Methods of Financial Literature Assessment: Kazakhstan's Experience

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Abstract

This research aims to study foreign experience and review the literature on methods for assessing financial literacy levels. Including analysis of financial literacy level in Kazakhstan based on official data from the AFRD. As a result, recommendations were developed for further improvement of the assessment methodology in Kazakhstan, based on the literature review. The research novelty lies in the systematization of the methods and approaches of various organizations and scientists to assess financial literacy in foreign countries. Additionally, development of recommendations for further improvement of financial literacy assessment based on foreign experience. Literature review results showed that many studies have standard features. Firstly, analysis of several factors may differ while the focus of their research interest. Secondly, the goal is to analyze the financial literacy of the population or specific groups of people. Secondary data analysis shows that financially illiterate citizens are inefficient participants in the securities market, have large debts, and use sources of financing irrationally. In terms of income – pensioners and youth. Therefore, there is a need for further development based on the experience of developed countries, where the level of financial literacy is high. The scientific significance of the work consists of the development of recommendations for improving the financial literacy of Kazakhstanis based on a methodological apparatus that considers integrated approaches and national restrictions. This is very important both for the theory and for the practice of further development of the state policy on improving the financial literacy of citizens of Kazakhstan.

Keywords: Economy Financial Literacy, Financial Markets, Strategy, Financial Literacy Concept, Financial Literacy Assessment Methods, Kazakhstan, Practice

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Қаржылық сауаттылықты бағалау әдістері: Қазақстан тәжірибесі

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Түйін

Бұл зерттеудің мақсаты – шетелдік тәжірибені зерделеу және қаржылық сауаттылық деңгейін бағалау әдістері бойынша әдебиеттерге шолу жасау. Сондай-ақ AFRD ресми деректері негізінде Қазақстандағы қаржылық сауаттылық деңгейін талдау. Әдебиеттерге шолу нәтижесінде Қазақстандағы бағалау әдістемесін одан әрі жетілдіру бойынша ұсыныстар әзірленді. Зерттеудің жаңалығы шет елдердегі әртүрлі ұйымдар мен ғалымдардың қаржылық сауаттылықты бағалаудағы әдістері мен тәсілдерін жүйелендіру. Сондай-ақ шетелдік тәжірибе негізінде қаржылық сауаттылықты бағалау әдістемесін одан әрі жетілдіру бойынша ұсыныстардың әзірленуі болып табылады. Әдебиеттерді шолу нәтижелері зерттеулердің көпшілігінің ортақ белгілері бар екенін көрсетті. Біріншіден, бұл бірнеше факторларды талдау, ал олардың зерттеу қызығушылығының бағыты әртүрлі болуы мүмкін. Екіншіден, зерттеудің мақсаты – халықтың немесе белгілі бір топтардың қаржылық сауаттылығын талдау. Қайталама мәліметтерді талдау қаржылық сауатсыз азаматтар бағалы қағаздар нарығының тиімсіз қатысушылары болып табылатынын, үлкен қарыздары бар және қаржыландыру көздерін ұтымсыз пайдаланатынын көрсетеді. Сондай-ақ табыс жағынан – зейнеткерлер мен жастар. Сондықтан қаржылық сауаттылық деңгейі жоғары дамыған елдердің тәжірибесіне сүйене отырып, одан әрі дамыту қажет. Жұмыстың ғылыми маңыздылығы кешенді тәсілдер мен ұлттық шектеулерді ескеретін әдістемелік аппарат негізінде қазақстандықтардың қаржылық сауаттылығын арттыру бойынша ұсынымдар әзірлеуден тұрады. Бұл Қазақстан азаматтарының қаржылық сауаттылығын арттыру жөніндегі мемлекеттік саясатты одан әрі дамыту теориясы үшін де, практикасы үшін де өте маңызды.

Түйін сөздер: Экономика, Қаржылық сауаттылық, Қаржы нарығы, Стратегия, Қаржылық сауаттылық түсінігі, Қаржылық сауаттылықты бағалау әдістері, Қазақстан, Практика

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Методы оценки финансовой грамотности: опыт Казахстана

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Аннотация

Целью данного исследования является изучение зарубежного опыта и обзора литературы по методам оценки уровня финансовой грамотности, а также анализ уровня финансовой грамотности в Казахстане на основе официальных данных АФРР. В результате были разработаны рекомендации по дальнейшему совершенствованию методологии оценке в Казахстане, на основе проведенного литературного обзора. Новизна исследования заключается в систематизации методов и подходов различных организаций и ученых к оценке финансовой грамотности в зарубежных странах. Также в разработке рекомендаций по дальнейшему совершенствованию методологии оценки финансовой грамотности на основе зарубежного опыта. Результаты обзора литературы показали, что большинство исследований имеют общие черты. Во-первых, это анализ нескольких факторов, в то время как фокус их исследовательского интереса может отличаться. Во-вторых, целью исследования является анализ финансовой грамотности населения или конкретных групп людей. Анализ вторичных данных показывают, что финансово неграмотные граждане являются неэффективными участниками рынка ценных бумаг, имеют большие долги и нерационально используют источники финансирования. А также по уровню доходов - пенсионеры и молодежь. Поэтому есть необходимость в дальнейшем развитии, опираясь на опыт развитых стран, где высок уровень финансовой грамотности. Научная значимость работы состоит в разработки рекомендаций по повышению финансовой грамотности казахстанцев на основе методического аппарата, учитывающего комплексные подходы и национальные ограничения. Это очень важно как для теории, так и для практики дальнейшего развития государственной политики по повышению финансовой грамотности граждан Казахстана.

