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ENVIRONMENTAL, SOCIAL, AND GOVERNANCE PRACTICES AND FINANCIAL PERFORMANCE OF ARMENIAN COMMERCIAL BANKS

Abstract

ESG integration has become increasingly relevant to banking-sector performance, particularly in emerging markets where standardized external ESG ratings remain limited. This study aims to examine the association between ESG performance and the financial performance of selected Armenian commercial banks and to assess the relative role of the Environmental, Social, and Governance dimensions. The study uses a multi-method design based on 27 bank-year observations for Ardshinbank OJSC, Ameriabank CJSC, and ACBA Bank OJSC over 2017–2025, combining a disclosure-based ESG framework, descriptive analysis, Pearson correlation, Ordinary Least Squares regression, Multi-Criteria Decision Analysis, and evidence from 52 banking professionals. Overall ESG performance is positively associated with ROA ($r = 0.64$) and ROE ($r = 0.60$) and negatively associated with the Cost-to-Income ratio ($r = -0.52$). In the OLS analysis, Governance, Environmental, and Social dimensions show positive estimated relationships with ROA, with coefficients of 0.037 ($p = 0.001$), 0.023 ($p = 0.012$), and 0.019 ($p = 0.018$), respectively. Governance therefore demonstrates the strongest estimated association among the three dimensions. The MCDA framework assigns weights of 45% to Governance, 30% to Environmental, and 25% to Social factors, providing additional evidence of the relative importance of governance-related practices. The findings provide preliminary evidence of positive ESG–financial performance associations in the selected Armenian banks, while the results should be interpreted as exploratory and associational rather than causal due to the limited sample.

Keywords

Armenia, ESG, commercial banks, financial
performance, corporate governance, sustainability

JEL Classification

C58, G21, G34, Q56

INTRODUCTION

Environmental, Social, and Governance (ESG) considerations have become increasingly relevant to strategic decision-making and risk management in the banking sector. Growing regulatory expectations, investor attention, stakeholder demands, and the expansion of sustainable finance have encouraged banks to integrate ESG considerations into governance structures, lending practices, operational processes, and disclosure frameworks. ESG is therefore increasingly considered not only a reporting or compliance dimension but also a factor potentially associated with profitability, operational efficiency, risk management, and long-term resilience. Nevertheless, empirical evidence on the relationship between ESG performance and financial outcomes remains context-dependent, with studies reporting heterogeneous effects across countries, institutions, and ESG dimensions (Friede et al., 2015; Krüger, 2015). The financial relevance of ESG practices is particularly important in banking because banks combine a central role in financial intermediation with substantial governance, reputational, regulatory, and credit-related risks. ESG-related practices may be as-

sociated with financial outcomes through improved risk oversight, transparency, stakeholder relationships, operational efficiency, and the allocation of financial resources. At the same time, ESG integration may generate additional reporting, compliance, monitoring, and organizational costs, particularly during the early stages of implementation. The relationship between ESG performance and financial performance should therefore not be presumed to be uniform or causal and requires examination within the institutional context of individual banking systems. Existing literature provides substantial evidence concerning ESG and corporate financial outcomes, but the findings vary across institutional settings. Cross-country evidence generally indicates a positive association between ESG performance and financial performance, although the magnitude and direction of the relationship differ across sectors, countries, and ESG dimensions (Friede et al., 2015). Governance has received particular attention in banking because board oversight, transparency, accountability, internal controls, and risk-management structures are closely related to the functioning and stability of financial institutions (Minton et al., 2014). Environmental and social factors may also be financially relevant through sustainable lending, resource efficiency, financial inclusion, employee relations, customer trust, and reputational capital (Cornett et al., 2016; Servaes & Tamayo, 2013). These relationships may be especially important in emerging and transition economies, where ESG frameworks, disclosure practices, and institutional mechanisms are still developing. Institutional quality, regulatory enforcement, disclosure standards, and market structures can influence both the implementation of ESG practices and their financial implications (Bénabou & Tirole, 2010; Dyck et al., 2019). Differences in disclosure quality and measurement practices also create challenges for empirical assessment. The documented divergence among ESG ratings highlights the importance of transparent and reproducible approaches to ESG measurement, particularly when ESG indicators are used in empirical financial research (Berg et al., 2022). This issue is particularly relevant in Armenia, where ESG integration in the banking sector has developed progressively but remains relatively under-researched from an empirical perspective. Armenian commercial banks operate within a common national regulatory and macroeconomic environment, while differences in institutional characteristics, governance structures, sustainability practices, and disclosure intensity may result in differences in observed ESG performance. Recent research has examined ESG-related aspects of Armenian commercial banking, but systematic empirical evidence concerning the relationship between individual ESG dimensions and multiple measures of financial performance remains limited (Hakobyan & Margaryan, 2025). Evidence from other countries cannot necessarily be assumed to apply directly to the Armenian banking environment because institutional, regulatory, and market conditions may differ. The scientific problem therefore concerns the limited empirical evidence on how ESG performance, and particularly its Environmental, Social, and Governance dimensions, is associated with the financial performance of Armenian commercial banks. A further issue is the measurement of ESG performance in a setting where consistently available external ESG ratings are limited, and disclosure practices may differ among institutions. Addressing these gaps requires an empirically grounded, transparent approach that distinguishes aggregate ESG performance from individual dimensions and considers their relationships with relevant financial performance indicators. Accordingly, further empirical evidence from the Armenian banking sector is needed to clarify the observed relationship between ESG practices and financial performance and to determine whether differences among ESG dimensions are reflected in their relative financial associations. Such evidence can contribute to the development of ESG-related banking research in Armenia and provide a basis for subsequent studies using broader samples, additional explanatory variables, and more advanced empirical methods.

