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ANALYSIS OF FINANCIAL LITERACY AND ITS DETERMINANTS: EVIDENCE FROM BOSNIA AND HERZEGOVINA

Merjem Bjelopoljak
International Burch University, Bosnia and Herzegovina
merjem.bjelopoljak@stu.ibu.edu.ba

Irfan Djedović
International Burch University, Bosnia and Herzegovina
irfan.djedovic@ibu.edu.ba

Dino Arnaut
International Business Information Academy Tuzla, Bosnia and Herzegovina
arnaut.dino@gmail.com

Jasna Imamović
International Burch University, Bosnia and Herzegovina
jasna.imamovic@ibu.edu.ba

Abstract

This study's objective was to assess and analyze the overall level of financial literacy in Bosnia and Herzegovina, as well as to identify its main determinants, whether demographic, socioeconomic, behavioral, or geographic. The study was conducted in Bosnia and Herzegovina, using a convenience sample, and a quantitative, cross-sectional approach. The final analytical sample comprised 233 valid respondents. Cronbach's Alpha reliability coefficients were .747 for the access to financial products and services scale, .635 for the financial behavior scale, and .653 for the financial literacy scale, all of them falling within the acceptable ranges. The mean financial literacy score was 2.30 (SD = .455), which indicated a moderate overall level of financial competence. Item-level analysis revealed critical objective

knowledge deficits: only 3% of the respondents were able to correctly identify the effect inflation has on purchasing power, 27% demonstrated basic investment concept knowledge, 31% correctly answered the interest compounding question, and 53% understood the risk diversification. Hypothesis 1, which proposed that demographic and socioeconomic characteristics significantly predict financial literacy, was rejected ($R^2 = .033$, $p = .264$). Hypothesis 2, proposing that access to financial products and services positively influences financial literacy, was supported, with access emerging as a significant and independent predictor. Hypothesis 3, proposing that financial behavior significantly affects financial literacy, was also supported. Together, access and behavior explained an additional 19.7% of variance beyond demographic factors, pointing to financial inclusion and active financial engagement as the primary levers for improving financial literacy in transitional economies such as Bosnia and Herzegovina.

Keywords: financial literacy, financial literacy determinants, Bosnia and Herzegovina, financial behavior, access to finance, OECD

INTRODUCTION

In the modern world global economy, financial literacy has become one of the most essential topics for the individual wellbeing, but also the overall wellbeing and development of the economy (Lusardi & Mitchell, 2014). We can see how financial markets and institutions within are becoming more complex, and how rapidly digital financial products and services are expanding, which has contributed to the growing need for financial knowledge and understanding.

The Organization for Economic Co-operation and Development (OECD) gives a definition of financial literacy as not only the knowledge and understanding of financial concepts and financial risks, but also all the skills it takes, motivation, and confidence, to apply the knowledge to make effective decisions across a wide range of financial contexts, and to improve the financial wellbeing of individuals and the economy as a whole (OECD, 2022).

While developed countries have had substantial growth when it comes to financial literacy, not the same can be said for transitional countries, such as Bosnia and Herzegovina, which continues to face challenges. According to OECD (2023) and the World Bank (2021), Western European countries constantly showcase higher levels of financial literacy compared to Balkan countries. This does not only highlight the differences in education systems and economic development, but also in the access to financial institutions, products and services.

Bosnia and Herzegovina: Economic and Financial Context

Bosnia and Herzegovina (BiH) is a small lower to middle income country in the Western Balkans region of Southeastern Europe, home to approximately 3.2 million people. Minimum monthly net wages start at 1,000 convertible marks (BAM), approximately 500 euros, which is among the lowest in Europe, leaving very limited, if any, disposable income for savings, insurance, or investment. The public pension system provides retirement benefits that often fall short of covering basic living costs, placing the burden of long-term financial planning on individuals who may lack the financial competence to plan effectively.

Youth unemployment in Bosnia and Herzegovina has historically been among the highest in Europe, reportedly exceeding 35 to 40 percent at various points in recent years (Agency for Statistics of Bosnia and Herzegovina, 2023). Formal financial education is largely absent from Bosnia and Herzegovina's educational systems. Financial literacy is not a part of the national school curriculum at either the primary or secondary level in either entity. The OECD (2023) has specifically identified Bosnia and Herzegovina among the Western Balkan countries requiring the most urgent development of a national financial literacy strategy.