Ключевые слова: экономика, финансовая грамотность, финансовые рынки, стратегия, концепция финансовой грамотности, методы оценки финансовой грамотности, Казахстан, практика

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Introduction

In current economic conditions, such as new geopolitical challenges, sanctions from a number of foreign countries, a decrease in the activity of domestic and foreign investors, and others, the investment and socio-economic potential of the country's development are becoming increasingly dependent on human capital. Firstly, the population's savings are a source of banking resources. Secondly, the level of debt load of the population is growing, which is a source of financial risks, as well as the risk of a slowdown in economic growth. The financial literacy of the people in many countries is mainly associated with a low level of financial knowledge and competencies, especially in practice. Therefore, for the country's economic growth, it is necessary to increase the level of financial literacy of the population.

Insufficient attention of financial sector entities to the problem of increasing the population's financial literacy leads to an increase in information asymmetry and financial risks, limiting the level and quality of financial injections from citizens and strengthening disproportions in developing the economy of Kazakhstan.

There is a lack of research that go beyond questions about the financial awareness of the population. Scientists are expected to try to match their studies to previous research. For instance, they take some indicators which they consider important, while their research topic differs (Van Rooij et al., 2011). The relevance of the relatively low financial literacy assertion in Kazakhstan is growing. It is necessary to consider the population's behavior in the financial market. Namely, consumer lending in the mortgage market, in the foreign exchange market, the number of investors in financial pyramids in the past, the number of victims of financial scams in the housing market, the number of complaints, and the nature of complaints from the population and other indicators. Low financial literacy threatens the financial security of citizens and the stability of the financial market, which means that it needs to be improved.

Upon provision of the survey in 2014, Kazakhstan came across the resolution to improve the financial literacy level of the population. Due to this, two main directions were taken: to start financial education starting from secondary education and to direct more attention to the level of financial literacy among migrants. Interestingly, that initially, improvement of the financial literacy among the population was a part of the state program of financial market development (OECD, 2018). In 2017 and 2020, Kazakhstan

took part in the sociological survey supported by OECD, which showed the following results of the investigation of the financial literacy level of local population 36,25% and 39,07%, respectively. Based on the results of the report in 2018, there were identified that the population with the lowest level of financial literacy are unemployed or those with low income, people who failed to graduate from a university, having complete or incomplete high school education (OECD, 2019).

The elements of financial literacy are diverse. This develops some problems measuring it. There can be defined three main issues. First, scientists face difficulties establishing an appropriate number of questions for research provision. Second is the approach of results analysis. Third, although there is a general agreement on the definition of financial literacy, they still differ. All mentioned problems prevent the development of a standardized approach to financial literacy measurement. One general agreement among scientists on the issue of financial literacy is a low level of financial knowledge (Baistaman et al., 2020; Ouachani et al., 2020).

Improving financial literacy improves access to economic, social and financial services. In world practice, this indicator is an important element of financial reforms, which are aimed at preventing crises in the future. A high level of financial literacy in the population has a positive effect on improving citizens' quality of life, the influx of individual investors into the country's economy, the development of competition in financial markets, strengthening financial stability, improving public welfare, and the economic growth of the country. Thus, the relevance of the study is due to the lack of scientific elaboration on the problems of the impact of financial literacy of the population on the development of the country's economy as a whole

Therefore, Kazakhstan has developed a Concept for improving financial literacy for 2020-2024. This document discusses the stimulation of economically rational behavior of the population through education and awareness, and as a result, an increase in its well-being and quality of life, including the application of financial market services

Kazakhstan ranked 49 in the "Global financial literacy ranking" in 2022 (https://theatlas.com). The index of financial literacy in 2022 made up 39,52%. It was revealed that young and older people face challenges in managing their finances. According to Satpaeva et al. (2021), it was shown that financial literacy affects the financial well-being of pensioners. Still, since such knowledge was not widespread in times of the Soviet

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Union, they did not receive it. Therefore, one of the reasons for the low well-being of pensioners is the lack or low level of financial knowledge.

Familywise, the situation is much better. Almost half of the surveyed (44,8%) have to manage personal or family budgets. Of all financial services, consumer credit is the most popular (37,4%), while such financial products as stocks or bonds, etc., are the least popular (0,16%). This shows that people are more interested in simple services. Based on the survey, men have a higher level of knowledge and skills in using financial services than women (https://dknews. kz/). According to worldwide statistics. More men are financially literate (35%) than women (30%).

Many scientists have done research in this area. However, the general conclusion was bounded by round insufficiency of available tools to determine financial literacy. Additionally, there was discussed the necessity for new methods. This research attempts to fill the gap in this issue by analyzing foreign and domestic experiences. The importance of scientific works in the field of developing recommendations for improving the financial literacy of Kazakhstanis based on a methodological apparatus that considers complex and comprehensive approaches, as well as national restrictions, is very high both for the theory and practice of economic security of citizens of the Republic of Kazakhstan.

