

Barriers to Green Financing for Micro, Small, and Medium Enterprises: Perspectives of Bank Lending Officers in the Philippines

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Abstract

This study examined the barriers to green financing for micro, small, and medium enterprises (MSMEs) in the Philippines from the perspective of bank lending officers, focusing on financial constraints, information asymmetry, regulatory compliance, institutional capacity, financing-product availability, and perceived opportunities. Although MSMEs represent 99.63% of Philippine business establishments, their loans accounted for only 3.9% of total bank lending in 2024, even as 90.3% of banks responding to a national banking survey planned to finance sustainable projects. Anchored in information asymmetry, institutional and regulatory perspectives, and organizational lending capacity, the research adopted an exploratory–descriptive, cross-sectional survey of 15 purposively selected personnel from Philippine banking and financial institutions. Questionnaire responses were analyzed descriptively using frequencies, percentages, and Wilson 95% confidence intervals. Informational barriers were among the most frequently endorsed: 13 respondents (86.7%) cited the lack of reliable sustainability documentation among MSMEs and 12 (80.0%) cited difficulties verifying environmental benefits, alongside conventional concerns about repayment capacity (80.0%) and collateral (73.3%). Regulatory uncertainty (66.7%) and insufficient personnel training (60.0%) were also widely reported, although only five respondents (33.3%) had evaluated or processed a green financing application. Despite these constraints, 14 respondents (93.3%) regarded green financing as an opportunity for MSME development, and most supported simplified sustainability documentation, specialized personnel training, tailored financing products, digital assessment systems, and stronger government–financial institution collaboration. The findings are consistent with the view that green eligibility adds a second verification task to conventional credit appraisal, one that respondents perceived MSMEs and lending staff as not yet fully equipped to complete. Because the sample was small and nonprobabilistic, the results are exploratory rather than generalizable. The study contributes officer-level evidence from an emerging Association of Southeast Asian Nations (ASEAN) economy and is relevant to Sustainable Development Goals 7, 8, 9, 12, 13, and 17 because it identifies practical routes to more inclusive and responsible green credit.

Keywords: Bank Lending Officers; Credit Accessibility; Green Financing; Information Asymmetry; Institutional Capacity; Micro, Small, and Medium Enterprises; Philippines; Sustainable Finance

1. Introduction

The transition toward a low-carbon and climate-resilient economy has increased the importance of green financing as a mechanism for promoting sustainable business practices. For micro, small, and medium enterprises (MSMEs), access to green financing can facilitate investments in renewable energy, resource efficiency, cleaner production, waste management, and climate-resilient operations. However, conventional financing constraints, limited sustainability documentation, environmental verification requirements, and institutional lending practices may restrict the ability of smaller enterprises to obtain such financing. The Organisation for Economic Co-operation and Development (OECD, 2022) reported that small and medium-sized enterprises (SMEs) struggle to access the growing pool of sustainable finance despite their importance to the green transition. In the Philippine context, these concerns are particularly relevant because MSMEs constitute the overwhelming majority of business establishments, while their participation in formal bank lending remains relatively limited. This study examines these barriers from the perspective of bank lending officers—the actors who translate sustainable-finance policy into individual credit decisions—focusing on the intersection of credit assessment, environmental compliance, institutional capacity, and sustainable financial inclusion.