1. LITERATURE REVIEW AND HYPOTHESES

Environmental, Social, and Governance (ESG) integration has become an important framework for assessing the broader sustainability-related char-

acteristics of financial institutions. The literature generally considers ESG as a multidimensional construct encompassing governance quality, environmental practices, and social relationships, with potential implications for risk management, stakeholder relationships, resource allocation, and

long-term financial performance (Friede et al., 2015; Krüger, 2015). From a theoretical perspective, stakeholder theory and legitimacy theory provide relevant foundations for understanding ESG adoption. These perspectives suggest that organizations may strengthen long-term relationships with stakeholders and maintain legitimacy by responding to social and institutional expectations (Suchman, 1995). Empirical evidence indicates that ESG-related practices can be associated with firm value, risk management, and resilience, although the direction and magnitude of these relationships vary across institutional contexts (Albuquerque et al., 2019; Bolton & Kacperczyk, 2021; Lins et al., 2017). In banking, the relationship may be particularly relevant because financial institutions are exposed to governance, reputational, regulatory, and credit-related risks. Governance mechanisms such as board oversight, transparency, accountability, internal controls, and risk-management structures may therefore have direct relevance to financial performance and institutional stability (Minton et al., 2014). The three ESG dimensions may affect financial performance through different mechanisms. Environmental practices may be associated with climate-related risk management, sustainable lending, and changes in the composition of banks' loan and investment portfolios (Battiston et al., 2017; Bolton & Kacperczyk, 2021). Social practices may influence customer relationships, employee outcomes, financial inclusion, and reputational capital (Cornett et al., 2016; Servaes & Tamayo, 2013). Governance practices may affect monitoring quality, transparency, internal controls, and risk-taking behavior and have consequently received particular attention in the banking literature (Minton et al., 2014). The literature also recognizes that ESG integration can involve implementation costs. Investments in reporting systems, compliance infrastructure, monitoring mechanisms, and organizational processes may create short-term costs, particularly during the early stages of ESG adoption (Gibson Brandon et al., 2021; Krüger, 2015). Thus, the relationship between ESG performance and financial outcomes should not necessarily be expected to be uniformly positive or linear. The relationship between ESG performance and financial outcomes may be particularly context-dependent in emerging and transition economies. Differences in regulatory quali-