These conditions mean that the usual links between demographics and financial literacy which are well-established in Western Europe and North America, may work differently here. When educational quality varies widely, incomes cluster in a narrow range, and many people rarely deal with banks or formal financial services, demographic factors like age or education may matter less than they typically do elsewhere. At the same time, the access-literacy and behavior-literacy relationships may be particularly powerful drivers of financial competence development in this setting, taking into the consideration the relative absence of formal financial education.

LITERATURE REVIEW

Demographic and Socio-Economic Variables as Determinants of Financial Literacy

Age is repeatedly identified as one of the main determinants of financial literacy. Lusardi et al. (2010, as cited in Abdullah & Chong, 2014) found that financial literacy among young adults is generally low, especially due to limited financial exposure and undeveloped decision-making skills. Worthington (2006, as cited in Abdullah & Chong, 2014) reports that individuals aged between 50 and 60 showcase the highest levels of financial literacy, most likely due to life experience, financial exposure and active engagement in savings, investing and planning for retirement.

Gender differences are among the most persistent patterns in financial literacy studies. Lusardi and Mitchell (2017) found that women, even those with university degrees, tend to score

lower on financial literacy assessments compared to men. The S&P Global FinLit Survey showed that 35% of men worldwide are financially literate, compared to 30% of women (Klapper et al., 2015).

Education is one of the strongest and most consistent determinants of financial literacy. The OECD working group (as cited in Luksander et al., 2014) reported that education is positively related to financial literacy across all countries examined. Evidence from the OECD Programme for the International Student Assessment (PISA) showcases persistent gaps in the financial literacy of the youth, as in both 2012 and 2015, only about 10% of the 15-year-olds from the participating countries reached the highest level of proficiency on the five-point financial literacy scale, while approximately 1 in every 5 students lacked basic financial knowledge (OECD, 2017).

Income level is another significant socio-economic determinant of financial literacy. Rehman and Mia (2024) found that households with greater incomes demonstrate higher levels of financial literacy due to the increased engagement with savings, budgeting and investing. Employment status significantly shapes individuals' financial literacy; Worthington (2006, as cited in Abdullah & Chong, 2014) found that unemployed individuals scored lowest on financial literacy measures, while employed ones and business owners showcased higher levels of financial knowledge.

Geographic location, especially when it comes to urban vs. rural areas, is another widely recognized determinant of financial literacy. Studies summarized by Rehman and Mia (2024) reported that individuals with urban residence tend to have higher levels of financial literacy due to greater access to banks and other financial institutions, and to financial education opportunities.

While the international literature provides a consistent and robust foundation for the demographic hypotheses tested in this study, it is important to acknowledge that the conditions under which these relationships have been documented differ significantly from those prevailing in Bosnia and Herzegovina. Educational quality is uneven across institutions and entities, income is compressed in the lower-middle range for the majority of the population, and formal financial education is absent from the school curriculum at all levels. Under these conditions, demographic gradients documented internationally may be attenuated, absent, or differently configured.

Access to Financial Products, Services and Institutions, as a Determinant of Financial Literacy

Access to financial services generally refers to the individual's ability to take the advantage of financial institutions, products and services, without facing prohibitive economic,

social or infrastructural obstacles (Gloukoviezoff, 2007). A growing body of literature highlights that the access to finance does not solely influence financial outcomes, but that it is tightly linked to financial literacy itself. Financial literacy enables individuals to be more confident with financial products, to compare available services, and to make informed and sound financial decisions (Disney & Gathergood, 2013).

In developing economies, such as Bosnia and Herzegovina, the connection between financial literacy and access to finance is even more noticeable. Limited financial infrastructure, in both urban and rural areas, persistent reliance on cash transactions, and of course, varying levels of trust in financial institutions, all lead to the conclusion that individuals with lower levels of financial literacy may be excessively excluded from formal banking and modern financial technologies.

