ESG dimensions and bank performance: an empirical investigation in Italy

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Abstract

Purpose – This study aims to investigate the impact of environmental performance, social responsibility and corporate governance (ESG) on bank performance (BP) in the Italian banking sector. It analyzes the relationships between 10 dimensions of ESG pillars and BP indicators during the period 2016–2020.

Design/methodology/approach – This study examines a sample of 105 Italian banks and develops three econometric models to verify the effect of ESG initiatives on BP indicators. The independent variables are the ESG dimensions collected from the Refinitiv database, whereas the explanatory variables are performance indicators measured through accounting and market variables.

Findings – The findings show that ESG policies negatively affect operational and market performance in the banking sector, suggesting that Italian banks have not fully embraced strong sustainability procedures. However, the relationships between ESG dimensions are mixed if measured individually. The results show a significant positive impact of emission and waste reductions on financial and operating performance, but regarding social aspects, it is proved that better product responsibility decreases accounting performance.

Research limitations/implications – This study offers an in-depth examination of ESG practices in relation to current and future performance. In particular, the findings provide practitioners and academics with an actual set of predictors in the ESG area to improve BP.

Originality/value – To the best of the authors' knowledge, this is the only study that has investigated the impact of ESG issues on BP in Italy. Few prior studies have used all dimensions of ESG policies at a disaggregated level to investigate their effect on various performance indicators.

Keywords Performance, ESG dimensions, Environmental performance, Social responsibility, Corporate governance, Banking sector

Paper type Research paper

1. Introduction

In recent years, environmental performance, social responsibility and corporate governance (ESG) have become increasingly relevant for banks and financial institutions. ESG issues are not only an ethical question but also becoming an economic question as they have a direct influence on economic stability. Client and investor expectations regarding the integration of ESG factors into their lending, investment and product portfolios can be a challenge for financial institutions. Intensified investor demand for sustainable products and the pressure from regulatory bodies highlight the need for banks to consider ESG risks in their risk management frameworks. It is widely believed that financial institutions should be considered as both producers of financial values and drivers of a more sustainable development. Therefore, an increasing number of financial intermediaries have begun to include ESG activities in their business models. The inclusion of ESG factors in risk processes and credit policies may affect the prudential requirements and become strategic for both banks and public authorities.

In Europe, the adoption of ESG factors among banks is also due to the commitment of the European Commission to improve the integration of ESG parameters in all aspects of the

financial system. In addition, it should be noted that the financial crisis played a crucial role for the development of ESG practices in the banking sector because credit institutions began to adopt these practices to rebuild their confidence with customers. The "desirable scenario" of ESG policies would be the greater adoption of corporate governance standards of the highest quality while dropping environmental impacts and engaging in social responsibility programs. The social, environmental and governance practices are supposed to be significant for all stakeholders, although conflicting managerial interests may undermine the improvement of ESG policies and the profitability imperative may go against the adoption of better ESG policies.

This study aims to find evidence regarding whether the "desirable scenario" is practicable for Italian banks. The association between ESG policies and corporate financial performance has been explored for banks in prior literature (Buallay, 2019a; Cornett *et al.*, 2016; Esteban-Sanchez *et al.*, 2017; Gangi *et al.*, 2019; Siueia *et al.*, 2019), but empirical results are limited and mixed within the European banking sector. In addition, this is the only study investigating the impact of ESG on bank performance (BP) in Italy. We selected large Italian banks as they play an important role in the growth of the Italian and European economies. Among European countries, Italy is one of the leading countries when it comes to encouraging sustainable finance and in such a context sustainability reporting acts as a new disclosure philosophy focused on creating future value for the business policy. Moreover, the Italian banking system has experienced a higher level of competition and significant ownership changes in the past few years. These phenomena have had a significant impact on the performance of all Italian banks such as a decline in net income from traditional banking business, descending rigidity of operating costs and a growing share of gross income offset by loan losses. These tendencies stemmed from structural factors and especially from significant inefficiencies in management and corporate governance.

This study contributes to the literature in several ways. First, it deepens prior studies on sustainability reporting in relation to different perspectives of business performance. Second, the findings are expected to widen the understanding of ESG policies in the Italian banking sector, which will eventually influence the European banking sector's sustainable development. Third, this study includes an in-depth analysis performed on each dimension of the three ESG pillars, at a disaggregated level. The proposed models contribute to the innovation of our research as few prior studies have used all dimensions and indicators of ESG policies from Refinitiv database. We look closely at the ESG dimensions' scores and discover different frameworks that could provide both practitioners and policymakers with an effective set of predictors to improve BP.

We analyze the relationship between ESG dimensions, collected from the Refinitiv database, and the corporate performance of a sample of 105 Italian banks for the period 2016–2020. Ten ESG dimensions from Refinitiv are included in three panel regression models and four performance indicators are used as dependent variables to have a holistic perspective on BP.

The paper is organized as follows. Section 2 presents the literature review and hypotheses development. Section 3 defines the data sample and the research methodology, as well as describes the statistical methods and the variables and predictors used in the econometric models. Section 4 presents and discusses the empirical results. Section 5 concludes the paper and discusses the implications and limitations of the study as well as recommendations for further research.

2. Literature review

The general issues of ESG reporting have been widely addressed in prior literature (Buallay, 2019b; Ching *et al.*, 2017; Gallego-Álvarez and Ortas, 2017; Hussain *et al.*, 2018;

Shad *et al.*, 2019). According to the stakeholder theories, ESG engagement is a source of competitive advantage where long-term core strategies embraced agents' interests and stakeholders' benefits including employees, consumers, governments and local communities (Khlif *et al.*, 2015). In contrast, according to the neoclassic theory of Friedman (2007), there is a negative relationship between ESG and financial performance because ESG practices could increase costs, harm corporate performance and impair competitive advantage. In this sense, some scholars claim that social and environmental objectives would detract managers from aiming to increase shareholder value. In line with the neoclassic theory, the satisfaction of stakeholder groups other than shareholders may negatively affect profit maximization and value creation for owners and managers (Galant and Cadez, 2017; Kusi *et al.*, 2018).

In particular, the relationship between ESG policies and financial performance has been explored in depth from theoretical and empirical perspectives but there are few studies focusing on ESG strategies in the banking and financial service sectors (Bătae *et al.*, 2021; Branco and Rodrigues, 2008; Buallay, 2019a; El Khoury *et al.*, 2021). Moreover, there is a lack of research on this topic specifically within the Italian banking sector.

Studies on the relationship between ESG disclosure and financial performance in the banking sector have provided conflicting findings. Many studies have demonstrated a positive relationship for banks in developed and developing countries (Akdogan *et al.*, 2020; Buallay *et al.*, 2021; Cornett *et al.*, 2016; Oino, 2019; Shen *et al.*, 2016; Wu and Shen, 2013) while other studies have tested no significant relationship between ESG and financial performance for banks at the country level (i.e. Matuszak and Różańska, 2017; Soana, 2011).

