Implications between Financial Literacy and Credit Card use among Retirees in Bosnia and Herzegovina

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Abstract

Financial literacy is crucial in navigating complexities of personal finance, enabling individuals to make informed decisions about budgeting, saving, investing, and borrowing. Financially more literate individuals are better equipped to withstand economic uncertainties, achieve their financial goals, and secure their long-term financial well-being. The aim of this study was to investigate level of financial literacy among retirees in Bosnia and Herzegovina using the "Big Three" financial literacy questions and to connect the results to their credit card usage. Empirical research on 556 respondents showed a very low level of financial literacy/knowledge among retirees as well as a very low rate of adoption and usage of credit cards. Research results point toward need for better financial education of this segment of population in order to raise their financial wellbeing and consequently the life quality as retirees in CEE countries represent a low-income segment of consumers and therefore a financially vulnerable social group that needs better inclusion into society. Furthermore, the research results point toward market opportunities, for financial institutions operating on Bosnian market, to launch a specialized financial product such as credit cards that would be specifically tailored towards the needs of this particular market segment.

Keywords: financial literacy, marketing, Bosnia and Herzegovina, credit cards
JEL classification: G53, M31

Paper type: Research article
Received: 24 February 2024
Accepted: 28 May 2024

DOI: 10.54820/entrenova-2024-0010

Introduction

Financial literacy is a broad term that includes financial knowledge and financial behaviour. It is a crucial component in promoting effective financial decision-making and improving overall financial well-being, so it is important for all individuals regardless of their wealth and income. Financial education is about empowering individuals so they can better analyse different financial options and take actions to achieve their financial goals. This process raises the level of individual responsibility in understanding and taking risks when making financial decisions and when planning investments. Financial literacy refers to knowledge, attitudes and behaviours towards money including family and business finances. A number of international organizations had notable and strong influence promoting financial literacy such as the OECD, the World Bank and the European Commission. OECD was among the first to start spreading the idea and the need for financial literacy among its members (Vehovec et al., 2015).

OECD defines financial literacy as: "A combination of financial awareness, knowledge, skills, attitudes and behaviours necessary to make sound financial decisions and ultimately achieve individual financial well-being." The financial literacy measurement instruments (questionnaires) are largely drawn from existing surveys and represent good practice in financial literacy and financial inclusion measurement. The financial literacy questions cover (OECD, 2022, 6):

- Financial behaviours related to financial literacy, such as budgeting, planning and managing finances,
- Financial attitudes related to financial literacy,
- Financial knowledge.

The level of financial literacy is measured by questions that show knowledge, attitudes and behaviours towards money, inflation, savings, interest rates, investments, debt, loans, financial contracts, and other financial choices. For this reason, financial literacy can generally be defined as a combination of information, knowledge, skills, attitudes, and behaviours necessary to make sound financial decisions that ultimately bring about individual financial well-being. Financial literacy is important in understanding financial products and making the right financial decisions, because it reduces the number of individual and family, as well as entrepreneurial financial failures, as well as the risk of poverty and contributes to economic growth and development. The research results in this study represent a valuable identification of level of the financial literacy of retirees in Bosnia and Herzegovina.

The purpose of this research is multiple. The first goal is to collect data describing the level of financial literacy of retired citizens of Bosnia and Herzegovina and to raise general awareness of the population on this topic. The second is that, based on the results and association between financial literacy and credit card usage might prove as an opportunity for an introduction of a new specialized financial product for financial institutions operating on Bosnian market: a credit card that would be specifically tailored towards the needs of this targeted market segment. The fact that Bosnia and Herzegovina consist of two entities (Federation of BiH and Republika Srpska) is just one example of the challenge facing government in conceptualizing and consolidating financial institutions and public structures for the faster economic development and wellbeing of its citizens. When researching topics connected to banks, understanding users and their behaviour is of crucial importance for their successful operations, and contemporary marketing approach emphasises customization of the user interaction. Banking is characterized by large number of clients, their accounts, and transactions as well as with a wide range of products and services and a high degree of dependence on technology (Croxford, Abramson &