The study aims to explore international and domestic experiences in calculating the population's financial literacy. Next, there will suggest ways to improve the methodology and methods of financial literacy assessment among the population of Kazakhstan based on the experience of developed countries. The scientific novelty of the research lies in the systematization of methods and approaches of different organizations and scientists to assess financial literacy in foreign countries. Development of recommendations for further improvement of financial literacy assessment methodologies based on foreign experience.

Literature review

In the world, financial literacy is assessed by global organizations such as Standard and Poors and OCED. S&P began conducting surveys in 2014 in more than 140 countries. By financial literacy, the researchers meant a person's ability to save, invest and borrow money. As part of the study, its participants are asked questions from 4 areas considered basic for determining the level of financial literacy: the ability to diversify risks, understanding inflation, knowledge of simple mathematics, and the ability to calculate compound interest. According to the OECD definition of financial literacy, it is the result of the financial education process, which is defined as the combination of awareness, knowledge, skills, and behaviors necessary to make successful financial decisions and ultimately achieve financial well-being. Since 2006, the OECD has been supporting and initiating various programs to improve the level of financial literacy in different countries of the world and is a key customer for research on progress in this direction. Next, we will consider individual studies conducted in other countries, the object of which is financial literacy, but the subject of the study is different.

Financial literacy has been one of the major goals to improve by governments. Governments have a particular interest in increasing the level of financial literacy among populations. This is achieved through various methods and ways. Scientific literature still lacks a standardized method for studying financial literacy. Financial markets are the main drivers of economic growth. This explains that financial literacy has an indirect but crucial impact on economic development. Thus, financial literacy is developed through education and skills of using knowledge. It plays a significant part in decision-making processes related to the demand for financial market products (Csorba, 2020). Throughout provided literature review, it was revealed that youth and pensioners are mostly taken as sample distribution among researchers.

A significant number of research is devoted to studying financial literacy measurement systems. One of the key directions in studying financial literacy is ways and methods how to measure it. It is prevalent that authors focus on such indicators as financial education, saving, pension savings, investments, and bank loans when they want to measure the level of financial literacy (Marcolin & Abraham, 2006).

In the study provided by Huston (2010), there was a summary of common measures used in studying financial literacy. In particular, the category construct included several indicators. First, as it was revealed, studies used definition evaluation. It also included knowledge, which was reflected in education and awareness of the respondents in specific terms. The content included four general areas focused on money (concepts, value, etc.), protecting funds, investing, and borrowing. There must also be mentioned that some studies used all four categories, others two or more. Next, standard data collection methods were mentioned. They ranged from interviews (through telephone, in person etc.) to surveys through online resources such as mail or the internet and rating system.

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Another body of knowledge focused on the impact of financial literacy is being developed. There are various studies that investigate the relationship between financial literacy and economic development. Other than revealing the degree of financial literacy importance, applying the knowledge still appears to be problematic. Thus, another issue is how people process the information and knowledge they have or receive. Studies on pension planning were the first drivers of research on financial literacy (Ameriks et al., 2003, Lusardi & Mitchell, 2007). Lusardi and Mitchel (2011) studied funds and resources protection through pension plans. They studied the relationship between financial literacy among pensioners and people in retirement and pension plan.

Financial literacy increases funds protection decisions as pension savings. For instance, most of the population follows a pension plan in European countries like Denmark, which are characterized as countries with high levels of financial literacy. Based on the study of Batsaikhan and Demertzis (2018), one of the strongest factors of financial literacy is education, which needs to be improved and updated as a life-learning skill.

For instance, in the USA, financially literate people are better at money matters, such as cash management, savings or having credit story. Adequate spending finances contributes to GDP growth. This is rather evident in immigrant dependent countries such as Canada. Durodola et al. (2017) suggested that the financial literacy test should be given as a high priority over the language test, which will ensure the contribution to economic growth.

Grohmann (2018) conducted study in Thailand and Bangkok to explore the impact of financial literacy both as an obstacle and as a driver at the same time for economic growth. She stated that one of the indicators of financially literate individuals is investments, lower debts and consumer credits, and a good credit story. Additionally, financial literacy plays a role in the decision-making process regarding two main factors: borrowing and saving. Moreover, development of financial institutions and an increase in demand for financial products stimulate financial development. Additionally, she underlined that financial education is applied in developed countries more rather than developing.

However, the study of Gaisina (2018) on the influence of financial institutions and financial education availability in Kazakhstan argued that financial literacy is important at any level. Lack of access to financial education has a negative impact on the experience of rural the population as it decreases the level of trust in financial institution and at some point leads to unproductive decisions.

Iacovoiu (2018) stated that financial education is becoming more and more important as the financial market becomes more diversified. Consumers who are less educated in finances (as knowledge of basic financial concepts) prefer simple products or services. They usually become victims of credit debts while their savings continue decreasing.

The development of financial markets is also provided through market product diversification. Therefore, SME development has the impact of economic growth. Mutegi et al. (2015) studied the impact of financial literacy on SME development in Kenya. This is highly prominent in rural areas and among such minorities as the poor, young, and women. Lack of financial education, which also includes management skills, funds distribution, played a significant role of the availability of bank loans for business owners. Financially literate business owners were more aware of bank loan procedures and committed to on-time-scheduled repayment. Other than that, financial literacy affects the decision to invest, more interested in funds protecting as saving money and insurance.