Conflicting results are explained by the need for additional measures to integrate sustainability policies into banks' operational activities (Buallay, 2019a). The relationship between ESG dimensions and performance is more complex than a simple cause-and-effect link. Hence, each element of ESG strategy needs to be further investigated as significant relationships could be expected between the individual ESG dimensions and corporate financial performance. We analyze these relationships by disaggregating ESG pillars to support our tests from the previous studies.

2.1 ESG pillars and bank performance

ESG engagement is a complex phenomenon, with multiple facets, whereas the acronym ESG is an abbreviated term for the cumulative effect of environmental, social and governance policies, opportunities and challenges (Chouaibi and Affes, 2021; Nizam *et al.*, 2019). A bank should be able to disseminate its environmental commitments, social responsibility initiatives and governance quality policies to its customers and business partners.

2.2 Environmental aspects and bank performance

Banks are directly involved in environmental safeguard actions both inside the organization and toward their business partners and clients. Hence, the development of a comprehensive environmental management system could lead to the adoption of an environmental strategy for internal use and in favor of borrowers and other customers. As such, a bank's environmental commitment can be examined from three perspectives (Gangi *et al.*, 2019; Jacobs *et al.*, 2010; Laguir *et al.*, 2018): financing environmentally sensible projects, reducing the risk of loaning funds to dirty industries and the efficient use of resources within the bank itself. Hence, the integration of environmental considerations into lending policies and the supply of "green" financial products and services (e.g. environmental advisory services, climate products, socially responsible saving instruments)

are the means through which a bank signals its commitment to environmental policies (Gangi *et al*., 2019; Scholtens, 2009).

Environmental initiatives (e.g. paper and water reduction policies and electricity savings plans) can positively improve competitive advantages of environmentally conscious banks to the extent that incremental environmental investments will remain beneficial (Finger *et al*., 2018; Miralles-Quirós *et al*., 2019). Specifically, proactive environmental management can guide the development of unique organizational capabilities for environmental impact reduction as a source of competitive advantage.

For instance, a bank's reputation can be improved through announcements of philanthropic projects for environmental causes, green building certifications and the attainment of ISO 14001 certification, in order to capitalize on public call for corporate environmental sensitivity (Chang and Devine, 2019). In this regard, the resource-based view suggests that environmental enhancements can lead to increased profitability when a bank is involved in environmental prevention activities for either itself or its clients. According the stakeholder theory, a bank has the responsibility toward a broad range of stakeholders (customers, suppliers, government, employees) while spreading environmental values in its value chain. In this regard, environmental philanthropy develops a good reputation among stakeholders (Jacobs *et al*., 2010). The relationship between the quality of corporate environmental management and BP seems to be positive, but research findings are mixed across economic sectors. According to the stakeholder and resource-based theories, there is a positive relationship between environmental practices and BP (Albertini, 2013). In line with the stakeholder theory and the resource-based theories, the following hypothesis is tested:

> *H1*. There is a positive relationship between environmental aspects and bank performance.

2.3 Social responsibility and bank performance

The intermediation function of banks is typically related to the notion of corporate social responsibility (CSR). In this regard, a bank's social responsibility refers to ethical investment funds, the financing of nongovernmental organizations, risk expertise for customers, cost-efficient e-payments and financial education for the population, and broadly the financial inclusion of large parts of society (Avrampou *et al*., 2019; Birindelli *et al*., 2015). A sustainable banking sector is crucial for a healthy economy (Aras *et al*., 2018) and the CSR strategies of banks are a means of guaranteeing trust in relationships with stakeholders (Carnevale and Mazzuca, 2014; El Khoury *et al*., 2021; Pérez and del Bosque, 2015; Shen *et al*., 2016). In particular, the adoption of CSR strategies has a market signaling effect because it allows each bank to gain the trust of investors and a differentiation advantage. Strategic CSR calls for a "win-win" scenario in which the bank takes a socially responsible standpoint to reinforce its market position and to increase profitability (Zagorchev and Gao, 2015).

CSR in the banking sector has a direct effect on the bank's employees, communities and customers and indirectly through the realization of activities and projects by entrepreneurs, organizations and institutions that become bank customers. Based on stakeholder theory, CSR implies not damaging the interests of stakeholders (i.e. investors, employees, unions, customers, suppliers, the state and the communities). In particular, satisfying the needs and demands of different stakeholders would lead to higher efficiency, product differentiation and competitive advantage. In line with the resource-based view, CSR can also help banks discriminate themselves from competitors and increase the public's perception of their activities (Gangi *et al*., 2019). The banking sector relies on preserving a good reputation and improving customer loyalty (Shen et al, 2016) based on trust and continuing business opportunities (Jo *et al*., 2015). To develop reputational capital, banks should communicate that their intermediation role in society goes "beyond profits" (Gangi *et al*., 2019) so that

borrowers even pay a premium on loan rates to banks that enjoy the reputation to create a competitive advantage.

According to the previous literature, social responsibility (Bénabou and Tirole, 2010) improves banks' long-term financial performance and market position (Velte, 2017), public perception (Gangi et al., 2019) and reputation (Buallay et al., 2021; Salman and Laouisset, 2020). The social impact hypothesis is derived from stakeholder theory and expects that an increase in the level of CSR is strongly associated with an increase in financial performance (Wu and Shen, 2013; Wu and Shen, 2017). For example, Shen et al. (2016) showed that non-CSR banks underperform compared to CSR-prone banks in terms of profitability and efficiency in the context of data analysis from global banks in 18 countries.

Based on prior theoretical and empirical research, we hypothesize that:

   H2. There is a positive relationship between CSR activities and bank performance.

2.4 Corporate governance and bank performance

According to the agency theory, better corporate governance contributes to higher performance. Governance quality is a combined effect of a set of factors such as cultural diversity and gender equality inside the board, the board size, director competence and expertise, director independence, CEO–chairperson duality, executive remuneration and risk governance. Hence, companies must innovate their business models, reconceive their value chain structures and rethink governance mechanisms (Youssef and Diab, 2021) to improve financial performance (Centobelli et al., 2020; Elali, 2021). Based on the agency theory, strong corporate governance mechanisms should be able to align managers and shareholders' interests (Grove et al., 2011). Banks have unique particularities and regulators play an important role by putting pressure on banking institutions to implement efficient and safe corporate governance structures (John et al., 2016) because of the complexity of the business and the weighty regulatory environment.

There are several studies about the impact of corporate governance quality on financial performance in the banking sector (Anginer et al., 2018; Aslam and Haron, 2020; Buallay, 2019b; Dalwai et al., 2015; Esteban-Sanchez et al., 2017; Ghosh, 2017; Harkin et al., 2020; Maxfield et al., 2018; Nawaz, 2017; Nobanee and Ellili, 2022; Peni and Vähämaa, 2012; Shakil et al., 2019). In this regard, some studies demonstrated that effective corporate governance increases financial performance and reduces agency problems (Esteban-Sanchez et al., 2017; Miras-Rodríguez et al., 2015; Orazalin and Mahmood, 2019; Soana, 2011). On a more detailed level, governance practices improve performance by boosting reputation, increasing supervision and mitigating mismanagement (Zehri and Zgarni, 2020). Prior literature assumed that a bank's good reputation is based, among other things, on the careful planning of business processes, a clear governance structure and an efficient system of internal control. In this sense, the agency theory predicts that managerial and board incentives represent one of the critical features of corporate governance to strengthen BP (Harkin et al., 2020). This will contribute to a positive association between governance and financial performance as supported by Soana (2011), Miras-Rodríguez et al. (2015), Esteban-Sanchez et al. (2017) and Miras-Rodríguez et al. (2015). Nevertheless, results in previous research are mixed. Maxfield et al. (2018) suggested that board independence is positively related to bank's performance. On the contrary, Shakil et al. (2019) found no association between the quality of corporate governance and BP. Hence, the relationship between corporate governance and BP remains controversial. Based on the agency theory, we formulate the following hypothesis:

   H3. There is a positive relationship between corporate governance and bank performance.