Green financing has emerged as an important component of sustainable economic development by directing financial resources toward activities that support environmental protection, climate change mitigation, and climate adaptation. It enables enterprises to invest in environmentally beneficial technologies and business practices while potentially improving operational efficiency and long-term resilience. According to the World Bank (2022), climate change poses substantial risks to the Philippine economy through extreme weather events, infrastructure damage, disruptions in economic activities, and adverse effects on vulnerable communities. Its *Philippines Country Climate and Development Report* estimated that, without climate action, economic damages could reach up to 13.6% of gross domestic product by 2040 under severe typhoon outcomes, against an average estimated loss of at least 5.7–7.5%. This projection demonstrates the economic importance of financing climate-responsive investments. MSMEs are particularly significant in this transition because of their contribution to employment, entrepreneurship, and local economic development. According to the 2024 Philippine MSME Statistics of the Department of Trade and Industry (DTI, 2025), the Philippines had 1,236,908 MSMEs, representing 99.63% of the country's 1,241,476 business establishments. These enterprises provided employment to approximately 6.25 million individuals, accounting for 66.58% of recorded employment. Microenterprises alone constituted 90.66% of all establishments, highlighting the predominance of enterprises that may have relatively limited capital, administrative resources, and technical capabilities. Despite their economic significance, MSMEs continue to encounter financing constraints. The Asian Development Bank (ADB, 2025b) reported that MSME loans accounted for only 3.9% of total bank lending in the Philippines in 2024, down from 6.1% in 2019. This disparity suggests that the substantial presence of MSMEs in the business population has not translated into a proportionate share of formal bank credit. Although these figures describe overall MSME lending rather than green financing specifically, they establish the broader credit-access environment within which MSMEs must finance environmental investments. The challenge becomes more complex when enterprises pursue green financing, which may require additional information on environmental benefits, project eligibility, technical feasibility, and sustainability performance. The ADB (2025a) identified limited awareness, information asymmetries, resource and cost constraints, and reporting and compliance requirements as barriers to MSME participation in green finance. Similarly, the OECD (2023) found that financial institutions integrating sustainability considerations into SME lending require improved access to sustainability information and enhanced internal assessment capabilities. In the Philippines, the Bangko Sentral ng Pilipinas (BSP, 2024a) has established a regulatory framework through the Philippine Sustainable Finance Taxonomy Guidelines to encourage credible and transparent sustainable financing. Nevertheless, the existence of regulatory frameworks does not automatically establish that MSMEs can satisfy lending requirements or that banks possess sufficient capacity to assess smaller green investments. Bank lending officers are important participants in this process because they interact with prospective borrowers, assess credit applications, evaluate financing risks, and implement institutional lending requirements. Understanding their perspectives may reveal how conventional credit criteria and green-finance assessment procedures influence access to financing.

Recent literature identifies several interconnected barriers affecting MSMEs in accessing green financing, particularly financial constraints, creditworthiness, information asymmetry, sustainability reporting requirements, institutional lending practices, and technical capacity, as well as the potential of financial innovation. The OECD (2022) explained that SMEs face financing difficulties arising from limited resources and high up-front investment costs with uncertain long-term returns, compounded by traditional barriers such as information asymmetries, higher interest rates, and collateral requirements. These constraints may become more pronounced when enterprises pursue environmentally sustainable projects that require substantial initial investments but generate financial benefits over extended periods. The OECD (2025b) further identified limited access to external finance, insufficient internal capacity, and perceived high risks of sustainability investments as persistent barriers to SME