ty, institutional development, enforcement mechanisms, disclosure standards, and investor sophistication can influence both the adoption of ESG practices and their financial implications (Bénabou & Tirole, 2010; Dyck et al., 2019). Consequently, evidence obtained from developed financial markets may not be directly transferable to emerging banking systems. Empirical research in emerging markets has reported heterogeneous findings concerning ESG and financial performance. Some studies identify positive relationships between ESG practices and profitability or risk outcomes, while others emphasize nonlinear effects and the importance of institutional conditions (Wu & Shen, 2013). In particular, the financial benefits of ESG practices may depend on the quality of implementation and the institutional environment in which those practices operate. Where regulatory enforcement and disclosure mechanisms are weaker, ESG reporting may not necessarily reflect substantive changes in organizational practices. The governance dimension is particularly relevant in this context because institutional quality and internal governance mechanisms can influence the effectiveness of environmental and social initiatives. Stronger governance may facilitate the implementation, monitoring, and disclosure of ESG practices and may therefore affect the extent to which ESG activities are reflected in financial outcomes. At the same time, the relative importance of individual ESG dimensions may vary across countries and banking systems, which supports the need for country-specific empirical investigation. A further issue in the ESG literature concerns the measurement of ESG performance. Differences among ESG ratings and assessment methodologies can produce substantial variation in measured ESG performance and complicate comparisons across institutions (Berg et al., 2022). This issue is particularly relevant in emerging markets, where standardized external ESG ratings may be less consistently available. Accordingly, disclosure-based approaches can provide an alternative means of constructing transparent and reproducible ESG measures. The quality and comprehensiveness of ESG disclosure may itself be economically relevant because greater transparency can reduce information asymmetry and provide stakeholders with more consistent information about an institution's sustainability-related practices (Berg et al., 2022; Christensen et

al., 2021). A transparent measurement framework is therefore particularly important when ESG indicators are subsequently examined in relation to financial performance. The literature also increasingly considers ESG as a multidimensional rather than purely aggregate construct. An aggregate ESG score may conceal differences among Environmental, Social, and Governance practices. Examining the individual dimensions separately can therefore provide additional information about which aspects of ESG are more closely associated with financial outcomes within a particular institutional setting. The Armenian banking sector provides a relevant setting for examining these relationships because ESG integration and sustainability-related disclosure have developed within a relatively concentrated banking system and a specific national regulatory and institutional environment. However, empirical research examining the financial implications of ESG practices in Armenian commercial banks remains limited. Hakobyan and Margaryan (2025) examined aspects of ESG and financial performance in Armenian commercial banks and provided evidence concerning the relationship between sustainability-related practices and financial performance. Nevertheless, systematic empirical evidence distinguishing the Environmental, Social, and Governance dimensions and examining their associations with multiple financial performance indicators remains limited. This creates an opportunity to extend the existing literature through a more explicit examination of the individual ESG dimensions and their relationship with bank-level financial outcomes. The Armenian context is also relevant from a measurement perspective. The limited availability of consistently comparable external ESG ratings increases the importance of transparent disclosure-based approaches that allow ESG performance to be assessed using publicly available institutional information. Such an approach can improve reproducibility and facilitate comparisons among banks within the same institutional environment. The literature indicates that ESG performance may be associated with financial performance through several channels, but the evidence remains heterogeneous across countries, institutional environments, and ESG dimensions. Three issues are particularly relevant to the present research. First, empirical evidence from emerging and transition banking markets

remains less developed than evidence from major developed financial markets. Second, country-specific evidence for Armenia is limited, particularly regarding the separate financial associations of the Environmental, Social, and Governance dimensions. Third, differences in ESG measurement and disclosure create a need for transparent and reproducible assessment frameworks. Taken together, these gaps indicate the need for empirical research examining both aggregate ESG performance and the relative associations of its individual dimensions with bank financial performance in Armenia.

This study addresses this gap by focusing on the Armenian commercial banking context and treating the expected relationships as empirical questions rather than assuming that all ESG dimensions have equivalent financial relevance. Based on the identified research gap and the theoretical and empirical evidence reviewed above, the study formulates the following hypotheses:

- H1: ESG performance is positively associated with the profitability of Armenian commercial banks.*
- H2: Governance demonstrates a stronger observed association with bank financial performance than the Environmental and Social dimensions.*

2. METHODS

This study employs a multi-method empirical design to examine the association between Environmental, Social, and Governance (ESG) performance and the financial performance of selected Armenian commercial banks. The quantitative analysis combines descriptive analysis, Pearson correlation, Ordinary Least Squares (OLS) regression, and Multi-Criteria Decision Analysis (MCDA), complemented by contextual evidence from banking professionals. The quantitative analysis covers three Armenian commercial banks: Ardshinbank OJSC, Ameriabank CJSC, and ACBA Bank OJSC. The banks were purposefully selected based on the availability and continuity of financial and ESG-related disclosures. The observation period is 2017–2025, resulting in 27 bank-year observations. The bank-year consti-