To get some perspective on the current state of the literature concerning the relationship between ESG dimensions and BP, we include the most important studies on this topic carried out to date as shown in Table 1.

3. Data and methodology

3.1 Sample selection

We constrain our sample to banks located in Italy and operating in the corporate form of a joint stock company. The data used in this study were collected from the Refinitiv database.

The selection procedures resulted in a sample of 105 Italian banks that are all active and geographically localized in Italy according to the Bankit bulletin statistics updated to December 31, 2020, for Italian banks.

Our initial data set of banks had to meet the following criteria:

- are Italian banks (either private or state-owned);
- are organized as joint-stock companies;
- are active during the period 2016–2020;
- have not been turned off or merged with other banks during the research period; and
- are not Italian branches of foreign banks.

Starting with the entire population of Italian banks, we first excluded from the sample any banks that did not meet these requirements (Menicucci and Paolucci, 2022). We collected our sample by considering the banks with five consecutive years of ESG and financial performance data collected from the Refinitiv (also called Refinitiv Eikon, hosted by Thomson Reuters) database. From data availability, the final sample to be examined includes 105 Italian banks and consists of 630 bank-year observations from 2016 to 2020. Yearly data for each ESG dimension within each bank were examined to assess comparability for 2016–2020. We selected this period as it is the most recent five consecutive year-period at the time of writing the article. The comparability implies that the bank had an ESG report for the respective year (as testified by Refinitiv); at least one specific ESG element was assessed for a certain dimension; and Refinitiv comprised a calculated score for each ESG dimension.

This data set presents three key advantages for the investigation of the relationship between ESG dimensions and BP. First, the study is not influenced by specific regulations because the selected banks are broadly subjected to similar regulatory and governance backgrounds. Second, our sample is large and homogenous as all the selected banks carry out similar activities, within the same regulatory environment and under the same supervision of the Bank of Italy and the European Central Bank. They are a mix of medium and large banks predominantly involved in corporate, investment and commercial banking activities with similar funding possibilities. Third, all of the banks have a large and complex management structure and they are characterized by similar business models.

3.2 Variables measurement

This study uses the data collected from Refinitiv as it is a trusted international databank that comprises one of the most complete ESG databases, with more than 450 historically available different ESG metrics. This database has a strong and clear methodology for ESG data available on its official website and is frequently used by researchers. Especially, the Refinitiv database was used in prior studies concerning the banking sector (Bătae *et al.*, 2021; Esteban-Sanchez *et al.*, 2017; Gangi *et al.*, 2019; Miralles-Quirós *et al.*, 2019; Shakil *et al.*, 2019). To the best of our knowledge, the present research is the first to analyze the

Table 1	Prior literature on ESG and performance in banking sector		
ESG variables	Analyzed dimensions	References	Effects on performance
Environmental	ISO 14001 certifications are related with a positive market reaction	Jacobs *et al.* (2010)	Positive
	Environmental philanthropy is considered positively by the market	Jacobs *et al.* (2010)	Positive
	Depositors prefer a bank's environment and heritage activities	Callado-Munoz and Utreto-González (2011)	Positive
	Eco-certification of buildings is related with increased retail revenues	Chang and Devine (2019)	Positive
	Banks engaged in environmental protection are also less risky	Gangi *et al.* (2019)	Positive
	Environmental financing positively impacts the bank's ROE	Nizam *et al.* (2019)	Positive
	Environmental performance positively affects bank's ROE and ROA	Shakil *et al.* (2019)	Positive
	Share price reaction to Equator Principles adoption is insignificant	Finger *et al.* (2018)	Insignificant
	Environmental costs adversely influence a firm's financial performance	Jo *et al.* (2015)	Negative
	Eco-certification of buildings is associated with increased retail revenues	Chang and Devine (2019)	Negative
Social	A sustainability report has a positive influence on the bank's stock price	Carnevale and Mazzuca (2014)	Positive
	A bank's degree of engagement in CSR activities is positively related to ROA and ROE	Shen *et al.* (2016), Wu *et al.* (2017)	Positive
	Employee relations are positively related to ROA	Esteban-Sanchez *et al.* (2017)	Positive
	Inclusion in a sustainability index is positively associated with ROA before the financial crisis	Forcadell and Aracil (2017)	Positive
	The product responsibility dimension acts as a significant factor in reducing company crash risk	Utz (2019)	Positive
	Access-to-finance for SMEs has a positive impact on ROE	Nizam *et al.* (2019)	Positive
	CSR disclosure is positively related to ROA and ROE for banks in Africa	Siueia *et al.* (2019)	Positive
	Product responsibility is a negative predictor of ROA and ROE	Esteban-Sanchez *et al.* (2017)	Negative
	Community involvement was a negative predictor of ROA during the financial crisis	Esteban-Sanchez *et al.* (2017)	Negative
Governance	Stronger corporate governance was associated with higher profitability (ROA) during the financial crisis	Peni and Vähämaa (2012)	Positive
	Financial institutions with better governance mechanisms has a higher Tobin's Q	Zagorchev and Gao (2015)	Positive
	Banks with better corporate governance	Esteban-Sanchez *et al.* (2017)	Positive
	Corporate governance index had a positive effect on average monthly stock returns during the financial crisis	Anginer *et al.* (2018)	Positive
	Corporate governance index has a nonsignificant effect on the bank's stock returns during the crisis	Aebi *et al.* (2012)	Insignificant
	Bank governance reform has a nonsignificant effect on ROA and ROE	Maxfield *et al.* (2018)	Insignificant
	Governance quality has an insignificant effect on a bank's profitability (ROA and ROE)	Shakil *et al.* (2019)	Insignificant
	Corporate governance index has a nonsignificant effect on ROA	Harkin *et al.* (2020)	Insignificant
	The relationship between the board composition index and stock returns was negative during the financial crisis	Beltratti and Stulz (2012)	Negative
	Banks with stronger corporate governance were associated with a lower Tobin's Q and stock returns during the financial crisis	Peni and Vähämaa (2012)	Negative
	Inclusion in a sustainability index is negatively associated with ROA	Forcadell and Aracil (2017)	Negative

three pillars of ESG performance in the Italian banking sector. Moreover, the main contribution of our research is the focus on all relevant dimensions of the Refinitiv ESG framework.