Bongomin et al. (2017) support that SMEs development is closely related to access to finances, which is dependent on financial skills and literacy Bongomin et al., 2017). Financial literacy improvement contributes to the GDP growth through innovation development, SMEs increase, etc. (In other words, financial literacy is a crucial factor for financial sector development. At the same time, it can contribute to the improvement of financial institution savings increase or financial products diversification. Besides public related development, it also impacts individuals' welfare. As it has been mentioned, financial literacy impacts the decision-making process, such as property buying or starting own business. This contributes to the economy's growth (Bayar et al., 2017).

In Kazakhstan, there are practically no studies on this topic, except for the study of the Agency of the Republic of Kazakhstan for the regulation and development of the financial market, which coordinates the implementation of the concepts of developing financial literacy. In this regard, they conduct an annual survey among the population, the results of which are described in the analysis and results section.

Despite the research, questions remain. It is necessary to emphasize the following. Different countries face general and specific problems. In addition to the peculiar conditions for developing financial literacy, there are general situations.

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Measuring financial literacy is still a major issue that requires a specific approach to define a set of elements. Since each country and its inhabitants have its traditions and mentality, which are not considered in research. Therefore, there is a need to include specific questions and the already developed general questions.

Methodology

This study will be carried out in 2 stages. The theoretical framework of this research reflects the study of Huston (2010), which provides a review and analysis of existing studies on the construct of financial literacy. This study focuses on methods of evaluation of financial literacy. The second is a description of the financial literacy of the population in Kazakhstan based on ARDFM data to determine the level of financial literacy among the population. As well as data from the OECD and S&P. Further, the experience of foreign countries on the methods for determining financial literacy will be considered. In the first stage, methods for assessing financial literacy in studies of foreign countries will be considered (Table 1).

The literature review showed that various research topics are different, but they mostly rely on the same measuring methods and construct. It is worth mentioning that there is standard limitation of existing research. Research methodologies are usually focused and less suitable for generalizations.

The design of the methodologies used in the research (table 1), includes (1) a specific group of respondents. This restricts the application of the methodology or results generalization. (2) The methodology intends to provide the evaluation of the financial terms knowledge. Basic knowledge does not show the level of the usage of financial tools in the financial market. (3) The research methodology, as well as analysis of the results are less focused on the context, particulary financial market development and cultural habits. These are two factors, which have indirect impact on financial literacy and the knowledge of finances management.

Context could be studied from various aspects, including cultural habits, traditions specific to the region, which influence spending habits, for instance, on significant events. From the perspective of the economic situation, it is important to analyze the economy's current development in the financial market. Based on the provided analysis, the questionnaires or interview questions could be adapted to the region.

Table 1 - The list of countries and data source

No.	Researchers/Organizations	Context, Sample	Methodolgy/Measure
1	2	3	4
1	Standard & Poor's Ratings Services (2014)	Questionnaire More than 150,000 adults in more than 140 countries	4 basic financial concepts: - risk diversification; - inflation; - check; - calculation of interest
2	OCED /INFE (2016)	Questionnaire 51,650 adults aged 18 to 79 from 30 countries	3 main components: - financial knowledge; - financial behavior; - financialplanning
3	Mutegi, H. K., Njeru, P. W., & Ongesa, N. T. (2015). Financial Literacy and its Impact on Loan Repayment by Small and Medium Enterprenuers. International Journal of Economics, Commerce and Management, 3(3), 1–28.	Cross- Sectional Survey, 30 SMEs (Ngara, Nairobi County)	Financial literacy on loan repayments; Likert Scale of 1-10 with one being strongly disagreeing and ten being strongly agreeing; multiple regression analysis (SPSS)
4	Durodola, O., Fusch, P., Tippins, S., & Alberta, L. (2017). A Case- Study of Financial Literacy and Wellbeing of Immigrants in Lloydminster, Canada. International Journal of Business and Management, 12(8), 37–50. DOI:10.5539/ijbm.v12n8p37	Qualitative case study approach (13 immigrants interviews), Lloydminster, Canada	Five steps procedure for qualitative data analysis (Yin, 2015), NVivo 11 Pro