Financial Behavior as a Determinant of Financial Literacy

Financial behavior, which includes spending and saving habits, debt management, budgeting and investing practices, plays an important role in shaping individuals financial knowledge over time. While the substantial body of existing literature traditionally builds on the idea of financial literacy as a precedent of sound financial behavior, a growing perspective suggests that the financial behavior itself serves as a driver of financial learning. This essentially relies on learning by doing mechanism, which implies that individuals boost their financial literacy through repeated financial decision-making and direct participation in the financial system.

Several researchers have raised concerns about reverse causality, noting that financial behavior can also influence financial literacy. Hilgert et al. (2003) noted that personal financial experience is one of the main sources of financial learning. Bucher-Koenen and Lusardi (2011) argue that planning for retirement itself has the potential to generate financial literacy, as individuals participating in savings programs can learn about interest compounding, inflation rates and more, simply through involvement.

Financial Literacy in the Western Balkans

OECD (2023) data from its most recent international adult financial literacy survey continue to place Western Balkan nations below the OECD average on composite financial literacy scores. The comparison with leading Western European nations is quite sobering. In the Netherlands, van Rooij et al. (2011) found that a majority of adults could correctly answer multiple advanced financial literacy items covering stock market mechanics and bond pricing, a

level of sophistication that would be exceptional in the present Bosnia and Herzegovina sample, where even the basic inflation item is answered correctly by only 3% of respondents.

Theoretical Frameworks Underpinning Financial Literacy Research

The life cycle hypothesis, originally developed by Modigliani and Brumberg (1954) and further extended by Ando and Modigliani (1963), provides the foundational economic rationale for the importance of financial literacy. Behavioral economics, especially the foundational work of Kahneman and Tversky (1979) on prospect theory and cognitive biases, provides a complementary lens for understanding financial decision-making failures. Social learning theory (Bandura, 1977) is foundational to understanding the learning-by-doing concept, through which financial behavior generates financial literacy.

RESEARCH MODEL AND HYPOTHESES

The research model proposes that financial literacy is determined by three categories of independent variables: demographic and socioeconomic characteristics, access to financial products and services, and financial behavior. These three categories are treated as hierarchically nested predictors, reflecting the established research tradition of examining each set of variables both independently and in combination, as executed through hierarchical regression analysis.

Financial literacy, derived from measuring financial knowledge, self-efficacy, digital financial confidence, and understanding of financial risk, serves as the dependent variable throughout the analysis. The following hypotheses guide the empirical analysis:

H1: Demographic characteristics have a significant impact on financial literacy levels.

H1a: Education level has a positive impact on financial literacy.

H1b: Financial literacy increases with income level.

H1c: Males exhibit higher levels of financial literacy compared to females.

H1d: Individuals residing in urban areas demonstrate higher financial literacy than those living in rural areas.

H1e: Participation in financial education programs positively influences financial literacy.

H1f: Employed individuals showcase higher levels of financial literacy compared to unemployed ones.

H1g: Age is positively correlated with financial literacy, with older individuals expected to have higher knowledge due to the greater exposure to finance.

H2: Access to financial products and services positively influences financial literacy.

H3: Financial behavior significantly affects individuals' financial literacy.

METHODOLOGY

This research will rely on a group of adults living in Bosnia and Herzegovina, with no limitation to a specific age group, with the aim of assessing and analysing their levels of financial literacy and identifying its main determinants. The primary data will be collected through an online, structured survey/questionnaire, which will be distributed online via emails and social media platforms. The study will use a non-probability convenience sampling method, because of its practicality and efficiency in collecting responses from a large number of participants all across the country.

The survey/questionnaire will be based on previous research, and previously validated and widely used scales which were developed by OECD and the World Bank's Global Index, adjusted to both English and Bosnian to ensure clarity and understanding from the participants.