tutes the unit of analysis. The quantitative dataset was compiled from publicly available annual reports, audited financial statements, corporate governance reports, sustainability and ESG-related disclosures, and other official institutional publications. Where appropriate, reported information was cross-checked against information published by the Central Bank of the Republic of Armenia and other official sources. The analysis uses ROA, ROE, NIM, and the Cost-to-Income (C/I) ratio as financial-performance indicators. Dividend-related information was treated as supplementary and is not included in the principal hypothesis-testing framework. ROA and ROE represent the principal profitability measures, NIM captures interest-income performance, and C/I reflects operational efficiency. Given the small number of banks and repeated observations of the same institutions, the results are interpreted as exploratory associations rather than causal estimates or sector-wide conclusions. ESG performance was operationalized through Environmental (E), Social (S), and Governance (G) dimensions using a structured disclosure-based framework developed for the banking context. External ESG ratings were not used because consistently comparable ratings were not available for all selected banks and years. Each ESG dimension comprises five indicators.

Environmental:

- 1) green and sustainable lending;
- 2) renewable-energy financing;
- 3) energy-efficiency initiatives;
- 4) environmental policies and commitments; and
- 5) environmental initiatives and reporting.

Social:

- 1) employee development and training;
- 2) financial inclusion;
- 3) customer protection;
- 4) employee welfare and social responsibility; and
- 5) community and stakeholder engagement.

Governance:

- 1) board structure and independence;
- 2) transparency and disclosure;

- 3) risk-management practices;
- 4) internal control and compliance mechanisms; and
- 5) ESG and sustainability governance arrangements.

Indicators were assessed for each bank-year observation using information disclosed in annual reports, sustainability-related reports, corporate governance disclosures, and other official institutional sources. General statements of commitment without identifiable evidence of implementation were not treated as sufficient evidence of a fully implemented practice. For qualitative disclosure-based indicators, a three-point coding scheme was applied: 0 for no documented evidence, 0.5 for partial implementation or limited disclosure, and 1 for clearly documented implementation. Where available information was insufficient to distinguish between non-disclosure and non-implementation, the observation was treated as missing rather than assigned a zero score. This distinction was intended to avoid equating lack of disclosure with confirmed absence of an ESG practice.

For quantitatively reported indicators, min-max normalization was applied:

$$X_{ijt}^* = \frac{X_{ijt} - \min(X_j)}{\max(X_j) - \min(X_j)}. \quad (1)$$

For negatively oriented indicators, the reverse transformation was used:

$$X_{ijt}^* = \frac{\max(X_j) - X_{ijt}}{\max(X_j) - \min(X_j)}, \quad (2)$$

where X_{ijt} represents the value of indicator j for bank i in year t . Higher normalized values therefore consistently represent stronger ESG performance.

The dimension scores were calculated as the arithmetic mean of valid indicators:

$$E_{it} = \frac{1}{n_E} \sum_{j=1}^{n_E} E_{ijt}^*, \quad (3)$$

$$S_{it} = \frac{1}{n_S} \sum_{j=1}^{n_S} S_{ijt}^*, \quad (4)$$

$$G_{it} = \frac{1}{n_G} \sum_{j=1}^{n_G} G_{ijt}^*, \quad (5)$$

where n_E , n_S , and n_G denote the number of valid indicators contributing to each dimension. The resulting scores range from 0 to 1, with higher values indicating stronger observed ESG performance. An overall ESG score was constructed using a weighted additive approach:

$$ESG_{it} = w_E E_{it} + w_S S_{it} + w_G G_{it}, \quad (6)$$

with weights of 30% for Environmental, 25% for Social, and 45% for Governance:

$$ESG_{it} = 0.30E_{it} + 0.25S_{it} + 0.45G_{it}. \quad (7)$$

The weighting structure reflects the relative importance assigned to the three dimensions within the banking-specific assessment framework, with greater weight assigned to Governance because of its relevance to risk oversight, transparency, internal controls, and institutional accountability. Importantly, these weights are construction parameters of the composite ESG index and are not estimated coefficients. Therefore, the 45% Governance weight is not interpreted as evidence that Governance explains 45% of financial performance and does not constitute independent evidence for *H2*. MCDA was used to provide a structured comparative assessment of ESG performance across the selected banks. It serves a measurement and comparative-ranking function, while Pearson correlation and OLS regression provide the principal statistical evidence for examining the hypotheses. Pearson correlation analysis was used to assess the direction and strength of linear associations between ESG measures and financial-performance indicators. The analysis considers the overall ESG score and the three ESG dimensions in relation to ROA, ROE, NIM, and C/I. The correlation coefficient is expressed as:

$$r_{XY} = \frac{\text{cov}(X, Y)}{\sigma_X \sigma_Y}, \quad (8)$$

where X represents an ESG measure, and Y represents a financial-performance indicator. The analysis uses the underlying 27 bank-year observations rather than bank-level averages. Pearson correlation measures linear association and does

not establish causality. Given the small sample and repeated observations, statistical significance is interpreted cautiously. To examine the association between individual ESG dimensions and profitability, an OLS model was estimated with ROA as the dependent variable:

$$ROA_{it} = \alpha + \beta_1 G_{it} + \beta_2 E_{it} + \beta_3 S_{it} + \varepsilon_{it}, \quad (9)$$

where ROA_{it} denotes return on assets, G_{it} , E_{it} , and S_{it} represent the three ESG dimensions, α is the intercept, β coefficients represent estimated associations, and ε_{it} is the error term. The model is estimated using 27 bank-year observations. The coefficients represent conditional statistical associations between each ESG dimension and ROA, holding the other ESG dimensions constant. The model is interpreted as exploratory rather than causal because it does not include a comprehensive set of bank-specific and macroeconomic controls and contains repeated observations for only three banks. Accordingly, conventional standard errors and p-values should be interpreted with caution. The quantitative analysis was complemented by evidence from 52 banking professionals from the Central Bank of the Republic of Armenia and selected commercial banks, including Ardshinbank, Ameriabank, ACBA Bank, Evocabank, AraratBank, AMIO Bank, and VTB-Armenia Bank. A purposive sampling approach was used to select professionals working in areas relevant to ESG and banking, including risk management, compliance, governance, banking operations, business conduct supervision, and ESG-related activities. Data were collected through face-to-face and telephone interactions. The expert evidence is used as complementary contextual information rather than as statistically representative evidence for the Armenian banking sector. Because the item-level dataset and full questionnaire are not available for independent verification, the previously reported Cronbach's alpha of 0.82 is not used in the revised analysis. The empirical design tests two hypotheses.

The MCDA weighting structure is not treated as independent evidence for *H2* because its weights are predetermined construction parameters rather than estimated financial-performance effects. The quantitative analysis is limited to three banks and 27 bank-year observations, restricting statis-

tical power and generalizability. The repeated-observation structure also means that the observations cannot necessarily be treated as fully independent. The OLS specification does not include comprehensive bank-specific or macroeconomic controls, so omitted-variable bias and endogeneity cannot be excluded. In addition, ESG measures are based on publicly disclosed information and structured coding, meaning that differences in disclosure practices may affect measured ESG performance. The resulting scores should therefore be interpreted as structured comparative measures rather than externally certified ESG ratings. Finally, the purposive expert sample provides contextual rather than statistically representative evidence. These limitations support interpreting the findings as exploratory and associational. Future research could extend the sample, incorporate additional controls, apply appropriate panel-data methods, and introduce dedicated measures of financial risk and nonlinear relationships.

3. RESULTS

The empirical analysis covers 27 bank-year observations for Ardshinbank OJSC, Ameriabank CJSC, and ACBA Bank OJSC over 2017–2025. The descriptive results indicate differences in profitability, interest-margin performance, and operating efficiency across the selected banks. Ardshinbank recorded the highest average ROA (2.60%) and ROE (15.10%), followed by ACBA Bank (2.25% and 12.90%, respectively) and Ameriabank (1.95% and 11.60%). A similar pattern was observed for NIM, with average values of 3.45% for Ardshinbank, 3.20% for ACBA Bank, and 3.05% for Ameriabank. The average C/I ratio was 41.8% for Ardshinbank, 45.2% for ACBA Bank, and 49.5% for Ameriabank. Since lower C/I values generally indicate stronger operating efficiency, Ardshinbank recorded the lowest average ratio among the selected institutions. The disclosure-based ESG assessment also indicates differences among the selected banks. Using the predetermined weights of 30% for Environmental, 25% for Social, and 45% for Governance, the composite ESG scores were approximately 86/100 for Ardshinbank, 81/100 for ACBA Bank, and 73/100 for Ameriabank. The relative ESG ranking broadly corresponds to the descriptive ranking of several financial-performance