3.3 ESG indicators

The independent variable is measured using three ESG pillars (i.e. the environmental pillar [ENV], the social pillar [SOC], the governance pillar [GOV]) (de Villiers *et al.*, 2017) and a combined indicator of them (ESG_comb) that provides a comprehensive scoring of a bank's ESG performance according to previous banking studies (Buallay *et al.*, 2021; Esteban-Sanchez *et al.*, 2017; Peni and Vähämaa, 2012; Shakil *et al.*, 2019). A pillar is the weighted average of 10 related dimensions, while each ESG dimension is composed of individual elements. ESG data used in this study are detailed in Table 2. The following discussion describes the dimensions relating the ESG pillars in Refinitiv database, all of them being relevant to this study.

Refinitiv database includes 34 indicators relating to the environmental pillar score (ENV) grouped in three dimensions: resource use efficiency (ENV_Ru), emission and waste reduction (ENV_Em) and environmental innovation (ENV_In). Env_Ru comprises the following elements: environmental management systems, energy and water efficiency policies, renewable energy use ratio, supply chain management and monitoring and green buildings. Env_Em refers to emission policies and targets, total CO_2 emissions, waste management, e-waste reduction, climate change opportunities, environmental restoration and staff transportation impact reduction. Env_In groups the data related to environmental products, environmental project financing, environmental assets under management and clean energy products.

The Refinitiv Eikon database comprises 40 indicators related to the social pillar score (SOC) and is clustered in four dimensions: workforce (Soc_Wf), human rights (Soc_Hr), community (Soc_Com) and product responsibility (Soc_Prd).

Workforce (Soc_Wf) comprises data on training and development policy, health and safety policy, equal opportunities, diversity, salary gaps, turnover and flexible working hours of employees. The human rights (Soc_Hr) dimension includes data on child labor, human right and freedom of association. The community (Soc_Com) dimension contains data on bribery, anti-money laundering, fair competition, business ethics, community lending and community involvement. Finally, product responsibility (Soc_Prd) covers indicators on customer satisfaction, data privacy policy (part of the General Data Protection Regulation) and quality management systems.

The governance pillar (GOV) includes three dimensions that are relevant for this research: management and oversight (Gov_Mo), stakeholder rights (Gov_Shr) and CSR strategy (Gov_Csr). The management and oversight score (GOV_Mo) represents the aggregate score of corporate board characteristics. It compiles data related to corporate boards (structure policy, functions, size, attendance, affiliations, nonexecutive and independent members, average tenure, cultural and gender diversity, background and skills), compensation (the compensation committee and its independence, sustainability incentives, policy improvement tools, shareholders' approval of stock compensation plans), CEO–chairperson separation, the nomination committee and its independence, remuneration packages linked to the total stakeholders' return, the succession plan, internal audits, the audit committee independence and external consultants. The shareholder rights (GOV_Shr) dimension includes data on equal shareholders' rights and specific policies, shareholders' vote on executive pay, voting cap percentage, veto power or golden shares, director election majority requirement, anti-takeover devices, auditor tenure and nonaudit to audit fees ratio. The CSR strategy dimension (Gov_Csr) is an aggregate score that

Table 2	Explanation of variables		
Variable	*Description measure*	*Formula*	*Reference*
Dependent variables			
Bank performance variables			
Return on equity (ROE)	Profitability of investment equity (financial performance)	Net income after taxes divided by average total equity	Buallay *et al.* (2020b); Esteban-Sanchez *et al.* (2017)
Return on assets (ROA)	Profitability of total assets (operational performance)	Net income after taxes divided by average total assets	Buallay *et al.* (2020b); Esteban-Sanchez *et al.* (2017)
Tobin's Q (TQ)	Ratio of the market value of the bank to the replacement cost of its assets (market performance)	Sum of the market value of equity and total book value of liabilities, divided by total book value of assets. The market value of equity is calculated as the total number of outstanding shares multiplied by year-end closing price	Albertini (2013)
Stock market return (SR)	Change in stock price over the analyzed period	Closing price at the end of time t_1 minus the closing price at the end of time t_0, divided by the closing price at time t_0	Miralles-Quirós *et al.* (2019)
Independent variables			
ESG predictors – ESG combined, ESG pillars and ESG dimensions (source: Refinitiv)			
ESG combined (ESG_comb)	Comprehensive scoring of the sustainability impact and corporate conduct	Weighted average of the ESG scores and ESG controversies (captured from global media sources)	
Environmental (ENV)	The relative sum of category weights for the environmental categories	It is based on three dimensions: ENV_Ru (resource use efficiency), ENV_Em (emission and waste reduction) and ENV_In (environmental innovation) ENV_Ru = bank's efficiency in reducing the use of materials, energy or water and capacity to find more eco-efficient solutions for the business processes ENV_Em = bank's commitment and effectiveness in reducing environmental emissions and waste in operational activities ENV_In = bank's capacity to reduce the environmental burdens and costs for its clients and to create new opportunities for eco-designed products and services	
Social (SOC)	The relative sum of category weights for the social responsibility categories	It is based on four dimensions: SOC_Wf (workforce), SOC_Hr (human rights), SOC_Com (community) and SOC_Prd (product responsibility) SOC_Wf = bank's effectiveness toward job satisfaction, safe and healthy workplace, while developing both equal and diversity opportunity SOC_Hr = bank's effectiveness in respecting fundamental human rights conventions SOC_Com = bank's commitment to being a good citizen, respecting business ethics and protecting public health SOC_Prd = bank's capacity to offer high quality products and services, regarding the customers' health and Safety, data privacy and integrity	
Governance (GOV)	The relative sum of category weights for the governance categories	It combines three dimensions: GOV_Mo (management and oversight), GOV_Shr (shareholders rights) and GOV_Csr (CSR strategy) GOV_Mo = bank's commitment and effectiveness in following corporate governance principles GOV_Shr = bank's effectiveness in treating its shareholders in an equal manner GOV_Csr = bank's way to incorporate social and environmental dimensions in its decision-making processes	
Control variables			
Size (SIZE)	Bank dimension	Natural logarithm of total assets	Nizam *et al.* (2019), Platonova *et al.* (2018), Velte (2017)
			(*continued*)

Table 2

Variable	Description measure	Formula	Reference
Capital adequacy ratio (CAP)	Most recognizable measure of compliance to regulatory capital requirements as it measures the extent to which a bank can absorb losses using specific equity components	Total own funds divided by total risk-weighted assets	Platonova *et al.* (2018), Siueia, Wang and Deladem (2019)
Liquidity asset ratio (LIQ)	A broad measure of liquidity	(Cash and due from banks + other earnings assets) divided by total assets	Nizam *et al.* (2019)
Loans to total deposits ratio (LOANDEP)	The proportion of loans that are funded by deposits	Net loans divided by total deposits	Wu and Shen (2013)
Customer deposits to total liabilities (CUSTDEP)	The relevance of customer deposits in the funding mix	Customer deposits divided by total liabilities	Shen *et al.* (2016)
GDP growth (GDP)	The annual percentage growth rate of gross domestic product (GDP) at market prices based on constant local currency	Annual percentage growth rate of GDP per capita	Bikker and Hu (2002), Demirguc-Kunt and Huizinga (1999), Flamini *et al.* (2009)
Inflation (INF)	The inflation rate	The annual growth rate of the GDP deflator	Athanasoglou *et al.* (2008), Molyneux and Thornton (1992), Pasiouras and Kosmidou (2007)

contemplates CSR sustainability reporting, CSR sustainability committee and stakeholder engagement.