greening. These findings suggest that green financing accessibility depends not only on the environmental merits of proposed projects but also on enterprises' financial stability, repayment capacity, and ability to satisfy lending requirements. Information asymmetry and sustainability documentation represent additional challenges in green financing. Financial institutions require reliable financial and environmental information to evaluate borrowers' creditworthiness and determine whether proposed investments satisfy sustainability criteria. However, MSMEs may lack comprehensive financial records, environmental performance assessments, emissions data, technical certifications, and sustainability reports necessary for evaluating green projects. The ADB (2025a) reported that five of the eight Asia-Pacific Economic Cooperation (APEC) economies responding to its 2023 survey (63%) considered additional sustainability reporting requirements and associated costs difficult or very difficult for MSMEs to satisfy. Although this finding represents the assessments of participating economies rather than direct evidence from Philippine lending institutions, it highlights the potential administrative and financial burden associated with environmental compliance. Similarly, the OECD (2025a) proposed an initial core set of SME sustainability-reporting indicators intended to meet financial institutions' information needs while limiting the reporting burden on smaller enterprises. These findings indicate that financing difficulties may arise not only from limited environmental performance but also from enterprises' inability to provide credible and verifiable information supporting their green financing applications. Institutional lending practices and credit risk assessment also influence the accessibility of green financing. D'Apolito et al. (2024), in their analysis of 125 listed Italian SMEs, found that enterprises demonstrating stronger sustainability orientations experienced greater access to bank credit and a better ability to pay the cost of bank debt. Although these findings were obtained outside the Philippine context, they suggest that credible sustainability practices may positively influence financing relationships. Similarly, Mirza et al. (2023) examined the relationship between green lending and banking performance using commercial bank data from Brazil, Russia, India, and China (BRIC) and found that green SME lending was associated with stronger net interest margins and lower bank default risk. These findings indicate that sustainable lending may offer financial advantages to banking institutions when supported by appropriate credit assessment and risk management mechanisms. Nevertheless, financing decisions remain dependent on borrower characteristics, project feasibility, repayment capacity, and institutional lending policies, suggesting that environmental objectives alone may be insufficient to secure financing approval. Lender-side studies reinforce this point. Drawing on 88 interviews with bankers, other financial-sector actors, public officials working on financial regulation, and civil-society organizations, conducted mainly in Europe, Aguila et al. (2026) attributed slow green lending to a scarcity of green firms and projects meeting banks' risk–return profiles; to changes in banks' business models that have made corporate and project lending less important, together with lending processes that prioritize long-standing client relationships; and to regulation perceived as costly or biased against green assets, compounded by policy uncertainty. Toxopeus et al. (2021) identified strategies through which firms could nonetheless obtain bank finance for circular business models, namely signaling future cash flows through customer contracts, building relationships with banks and value-chain partners, and designing standardized, durable assets that can serve as collateral. Among unlisted firms in developing economies, better environmental performance was associated with larger loans relative to sales, particularly for SMEs, but not with more favorable collateral or maturity terms (Hewa Wellalage & Kumar, 2021). The capacity of financial institutions to assess environmental risks and evaluate sustainable investments constitutes another important consideration. Unlike conventional credit assessment, green financing may require lending personnel to understand environmental regulations, climate-related financial risks, sustainability classifications, and the technical characteristics of environmentally beneficial projects. The OECD (2023) observed that financial institutions require stronger internal capabilities, improved sustainability-related information, and appropriate assessment procedures to integrate environmental considerations into SME lending operations. Likewise, the ADB (2025a) noted that financial institutions may lack the resources and capability to analyze sustainability data supplied by MSMEs, and that the small size of the MSME green-finance market may make them less inclined to expand green products for MSMEs. These findings suggest that inadequate training, limited familiarity with sustainability assessment tools, and insufficient institutional resources may complicate lending officers' evaluation of green financing applications. Survey evidence from German banks indicates that sustainability integration is less advanced for small businesses than for large and listed firms and relies mainly on hard data (Rink, 2024), while evidence from a Chinese bank shows that the personal environmental values of customer managers and loan officers shape how green small firms are assessed (Bu et al., 2026). Consequently, strengthening professional competencies and establishing clear assessment procedures may be important for improving the implementation of sustainable financing initiatives. Financial technology and innovative financing mechanisms have also emerged as potential approaches to addressing the limitations of conventional green lending. Quintiliani (2025) found that FinTech within a country's banking ecosystem was associated with stronger environmental, social, and governance (ESG) performance among Italian and British SMEs, an effect attributed to the mitigation of adverse selection and moral hazard in bank–firm relationships and more pronounced in the more FinTech-developed United Kingdom. Similarly, the ADB (2025a) identified FinTech services, artificial intelligence-supported credit scoring, and digital tools that automate the collection and verification of sustainability data as potential means of easing MSME access to green finance. These innovations may enable financial institutions to evaluate borrower information more efficiently while helping MSMEs comply with documentation and monitoring requirements. However, their effectiveness remains dependent on reliable information systems, technological readiness,

personnel competencies, and appropriate regulatory safeguards. Overall, the reviewed literature demonstrates that barriers to green financing extend beyond the availability of financial resources and involve the interaction of borrower characteristics, institutional lending requirements, environmental compliance, technical capabilities, and financial innovation. Although international studies provide evidence regarding the challenges and opportunities associated with sustainable lending, their findings may not fully explain the experiences of bank lending officers operating within the Philippine financial system. Evidence from emerging Asia is particularly thin: Nguyen et al. (2023) examined green financing in six Vietnamese commercial banks, and Sunio et al. (2021) studied Philippine bank lending to merchant renewable-energy plants, including those of small developers, but neither examined MSMEs as a borrower segment. This limitation highlights the need for a context-specific investigation examining how lending officers perceive financial, informational, regulatory, institutional, and technological barriers when assessing green financing applications from MSMEs. By addressing these interconnected dimensions, the present study seeks to generate evidence that may support improvements in sustainable lending practices, institutional capacity development, and the accessibility of green financing for Philippine MSMEs.