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1	2	3	4
5	Bayar, Y., Sezgin, H. F., Öztürk, Ö.F., & Şaşmaz, M. (2017). Impact of Financial Literacy on Personal Saving: A Research on Usak University Staff Impact of. Journal of Knowledge Management Economics and Information Technology, 6(6), 1–19	325 Survey; Usak University personnel; Turkey	Logistic regression analysis- SPSS (Variables: Personal saving, Individual financial literacy level, Individual risk tolerance, Income level, Education level, Term of employment)
6	Bongomin, G. O. C., Ntayi, J. M., Munene, J. C., &Malinga, C. A. (2017). The relationship between access to finance and growth of SMEs in developing economies: financial literacy as a moderator. Review of International Businessand Strategy, DOI:10.1108/RIBS-04-2017-0037	169 Survey, SMEs, Uganda	Pearson's zero order correlation and hierarchical regression analysis- SPSS (Access to finance (accessibility, usage, quality (relevance), and welfare impact were); Financial literacy (knowledge, skills, attitude, and behavior), 5 point Likert scale with 1- strongly disagree, and 5 strongly agree
7	Grohmann, A. (2018). Pacific- Basin Finance Journal Financial literacy and financial behavior: Evidence from the emerging Asian middle class. Pacific-Basin Finance Journal, 48(January), 129–143. DOI:10.1016/j.pacfin.2018.01.007	491 Survey, urban middle class (Bangkok)	Lusardi-Mitchell(2004) measure of financial literacy (Interest rate, Inflation, diversification, education)
8	Brugiavini, A., Cavapozzi, D., Padula, M., & Pettinicchi, Y. (2020). On the effect of financial education on financial literacy: evidence from a sample of college students. Journal of Pension Economics&Finance, 19(3), 344-352	579 students, Italy	Big Three questions. (Inflation, Interest compounding, Diversification(SHIW questionnaire (2006)), (financial literacy, investment attitudes, and self-assessed financial literacy), OLS regression
9	Batsaikhan, U., &Demertzis, M. (2018). Financial literacy and inclusive growth in the European Union. Bruegel Policy Contribution., 08. Available at: http://hdl.handle.net/10419/208015	Research Report	Financial literacy, Financial literacy and education, Financial literacy in EU
10	Iacovoiu, V. B. (2018). An Empirical Analysis of Some Factors Influencing Financial Literacy. (2), 23–31.	European Union Member States	Linear regression equation, correlation coefficient (variables: Financial Literacy Rate, GDP, Population by minimum completed level of education, Education Spending), Excel software
11	Kabakova, O., & Plaksenkov, E. (2018). Analysis of factors affecting financial inclusion: Ecosystem view. Journal of business Research, 89, 198-205	43 emerging and low-income countries, classi-fications of the World Bank and Standard & Poor's	fsQCA (socio-demographic, techno-logical, economical and political dimensions), exploratory (EFA) and confirmatory factor analysis (CFA)
12	Santini, F. D. O., Ladeira, W. J., Mette, F. M. B., &Ponchio, M. C. (2019). The antecedents and consequences of financial literacy: a meta-analysis. International Journal of Bank Marketing	44 valid studies, seven databases: EBSCO, Else-vier Science Direct, Emerald, JSTOR, SciELO, Scopus and Taylor and Francis	Meta-analytic approach. The Cooper (2010) approach comprises three steps: data search, data collection process, and data coding and analysis. Pearson's correlation coefficient (r)
13	Kadoya, Y., & Khan, M. S. R. (2020). Financial literacy in Japan: New Evidence using financial knowledge, behavior, and attitude. Sustainability, 12(9), 3683	16,345 respondents, Japan (secondary source)	IV: Age, Gender, Education. DV: financial knowledge, financial behavior, and financial attitude. 5-point Likert scale, where 1 = strongly agree and 5 = strongly disagree

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1	2	3	4
14	Dewi, V., Febrian, E., Effendi, N., & Anwar, M. (2020). Financial literacy among the millennial generation: Relationships between knowledge, skills, attitude, and behavior. Australasian Accounting, Business and Finance Journal, 14(4), 24-37	194 millennial aged people in West Java province, Indonesia.200 questionnaires distributed online	12 questions on financial knowledge. The indicators of financial skills, financial attitude. DV- financial management behavior. 5-point Likert scale, where 1 = strongly agree and 5 = strongly disagree
15	Baistaman, J., Awang, Z., Afthanorhan, A., & Rahim, M. Z.A. (2020). Developing and validating the measurement model for financial literacy construct using confirmatory factor analysis. Humanities and Social Science Review, 8(2), 413–422. DOI:/10.18510/hssr.2020.8247	100 (pilot)/300 (field) study survey, school teachers in Kelantan and Terengganu, Malaysia	Exploratory Factor Analysis, Extraction Method: Principal Component Analysis Rotation Method: Varimax with Kaiser Normalization, IBM-SPSS 25.0
16	Ahmad, G., Widyastuti, U., Susanti, S., &Mukhibad, H. (2020). Determinants of the Islamic financial literacy. Accounting, 6(6), 961-966.	472 individual investors Islamic finance, Sharia mutual funds	Exploratory Factor Analysis,5-point Likert scale, where 1 = strongly agree and 5 = strongly disagree (Islamic finance principal and Islamic finance methods; riba, salam, murabahah, istishna', ijarah, mudharabah, and musyarakah.)
17	Dewi, V. I., Febrian, E., Effendi, N., Anwar, M., &Nidar, S. R. (2020). Financial literacy and its variables: The evidence from Indonesia. Economics & Sociology, 13(3), 133-154	935 (889 used) academic community and, Indonesia	Confirmatory factor analysis (CFA), construct validity (CR), goodness of fit for the measurement model. 5-point Likert scale, where 1 = strongly agree and 5 = strongly disagree (Financial awareness, Financial experience, Financial behavior, Subjective financial knowledge, Financial skills, Financial capability, Financial goals, Financial decisions

Note: compiled by the authors

However, existing methodology provides analysis and assessment of the population's financial literacy level. It is conducted through primary and secondary data. Research which used primary data is more specific, while secondary data research methodology and results are more appropriate to adapt and generalize. There are two methods that measure the indicator of financial literacy:

1. The number of correct answers to the questionnaire was measured as a percentage.

2. Statistical processing of factors affecting financial literacy.

Therefore, this research will conduct analyses of financial literacy in the CIS area based on secondary data. In addition, the experience of Kazakhstan will be analyzed more broadly in the next section.