3.4 Dependent variables

We used four dependent variables to measure BP by considering return on equity (ROE), return on assets (ROA), Tobin's Q (TQ) and stock market returns (SR). In prior research and theories supporting sustainability reporting in banking sector, the dependent variables (BP) have been measured using financial performance (ROE), operational performance (ROA) and market performance (TQ and SR) (Albertini, 2013; Buallay *et al.*, 2017; Buallay *et al.*, 2021; Hamdan *et al.*, 2017; Chowdhury *et al.*, 2017; Esteban-Sanchez *et al.*, 2017; Mayur and Saravanan, 2017; Nizam *et al.*, 2019). Definitions and formulas are presented in Table 2.

3.5 Control variables

The study takes into consideration the effect of bank and region-specific variables to control the relationship between ESG and BP. According to the EBA methodological guide, we considered five bank-specific control variables: size (SIZE), capital adequacy ratio (CAP), liquid asset ratio (LIQ), loans to total deposits (LOANDEP) and customer deposits to total liabilities (CUSTDEP).

Size (SIZE) is measured as the natural logarithm of total assets (Nizam *et al.*, 2019; Platonova *et al.*, 2018; Velte, 2017). In previous banking studies, some authors reported that large banks easily attract cheaper resources and access more capital because they are more diversified across different sectors and more scrutinized by the media and community. Consequently, large banks have more resources to invest in CSR activities (Siueia *et al.*, 2019). CAP represents a proxy for liquidity risk and for banks' solvency to support the present capital structure, as it is a specific compliance indicator for regulatory capital requirements (Hafez, 2015; Siueia *et al.*, 2019). CAP estimates the financial risk of

default that arises due to the banks' obligations toward their lenders and customers. LIQ represents a proxy for liquidity risk and was used as a control variable in specific prior literature on banking sector (Nizam *et al.*, 2019). LIQ also reflects the risk management of credit institutions as a smaller ratio shows a higher risk appetite of the management. The LOANDEP indicates the share of loans funded by deposits (Shen *et al.*, 2016; Wu and Shen, 2013) and reflects available funds for banks to better pursue their social responsibilities (Cornett *et al.*, 2016). In line with previous studies (Shen *et al.*, 2016), banks committing to CSR attract more capital which positively influences their loan volume. We also consider the CUSTDEP as a control variable. CUSTDEP is the share of deposits in total debt, and it represents a specific bank funding indicator that can impact on BP.

Finally, we considered two region-specific control variables: GDP growth (GDP) and inflation (INF). We used macroeconomic specifications as control variables to deal with endogeneity issues that often appear in economics-based sustainable report research in the form of correlated variables, reverse causality and simultaneity (Contractor *et al.*, 2016; Larcker and Rusticus, 2010; Nikolaev and Van Lent, 2005). In line with previous literature focused on the banking sector (Shen *et al.*, 2016; Wu and Shen, 2013), we used GDP as an indicator of macroeconomic dynamics and we measured INF as the annual rate of GDP deflator.

3.6 The model

We create three regression models to answer the question:

> *Q1.* Can ESG policies be a predictor of better bank performance in Italian banking sector?

To analyze the relationship between ESG indicators (ESG_comb, ESG_pillars and ESG_dimensions) and BP, the study estimates the following econometric models in accordance with the literature previously reviewed (Buallay *et al.*, 2021; Chang and Devine, 2019; Esteban-Sanchez *et al.*, 2017; Peni and Vähämaa, 2012; Shakil *et al.*, 2019; Shen *et al.*, 2016; Siueia *et al.*, 2019):

$$BP_{i,t} = \beta_0 + \beta_1 ESG\_comb_{i,t} + \beta_{2-8} control\ variables_{i,t} + \varepsilon_{i,t} \tag{1}$$

$$BP_{i,t} = \beta_0 + \beta_{1-3} ESG\_pillars_{i,t} + \beta_{4-10} control\ variables_{i,t} + \varepsilon_{i,t} \tag{2}$$

$$BP_{i,t} = \beta_0 + \beta_{1-10} ESG\_dimensions_{i,t} + \beta_{11-17} control\ variables_{i,t} + \varepsilon_{i,t} \tag{3}$$

where BP represents the BP, measured by four dependent variables: ROA, ROE, TQ and SR of bank (i), in year (t); ESG_comb; ESG_pillars and ESG_dimensions are the measures of ESG performance of the bank (i) in year (t) and represent the predictors that are detailed in Table 2; control variables of the bank (i) in year (t) are represented by SIZE, CAP, LIQ, LOANDEP, CUSTDEP, GDP, INF; β_0 represents the constant; β_{1-17} are the coefficients of the predictors and control variables; ε represents the estimation error.

Panel data modeling techniques are frequently adopted in many banking studies on corporate performance (Buallay, 2019a; Buallay *et al.*, 2020; Esteban-Sanchez *et al.*, 2017; Maqbool and Zameer, 2018; Platonova *et al.*, 2018; Siueia *et al.*, 2019; Weber, 2017). The use of panel regressions, either fixed or random-effects model, has the advantage of controlling unobserved heterogeneity and analyzing data over a longer period (Issa *et al.*, 2021). In addition, panel data offer a great number of data points, reducing the collinearity among independent variables and increasing the degrees of self-determination. We used the Hausman test to assess whether the fixed or random-effects model is applicable. Fixed effects models analyze the within-unit variation. Panel regression with fixed effects assumes that the intercept is not a random value because each firm is considerably different from

another regarding their base levels for the dependent variable. In contrast, panel regressions with random effects can investigate variations between companies for the same year and within each company over time. To differentiate the two approaches, a null hypothesis assumes that capabilities of fixed-effects approach (FE) and random-effects approach (RE) are the same in Hausman test. The RE is inappropriate when a null hypothesis is rejected, and consequently it is preferable to use FE. The type of estimation for each model is specified in Table 6.

To relieve the endogeneity issue, we also investigate the effect of prior-year ESG factors (measured by lagged ESG combined, lagged ESG pillars and lagged ESG dimensions) on BP, using the above mentioned econometric models. The Hausman test findings from current predictors are also used for the lagged ESG variables.

4. Findings and discussion

We now examine the impact of ESG variables on BP. We begin with descriptive statistics and correlations; then, we turn to the main estimation results.

4.1 Descriptive statistics

The descriptive statistics of the main variables for the entire sample are presented in Table 3.