This need is sharpened by developments at the global, regional, and national levels. At the global level, the expansion of sustainable finance reflects increasing recognition that environmental investments must extend beyond large corporations. The OECD (2025b) emphasized that SMEs contribute to the green transition as developers of sustainable innovations, providers of environmentally beneficial products, and adopters of cleaner technologies. However, many financial instruments and sustainability reporting systems remain difficult for smaller businesses to use. The ADB (2024) likewise recommended building a base of green MSMEs, supported by government financial and nonfinancial measures, to promote climate-responsive growth in Asia and the Pacific. At the regional level, the ADB (2025a) examined the green financing experiences of APEC economies, including the Philippines. That report found that limited environmental awareness, difficulties in collecting sustainability information, and the costs of complying with green financing requirements can restrict participation. Among the eight responding economies, 50% identified limited demand associated with insufficient MSME awareness of green finance, while 25% identified growing demand that was constrained by the availability of relevant products. These findings suggest that limited green lending may reflect interacting demand-side and supply-side conditions. At the national level, Philippine banking authorities have introduced measures intended to promote environmentally responsible finance. Through Circular No. 1187, the BSP (2024a) adopted the Philippine Sustainable Finance Taxonomy Guidelines, which classify economic activities as Green, Amber, or Red according to their substantial contribution to climate change mitigation or adaptation, the do-no-significant-harm test, remedial measures to transition, and minimum social safeguards. Notably, the guidelines provide a simplified assessment approach for MSME activities, which the BSP's user guide operationalizes (BSP, 2024a, 2024c). Under this approach, an eligible MSME activity may be assessed against an appropriate recognized use-of-proceeds standard or certification, subject to applicable legal and exclusion requirements. Activities without the necessary alignment may undergo the broader taxonomy assessment. The existence of this simplified pathway is relevant to the present study because it creates an opportunity to examine whether lending officers report uncertainty in applying classification requirements. The BSP (2024b) also reported that 90.3% of responding banks in its 2023 Banking Sector Outlook Survey (147 of 173 banks responded) planned to finance sustainable projects over the next two years, up from 85% in the 2022 survey. Such intentions indicate sustainable-finance interest at the banking-sector level but do not establish how much financing reaches MSMEs. Further policy support continued in 2026. Under Circular No. 1227, the BSP (2026) extended regulatory incentives for eligible green and sustainable financing, including an additional 15% single-borrower's-limit allowance and a 0% reserve requirement on eligible sustainable bonds issued by banks, for two years from January 6, 2026. These are bank-level regulatory incentives rather than automatic loan discounts or direct financing entitlements for MSMEs. At the local level, MSMEs operate in geographically and economically diverse environments, including urban commercial centers, agricultural communities, industrial areas, and climate-vulnerable localities. Their access to banking services, technical expertise, reliable financial documentation, and suitable environmental technologies may differ across locations. Lending practices and implementation challenges may likewise vary among bank types and branches. These possible variations require empirical verification rather than assumptions about particular localities. The interaction between national sustainable-finance policy and local lending practices establishes the central context of this study. While regulatory measures provide a basis for expanding green financing, the extent to which they facilitate MSME access may depend partly on how banks and their lending personnel interpret and operationalize them.