indicators. Ardshinbank records the highest composite ESG score as well as the highest average ROA, ROE, and NIM and the lowest average C/I ratio. ACBA Bank occupies an intermediate position, while Ameriabank records comparatively lower composite ESG and several financial-performance values. This correspondence is descriptive and does not establish causality. Moreover, the 45% Governance weight is a predetermined construction parameter of the composite index and should not be interpreted as evidence of a stronger financial effect of Governance. The individual E, S, and G scores are therefore analyzed separately below. Pearson correlation analysis was conducted using the 27 bank-year observations. Overall ESG performance shows a positive correlation with ROA ($r = 0.64$) and ROE ($r = 0.60$). ESG performance is also negatively correlated with the C/I ratio ($r = -0.52$), which is directionally consistent with an association between stronger ESG performance and lower operating costs relative to income. The dimension-level results indicate that Governance has the strongest observed association with the principal profitability measures among the three ESG dimensions. Taken together, the correlation results provide preliminary empirical support for *H1* because overall ESG performance is positively associated with both ROA and ROE. They also provide evidence relevant to *H2* because Governance exhibits the strongest observed association among the individual ESG dimensions. These findings represent statistical associations and should not be interpreted as causal effects. To examine the simultaneous associations of the three ESG dimensions with profitability, an OLS model was estimated with ROA as the dependent variable:

$$ROA_{it} = \alpha + \beta_1 G_{it} + \beta_2 E_{it} + \beta_3 S_{it} + \varepsilon_{it}. \quad (10)$$

The estimated coefficients are positive for all three ESG dimensions. Governance has the largest coefficient, $\beta = 0.037$ ($p = 0.001$), followed by Environmental, $\beta = 0.023$ ($p = 0.012$), and Social, $\beta = 0.019$ ($p = 0.018$). Thus, within the estimated specification, higher values of each ESG dimension are associated with higher ROA when the other ESG dimensions are held constant. The ordering of the coefficients—Governance, Environmental, and Social—is consistent with *H2*. The OLS results should nevertheless be interpreted as exploratory

conditional associations rather than causal effects, given the small sample, repeated observations of three banks, and absence of comprehensive bank-specific and macroeconomic controls. The MCDA assessment produces composite ESG scores of approximately 86/100 for Ardshinbank, 81/100 for ACBA Bank, and 73/100 for Ameriabank. The resulting comparative order is therefore consistent with the composite ESG results presented above. The MCDA assessment provides a structured comparison of ESG performance but does not constitute an independent statistical test of the hypotheses. In particular, the 45% Governance weight is a predetermined index-construction parameter and should not be interpreted as an estimated contribution of Governance to profitability. The quantitative analysis was complemented by evidence from 52 banking professionals representing the Central Bank of the Republic of Armenia and selected commercial banks. The responses indicate that ESG-related considerations are relevant to banking practices, particularly in relation to governance, risk oversight, compliance, transparency, responsible financing, and customer-related practices. The professional evidence also emphasizes the importance of governance mechanisms, including institutional accountability, risk management, compliance, and transparency. However, because the respondents were selected purposively, these findings provide contextual rather than statistically representative evidence and are not treated as an independent statistical test of *H2*.

H1: ESG performance is positively associated with the profitability of Armenian commercial banks. *H1* receives preliminary empirical support. Overall ESG performance is positively associated with ROA ($r = 0.64$) and ROE ($r = 0.60$), while the OLS model reports positive coefficients for all three ESG dimensions in relation to ROA.

H2: Governance demonstrates a stronger observed association with bank financial performance than the Environmental and Social dimensions. *H2* also receives preliminary empirical support. Governance has the largest OLS coefficient ($\beta = 0.037$), compared with Environmental ($\beta = 0.023$) and Social ($\beta = 0.019$). The dimension-level correlation results are directionally consistent with this ordering. The conclusion concerning *H2* is based on the comparative statistical evidence and not on

the predetermined MCDA weights. Overall, the results indicate a consistent positive association between ESG performance and selected measures of financial performance in the analyzed bank-year observations, while Governance demonstrates the strongest observed association among the three ESG dimensions. These findings are exploratory and associational and should not be interpreted as causal or sector-wide evidence.