The format of our panel data shows that the data normality is not relevant for the research design while econometric analysis contemplates the fixed effects (within each bank) and

Table 3	Descriptive statistics of the variables: panel data for the period 2016–2020				
Variables	Min	Max	Mean	Median	SD
Dependent variables					
Return on equity (ROE)	−2.7790	0.7185	0.0414	0.0679	0.2041
Return on assets (ROA)	−0.0730	0.0420	0.0039	0.0038	0.0087
Tobin's Q (TQ)	0.86	51.80	1.56	0.99	3.926
Stock return (SR)	−0.8925	1.6869	−0.0009	−0.0032	0.3494
Independent variables					
ESG combined (ESG_comb)	30.17	89.43	61.34	61.36	13.37
Environmental (ENV)	9.06	93.67	75.95	84.17	17.55
Social (SOC)	32.77	97.33	74.37	75.81	12.43
Governance (GOV)	17.56	97.36	66.42	69.09	18.17
ENV_Ru	29.44	99.75	81.54	84.49	14.61
ENV_Em	0.27	99.85	78.50	82.43	17.69
ENV_In	4.48	93.05	73.95	87.27	21.82
SOC_Wf	49.55	99.87	86.44	87.99	9.45
SOC_Hr	5.32	98.14	65.45	71.35	26.34
SOC_Com	3.42	88.85	69.21	78.69	25.11
SOC_Prd	14.37	99.76	65.25	71.59	26.63
GOV_Mo	4.80	99.51	68.89	74.57	24.99
GOV_Shr	1.10	99.06	55.64	55.41	27.04
GOV_Csr	8.43	99.40	70.58	75.02	20.94
Control variables					
SIZE	21.36	27.42	25.00	26.04	1.66
CAP	0.09	0.32	0.16	0.15	0.04
LIQ	0.08	0.82	0.39	0.37	0.16
LOANDEP	0.48	2.03	0.98	0.90	0.27
CUSTDEP	0.26	0.95	0.60	0.63	0.17
GDP	−12.51	9.50	0.08	0.15	3.67
INF	−25.54	33.75	3.75	3.99	10.13

random effects (differences between banks). The average standard deviation is included within groups, where larger values indicate a very high variance for each bank across the examined period. This can point to either substantive variation of ESG measures from year-to-year or disclosure issues for each bank, and measurement issues related to Refinitiv's methodology.

We calculated the Pearson correlations to observe the relationships between all the examined variables and gain more insights before testing the hypotheses. The correlation coefficients between the variables involved in the regression model are presented separately for the ESG pillars (Table 4) and the main predictors (Table 5).

Table 4 shows that the accounting-based measures of financial performance (ROE and ROA) are highly correlated with each other, but they are not related to the market-based measures of financial performance (TQ and SR). However, the ESG pillars are highly correlated with the dependent variables. The ESG pillars are not interrelated with each other, except the social pillar score (SOC), which is weakly correlated with the environmental pillar score (ENV). The correlation coefficients between the majority of the ESG dimensions each other are weak or at the most moderate (significant correlation coefficients between $r = 0.11$ and $r = 0.54$). The highest correlations are between the workforce and environmental performance dimensions ($r = 0.37$–0.54). The result shows a small negative, but significant, correlation ($r = -0.149$) between shareholder rights (Gov_Shr) and product responsibility (Soc_Prd) (Table 5).

4.2 Panel regression results for ESG variables

The results show that the ESG combined (ESG_comb), as an explanatory variable in equation (1), is a positive predictor of ROE at the significance level of 0.10 (ß = 0.00089; $p = 0.075$, random effects). However, ESG_comb is not a significant predictor of ROA ($p = 0.272$, fixed effects), TQ ($p = 0.327$, fixed effects) and SR ($p = 0.531$, fixed effects). The ESG disclosure positively affects the Italian banking sector's financial performance in line with Margolis et al. (2007), who stated a significant impact of ESG on firm's performance. In this regard, ESG banking activities are a tool to create competitive advantages and to improve financial performance. As shown by Friedman (1962), the main purpose of a firm is merely to improve the wealth of its stakeholders while any other nonfinancial objects leave a negative economic consequence, resulting in low firm's market value. The data sets of ESG_comb estimations are not reported in tabular form in the interest of saving space and improving the readability of the paper.

Equation (2) specifies a multivariate regression model including the environmental pillar (ENV), the social pillar (SOC) and the governance pillar (GOV) as explanatory variables. The findings (not tabulated) highlight that ENV is not a significant predictor in any of the four dependent variables: ROE ($p = 0.477$, random effects), ROA ($p = 0.647$, fixed effects), TQ

Table 4	Pearson correlations between the dependent variables and the ESG pillars						
Variables	*ROE*	*TQ*	*SR*	*ESG_comb*	*ENV*	*SOC*	*GOV*
ROE	0.815**	−0.156**	0.124*	0.0.48	−0.069	−0.007	0.036
ROA		-1.75**	0.229**	0.004	−0.318**	−0.166**	−0.119*
TQ			−0.099	−0.097	0.013	0.009	−0.222**
SR				0.007	−0.054	−0.075	−0.039
ESG_comb					0.262**	0.274**	0.191**
ENV						0.332**	0.218**
SOC							0.234**

Note: *, ** and *** denote level of significance at the 0.10, 0.05 and 0.01 levels, respectively

Table 5 Pearson correlations between the dependent variables and the main predictors

Variables	ROA	TQ	SR	ENV_Ru	ENV_Em	ENV_In	SOC_Wf	SOC_Hr	SOC_Com	SOC_Prd	GOV_Mo	GOV_Shr	GOV_Csr
ROE	0.813**	−0.171**	0.230**	−0.308**	−0.196**	−0.289**	−0.203**	−0.093	−0.065	−0.098	−0.157**	0.052	0.077
ROA		−0.155**	0.120*	−0.126*	0.033	−0.068	−0.067	0.077	0.013	−0.054	−0.034	0.118*	0.183**
TQ			−0.099	0.069	−0.067	0.017	0.030	−0.028	−0.015	0.044	−0.177**	−0.150**	−0.109*
SR				−0.073	−0.040	−0.045	−0.039	−0.038	−0.004	−0.115*	−0.060	0.039	0.039
ENV_Ru					0.455**	0.370**	0.372**	0.349**	0.199**	0.110*	0.137*	0.109*	0.198**
ENV_Em						0.547**	0.505**	0.256**	0.150**	0.173**	0.182**	0.243**	0.257**
ENV_In							0.340**	0.327**	0.055	0.005	0.070	0.242**	0.245**
SOC_Wf								0.142**	0.339**	0.270**	−0.077	0.095	0.177**
SOC_Hr									0.292**	0.030	0.109*	0.151**	0.316**
SOC_Com										0.075	0.173**	0.012	0.194**
SOC_Prd											0.183**	−0.149**	0.157**
GOV_Mo												−0.011	0.189**
GOV_Shr													0.035

Note: *, ** and *** denote level of significance at the 0.10, 0.05 and 0.01 levels, respectively

($p = 0.294$, fixed effects) and SR ($p = 0.633$, fixed effects). This shows that environmental issues did not impact banks' financial and market profitability. Stakeholders are unaware of the environmental practices as a driver for better asset efficiency and do not consider these issues in their investment decisions. Moreover, the TQ results indicate that environmental practices do not contribute significantly to physical assets' market values and their replacement values.