The study is guided by an integrated conceptual perspective combining information asymmetry, institutional and regulatory influences, and organizational lending capacity. These perspectives provide complementary explanations for the potential barriers encountered when banks assess green financing applications from MSMEs. Information asymmetry provides the first analytical perspective. In lending relationships, borrowers generally possess more detailed information about their businesses, operational circumstances, and proposed investments than lenders. This information imbalance complicates credit evaluation and may increase perceived lending risks. Where lenders cannot distinguish good from poor borrowers, they may ration credit rather than raise its price (Stiglitz & Weiss, 1981), and opaque small firms are therefore served through a range of lending technologies,

including relationship lending based on soft information and transactions technologies such as asset-based lending, leasing, and credit scoring (Berger & Udell, 2006). Liberti and Petersen (2019) distinguish hard information, which is quantifiable and transmissible within an organization, from soft information, which is contextual and difficult for anyone other than its collector to verify. Green eligibility adds a second object of verification to conventional appraisal: the lender must judge not only whether the borrower can repay but also whether the financed activity will deliver the environmental outcome claimed. For MSMEs, evidence of that outcome is frequently soft—an owner's estimate of energy savings, for example—whereas taxonomy and reporting procedures reward hard, documented data. Quintiliani (2025) linked the contribution of FinTech to SME sustainability performance to its capacity to mitigate adverse selection and moral hazard, two classic consequences of information asymmetry in lending. Applied to the present study, this perspective suggests that incomplete financial statements, insufficient environmental documentation, and difficulties verifying sustainability benefits may influence lending officers' assessments. The second perspective concerns institutional and regulatory influences on lending decisions. Banks operate within a framework of prudential regulations, environmental and social risk management requirements, internal credit policies, and sustainability-related guidelines. The BSP (2024a) provides a formal framework for classifying sustainable activities, while the OECD (2023) emphasizes that financial institutions need to integrate climate considerations into operational strategies and financing procedures. Within this perspective, perceived barriers may emerge when regulatory expectations, internal policies, and the practical capabilities of borrowers are not adequately aligned. The third perspective focuses on organizational capacity and resource constraints. Financial institutions require personnel, information systems, technical competencies, and appropriate lending products to implement sustainable financing effectively. Bankability—whether a project meets the lender's risk–return thresholds—has been identified as a central constraint on green lending (Aguila et al., 2026), and the present study argues that it depends on lenders' assessment capacities as well as on project characteristics. According to the ADB (2025a), financial institutions may lack the resources or capability to analyze sustainability data supplied by MSMEs, and the small size of the MSME green-finance market may make them less inclined to expand green financing products for MSMEs. The OECD (2025b) further emphasizes the importance of combining financial assistance with nonfinancial support, including capacity development and tailored advisory services. Integrating these perspectives, the study conceptualizes green financing barriers through five interrelated dimensions: financial and credit-related constraints; information and documentation constraints; environmental and regulatory compliance requirements; institutional and technical capacity limitations; and financing-product and market-support constraints. These dimensions provide an initial analytical framework for examining lending officers' perceptions of green financing accessibility and feasibility. The framework assumes that financing decisions require simultaneous consideration of borrower creditworthiness, environmental eligibility, institutional policy, and the availability of suitable financing mechanisms. Three sensitizing expectations follow from this framework: first, that informational and verification barriers would be endorsed at least as strongly as conventional credit barriers; second, that limited direct exposure to green-loan assessment would coincide with reported regulatory uncertainty and capacity gaps; and third, that support for remedies would concentrate on measures that convert soft environmental claims into hard, verifiable information. Given the exploratory design, these expectations were examined descriptively rather than tested statistically.

Although recent studies have established the importance of sustainable finance, several issues warrant further investigation within the Philippine MSME banking context. The central theoretical gap is that the credit-rationing and lending-technology literatures explain why lenders ration opaque borrowers (Berger & Udell, 2006; Stiglitz & Weiss, 1981) but do not specify how green eligibility adds a second layer of verification to conventional appraisal. In addition, four empirical and practical gaps remain. First, existing international studies have examined sustainable financing from the perspectives of firm characteristics, banking performance, financing policy, and technological innovation. For example, D'Apolito et al. (2024) investigated the relationship between corporate sustainability and bank credit access, while Mirza et al. (2023) examined the financial performance implications of green SME lending. However, these investigations were conducted outside the Philippines and do not directly establish how Philippine bank lending officers evaluate green financing applications from MSMEs. Second, institutional reports provide valuable evidence about green financing challenges but offer limited insight into the detailed decision-making experiences of Philippine lending personnel. The OECD (2023) examined financial institution strategies and sustainability-related capabilities, while the ADB (2025a) documented barriers across participating APEC economies. Nevertheless, these sources do not provide officer-level evidence on which green financing barriers Philippine lending staff endorse. Third, the implementation of the Philippine Sustainable Finance Taxonomy Guidelines creates an important research opportunity. Although the BSP (2024c) provides a simplified assessment pathway for eligible MSME activities, additional evidence is needed on whether lending officers report uncertainty in operationalizing the guidelines. The relationship between regulatory guidance and actual frontline lending practices remains especially relevant. Fourth, there is a need to distinguish general MSME credit constraints from barriers specifically associated with green financing. Requirements relating to collateral, cash flow, and repayment capacity are common to conventional lending, whereas environmental eligibility, technical verification, sustainability information, and project-impact assessment introduce additional considerations. Identifying how these requirements interact can provide a more precise explanation of green