Jablonowski, 2005). It is considered that the banking sector of Bosnia and Herzegovina (BiH) is the most stable segment of the BiH economy and has an important role and significant impact on the economic development of the country (Erceg, Milovanović & Mitrović, 2017). The main risk banks in BiH face is the credit risk of their clients, which is still a reason for concern and which certain institutional financial policies have been trying to reduce for years (Erceg, Milovanović & Mitrović, 2017). Banks are focused on researching consumer characteristics, their needs and decision-making process regarding purchases, perceived risk, experiences and satisfaction with banks' financial services. Numerous studies demonstrated that adoption rate of new banking technologies, services and financial products are not evenly spread across all age groups in society, just as there are significant differences between countries in terms of both digitalization and digital financial solutions (Garai-Fodor, Varga & Csiszárik-Kocsir, 2022). Individuals' financial well-being is incumbent on their actions. Although influenced by external forces such as economic factors and financial regulatory framework adopted by government and private industry, decisions are ultimately made by individuals (Robb & Woodyard, 2011).

Methodology

Quantitative empirical explorative research has been undertaken using highly structured questionnaire. The primary data collection took place between January and March of 2024 in banking branches on the territory of Republic of Bosnia and Herzegovina were branch employees administered questionnaire in person to their retired clients that were willing to take part in the research and gave consent for the participation. Highly structured questionnaire consisted of three parts: (1) questions regarding credit card usage and main communication channels with the bank, (2) the Big Three financial literacy questions, and (3) socio-demographic variables that provide better description of the respondent sample. The questionnaire was fairly short in order to be more convenient for the clients to participate and save their time. Primary data was manually entered into the spreadsheet and then recoded, imported and processed in the IBM SPSS v. 24 statistical software.

Research results

The overall number of respondents participating in the research was 702 across 32 bank branches. However, some respondents changed their mind about participation or declined to answer certain questions. Finally, there has been 556 questionnaires completely completed and those were included as the primary data for further statistical analysis. All respondents were required to be retired and at least 50 years of age (some occupations as well as war veterans and disabled people can retire earlier than the standard retirement age of 65). The average age of respondents in the research was 69 years with oldest being born in 1936 and youngest being born in the year 1974. Male respondents comprised 54.1% of the sample and female share was slightly lower standing at 45.9%. Most of the respondents completed high school level of education (60.8%), live in a two person household (43.9%) and have a total monthly household income between 500-800 KM (25%)(205-410 Euros).

However, from the collected responses it was obvious that a number of respondents actually did not distinguish between debit and credit cards so actual number of credit card users is even lowe. Also, a type of credit cards used is not representative of entire population as all respondents are clients of the same bank that offers one major credit card.

Open question regarding most frequent use of credit card by the respondents has been analysed through content analysis. Most frequent use of credit cards is for purchase with deferred payments and instalments (12.1% of all respondents or 35.3% of credit card owners), followed by financing larger shopping expenses that are usually also bought through instalments (11%; 32.1%).
Respondents perceive fraud protection and purchase in instalments (with and without interest) as the main benefits of credit card use as shown on graph 1. The main source of information about banking services and products are branch offices and bank employees (40.5%) followed by TV (24.1%) while internet has only 13.5% share. This is "old school" behaviour what shouldn't be a surprise regarding the targeted age group. Finally, when asked if they would be interested for a specialized credit card tailored for the needs of retirees, only 26.1% of respondents were affirmative. There is a statistically significant correlation between respondents that already use credit cards and interest for specialized credit card for retirees ($r=0.383$, $p<0.01$). Out of those that were interested 63.5% already have at least one credit card.

Figure 1
Perceived benefits of using a credit card (on a scale of 1 not important, to 5 very important)

Source: Author's work

Financial literacy results were quite low on the "Big Three" financial literacy questions as 74.5% of respondents did not know or answered wrongly all three questions. First question was correctly answered by 16.5% of the respondents, second 12.4%, the third 9.5% and only 2.7% had all three questions answered correctly (Table 5). In the table there is comparison with same measurement across different countries. The results are lower comparing to the previous research, but it is worth mentioning that the respondents in this research belonged to older, retired part of the population. Financial literacy score is presented in Table 6 with sum of correct answers (points).

