering critical insights into financial vulnerabilities. Certain high-risk groups emerge as particularly susceptible to financial exclusion, including self-employed agricultural workers, pensioners, individuals with low education levels, and rural households. These groups face persistent income stagnation, limited economic opportunities, and expenditure patterns dominated by essential needs.

A key finding is the strong correlation between education and income levels. Individuals with higher education consistently achieve better financial outcomes, benefiting from stable employment, career advancement opportunities, and higher salaries. Conversely, those with only primary education or no formal education experience persistently low incomes, limiting their ability to diversify income sources and heightening their risk of economic exclusion.

Age also plays a pivotal role in shaping financial realities. Older individuals (65+ years) are heavily reliant on insufficient pensions, which fail to meet rising living costs. Younger groups (30–49 years) face financial pressures stemming from family-related consumption demands, such as raising children, education expenses, or mortgage payments. These factors constrain disposable income, even during what is typically an economically active phase of life.

Regional disparities further compound these inequalities. Urban households consistently report higher income growth and greater financial stability than rural households. In rural areas, income stagnation and limited economic opportunities exacerbate vulnerabilities. Self-employed workers in agriculture are particularly disadvantaged, with negative or negligible income-to-expenditure differences highlighting their precarious financial conditions. Pensioners, while slightly better off, remain constrained by fixed incomes that cannot keep pace with inflation or rising costs.

This analysis underscores the systemic inequalities shaping financial realities in Moldova, driven by intersecting factors such as education, age, labour market participation, and regional disparities. Addressing these challenges requires a comprehensive, evidence-based approach that prioritises equitable access to economic opportunities, robust social protection mechanisms, and initiatives to enhance economic resilience. By focusing on these measures, policymakers can mitigate vulnerabilities, reduce inequalities, and foster sustainable socioeconomic development for all segments of society.

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References

1. BNS. (2024). Veniturile și cheltuielile gospodăriilor casnice. CBGC. Metadate. BNS. October. Retrieved from BNS: https://statbank.statistica.md/PxWeb/Resources/PX/Databases/30%20Statistica%20sociala/04%20NIV/NIV010/CBGC.pdf
2. Buleca, J., Šubová, N., & Maličká, L. (2022). The relationship between household wealth and financial vulnerability in the post-communist countries of the Euro Area. Ekonomický časopis, 70(7/8), 569-588. doi:https://doi.org/10.31577/ekoncas.2022.07-8.01
3. Daud, S. N., Marzuki, A., Ahmad, N., & Kefeli, Z. (2019). Financial vulnerability and its determinants: Survey evidence from Malaysian households. Emerging Markets Finance and Trade, 55(9), 1991--2003. doi:https://doi.org/10.1080/1540496X.2018.1511421
4. Dorjnyambuu, B. (2023). The reflexive relationship between financial and social exclusion for the selected Central-Eastern European countries. PÉNZÜGYI SZEMLE/PUBLIC FINANCE QUARTERLY, 69(4), 61-80. doi:https://doi.org/10.35551/PFQ_2023_4_4
5. Fernández-Olit, B., Martín Martín, J. M., & Porras González, E. (2020). Systematized literature review on financial inclusion and

exclusion in developed countries. International Journal of Bank Marketing, 38(3), 600-626. doi:https://doi.org/10.1108/IJBM-06-2019-0203
6. Hamid, F. S., Loke, Y. J., & Chin, P. N. (2023). Determinants of financial resilience: insights from an emerging economy. Journal of social and economic development, 25(2), 479-499. doi:https://doi.org/10.1007/s40847-023-00239-y
7. Lee, M. P., & Sabri, M. F. (2017). Review of financial vulnerability studies. Archives of Business Research, 5(2), 127-134. doi:DOI: 10.14738/abr.52.2784.
8. Lewis, J., & AV Lewis, S. (2014). Processes of vulnerability in England? Place, poverty and susceptibility. Disaster Prevention and Management, 23(5), 586-609. doi:https://doi.org/10.1108/DPM-03-2014-0044
9. Németh, E., Zsótér, B., & Béres, D. (2020). Financial Vulnerability of the Hungarian Population—Empirical Results Based on 2018 Representative Data. Public Finance Quarterly= Pénzügyi Szemle, 65(2), 284-311. doi:https://doi.org/10.35551/PFQ_2020_2_8
10. Rhine, S. L., & Greene, W. H. (2013). Factors that contribute to becoming unbanked. Journal of Consumer Affairs, 47(1), 27-45. doi:https://doi.org/10.1111/j.1745-6606.2012.01244.x
11. Šubová, N., Mura, L., & Buleca, J. (2021). Determinants of household financial vulnerability: Evidence from selected EU countries. Economics and Management, 186-207. doi:https://doi.org/10.15240/tul/001/2021-3-011
12. Vik, P. M., Kamerāde, D., & Dayson, K. T. (2024). The Link Between Digital Skills and Financial Inclusion—Evidence from Consumers Survey Data from Low-Income Areas. Journal of Consumer Policy, 47, 373-393. doi:https://doi.org/10.1007/s10603-024-09567-w
13. Yusof, S. A., Rokis, R. A., & Jusoh, W. J. (2015). Financial fragility of urban households in Malaysia. Jurnal Ekonomi Malaysia, 49(1), 15-24. doi:http://doi.org/10.17576/JEM-2015-4901-02