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## Factor Stratification of Individual Investors as Participants in the Domestic Government Borrowing Market

**Abstract**

In the context of open aggression against Ukraine, and taking into account the war of attrition, which leads to increased defence spending and budget deficits, the state should promote the development of the domestic government borrowing market (hereinafter referred to as DGBM) by attracting temporarily available funds from individual investors to purchase government bonds. In order to align the interests of the state and individual investors in the DGBM, it is necessary to conduct factor stratification to determine the priority of factors influencing their investment behaviour. The *subject of the study* is the investment behaviour of individual investors in the domestic government borrowing market. The *purpose of the study* is to identify factors influencing the investment behaviour of individual investors as key participants in the DGBM and to stratify them in order to increase investment in government securities to support Ukraine's economy during martial law and ensure financing for post-war reconstruction. The scientific and theoretical basis for the study of factor stratification of individual investors as participants in the domestic government borrowing market consists of *methods* such as dialectical, generalisation, economic-statistical, analytical, and induction. The factor stratification of individual investors in Ukraine's domestic government borrowing market has enabled us to draw several important conclusions. Firstly, it has been established that factor stratification is a dynamic process of dividing factors that influence the behaviour of individual investors on the DGBM according to a hierarchical principle, which allows for their differentiation and prioritisation. Secondly, the main groups of factors influencing the behaviour of individual investors on the DGBM in the current conditions have been determined and divided according to priority into economic, personal, demographic, fiscal and legal factors. Thirdly, it is argued that the factor stratification of individual investors should form the basis for the development of state investment policy and the strategy for the development of the domestic government borrowing market (DGBM) in order to attract free funds from individual investors to purchase domestic government bonds (DGB), in particular military bonds. Fourthly, there is a proven need for the authorities and regulators of the DGBM not only to ensure growth in the volume of domestic government bond purchases, but also to verify that individual investors have obtained the funds for their purchase legally.

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**1 Introduction**

The domestic government borrowing market (DGBM) ensures the stability of the state's financial system, increasing its resilience to shocks during periods of political, economic, financial, environmental and social crises. The effectiveness of this market directly depends on the ability to

attract funds from individual investors. The growth in their number depends on the development of effective measures at the state level to stimulate individual investment. Such incentives should be based on an individual approach, founded on the classification of individual investors, and take into account various factors that influence sound investment decisions.

**Keywords**

household savings, individual investor resources, household investments, factor stratification, public debt, domestic public borrowing market, financial system

**JEL:** E6, G5, H6



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In most cases, the motivation of individual investors is based on certain expectations regarding the profitability and risk of financial instruments. In this context, DGBM have certain advantages, as they are issued by the state and have a lower level of risk compared to financial instruments of private issuers. With the spread of digital information technologies, the choice of instruments on the financial market is expanding. However, quite often for certain groups of individual investors, information about the rules of the game on the DGBM and existing investment opportunities is often limited or inaccessible. Such information is perceived by individual investors through the prism of their level of financial literacy, access to modern information technologies, degree of trust in public authorities, existing experience, personal mentality, etc.

For a long time, economic science relied on the concept of effective market and rational determination of investor behaviour. However, the idea of perfectly rational investors who always maximise utility and demonstrate excellent self-control is gradually losing its relevance. At the end of the 19th century, representatives of institutional theory put forward the idea that rationalism and economic freedom give rise to irrational forms of behaviour. At the same time, the study of the motives behind investor behaviour did not take into account socio-psychological factors of influence.

Irrational motives in the behaviour of individual investors under the influence of economic, behavioural, social and psychological factors on the investment decision-making process require factor stratification of individual investors as key DGBM participants. All of the above determines the theoretical and practical significance of such research.