Table 5
Comparison of financial literacy scores between different countries

Country	FL I (%)	FL II (%)	FL III (%)	Sample	Year	All correct (%)	Source
Germany	82.4	78.4	61.8	1059	2009	53.2	Bucher-Koenen & Lusardi (2011)
Switzerland	79.3	78.4	73.5	1500	2011	50.1	Brown & Graf (2013)
Netherland	84.8	76.9	51.9	1665	2010	44.8	Alessie et al. (2011)
Spain	85.2	70.0	56.2	500	2015	44.8	Trombetta (2016)
Australia	83.1	63.9	54.7	1024	2012	42.7	Agnew et al. (2013)
Canada	77.9	66.2	59.4	6805	2012	42.5	Boisclair et al. (2017)
Poland	72.2	63.2	68.6	1300	2020	42.0	Kurowski (2021)
Finland	58.1	76.4	65.8	1477	2014	35.6	Kalmi and Ruuskanen (2017)
France	48.0	61.2	66.8	3616	2011	30.9	Arrondel et al. (2013)
USA	64.9	64.3	51.8	1488	2009	30.2	Lusardi & Mitchell (2011)
Japan	70.5	58.8	39.5	5268	2010	27.0	Sekita (2011)
Italy	40.0	59.3	52.2	3992	2007	24.9	Fornero & Monticone (2011)
New Zealand	86	81	49%	850	2009	24.0	Crossan (2011)
Sweden	35.2	59.5	68.4	1302	2010	21.4	Almenberg & Säve-Söderbergh (2011)
Chile	47.4	17.7	40.6	14463	2009	7.7%	Moure (2015)
Romania	41.3	31.8	14.7	1030	2011	3.8	Beckmann (2013)
Russian Federation	36.3	50.8	12.8	1366	2009	3.7	Klapper & Panos (2011)
BiH (retirees)	**16.5**	**12.4**	**9.5**	**556**	**2024**	**2.7**	**This research**

Source: own research (2024); Lusardi & Mitchell (2014); Kurowski (2021)

Table 6
Financial literacy score distribution among respondents

Points(score)		Frequency	Percent	Cumulative %
	0	414	74.5	74.5
	1	85	15.3	89.7
	2	42	7.6	97.3
	3	15	2.7	100.0
	Total	556	100.0	

Source: own research

An independent samples t-test was conducted to examine the difference in financial literacy scores between male and female participants. Descriptive statistics revealed that male respondents ($N = 301$, $M = 0.47$, $SD = 0.798$, $SEM = 0.046$) had a higher mean financial literacy score compared to female participants ($N = 255$, $M = 0.29$, $SD = 0.660$, $SEM = 0.041$). Levene's test for equality of variances indicated a violation of the assumption of equal variances ($F(1, 554) = 20.439$, $p < .001$). Therefore, the results of the t-test were interpreted under both assumptions of equal and unequal variances. Under the assumption of equal variances, the t-test revealed a statistically significant difference in financial literacy scores between genders ($t(554) = 2.786$, $p = 0.006$). Similarly, when assuming unequal variances, the difference remained statistically significant ($t(553.689) = 2.830$, $p = 0.005$). The mean difference in financial literacy scores between males and females was found to be 0.175 ($SE = 0.062$). The 95% confidence interval for this difference ranged from 0.054 to 0.296. These results suggest that male participants exhibited higher levels of financial literacy compared to their female counterparts.
Pearson correlation coefficients were computed to explore the relationships between various variables. The list below summarizes the correlation coefficients along with their significance levels:

- A strong positive correlation was found between the interest for a specialized credit card and the number of credit cards already owned ($r = 0.383$, $p < 0.01$). This suggests that individuals who already possess multiple credit cards are more likely to express a desire for acquiring additional one - specialized for retirees.
- There was a significant positive correlation between the interest for a specialized credit card and overall financial literacy ($r = 0.215$, $p < 0.01$). This implies that individuals with higher levels of financial literacy are more inclined to express a desire for obtaining credit card specialized for retirees.
- The number of credit cards owned showed a significant positive correlation with financial literacy ($r = 0.257$, $p < 0.01$). This indicates that individuals with more credit cards tend to have higher levels of financial literacy.
- Financial literacy was positively correlated with Education level ($r = 0.211$, $p < 0.01$). This suggests that individuals with higher levels of education tend to exhibit greater level of financial literacy.
- There was a significant negative correlation between education level and gender ($r = -0.173$, $p < 0.01$). This indicates that females, on average, tended to have lower levels of education compared to males in the studied sample.
- Year of birth exhibited a significant positive correlation with the desire for a new credit card ($r = 0.153$, $p < 0.01$). This suggests that younger respondents are more likely to express a desire for acquiring a new specialized credit card.

Other mutual correlations of those variables were not in statistically significant relationship. The significant correlations mentioned above provide insights into the relationships between various factors such as credit card ownership, financial literacy, education level, gender, and age-related preferences for new credit cards among the studied population.