financing accessibility. To address these gaps, the present study aims to examine the barriers to green financing for Philippine MSMEs as perceived by bank lending officers. Specifically, it addresses three research questions: (1) What exposure do bank lending personnel have to MSME green-loan assessment? (2) Which financial, informational, regulatory, institutional, and market-related barriers do they endorse, and how consistently? (3) Which improvements in lending procedures, institutional support, and policy implementation do they support? The resulting evidence may inform the development of more accessible MSME green financing arrangements, lender capacity-building programs, simplified environmental documentation procedures, and enhanced coordination among financial institutions, enterprises, and policymakers. The study contributes in three ways. It reframes MSME green-finance barriers as a dual verification problem located at the credit desk, extending the distinction between hard and soft information (Liberti & Petersen, 2019) to environmental eligibility; it provides officer-level evidence from an emerging Association of Southeast Asian Nations (ASEAN) economy at an early stage of taxonomy implementation; and it argues that bank-level regulatory incentives may not reach MSMEs unless documentation and assessment capacity are also addressed.

The study aligns with several interconnected Sustainable Development Goals (SDGs) by examining how financial institutions can potentially support environmentally responsible enterprise development. The United Nations Department of Economic and Social Affairs (2025) emphasized the continuing need for accelerated investment, institutional cooperation, and inclusive economic development to advance the 2030 Agenda. The study relates most directly to SDG 8 – Decent Work and Economic Growth, particularly Target 8.3, which promotes entrepreneurship, MSME growth, and access to financial services (United Nations General Assembly, 2015). Improving understanding of green financing barriers may help identify approaches for supporting MSME continuity, productivity, and sustainable employment. It also relates to SDG 9 – Industry, Innovation and Infrastructure, particularly Target 9.3, which concerns small-enterprise access to financial services and affordable credit. The investigation may contribute to financing strategies that enable enterprises to modernize their operations, adopt cleaner technologies, and participate in sustainable value chains. SDG 7 – Affordable and Clean Energy is relevant where MSMEs seek financing for renewable energy installations, energy-efficient equipment, or related technologies. Understanding lender-related barriers can help inform approaches for financing these initiatives. The study further relates to SDG 12 – Responsible Consumption and Production by considering financial access for cleaner production, resource-efficient operations, and waste-reduction investments. It aligns with SDG 13 – Climate Action through the potential financing of climate mitigation and adaptation activities consistent with the BSP's sustainable-finance framework (BSP, 2024a). Finally, SDG 17 – Partnerships for the Goals is relevant to the cooperation required among banking institutions, MSMEs, government agencies, and development organizations. The OECD (2025b) emphasized the importance of integrated financial and nonfinancial support in expanding sustainable financing opportunities.