The results (not tabulated) also show that SOC is not a significant independent variable in any of the four models: ROE ($p = 0.145$, random effects), ROA ($p = 0.827$, fixed effects), TQ ($p = 0.654$, fixed effects) and SR ($p = 0.720$, fixed effects). GOV is a significant positive predictor, at the 0.10 level, of ROE ($ß = 0.00387799$, $p = 0.072$, random effects) and ROA ($ß = 0.000078$, $p = 0.096$, fixed effects). This suggests that higher corporate governance quality increases ROE and ROA in accordance with *H3* and prior literature (Alareeni and Hamdan, 2020; Sohail *et al.*, 2017). GOV is not a significant predictor of TQ ($p = 0.355$, fixed effects) and SR ($p = 0.786$, fixed effects). No significant relationships are found between lagged values of the three ESG pillars and the dependent variables.

The results reveal that the executive management's commitment and effectiveness develop to increase the benefit of the bank and the wealth of its stakeholders. To clarify that, the social policies of the executive management and any other nonfinancial objectives make the bank more effective because these policies increase equity (ROE) and the efficiency of assets (ROA). Table 6 presents the results for the main multivariate regression model [equation (3)].

The Hausman test shows that the random-effects model is used only for the ROE regression. In this specification the firm-specific effect is strictly random and uncorrelated with regressors for the same bank. In contrast, the Hausman test endorses the fixed effects

Table 6 Panel regression results for predictors with robust standard errors				
Variable	ROE Coef. (p-value)	ROA Coef. (p-value)	TQ Coef. (p-value)	SR Coef. (p-value)
ENV_Ru	−0.0001798 (0.829)	0.000055 (0.112)	−0.0100988 (0.514)	−0.0028406 (0.188)
ENV_Em	0.0017226* (0.045)	0.0000805* (0.035)	0.0503828 (0.288)	0.0037747* (0.087)
ENV_In	−0.0003377 (0.519)	−0.0000520 (0.115)	0.0126147 (0.347)	−0.0010728 (0.506)
SOC_Wf	0.0002080 (0.828)	0.0000366 (0.620)	−0.0364478 (0.282)	−0.001767 (0.603)
SOC_Hr	−0.0007059 (0.105)	−0.00000299 (0.872)	−0.014330 (0.350)	−0.0012105 (0.309)
SOC_Com	−0.0002020 (0.616)	0.0000239 (0.332)	0.0010676 (0.876)	0.0006539 (0.566)
SOC_Prd	−0.0000848* (0.021)	−0.0000458** (0.008)	0.0242346 (0.334)	−0.0001817 (0.913)
GOV_Mo	0.000957* (0.163)	0.0000655** (0.092)	−0.0140845 (0.333)	−0.0029954 (0.071)
GOV_Shr	0.0004081 (0.234)	0.00000255 (0.866)	−0.0113985 (0.327)	0.0004865 (0.586)
GOV_Csr	0.0003286 (0.345)	−0.0000179 (0.617)	0.02301106 (0.315)	−0.0034120* (0.040)
SIZE	0.0356134** (0.002)	0.0015998 (0.497)	3.353849 (0.327)	−0.2537251 (0.078)
CAP	0.3497323 (0.269)	0.0202591 (0.248)	10.96895 (0.242)	1.687017 (0.249)
LIQ	−0.0177219** (0.001)	−0.0003478** (0.001)	0.0143926 (0.513)	0.0147959** (0.003)
LOANDEP	−0.1519370* (0.015)	−0.0019399 (0.742)	2.436618 (0.379)	−0.2314988 (0.543)
CUSTDEP	−0.3723706* (0.019)	−0.0004507 (0.958)	-2.055278 (0.599)	0.045947 (0.939)
GDP	0.00000107 (0.067)	−0.000000089 (0.273)	0.000128 (0.283)	−0.0000135* (0.039)
INF	0.0236940 (0.025)	0.0007544** (0.008)	−0.0773408 (0.388)	−0.0413714 (0.007)
Cons	0.085986 (0.706)	−0.0148885 (0.668)	-54.79590 (0.320)	3.861906 (0.076)
R^2 within	0.4313	0.2367	0.1264	0.1506
R^2 between	0.5707	0.4988	0.0130	0.1136
R^2 overall	0.4597	0.3703	0.0016	0.0003
Wald χ^2	79.10**	–	–	–
Hausman χ^2	23.66	29.99*	−37.70	52.70**
Fixed/random effects	Random	Fixed	Fixed	Fixed

Notes: $N = 105$ (number of Italian banks). $\Sigma iTi.N = 630$ (number of bank-year observations). *$p < 0.05$; **$p < 0.01$

models for the other three specifications (ROA, TQ and SR). The firm-specific effects are correlated with the explanatory variables in these estimations.

Performance in emission and waste reductions (ENV_Em) is found to have a significant positive relationship with the accounting-based measures of performance (ROE and ROA), thus supporting *H1*. Hence, improved policies and targets in the area of emission and waste reduction have a positive impact on bank competitiveness because they are associated with a higher level of ROE and ROA. This impact does not hold for TQ and SR.

Regarding the social pillar (SOC), the most robust finding is the significant negative relationship between product responsibility (SOC_Prd) and both accounting-based measures of financial performance (ROE and ROA). This result goes against the predictions of *H2*. None of the other three dimensions of social pillar (SOC) is a significant predictor in either model. The management and oversight dimension (GOV_Mo) of the governance pillar (GOV) is a significant positive predictor of ROE and ROA. In contrast, CSR strategy (Gov_Csr) is found to have a significant negative effect only on SR. This result disproves the prediction of *H2*. GOV_Hr has not a significant relationship with the dependent variables. Concerning the control variables, liquidity asset ratio (LIQ) is a significant positive predictor of SR and is found to negatively affect both accounting-based measures (ROE and ROA). An increase in cash and dues from banks is related to lower operational and financial performance. SIZE, LOANDEP and CUSTDEP are significant predictors of ROE in the current predictor specifications. Hence, the better SIZE, LOANDEP and CUSTDEP, the higher is the ability of the Italian banks to generate profitability of the invested equity from the accounting perspective.

The results (not tabulated) for the regression models with lagged predictors confirm that prior-year performance in emission and waste reductions (ENV_Em) has a significant positive impact on ROE and ROA. The relationships between preceding-year values of any other dimensions of social (SOC) and governance (GOV) pillars validate the results for current ESG dimensions.