## **2 Behavioural Aspects of Individual Investors' Activities**

The works of well-known domestic and foreign scientists are devoted to the study of behavioural aspects of individual investors in the financial market and the factors that influence them. In this context, the scientific works of domestic economists consider the problems of attracting individual investors to the DGBM. Some scholars point out that the issue of attracting personal investments to finance military budget expenditures and restoration, as well as to maintain macroeconomic and financial stability, is becoming particularly important (Liutyi & Miedviedkova, 2023). Other experts (Shyshkov, 2022) distinguish between retail and mass individual investors, and also point out that their involvement in the stock market is hampered by a lack of financial resources and insufficient financial literacy. In a scientific paper by foreign experts (Reiter-Gavish, Qadan & Yagil, 2022), individual investors are

segmented according to several criteria: 1) investment experience; 2) level of financial literacy; 3) wealth; 4) professional abilities; 5) education; 6) family status. The relevance of studying investor behaviour from the perspective of national investment security is highlighted by another Ukrainian scholar (Varnalii, 2019), who notes the existence of problematic aspects of state policy on investment activity. A number of authors point out that there are circumstances that determine the irrationality and quasi-rationality of financial decisions made by investors (Karpinskyi, 2020). Investors make irrational decisions under the influence of the external environment and due to different views and opinions, while quasi-rational decisions are based on a subjective assessment of the situation.

Other authors note that the main problems of modern society are rooted in morality (Nikiforov & Marych, 2023). People's behaviour when making both private and public choices is only partially justified by moral norms. Some scientific works (Karpyshyn, 2015) focus on several models of investment behaviour among the population. It should be noted that, as a rule, these models are based on established approaches to the typology of national financial markets. The psychological aspects of investment decision-making based on investor confidence can be a pretty influential factor, even leading to people turning away from professional services (Singh, Malik, Jain & Abouraia, 2024). Almost identical results were achieved by another author (Suciu, 2015), who divides individual investors from a psychological point of view into very conservative, conservative, moderate, dynamic, and aggressive. The results of a study on the social responsibility of individual investors from the perspective of investing in socially significant projects (Robba, Sorgente & Iannello, 2024) are scientifically significant. The results of another study (Milan & Eid, 2017) show that individual investors with higher education tend to have a higher portfolio diversification rate. The quantitative parameters of an investment portfolio are also influenced by age, gender, marital status, and level of education. In researching the gender aspects of investing, scholars (Mintautė & Lezgovko, 2021) highlight the main differences between men and women in their personal choice of investment strategy.

Despite significant scientific achievements devoted to the study of behavioural factors influencing decision-making by individual investors, there are currently no uniform approaches to the factor stratification of these financial market participants.

## **3 Factor Stratification of Individual Investors**

The behaviour of individual investors on the DBGM is primarily determined by their investment goals and their own investment strategy, which are shaped

by various factors. To study these factors, the author propose using the concept of factor stratification. For the purposes of this study, factor stratification will be understood as a dynamic process of dividing the factors that influence the behaviour of individual investors on the DGBM according to a hierarchical principle. This approach will make it possible to differentiate between them and determine their priority. In addition, it should be borne in mind that the DGBM synchronises the interests of the state as a borrower and individual investors who invest their resources in government securities. Financial intermediaries play a special role in this process (Fig. 1).

The level of trust that individual investors have in the financial instruments issued by the state depends largely on the actions of the state. However, the factors of trust in financial instruments, financial and digital literacy are interrelated, since appropriate knowledge is also necessary to assess the effectiveness of financial investments. It is obvious that investment strategies are also determined by an individual's education and professional competencies. As mentioned above, the factor stratification of individual investors' investment behavior on the Ukrainian DGBM is a dynamic process, and the hierarchy of influence of certain factors may change significantly over time or under the influence of force majeure circumstances, in particular military actions. With the help of factor stratification, government authorities can identify

groups of individual investors and, on this basis, develop strategies to attract their personal savings (Fig. 2).

Among the factors listed in Fig. 2, economic factors are a priority in the current environment, especially income stability. Without income, potential individual investors will not have free funds in the form of savings to invest in DGB. The second priority is financial status, since the availability of, for example, one's own home will attract the investor's attention to securities. A stable financial situation of an individual implies the availability of free funds, and positive investment experience facilitates the task of attracting individual investors.