Research Design and Sampling

The study uses a quantitative, cross-sectional research design, grounded in the positivist tradition. The final analytical sample consisted of 233 valid respondents. A total of 234 responses were initially collected, of which 233 were retained as valid and included in the final analysis. One respondent was excluded due to missing data across all key scale items, rendering their responses unusable for composite score calculation. To be considered valid, a response was required to meet the following criteria: complete answers on all items across the three composite scales, with no item left unanswered; no evidence of straight-lining, defined as selecting the same response option across all items of a single scale without meaningful variation; and no extreme multivariate outliers as identified through examination of Mahalanobis distances computed on the continuous predictor variables. Responses that exhibited implausible response patterns were also flagged for review. After applying these criteria, the single excluded case was one with pervasive missing data, and no additional cases were removed, yielding a final analytical sample of 233 valid respondents. A sample size of 233 is adequate for the planned hierarchical multiple regression analysis with eight predictor variables across three sequential models. The widely cited rule of thumb proposed by Tabachnick and Fidell (2013) recommends a minimum of 20 cases per predictor variable for stable regression estimates. With eight predictors in the full model, this yields a minimum recommended sample of 160 cases, which the present sample of 233 comfortably exceeds.

A non-probability convenience sampling approach was used, chosen for its practicality in reaching a geographically dispersed sample across the country. The survey was distributed primarily through university networks, personal contacts, and social media platforms, which in

part explains the strong representation of young, educated, urban respondents in the final sample.

Measurement Instruments

Three composite scales were used in the empirical analysis. The financial literacy scale consisted of nine items measuring financial knowledge (interest rates, inflation, risk diversification, and investment concepts), financial self-efficacy and confidence in digital financial tools, and understanding of financial product risk. The access to financial products and services scale comprised six items measured on a five-point Likert scale, capturing personal bank account ownership and use, regular use of online or mobile banking, ease of accessing formal credit, ability to compare financial products across providers, knowledge of investment and insurance product sources, and use of fintech or digital financial services within the past twelve months. The financial behavior scale consisted of ten items assessing self-reported financial management practices and financial outcome states, combining five-point Likert-scale process items with binary yes/no outcome items.

The decision to ground the survey instrument in the OECD/INFE Financial Literacy Measurement Toolkit (OECD, 2022) and the World Bank's Global Financial Inclusion Index was not random, but reflected several deliberate methodological considerations. First, the OECD/INFE toolkit is the most widely used and internationally validated instrument for measuring financial literacy across diverse national contexts, having been applied in over 40 countries. Second, the toolkit's tripartite framework, measuring financial knowledge, financial attitudes, and financial behaviors as distinct but interrelated components, aligns precisely with the theoretical model of financial literacy adopted in this study.

Data Analysis

The analytical strategy proceeded in five sequential stages. First, descriptive statistics were computed for all variables. Second, individual item analyses examined the specific financial literacy, access, and behavioral components showing the strongest and weakest performance. Third, reliability analysis using Cronbach's Alpha and item-total statistics assessed internal consistency of each composite scale. Fourth, Pearson correlation analysis examined bivariate relationships, and VIF-based multicollinearity diagnostics verified predictor independence. Fifth, hierarchical multiple regression was conducted across three sequential models: Model 1 (demographic predictors, testing H1), Model 2 (adding access, testing H2), and Model 3 (adding financial behavior, testing H3, representing the full model).

The hierarchical regression approach was selected over standard multiple regression because it allows each variable set's explanatory contribution to be assessed independently while controlling for the contributions of previously entered predictors. Demographic and socioeconomic variables are entered first as the most distant background conditions, access is entered second as the structural opportunity mediator, and behavior is entered last as the most proximate experiential mechanism.

RESULTS

Sample Characteristics

The final analytical sample consisted of 233 valid respondents. The distribution skews young, with 69.1% of respondents aged between 26 and 35, and highly educated, with 74.2% holding at least a bachelor's degree. Employment is dominated by students and those not yet in full-time employment (68.7%), and the sample is concentrated in medium and large cities (67.4%). This profile is consistent with the characteristics of online convenience samples in Bosnia and Herzegovina and directly influences the detectability of demographic effects on financial literacy.