4. DISCUSSION

The findings provide exploratory evidence of a positive association between ESG performance and financial performance in the selected Armenian commercial banks. The positive relationships between overall ESG performance and ROA and ROE, together with the negative association with the Cost-to-Income ratio, suggest that stronger ESG practices tend to coexist with higher profitability and operating efficiency in the observed bank-year sample. These results are broadly consistent with the wider literature reporting positive or context-dependent relationships between ESG practices and financial performance (Albuquerque et al., 2019; Friede et al., 2015; Lins et al., 2017). However, the present results do not establish causality, as reverse causality, omitted variables, and bank-specific characteristics cannot be excluded. The negative association between ESG performance and the Cost-to-Income ratio is particularly relevant to banking efficiency. ESG-related practices may contribute to efficiency through stronger internal controls, improved governance, employee development, transparency, and more effective organizational processes. Nevertheless, C/I is an efficiency measure rather than a direct indicator of financial risk, and the observed relationship should not be interpreted as evidence that ESG performance reduces banking risk. A central finding is the stronger observed association of Governance with profitability relative to the Environmental and Social dimensions. Governance has the largest OLS coefficient, while the dimension-level correlation results are directionally consistent with this ordering. This finding is consistent with the institutional characteristics of banking, where board oversight, risk management, internal controls, regulatory compliance, transparency, and accountability are closely connected to financial

and operational outcomes (Minton et al., 2014). Governance mechanisms may influence several processes through which banks generate and protect financial performance. Effective oversight can strengthen strategic monitoring, while risk-management and internal-control systems may reduce operational and regulatory vulnerabilities. Transparency and accountability may additionally support stakeholder confidence in institutions operating under substantial information asymmetry. These mechanisms may help explain why Governance demonstrates a stronger observed financial association in the present sample. The positive estimated relationships of Environmental and Social performance with ROA also indicate that these dimensions may be financially relevant. Environmental practices may be connected with sustainable financing, resource efficiency, and adaptation to emerging sustainability requirements, while Social practices may influence employee development, customer relationships, financial inclusion, and stakeholder trust (Cornett et al., 2016; Servaes & Tamayo, 2013). Their smaller estimated coefficients in the present analysis should not, however, be interpreted as evidence that these dimensions are economically unimportant. Importantly, the stronger observed role of Governance is based on the statistical results rather than on the 45% Governance weight used to construct the composite ESG index. The MCDA weights are predetermined methodological parameters and therefore cannot independently demonstrate a stronger financial effect of Governance. The findings extend the existing literature by providing country-specific evidence from an emerging banking market in which standardized ESG ratings and long historical datasets are less consistently available. Previous research has documented heterogeneous ESG–financial performance relationships across countries and institutional settings, emphasizing the importance of regulatory, disclosure, and institutional conditions (Krüger, 2015; Wu & Shen, 2013). The present results are broadly compatible with this literature while indicating that Governance may have particular relevance within the Armenian banking context. The study also extends previous Armenian evidence by examining the three ESG dimensions separately rather than relying exclusively on an aggregate ESG measure. This distinction is relevant because aggregate scores can conceal differences among

Environmental, Social, and Governance practices. The disclosure-based framework further provides a structured approach for measuring ESG performance where consistently comparable external ratings are unavailable, addressing a measurement challenge identified in the broader ESG literature (Berg et al., 2022). The correspondence between the MCDA-based ESG ranking and the descriptive financial-performance ranking provides additional contextual evidence. However, this convergence should be interpreted as descriptive rather than causal evidence. The principal statistical evidence remains the correlation and OLS analysis. The professional evidence from 52 banking practitioners provides further contextual support for the importance of governance, compliance, risk oversight, transparency, and institutional accountability in ESG implementation. Because the expert sample was purposive, however, it serves as triangulating evidence rather than statistically representative evidence of the Armenian banking sector. The findings suggest that ESG integration in banking may be closely connected with core institutional processes rather than being limited to reporting or reputational activities. In particular, governance, risk management, compliance, internal control, transparency, and stakeholder management appear relevant to the observed ESG–financial performance relationship. For bank management, the results indicate that ESG integration can be considered alongside existing governance and risk-management processes. For regulators and policymakers, the findings provide analytical evidence concerning the relevance of ESG-related governance, transparency, risk oversight, and accountability. Given the exploratory design, these findings should be treated as inputs for further analysis rather than as a basis for prescriptive regulatory conclusions. Several limitations constrain the interpretation of the findings. First, the quantitative analysis covers only three banks and 27 bank-year observations, limiting statistical power and generalizability. Second, repeated observations of the same institutions mean that the observations cannot necessarily be treated as fully independent. Third, the OLS specification does not include comprehensive bank-specific or macroeconomic controls, so omitted-variable bias and endogeneity cannot be excluded. Fourth, ESG performance is measured from publicly disclosed information and structured coding. Differences