As for the economic basis for individuals to purchase DGB, wages remain the main resource for this. According to official data (The Ministry of Finance of Ukraine, 2025), the average monthly salary of employees in 2024 was 17,442 UAH, which is 17.5% more than in the previous year 2023 and, compared to the pre-war years, 69.1% and 34.6% more, in 2020 and 2021, respectively. The highest wages in 2024 were observed in the sectors of "Information and Telecommunications" (57,514 UAH), "Air Transport" (54,646 UAH), and "Financial and Insurance Activities" (44,943 UAH) (The State Statistics Service of Ukraine, 2024). Employees in postal and courier services earned less than the average wage (17,923 UAH), as did those in education (16,479 UAH), and in creative and

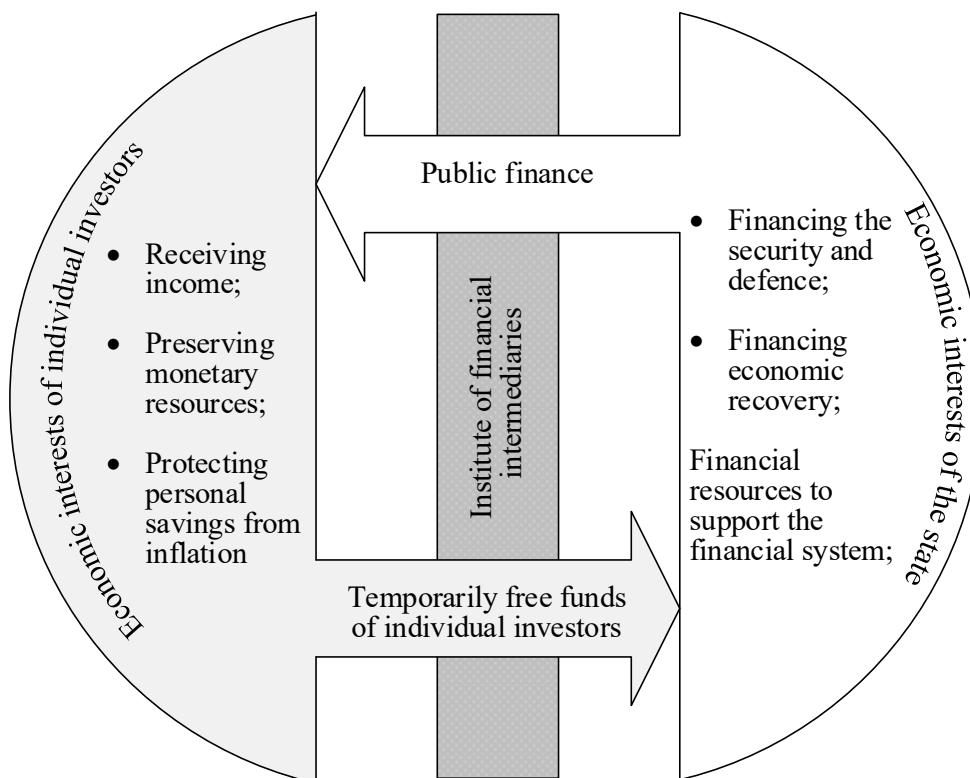


FIGURE 1. Synchronisation of economic interests of the state and individual investors in the DGBM