Analysis and results

The top three most financially literate countries in 2021 are Norway, Denmark, and Sweden, according to S&P research, with 71% of adults in these countries knowing how to manage money. The top ten also include Israel (68%), Canada (68%), Great Britain (67%), the Netherlands (66%), Germany (66%), Australia (64%), and Finland (63%). The last three places are Afghanistan (14%), Albania (14%), and Yemen (13%) respectively. These countries hold their positions for several years. While Kazakhstan scored 40% and ranked 49th among 144 countries, which is an average. Other post-Soviet countries obtained approximately the same results. All countries included in the analyses are given in table 2.

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Table 2 - Adult Financial Literacy Rate by S&P 2014

Country	Level of financial literacy among the adult population, %
Kazakhstan	40
Russia	38
Belarus	38
Kyrgyzstan	19
Uzbekistan	21
Armenia	18
Tajikistan	17

Note - compiled from source [S&P, 2014]

According to the OECD report on the "Financial Literacy Rate in the CIS" for 2014, Kazakhstan ranked third after Belarus and Uzbekistan in terms of overall financial literacy. This indicator is calculated based on3 components, such as: financial knowledge, financial behavior, attitudes towards finance. In addition, the adult population of Kazakhstan showed results above the average in the following indicators: financial literacy, financial knowledge, financial behavior, and financial well-being. The level of financial literacy in the CIS for 2021 according to OECD presents in Figure 1.
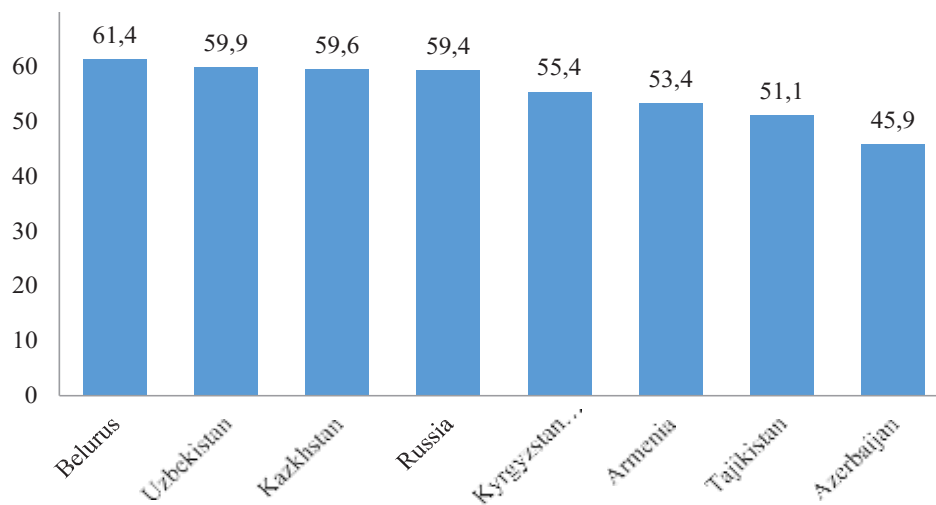
Figure 1 - The level of financial literacy in the CIS for 2021 according to OECD calculations, in %

Note - compiled from source [OECD, 2018]

Respondents showed moderate confidence in their financial knowledge: 22% rated it highly, slightly more than the average for the CIS (19%). Also, compared with the CIS countries, Kazakhstan leads in terms of such indicators as keeping money in financial institutions, namely on savings accounts - 30%, and in time deposits - 7% (average for the CIS - 13% and 3%, respectively). In many respects, the level of financial literacy of Kazakhstani citizens and their experience in dealing with financial issues correspond to the general picture in the CIS (Klapper et al., 2015).

According to the methodology of the Agency of the Republic of Kazakhstan for the regulation and development of the financial market in the country, there is an increase in the level of financial literacy of the population. In these calculations of the financial literacy index, the OECD parameters were taken into account and included an analysis of three indicators. This index is calculated as the arithmetic average of three indicators:

- Ability to use financial services and tools;
- Management of own financial resources;
- The level of awareness about the financial system and its principles.

Also, each component is evaluated by a certain number of questions and as an arithmetic average. The total number of questions consists of 39 questions. The first nine questions are general. Questions 10 to 19 are related to "Managing your own financial resources" and make up ten questions. Questions 20 to 31 are related to the "Ability to use financial services" component, i.e., 13 questions. Further, from 32 to 39, the question refers to "Awareness of the financial system" and consists of 8 questions. For calculating each of the above components, the highest percentages of responses to questions from the block were selected.

For questions with score scaling and multiple answer options, the method of calculating the arithmetic mean of the highest scores according to the proposed statements was also applied.