Table 1. Sample demographic profile (N = 233)

Variable	Category	N	Valid %
Age	18-25 years	80	34.3
	26-35 years	81	34.8
	36-45 years	44	18.9
	46-55 years	20	8.6
	56-65 years	7	3.0
	Over 65 years	1	0.4
Gender	Female	105	45.1
	Male	128	54.9
Education	Secondary school	73	31.3
	Bachelor’s degree	100	42.9
	Master’s degree	49	21.0
	PhD	10	4.3
Employment	Student/Unemployed	160	68.7
	Employed full-time	34	14.6
	Self-employed	16	6.9
Income (BAM)	No income	32	13.7
	1,000-2,000 BAM	65	27.9
	Over 2,000 BAM	84	36.1
Residence	Large city	33	14.2
	Medium city	124	53.2
	Smaller city/town	76	32.6

Table 2. Descriptive statistics for key study variables (N = 233)

Variable	N	Mean	SD	Skewness	Min	Max
AGE	233	1.12	1.097	0.896	0	5
INCOME	233	2.67	1.373	-0.807	0	4
ACCESS	233	3.81	0.914	-0.789	1.00	5.00
BEHAVIOR	233	2.63	0.501	-1.103	0.70	3.30
LITERACY	233	2.30	0.455	-0.418	0.89	3.11

The mean financial literacy score was 2.30 (SD = .455, range 0.89–3.11), indicating a moderate overall level of financial competence across the sample. The mean access to financial products and services score was 3.81 out of 5 (SD = .914), suggesting that respondents on average reported relatively good access to formal financial services, which is consistent with sample's predominantly urban and educated composition. The mean financial behavior score was 2.63 (SD = .501), indicating moderately positive financial management practices across the sample.

Item-Level Findings

The most surprising finding is the stark contrast between objective knowledge and self-efficacy items. Only 3% of respondents correctly identified the effect of inflation on purchasing power, which is the most fundamental economic concept for household financial planning. Only 27% demonstrated knowledge of basic investment concepts, and 31% correctly answered the interest compounding question. Risk diversification showed the highest correct response rate at 53%. In contrast, the five self-efficacy and attitudinal items received mean scores ranging from 3.72 to 4.24 on the five-point scale, all substantially above the midpoint.

This gap between what respondents know and how capable they believe themselves to be is a classic manifestation of the overconfidence bias extensively documented in the financial literacy research (Lusardi & Mitchell, 2014). The practical implication of this gap is particularly concerning: individuals who overestimate their own financial competence are less likely to recognize the need for financial education and less likely to seek it out, creating a self-reinforcing barrier to financial literacy improvement.

Reliability Analysis

Table 3. Reliability statistics for all composite scales

Scale	N Items	Cronbach's Alpha	Assessment
Access to Financial Products & Services	6	.747	Good - acceptable
Financial Behavior	10	.635	Acceptable (exploratory)
Financial Literacy	9	.653	Acceptable (exploratory)

The access scale (α = .747) comfortably exceeds the conventional .70 threshold, indicating good internal consistency. The highest-loading items are those capturing active higher-order engagement; the ability to compare financial products across providers (r = .617), knowledge of investment and insurance sources (r = .583), and ease of credit access (r = .531) rather than mere account ownership (r = .380).

The financial literacy scale (α = .653) also falls within the acceptable exploratory range. Alpha values in the .60–.70 range are considered acceptable for exploratory research and for scales combining items that measure conceptually related but distinct sub-dimensions of a broader construct, such as the present combination of objective knowledge and self-efficacy items (Nunnally, 1978; Hair et al., 2010). The relatively lower alpha for the financial behavior scale (α = .635) is similarly attributable to the deliberate inclusion of both Likert-scale process items and binary outcome items within a single composite, which introduces item-format heterogeneity that inherently reduces internal consistency coefficients without undermining the scale's construct validity. The four binary knowledge items have low or negative corrected item-total correlations (interest: -.101; inflation: -.146; risk diversification: .025; investment: -.037), while the five self-efficacy items show strong positive correlations (.383 to .598). This gap reflects the overconfidence phenomenon: respondents who answer knowledge items incorrectly simultaneously report high self-efficacy, creating within-scale inconsistency that depresses alpha.