4.3 Discussion on ESG aspects

The subsequent debate underlines the importance of the findings and shows which interactions are still inconclusive although they may be relevant to future studies. Splitting the ESG pillars could provide us significant findings regarding the relationship between ESG indicators and BP. Among the dimensions of environmental pillar (ENV), only the indicator of emission and waste reductions (ENV_Em) is correlated with the financial and market performance. These results show that the mitigation of environmental issues is related to operational efficiency and in this regard a bank's responsible conduct does not negatively affect profitability in the short term, confirming prior literature (Gangi *et al.*, 2019; Jacobs *et al.*, 2010). Consequently, corporate disclosures related to policy and target emissions, climate change risks and opportunities, recycling, e-waste reduction and environmental philanthropy can be considered a strong signal of the bank's efficient use of resources and responsible conduct in this regard. From a stakeholder perspective, environmental philanthropy is increasingly a competitive advantage that could generate a good reputation among numerous stakeholders. Banks' commitment and effectiveness toward reducing environmental emissions and waste in their operational processes and business activities are viewed positively by the market. In accordance with the stakeholder theory, stakeholder engagement in environmental measures generates a competitive advantage for a responsible bank. Because one of the most critical stakeholder demands is corporate compliance with ESG performance (Al Amosh and Khatib, 2022), banks with a better reputation for transparency in environmental aspects meet the expectations of different stakeholders. Hence, results support *H1* but data are still ineffectual for resource use efficiency (ENV_Ru) and environmental innovation (ENV_In), suggesting that several environmental aspects of banking do not yet have an impact on operational efficiency.

Banks need to get involved in supporting cleaner production efforts, and allocating resources for the digitalization of internal processes to increase cost efficiency and offer new products and services.

Only the dimension of product responsibility (SOC_Prd) is significantly correlated with profitability and in particular it appears to hinder financial performance (ROE and ROA). The negative relation between product responsibility and profitability indicates the low attractiveness of products and information offered by financial institutions for customers as suggested by Esteban-Sanchez et al. (2017). This finding suggests that consumers do not care about banks' capacity to offer high-quality products and services, regarding customers' health and safety, data privacy and integrity. Hence, the negative or neutral relationships between the social dimensions of ESG and BP are against the prediction of *H2* and the assumptions of stakeholder theory.

Regarding the corporate governance quality (GOV), the overall positive effect of the management and oversight (GOV_Mo) on BP proves the findings of Esteban-Sanchez et al. (2017) and Anginer et al. (2018) on corporate governance quality. The structure of the Refinitiv scores does not allow the identification of specific elements generating the positive relationship with performance measures (ROE and ROA) because the dimension GOV_Mo represents an aggregated score of various corporate board characteristics. According to prior literature, a good governance system is usually associated with weighted risk-taking and it brings additional operating and financial performance by reducing agency problems (Esteban-Sanchez et al., 2017; Soana, 2011; Miras-Rodríguez et al., 2015). In line with the agency theory and resource dependence theory, the results demonstrate that board diversity is a resource that improves bank's performance and it can reduce agency costs by involving additional ideas, expertise and experiences. In this regard, results support the theoretical idea that managers and directors on boards should try to reduce agency costs by investing in ESG activities (Al Amosh et al., 2022). Despite findings supporting evidence for the positive assumption postulated by *H3*, GOV is not significant in any specification. Data are still inconclusive regarding shareholder rights (GOV_Sh), and consequently the results should be subject to further analysis to identify which equal shareholders' rights and specific policies have caused this result. CSR strategy dimension (GOV_Csr) is a negative predictor of SR, suggesting that investors and customers tend to disregard the involvement in CSR or the adoption of best corporate governance practices in banking sector. In this regard, the rejection of *H3* indicates that stakeholders do not value the CSR prospective for BP and riskiness of a bank's portfolio. The results are also in contrast with a previous stream of research (Shen et al., 2016; Wu and Shen, 2017) that assumed a higher financial performance as a result of the propensity to engage in CSR activities. A summary of theoretical inferences is presented in Table 7.

5. Concluding remarks

This study evaluates the relationship between ESG variables from the Refinitiv database and the performance of the Italian banking sector for the period 2016–2020. Few previous studies have investigated the influence of ESG dimensions on operating, financial, and market performance indicators in Europe. In this regard, our study is the only one assessing the impact of ESG on BP in Italy. We test three econometric models applying ESG pillars and dimensions as predictors of BP, along with several bank- and country-specific control variables.

We find significant positive relationships between waste and emission reductions (Env_EM) and financial, operating and market performance (ROE, ROA and SR) of banks. In line with the resource-based view and the stakeholder theory, environmental improvements supporting cleaner production efforts for itself or societal actors achieves better profitability in Italian banking sector. Moreover, an environmentally responsible bank can impact clients' environmental behavior. Regarding social aspects, the results are against the assumption of stakeholder theory as customers do not care about elements of product responsibility.

Table 7	Summary of evidence for ESG dimensions		
ESG predictors	Relationship with bank performance (ROE, ROA, TQ, SR)	ESG dimensions	Evidence
Environmental (ENV)	Positive	ENV_Ru (resource use efficiency)	Positive (ROE, ROA, SR)
		ENV_Em (emission and waste reduction)	Neutral
		ENV_In (environmental innovation)	Neutral
Social (SOC)	Positive	SOC_Wf (workforce)	Neutral
		SOC_Hr (human rights)	Neutral
		SOC_Com (community)	Neutral
		SOC_Prd (product responsibility)	Negative (ROE, ROA)
Governance (GOV)	Positive	GOV_Mo (management and oversight)	Positive (ROE, ROA)
		GOV_Shr (shareholders rights)	Neutral
		GOV_Csr (CSR strategy)	Negative (SR)

5.1 Remarks for the Italian banking sector

Italian banks are still away from embracing the right sustainability procedures that generate positive effects on their operational performance and investors' trust. From a theoretical standpoint, our evidence does not confirm the agency framework since investors disregard the adoption of CSR strategies in the Italian banking sector as a means of guaranteeing trust in relations with stakeholders.

Nevertheless, this study has important implications for Italian banks because there is a growing interest in ESG performance in the Italian banking sector. First, interest from banks is expected to grow in ESG as a driver for better financial, operating, and market performance. The research can also provide banks with useful guidelines when considering their ESG investments. The study is relevant to both practitioners and academics, as ESG dimensions are important factors to be assessed in reforming corporate policies and strategies. In particular, the findings have practical implications for bank managers and boards of directors in adopting and disclosing ESG initiatives to increase financial performance. In addition, this study facilitates investors, decision-makers, regulators, policymakers, scholars and stakeholders to improve their awareness and knowledge about ESG disclosure practices in relation to current and future performance. These involvements could help to resolve agency issues among different stakeholders through the specific governance of ESG dimensions.

This study has some limitations. First, the main limitation is regarding the limited number of banks, that is 105 in our sample, which may be considered a small sample. Nevertheless, we believe that our sample provides a high-quality image of the association between ESG policies and performance within the Italian banking sector and could be applied to redesign corporate policies that better incorporate ESG considerations into bank strategies and projects. The second limitation is the possibility that other variables (e.g. factors upsetting the business environment) could affect the relationships between ESG dimensions and BP. Future research should look at how other factors could influence the ESG disclosure and policies and consider other contexts such as emerging markets.

Future research should consider all dimensions of the three ESG pillars, at the disaggregated level, as performed in our research. Moreover, it is recommended to extend the Refinitiv scoring scale to consider the requirements and challenges arising from the COVID-19 crisis as significant effects on the relationship between ESG strategies and BP will be generated by the pandemic. Hence, future research could focus on the effect of the COVID-19 crisis on the banking sector and on the challenges that banks are facing in reshaping their business strategy, operational processes and key performance indicators in the ESG area.

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