Source: compiled by the author

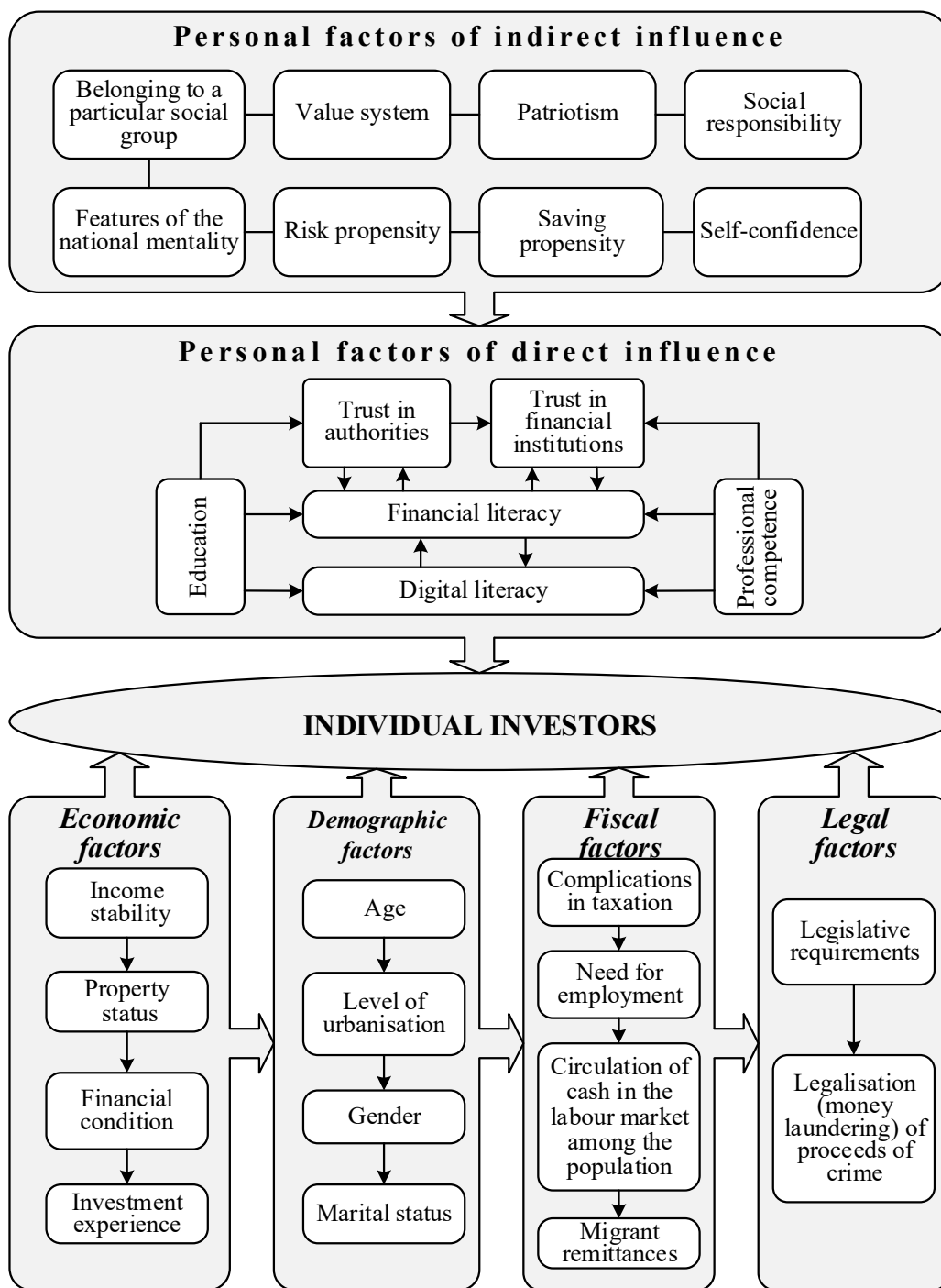


FIGURE 2 Factor stratification of individual investors in the domestic government borrowing market

Source: compiled by the author

artistic professions (15,165 UAH). It is evident that employees with higher wages have greater investment opportunities. In the context of the issue under study, it is also worth paying attention to the potential of self-employed persons (individual entrepreneurs) (Fig. 3).

A significant amount of funds may be attracted to the purchase of DGB through private money transfers from migrant workers abroad. Thus, the volume of such transfers increased from 11,980 million USD in 2020 to 14,019 million USD in 2021. However, under

the influence of military operations, it decreased to 12,543 million USD in 2022, 11,292 million USD in 2023, and 9,480 million USD in 2024. To understand the scale of such transfers, the following figures are given as a percentage of GDP: in 2020–7.7%, in 2021–7.0%, in 2022–7.8%, in 2023–6.2%, in 2024–4.9% (The National Bank of Ukraine, 2024).

Demographic factors also influence the investment activity of potential investors. The urban population in Ukraine is considered to be