Correlation Analysis

Table 4. Pearson correlation matrix (N = 233). ** p < .01 (2-tailed). * p < .05 (2-tailed)

Variable	AGE	INCOME	ACCESS	BEHAVIOR	LITERACY
AGE	1	.351**	.070	.085	-.110
INCOME		1	.152*	.045	.045
ACCESS			1	.237**	.348**
BEHAVIOR				1	.341**
LITERACY					1

Access to financial products and services shows a moderate, statistically significant positive correlation with financial literacy (r = .348, p < .001), providing preliminary bivariate support for H2. Financial behavior demonstrates an almost identical moderate positive correlation with financial literacy (r = .341, p < .001), offering support for H3. Age (r = -.110, p = .093) and income (r = .045, p = .496) do not show statistically significant bivariate correlations

with financial literacy at the .05 threshold, providing the early indication that H1 might not be supported.

Multicollinearity Diagnostics

Multicollinearity among the predictor variables was assessed using VIF and tolerance values computed on the full research model. All VIF values are well below the threshold of 10 (Hair et al., 2010), with the highest value for income (VIF = 1.575). The maximum condition index from SPSS collinearity diagnostics was 22.317, approaching but not exceeding the threshold of 30 (Belsley et al., 1980). These findings confirm that multicollinearity does not pose a threat to the validity of the regression estimates.

Hierarchical Regression Analysis

Table 5. Hierarchical regression model summaries

Model	Predictors	R	R^2	Adj. R^2	Delta R^2	F Change	Sig. Delta F
1	Demographics	.182	.033	.007	.033	1.287	.264
2	+Access	.397	.158	.131	.125	33.29	.000
3 (Full)	+Behavior	.480	.230	.199	.072	21.27	.000

For Model 1, the F statistic of 1.287 with a significance value of .264 indicates that the six demographic and socioeconomic predictors combined fail to explain a statistically significant portion of financial literacy variance. Knowing a respondent's age, gender, education level, employment status, income, and place of residence does not allow us to predict their financial literacy score with any meaningful accuracy in this sample. This is the statistical basis for the rejection of Hypothesis 1. For Model 2, the addition of access to financial products and services produces a model that is highly statistically significant overall ($F = 6.016$, $p < .001$). For Model 3, the full model, the F statistic of 8.397 ($p < .001$) indicates that all eight predictors together explain a statistically significant and meaningful proportion of financial literacy variance.

Table 6. Regression coefficients – Model 3 (full model). Dependent Variable: Financial Literacy

Predictor	B	Beta	t	Sig.	95% CI
(Constant)	1.250	-	6.304	.000	[.859, 1.641]
AGE	-.061	-.148	-2.242	.026	[-.115, -.007]
SEX	-.100	-.109	-1.731	.085	[-.214, .014]
EDUCATION	-.013	-.025	-.393	.695	[-.079, .053]
EMPLOYMENT	.006	.016	.244	.807	[-.041, .053]
INCOME	.005	.015	.208	.835	[-.043, .053]

CITY	-.026	-.038	-.635	.526	[-.108, .055]
ACCESS	.147	.295	4.771	.000	[.086, .207]
BEHAVIOR	.255	.280	4.612	.000	[.146, .363]

Access to financial products and services remains the strongest individual predictor in the full model (B = .147, β = .295, t = 4.771, p < .001). Financial behavior enters as the second significant predictor (B = .255, β = .280, t = 4.612, p < .001). The near-equal standardized coefficients of access (β = .295) and behavior (β = .280) indicate that these two constructs contribute approximately equal independent explanatory power to financial literacy. Among the demographic variables, age is the only predictor to achieve statistical significance in the full model (B = -.061, β = -.148, t = -2.242, p = .026), with a negative direction indicating that younger respondents score higher on financial literacy after accounting for access and behavior.

Hypothesis Testing and Interpretation

Hypothesis 1 proposed that the demographic and socioeconomic characteristics would have a significant impact on financial literacy levels. The results of the study do not support this hypothesis. Model 1 failed to achieve statistical significance (F = 1.287, p = .264, R^2 = .033), and no individual demographic predictor approached significance except age in the full model. The rejection of H1 and all sub-hypotheses (H1a–H1g) is mostly a result of the sample's composition, rather than proof that demographics are genuinely unrelated to financial literacy in the broader population of Bosnia and Herzegovina.