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Thus, the financial literacy index of citizens of Kazakhstan in 2021 amounted to 39.52%, an increase of 0.45 points compared to the previous year (Fig.2). In 2020, the financial literacy index of the population of Kazakhstan, according to the results of the st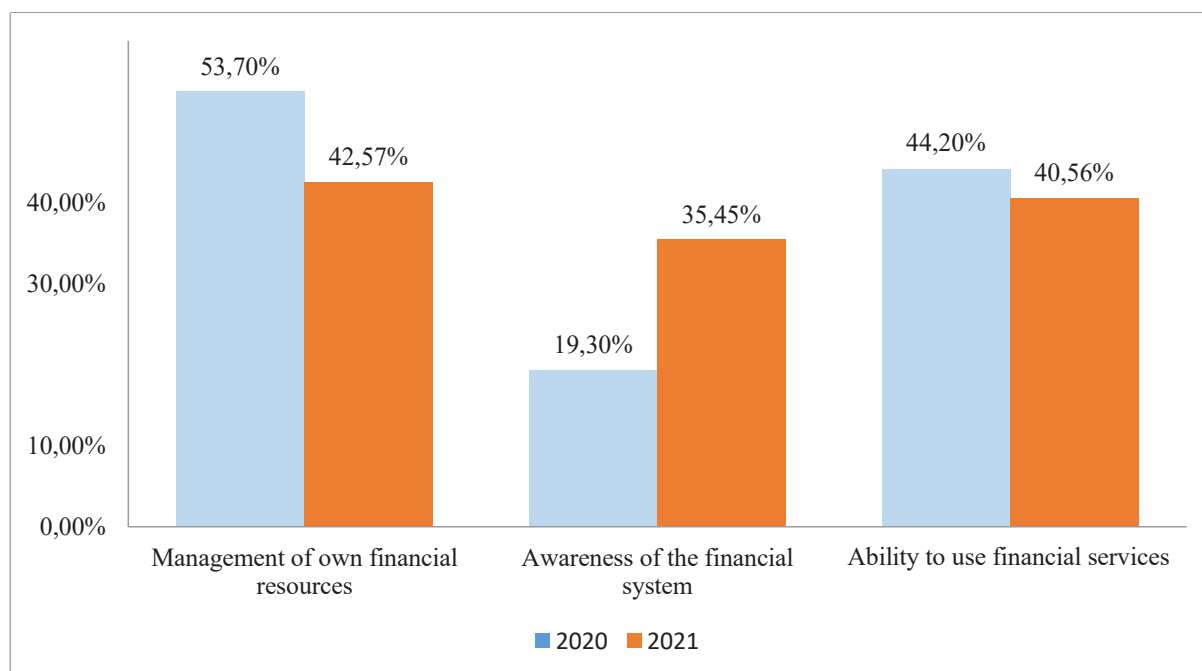udy, was at an average level and amounted to 39.07% (on a 100-point scale). In 2018, the financial literacy rate of the population was 36.25%. Next, the components of financial literacy will be considered.

Figure 2 shows a positive trend in the country's financial literacy growth.
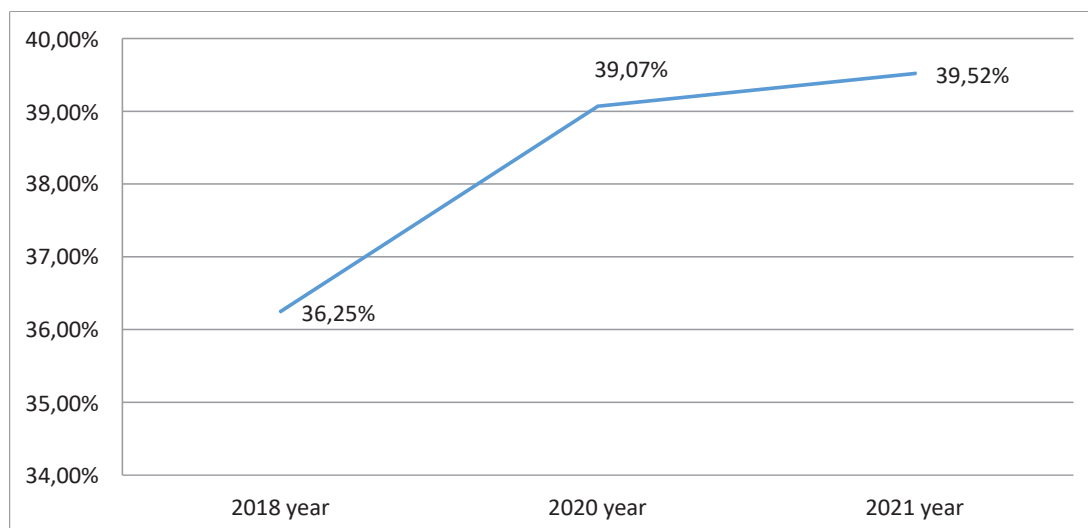
Figure 2 - The level of financial literacy of the population in Kazakhstan for 2020 and 2021, according to the ARDFM, in %

Note - compiled from source [https://fingramota.kz]

Figure 3 - Answers of respondents by key indicators, in %

Note - compiled from source [https://fingramota.kz]

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In 2021 the highest level was achieved in the "management of own financial resources" segment – 42.57%. However, this indicator was higher in 2020 by 11.13%. The "Ability to use financial services" indicator was 40.56% in 2021. This indicator also decreased compared to 2020 by almost 4%. At the same time, the highest level was recorded for the indicator "Management of own financial resources" - 42.57%; the lowest is "Awareness of the financial system" – 35.45%. However, over the year, this indicator increased by more than 16 points (in 2020, it was 19.3%). The indicator of financial literacy in 2021 grew only due to the indicator "Awareness of the financial system".