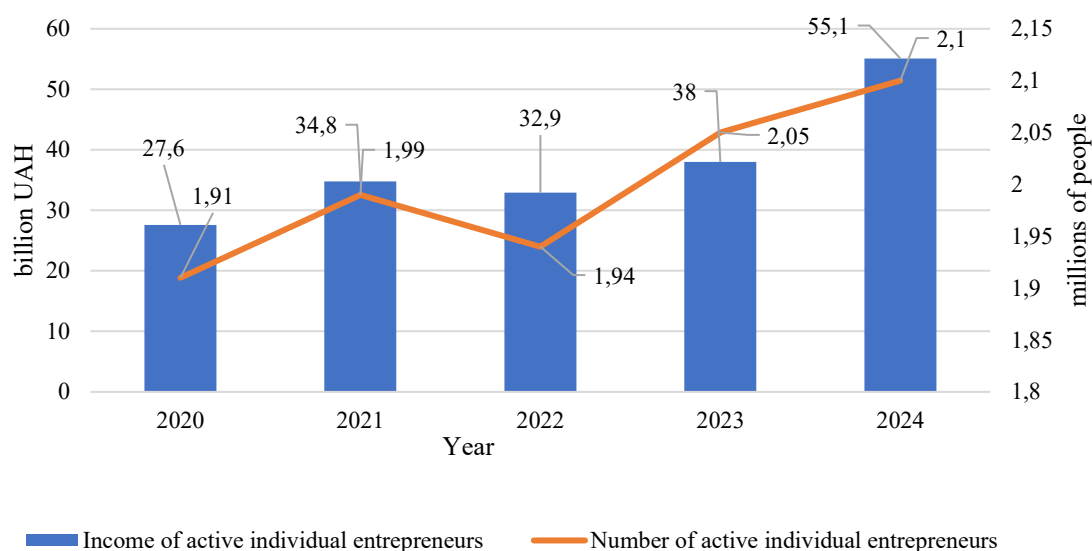


FIGURE 3 Number of individual entrepreneurs and their income

Source: compiled by the author based on (*Economy of Ukrainian IEs in real time. Opendatabot, 2025*)

more investment-active than the rural population. Age often influences investment goals. According to international estimates, in 2023, Ukraine's population was 36.7 million, with people aged 15 to 64 accounting for 64.6%, over 65 years old – 20.2%, and under 14 years old – 15.2% (United Nations Population Fund, 2024). Before the start of military operations, young people invested more in education, middle-aged people invested in business, real estate or saved money, while older people mostly refrained from investing. At the start of the full-scale invasion, the situation changed radically. Influenced by patriotic sentiments and a desire to help ensure the country's defence capability, individuals of all ages, regardless of income level, began investing in government bonds (primarily government bonds).

The basic factors that influence the investment decision-making process are personal. Depending on the state's ability to influence them, they can be divided into factors of direct and indirect influence. Among the factors of direct influence, the main ones are financial and digital literacy, as well as trust in financial instruments. As noted in some studies, trust in government authorities can also be mentioned here (Dubyna, Zhuk & Bondarenko, 2018). It should be added that the level of trust determines the extent to which other factors will influence the activity of individual investors. For example, a high level of trust in financial instruments and state guarantees for the protection of investors' rights can, to a certain extent, compensate for the lack of financial and digital skills.

The state can directly influence the above factors by implementing appropriate training programmes for potential investors. Examples of such positive influence include the creation of the free online

platform "Harazd", the work of the "TALAN" Financial Knowledge Centre, and the opportunities provided on the Unified State Web Portal "Diiia. Education".

It is also important to stratify potential individual investors according to their level of education, financial and digital literacy. According to various estimates, about 80% of the adult population of Ukraine has higher education, which indicates the development of the education sector in our country. In turn, according to official data, as of the end of 2023, only 7% of the adult population of Ukraine did not have digital skills, while 22% had above-average skills (The Ministry of Digital Transformation of Ukraine, 2024). The digital skills of men and women are practically the same, which indicates gender equality in this area. The age structure of the adult population's digital skills is also quite natural, with young people having better digital skills than the elderly population.

The latest comprehensive study of the financial literacy of the Ukrainian population was conducted in 2021 using the methodology of the OECD International Network on Financial Education (Financial literacy, financial inclusion and financial well-being in Ukraine in 2021). Since the previous study in 2018, the financial literacy index of the Ukrainian population has risen from 11.6 to 12.3 points. This index consists of three components: financial knowledge, financial behaviour, and attitudes towards financial issues. Improvements were seen in all of these components, but the results obtained are only 58% of the maximum score and are lower than the OECD recommendation of 14 points. In terms of age, middle-aged people have the best indicators of financial knowledge, financial behaviour and attitude towards finance. The best indicator is among people with higher education (13.3 points), followed by those with secondary specialised education

(11.9 points), and those with complete or incomplete secondary education (11.2 points).

In terms of personal income, the worst financial literacy indicators are found among people with the lowest incomes, while the highest indicators are found among people with the highest incomes (Fig. 4).