The importance of this study extends beyond banking and financial management because green financing connects environmental protection, economic development, technological innovation, institutional governance, and community resilience. From an economic and financial sustainability perspective, understanding lending barriers may help banks develop approaches that balance financial prudence with broader access to environmentally responsible investments. The study may contribute to credit risk assessment, financial inclusion strategies, and the development of green loan products suited to MSME operating conditions. The OECD (2025b) emphasized that public financing should be tailored to SMEs' differing needs and constraints, use risk-sharing mechanisms to lower perceived risks and crowd in private capital, and support commercially viable green investments. From an environmental sustainability perspective, improved financing accessibility may enable MSMEs to undertake activities that reduce resource consumption, improve energy efficiency, adopt cleaner technologies, and strengthen climate resilience. The World Bank (2022) identified climate adaptation and mitigation as essential components of sustainable Philippine development, reinforcing the relevance of financing arrangements that support environmentally responsible economic activities. The study also contributes to institutional and governance sustainability by examining the operational relationship between sustainable-finance regulations and banking practice. Its findings may identify areas where lending personnel need clearer procedures, technical assistance, better environmental information, or enhanced institutional support. Such evidence may be useful in strengthening transparency, consistency, and accountability in sustainable lending decisions. In terms of technological and innovation sustainability, the study may provide insights into the potential application of digital credit assessment, electronic documentation, and technology-supported environmental verification. Quintiliani (2025) associated FinTech development with stronger SME sustainability performance through the mitigation of adverse selection and moral hazard. These approaches may be particularly useful where traditional information collection and verification processes are costly or difficult to implement. From a socioeconomic and community sustainability perspective, facilitating appropriate green investment can potentially support enterprise resilience, employment continuity, and local economic activity. Because Philippine MSMEs provide a substantial share of employment, policies that strengthen their financial viability and capacity to adapt to environmental risks may also have implications for the communities they serve (DTI, 2025). Ultimately, the study seeks to contribute to a more inclusive understanding of sustainable finance by examining the institutional barriers that may prevent green financing policies from translating into accessible opportunities for smaller enterprises. By incorporating the

perspectives of bank lending officers, it aims to generate practical evidence that can support more responsive credit assessment, responsible financial innovation, and sustainable enterprise development in the Philippines.

2. Material and methods

2.1 Research Design

The study employed an exploratory–descriptive, cross-sectional survey design to examine the perceived barriers to green financing among banking and financial institution personnel in the Philippines. This design was considered appropriate for investigating institutional practices, professional experiences, and financing-related challenges within a defined group of respondents. Creswell and Creswell (2023) explained that the choice of research approach should fit the research problem and questions, the researcher's experience, and the intended audience. Similarly, Saunders et al. (2023) emphasized the usefulness of survey research in systematically collecting information about perceptions, experiences, and organizational practices. The descriptive component focused on identifying the frequency and relative emphasis of financial, documentation-related, regulatory, institutional, and market barriers to MSME green financing. The exploratory component sought to identify challenges and potential solutions that were not adequately explained by existing studies or financial regulations. Where open-ended questionnaire responses were available, qualitative analysis served as a supplementary approach, providing further explanations of lending practices and institutional constraints. Given the limited sample of 15 respondents, the study was designed to provide preliminary empirical insights rather than statistically generalizable estimates of the Philippine banking sector. Comparable lender-side research in emerging economies has likewise relied on small samples, such as Nguyen et al.'s (2023) multiple-case study of six Vietnamese commercial banks.

2.2 Locale of the Study

The study was conducted within the Philippines, focusing on the banking and financial institution sector and its role in facilitating access to green financing for MSMEs. The Philippine setting was considered relevant because financial institutions operated within national policies governing credit assessment, financial inclusion, environmental risk management, and sustainable financing. The investigation considered the experiences of participating financial personnel within this institutional and regulatory environment, particularly the implementation of green financing initiatives and the practical requirements associated with evaluating environmentally sustainable investments. The geographical scope covered the Philippines; however, the study's empirical coverage was limited to the locations and institutions represented by the 15 respondents. Consequently, the findings were intended to reflect the perspectives of participating financial institution personnel rather than provide a comprehensive assessment of all banks or regions in the country. This distinction acknowledged that lending conditions, institutional resources, and MSME financing opportunities could vary across banking institutions and geographical locations.

2.3 Respondents of the Study

The study involved 15 respondents drawn from banking and financial institutions operating in the Philippines. The respondents consisted of banking or financial institution personnel whose professional responsibilities were relevant to lending, credit evaluation, loan processing, credit risk assessment, or financial services associated with MSME financing. Their perspectives were considered important because lending personnel encountered or possessed knowledge of practical challenges involving borrower creditworthiness, financial documentation, environmental eligibility, institutional requirements, and the assessment of sustainable investment proposals. The respondents were considered professional informants who could provide insights into financial institution practices and perceived financing constraints. Relevant background characteristics included institutional classification, professional position, years of banking experience, involvement in MSME lending, and familiarity with green financing initiatives, where these details were collected through the questionnaire. These characteristics were considered useful for contextualizing differences in respondents' perceptions. The study did not assume that all respondents had direct experience with green loan approvals; instead, their exposure to sustainable lending was treated as an aspect to be established through their questionnaire responses. For brevity, the respondents are collectively referred to as lending officers, a term used broadly for the lending-related roles listed above.