According to the survey results in 2020, the most financially educated were residents of the Almaty and Almaty region, as well as Aktobe, Kostanay, Pavlodar, Zhambyl, and Turkestan regions. And among the residents of Akmola, Atyrau, Karaganda, East Kazakhstan region, and the cities of Nur-Sultan, Shymkent, the indicator was below the average.

The study for 2021 involved 10 thousand respondents, of which 58.8% were women, and 41.2% were men from all regions of the country and cities of republican significance aged 18 to 63 years and older.

According to the indicator "Skills to manage your own money", almost half of the respondents keep a family or personal budget and carefully monitor their spending - 44.8%, only 1.6% of respondents do not do this. 42.8% of Kazakhstanis have a personal budget, and a third of 29.9% of respondents maintain a joint budget with their spouse. The majority of survey participants 46.3%, indicated that they carefully consider whether they can afford a purchase or not, and 0.6% do not make such an assessment. 36.4% of respondents make regular savings, and 37.9% set aside some money whenever possible. 36.04% of respondents have the habit of planning expenses, 37.1% sometimes try, and 2.2% never do it. 39.08% of respondents noted that they are sometimes ready to take risks by investing in various financial instruments, for example, securities, but are not at all prepared to do this - 18.4%

The highest levels in terms of "popular financial services" are noted in the cities of Nur-Sultan and Almaty, as well as Almaty, Turkestan, and West Kazakhstan regions. The smallest ones are in the North Kazakhstan, Pavlodar, Karaganda, and Zhambyl regions. Below are data on the popularity of financial products among Kazakhstan citizens. During the Covid-19 pandemic, bank services related to the provision of Internet and mobile banking became especially popular for the population. In solving the financial literacy problems in the questionnaire, almost a third of the respondents provided correct answers. This suggests that the interviewees understood the complexities of financial services and products. Nevertheless, there is a proportion of respondents who do not understand professional economic terminology and the conditions offered by banks and other financial organizations. These are pensioners, students, and housewives. In general, the study showed that although some respondents are not familiar with a differentiated set of financial services, they began to take a more detailed approach to choose a financial service and carefully studying the contract. Thus, 44.9% of respondents, according them, always sign a contract only after reading it and clarifying all the details, asking additional questions to managers and studying the conditions, and 21.8% of respondents sign without questions, because it is difficult for them to figure it all out.

Empirical data obtained during the study showed that financially illiterate citizens are characterized by inefficient participation in the stock market, which manifests itself in insufficient diversification of the securities portfolio, inertia in its management, the formation of excessive debt, and the use of informal sources of borrowing.

Conclusion

In the current research, literature on assessing the population's financial literacy was carried out. Different studies give different definitions of financial literacy, which explains the various assessment methods.

Participation of Kazakhstan in the sociological survey supported by OECD revealed that Kazakhstan's financial literacy level among the CIS countries is in the leading position. However, it was also revealed that respondents were not aware of their level of financial literacy. Thus the knowledge they had was not used. This shows that the capability and the possibility of financial knowledge application plays a crucial role in improving financial behavior.

Findings of provided literature review showed a majority of the studies have the following common features. First, research provides analyses of several factors, while the focus of their research interest may differ. Second, research intends to provide an analysis of the financial literacy among the population or specific groups of people (i.e., entrepreneurs, youth, or elderly). Few studies are focused on studying the financial knowledge application and management of finances by the population. However, there is lack of the financial market

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level of development analysis of the current state of the financial market products diversity and drivers that motivate people to use their knowledge in finances. Few studies considered context played a crucial role in the ability of the population to manage finances and apply their knowledge in finances. It is worth providing analysis based on the financial market development and demographic characteristics of the people, particularly gender. For instance, few studies included gender as an important factor. Therefore, it is recommended to consider gender as an important factor for future work, especially in a multi-cultural comparative survey. Another factor which is needed to be considered is cultural-traditions or habits. They have a strong effect in Asian countries, but it has not been studied well yet. A developed financial market can function as a motivator for the population to apply their knowledge in finances.

In addition, to improve methodologies for assessing financial literacy, it is necessary to develop a questionnaire that will be a) simple, b) relevant, c) short, and d) able to differentiate. The questionnaire used in Kazakhstan has more than 40 questions that are similar to each other. Therefore, these issues need to be revisited. Before determining the group of questions to conduct a study, it is necessary to decide on the type of financial literacy and the subjects of the study. The study's subject is also important to adjust the questionnaire. If above mentioned recommendations are taken into account, the state and condition to development of financial literacy will be clearer. This, in turn, will help solve financial literacy problems in a targeted and correct way to adjust state programs directed at improving financial literacy.

Kazakhstan has also adopted the concept of improving financial literacy mentioned above. Because of the implementation of the state strategy of program provision, the level of financial literacy in Kazakhstan is growing and has a positive trend. However, it remains average compared to world indicators. Therefore, there is a need for further development based on the experience of developed countries. It is also important to note that the financial literacy of residents where the financial infrastructure is developed is much higher than in other cities of Kazakhstan. There is a need to teach financial literacy skills and practice them at the secondary school level. Moreover, the strategy of financial literacy teaching could be implemented in primary grades already, as it is done in Norway, Sweden, and other developed countries with a high rate of financial literacy. It is also necessary to attract commercial, financial organizations that can allocate funds and training programs for the population. Based on the provided literature review, the development of the financial market is important. The variety of financial products motivates people to use their skills to manage their finances and improve their financial situation.

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