The sample's demographic homogeneity, with 69.1% of respondents aged between 26 and 35, 74.2% holding at least a bachelor's degree, and 67.4% residing in medium or large cities, creates severe range restriction in the key socioeconomic predictor variables, which reduces the statistical power to detect demographic effects even where they exist in the broader population. Therefore, it is very critical to emphasise that the rejection of H1 should not be interpreted as evidence that demographic factors are irrelevant to financial literacy in Bosnia and Herzegovina as a whole, but that it reflects a sample-specific finding arising from the compositional characteristics of a convenience sample that overrepresents young, educated, urban respondents. In a nationally representative probability sample spanning the full demographic spectrum of the country, including older adults, individuals with primary or secondary education only, rural residents, and those with very low or no income; education and income in particular would almost certainly emerge as significant predictors, fully consistent with the robust international evidence base (Lusardi & Mitchell, 2014; Rehman & Mia, 2024; Cohen et al., 2003).

The significant negative age effect in the full model (β = -.148, p = .026) is quite interesting. Younger respondents score higher on financial literacy after controlling for access and behavior. This pattern reflects the composite literacy measure's inclusion of digital financial confidence and self-efficacy items, which systematically favor the digitally savvy younger population.

The finding that only 3% of respondents could correctly identify the effect of inflation on purchasing power, in a country whose modern economic identity was shaped largely by one of the most extreme inflations in European history, suggests that this collective memory, regardless of how vivid it is within the generation that lived through it, has not translated into financial knowledge for younger individuals who did not directly experience it. It underscores the need for structured financial education that explicitly connects historical financial experiences to abstract financial concepts, rather than assuming that collective memory does that work on its own.

Hypothesis 2 is strongly and consistently supported. Access to financial products and services adds $\Delta R^2 = .125$ in Model 2 (F change = 33.29, $p < .001$), and remains the strongest individual predictor in the full model ($\beta = .295$, $t = 4.771$, $p < .001$). The strongest-loading items are those capturing active, higher-order engagement with the financial system such as product comparison ($r = .617$), investment and insurance source knowledge ($r = .583$), and formal credit access ($r = .531$), rather than passive account ownership ($r = .380$). This tells us that it is the active, informed, and comparative engagement with the financial system that drives financial literacy development, not just the holding of a bank account.

Hypothesis 3 is supported. Financial behavior adds $\Delta R^2 = .072$ beyond Model 2 (F change = 21.27, $p < .001$) and achieves a standardized coefficient of $\beta = .280$ ($t = 4.612$, $p < .001$) in the full model, nearly identical in magnitude to the access predictor. This parity in effect sizes, combined with the low inter-correlation between access and behavior ($r = .237$), confirms that the two constructs are empirically distinct and independently contribute to financial literacy. Access captures structural opportunity; behavior captures active management practice.

Table 7. Summary of hypothesis testing results

Hypothesis	Statement	Result
H1	Demographic characteristics significantly predict financial literacy	REJECTED — F=1.287, p=.264, R^2=.033
H1g	Age ↑ → Literacy ↑	REJECTED — β=-.148, p=.026 (significant, reversed)
H2	Access ↑ → Literacy ↑	SUPPORTED — β=.295, p<.001, ΔR^2=.125
H3	Behavior ↑ → Literacy ↑	SUPPORTED — β=.280, p<.001, ΔR^2=.072

DISCUSSION

These conclusions matter because they redirect managerial attention. The finding that demographic variables lose significance when access and behavioral variables are included adds to an ongoing debate about whether the demographic patterns in financial literacy seen in national studies reflect direct causal effects of age, education, and income, or whether they are largely explained by the differences in financial access and engagement that come with different socioeconomic positions. Formally testing this requires a nationally representative sample, but the present findings strongly point in this direction. The negative age effect in the full model also contributes to an emerging literature on digital financial literacy and generational differences in composite literacy measurement, demonstrating empirically that financial literacy measures including digital financial confidence items may produce age-literacy patterns that differ from traditional knowledge-only instruments.