in disclosure quality and reporting intensity may therefore affect the resulting scores, even though the coding framework distinguishes non-disclosure from documented non-implementation. Fifth, the predetermined MCDA weights represent analytical choices rather than estimated economic effects. Finally, the purposive expert sample does not support population-level statistical inference, and the analysis does not formally examine nonlinear, dynamic, or causal relationships. Future research could expand the sample and observation period and apply appropriate panel-data methods with bank-specific and macroeconomic controls.

Additional financial-risk indicators, including non-performing loans, capital adequacy, loan-loss provisions, and earnings volatility, could be incorporated. Future studies could also examine lagged ESG effects, nonlinear relationships, and causal mechanisms using larger national or cross-country samples. The findings therefore provide preliminary country-specific evidence on the ESG–financial performance relationship while highlighting the need for broader datasets and more rigorous longitudinal methods to establish whether the observed associations persist under stronger controls.

CONCLUSIONS

This study aimed to examine the association between Environmental, Social, and Governance (ESG) performance and the financial performance of selected Armenian commercial banks and to assess the relative role of the Environmental, Social, and Governance dimensions over 2017–2025. The empirical results provide exploratory evidence of a positive relationship between overall ESG performance and bank profitability. ESG performance is positively associated with ROA ($r = 0.64$) and ROE ($r = 0.60$) and negatively associated with the Cost-to-Income ratio ($r = -0.52$), indicating a consistent relationship with profitability and operating efficiency in the observed sample. The OLS results further show positive estimated coefficients for Governance ($\beta = 0.037$, $p = 0.001$), Environmental ($\beta = 0.023$, $p = 0.012$), and Social ($\beta = 0.019$, $p = 0.018$) performance, with Governance demonstrating the strongest observed association with ROA. These findings provide preliminary support for both hypotheses. The results also demonstrate the usefulness of a structured, disclosure-based ESG framework in an emerging-market banking context where consistently comparable external ESG ratings are limited. The separation of aggregate ESG performance from the individual E, S, and G dimensions enables the analysis to identify differences in their observed financial associations. Complementary evidence from 52 banking professionals provides contextual support for the relevance of governance, risk management, compliance, transparency, and accountability in ESG implementation. From a practical perspective, the findings indicate that ESG integration may be most effectively considered as part of core banking processes, particularly governance, risk management, internal control, compliance, and transparency. However, the results should not be interpreted as causal or representative of the entire Armenian banking sector. The analysis is limited to three banks and 27 bank-year observations, and the absence of comprehensive bank-specific and macroeconomic controls restricts causal inference. Future research should expand the sample and observation period, incorporate additional controls and financial-risk indicators, and apply appropriate panel-data, lagged, nonlinear, or dynamic specifications. Comparative research across emerging banking markets could further examine whether the observed prominence of Governance is specific to Armenia or reflects a broader institutional pattern.

AUTHOR CONTRIBUTIONS

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APPENDIX A

The following semi-structured interview guide was used to obtain complementary contextual evidence from banking professionals regarding ESG practices, financial performance, and governance in Armenian banking institutions.

Section 1. ESG Financing

1. What financial resources did your bank attract for ESG-related purposes during 2017–2025?

Section 2. Financial Performance

2. What financial performance outcomes, such as profitability, investment returns, or cost efficiency, have been observed in relation to ESG-related financing activities in your bank?

Section 3. ESG Governance

3. Does your bank have a dedicated committee, governing body, or senior-management function responsible for ESG- or sustainability-related decision-making?

Section 4. Corporate Governance Practices

4. To what extent are decision-making processes within your bank aligned with internationally recognized corporate governance practices?

Interview Procedure: The interviews followed the above guide, with questions clarified verbally when necessary. Data were collected through face-to-face and telephone interviews. The resulting evidence was used as complementary contextual information and was not treated as statistically representative of the Armenian banking sector.