Urban residents in Ukraine have a higher financial literacy index (12.6) compared to rural residents (11.8). The availability of savings also affects the financial literacy index. All of the above indicates that financial literacy training should be carried out in various areas, and the focus should be shifted towards knowledge of investment activities.

The next level in the factor stratification of individual investors can be attributed to personal factors of indirect action, among which, in wartime conditions, one can distinguish the system of personal values and patriotism. The value system of individual investors, which is formed as a result of their upbringing and belonging to a particular social group, influences the manifestation of patriotism and a sense of social responsibility. Thus, it is these factors that create additional motivation to invest specifically in the purchase of DGB, in particular military bonds.

**4 Conclusions**

Attracting funds from individual investors to the domestic government borrowing market requires the practical application of the proposed factor

stratification. It allows identifying key mechanisms aimed at stimulating individual investment in the domestic government borrowing market. The primary task is to increase the level of trust of individual investors in government authorities and government securities. The process of factor stratification is dynamic and, in wartime conditions, involves the following priorities: economic, personal, demographic, fiscal and legal factors. Economic factors are considered a priority because without stable incomes, potential individual investors will not have free funds in the form of savings to invest in DGB. It should be noted that even in wartime, there is a certain segment of the population with above-average incomes. The least costly option for the state would be to develop appropriate measures to influence their value system, patriotism and social responsibility.

Factor stratification allows the government to take into account the dynamics of household income and its share as potential investment resources that realise the interests of individual investors. The authorities should initiate changes to the current legislation and transform the current financial policy in terms of creating incentives for individual investors on the DGBM and attracting their free funds to purchase DGB, in particular military bonds. Legal factors require verification of the legality of funds obtained by individual investors who use them to purchase government financial instruments.

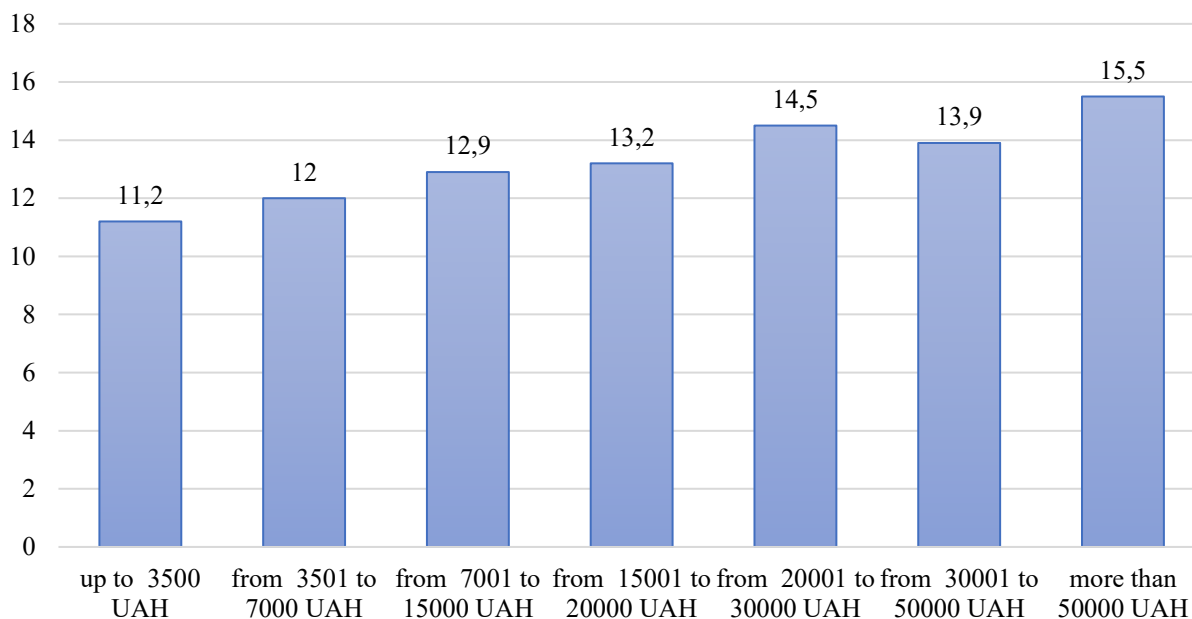


FIGURE 4 The significance of the financial literacy index depending on personal income  
 Source: compiled by the author based on (Financial literacy, financial inclusion and financial well-being in Ukraine in 2021)

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