POLICY IMPLICATIONS AND RECOMMENDATIONS

RECOMMENDATION 01 **Financial inclusion as a literacy intervention** Expanding mobile banking, product diversity, and access to credit generates measurable literacy gains. Access was the strongest predictor in the model (β = .295, p < .001).	RECOMMENDATION 02 **Practice-based financial education** Budgeting challenges, savings programmes, and expense tracking generate financial knowledge through behavioral engagement (β = .280, p < .001).	RECOMMENDATION 03 **Targeted inflation literacy campaigns** Only 3% correctly identified inflation's effect on purchasing power. Public campaigns using everyday financial examples are urgently needed.
RECOMMENDATION 04 **Financial literacy in secondary school curricula** Embed financial literacy across both entities using the OECD PISA framework, aligned with Bosnia and Herzegovina's EU accession objectives (OECD, 2017).	RECOMMENDATION 05 **Self-assessment tools to address overconfidence** Programmes must confront individuals with objective benchmarks. High self-efficacy alongside critically low knowledge scores signals overconfidence bias that suppresses motivation to learn.	RECOMMENDATION 06 **Nationally representative financial literacy survey** A population-level baseline survey in partnership with the Agency for Statistics, the Central Bank, and the OECD or World Bank is needed to monitor trends and evaluate interventions.

Source: Bjelopoljak, M. (2025). Analysis of Financial Literacy and Its Determinants: Evidence from Bosnia and Herzegovina. IJECM Submission, 2025

LIMITATIONS AND ACADEMIC CAUTIONS

The most significant limitation is the use of non-probability convenience sampling. The resulting sample is skewed toward young, educated, urban respondents, with approximately 70% holding at least a bachelor's degree, over 85% under 45, and approximately 67% residing in medium or large cities. This demographic profile creates severe range restriction in the key

socioeconomic predictor variables, which almost certainly accounts for the non-significant demographic effects in the regression analysis.

A second limitation is the composite measurement of financial literacy. The combination of binary knowledge items with Likert-scale self-efficacy items in a single composite score creates a scale with moderate internal consistency (α = .653) that is adequate for exploratory analysis but masks the critical distinction between objective financial knowledge and financial self-efficacy.

Third, the cross-sectional design prevents causal inference. The positive associations between access, behavior, and financial literacy are consistent with both the access-and-behavior-causing-literacy interpretation and the reverse-causation interpretation. Longitudinal or experimental research designs are required to establish causal directionality.

Looking ahead, the most valuable extensions of this research are: a nationally representative probability survey with stratified random sampling across regions, age groups, education levels, and the urban-rural continuum; comparative studies extending the same instrument to other Western Balkan nations using identical instruments; longitudinal research tracking respondents over time to establish causal directionality; and qualitative research exploring attitudinal barriers, including institutional trust deficits, cultural attitudes toward financial planning, and language barriers in financial communication.

CONCLUSION

This study set out to assess the level of financial literacy among individuals in Bosnia and Herzegovina and to empirically examine the determinants that shape it. Drawing on a sample of 233 respondents, validated OECD and World Bank measurement instruments, and hierarchical regression analysis across three sequential models, the research generated findings that directly address the gap in empirical knowledge on financial literacy in the Western Balkans region.

The overall conclusion is quite straightforward: in this sample of adults in Bosnia and Herzegovina, financial literacy is not meaningfully predicted by demographic and socioeconomic background but is significantly and substantially predicted by active engagement with the financial system through both access to formal financial products and services and positive financial management behaviors. Access and behavior together account for 19.7% of additional explained variance in financial literacy beyond what demographics alone can explain, and both emerge as significant, independent, and approximately equally powerful predictors in the full model.

The objective financial knowledge findings are particularly concerning from a policy standpoint. A mean correct response rate of approximately 29% across the four knowledge items, with the inflation item answered correctly by only 3% of respondents, documents critical gaps in the foundational financial knowledge that Bosnian citizens need in order to make sound decisions about savings, loans, pensions, and investments. These deficits coexist with high financial self-efficacy scores, creating a dangerous overconfidence that may suppress individuals' motivation to seek financial education. It adds to the very limited empirical literature on financial literacy in Bosnia and Herzegovina and the Western Balkans, producing the first systematic, OECD-validated assessment of financial literacy levels and determinants in this context.

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