Association between education level and financial literacy score has been examined in a more detail. The regression analysis examined the relationship between those two variables. The model revealed that education level significantly predicts financial literacy scores ($F(1, 554) = 25.736$, $p < 0.001$). The coefficient for education level was found to be 0.203 ($p < 0.001$), indicating that, on average, for each one-unit increase in education level, financial literacy increases by 0.203 units or $Y=-0.030+0.203*(\text{education level})$. This suggests a positive relationship between education level and financial literacy. However, the effect size was relatively small, with education level explaining only approximately 4.4% of the variance in financial literacy scores (R Square = 0.044). Despite the statistical significance, the constant term (-0.030) was not statistically significant (p = 0.734), suggesting that it does not meaningfully contribute to predicting financial literacy scores. Overall, while education level appears to be a significant predictor of financial literacy, other factors not included in the model, such as gender and age, also influence individuals' financial knowledge and decision-making abilities so if we dwell deeper there would be more correlation coefficients and variables included into the model making it more accurate: $Y=\beta_0 + \beta_1 (X_{education})+\beta_2 (X_{gender}) + \beta_3 (X_{age}) + \ldots + \beta_n(X_n)$

Conclusion

The research results point towards some very interesting findings that are in accordance with previous such research conducted in various countries. However, there are some specifics as well. From the sample composition, where majority share of respondents were men, even though women are more prevalent in this age group, to the very low results on financial literacy scale, numerous primary data characteristics point that this part of the BiH's population is characterised by low income, low education, very traditional and conservative financial behavior and low financial knowledge which all constitutes foundations for high level of financial exclusion and financial vulnerability for them and their households. Comparing to the previous research and using the same methodology, financial literacy score was the lowest recorded so far (Table 5). The limitation of such comparison is that the research presented in the paper focused on a particular segment of the population, but results are still well below average but in accordance with the country's BDP and general level of economic development. The presented evidence is also strongly supported by very low adoption and usage of credit cards, means of communication with banks, etc.

Statistical correlations connected with financial literacy are found to be related to gender, level of education, credit card usage, interest for a specialized cred card for retirees and age. However, when considering introduction of a new specialized credit card for retirees most of the results point that this would not be a financial product with high or even satisfactory ROI. This is based primarily on current low level of financial literacy and credit card usage but also on just 26% of respondents that expressed interest for the product. Such market share would be acceptable if not for this segment which is characterized by low income, conservative financial behaviour and high distribution costs given that their preferred sales and promotion channel is bank branch. In other words, segment would generate lower sales income with higher than average servicing costs and lower customer lifetime value (CLV) in comparison to other market segments.

The research conducted on retirees in Bosnia and Herzegovina highlights critical implications regarding financial literacy and credit card usage among this market segment. Financial literacy plays a pivotal role in shaping individuals' financial behaviors and decision-making processes, ultimately influencing their long-term financial well-being. However, the study reveals a concerning low level of financial literacy among retirees, as evidenced by their poor performance on the "Big Three" financial literacy questions. Moreover, the research underscores a significant underutilization of credit cards among them, with the majority of respondents either not owning or not actively using credit cards. This reluctance towards credit card usage could be attributed to factors such as low income, conservative financial behaviors, and limited financial knowledge within this demographic. Furthermore, the study indicates a relative lack of interest among retirees for a specialized credit cards tailored to their needs. The findings suggest a pressing need for targeted financial education initiatives aimed at improving the financial literacy of retirees in Bosnia and Herzegovina. By enhancing their understanding of financial concepts and products, individuals can make more informed decisions about budgeting, saving, investing, and borrowing, thereby improving their overall financial well-being and quality of life. Additionally, financial institutions operating in Bosnia and Herzegovina should consider the unique needs and preferences of retirees when designing financial products and services. While the introduction of specialized credit cards may present an opportunity, the low level of financial literacy and limited interest among retirees necessitate careful consideration of market viability and profitability.

In conclusion, addressing the challenges related to financial literacy and credit card usage among retirees in Bosnia and Herzegovina requires collaborative efforts from government agencies, financial institutions, and educational institutions. By empowering retirees with the necessary knowledge and tools, we can work towards enhancing their financial resilience and improving their socio-economic status in the long run. The preventive course of action is to focus on younger generations now and formalize targeted and specialized financial education programs for them so they can over their productive working years exhibit strong financial inclusion and enhance their wealth and by the time they reach retirement they will be better off than the previous generations.

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