2.4 Sample and Sampling Procedure

A nonprobability purposive sampling technique was used to select the 15 respondents because the investigation required information from individuals possessing professional knowledge or experience relevant to green financing and MSME lending. Saunders et al. (2023) described purposive sampling as the use of researcher judgment to select participants best able to address the research questions, such as those whose professional roles and experiences are relevant to the study. The selection criteria emphasized employment in a banking or financial institution and professional involvement in lending, credit evaluation, or related financing operations. The sample size of 15 respondents was considered suitable for a narrowly focused exploratory investigation intended to generate preliminary insights rather than population-level statistical estimates. For comparison only, Hennink and

Kaiser (2022), in a systematic review of empirical tests of saturation, found that studies using empirical data reached saturation within 9 to 17 interviews, particularly those with relatively homogeneous populations and narrowly defined objectives. However, their findings primarily concerned qualitative interviews and did not establish thematic saturation or statistical adequacy for a questionnaire survey. Accordingly, the study did not assume that thematic saturation had been achieved solely on the basis of the number of respondents. Given the limited sample size and the nonprobability sampling approach, the study was not intended to represent all bank lending officers or financial institutions in the Philippines. Instead, the respondents provided a focused source of preliminary information concerning perceived institutional challenges, lending practices, and areas requiring further investigation.

2.5 Research Instrument

The study utilized a questionnaire as its principal data collection instrument to obtain information concerning perceived barriers to green financing for MSMEs. The instrument covered respondent characteristics, exposure to green financing, and potential barriers associated with financial and credit requirements, information and documentation, regulatory compliance, institutional capacity, and financing-product availability, together with statements on perceived opportunities and possible improvements. These dimensions were drawn from the study's conceptual framework and existing literature concerning MSME financing and sustainable lending. A structured format consisting of closed-ended questions and rating-scale statements supported consistency in the collection and comparison of responses. A five-point agreement scale ranged from strongly disagree to strongly agree, with higher ratings indicating stronger agreement with the statement. An additional response option for insufficient knowledge or inapplicability was provided for questions requiring specialized knowledge of green financing procedures. Open-ended questions invited respondents to describe institutional challenges, explain lending practices, and suggest improvements beyond the predetermined statements. Creswell and Creswell (2023) emphasized the importance of aligning research instruments with study objectives and analytical requirements, while Saunders et al. (2023) highlighted the need for clearly constructed survey questions to support meaningful and consistent data collection. The content of the instrument was grounded in the study's conceptual framework and in prior research on MSME financing and sustainable lending, from which each dimension and statement was derived.

2.6 Data Gathering Procedure

The researcher utilized a questionnaire to gather information from the 15 participating banking and financial institution personnel. The data gathering process focused on obtaining responses from individuals whose professional responsibilities were relevant to lending and financial assessment. The procedural framework emphasized the importance of informing participants about the research objectives, the voluntary nature of their involvement, the intended use of their responses, and the measures adopted to protect confidentiality. Institutional permission was considered necessary where required by the participating organizations. The questionnaire served as the primary means of collecting information about respondents' professional backgrounds, familiarity with green financing, and perceptions of barriers affecting MSME access to sustainable lending. Data processing involved examining retrieved responses for completeness and consistency, systematically encoding closed-ended answers, and organizing open-ended responses for qualitative examination where applicable. The study also considered the importance of protecting respondents and their respective institutions by excluding unnecessary personally identifiable information and confidential borrower or transaction details from the research dataset. Findings are reported in aggregated, anonymized form to minimize the risk of identifying individual participants.

2.7 Data Analysis Techniques

The data analysis framework primarily involved descriptive statistical techniques appropriate to the exploratory objectives and limited sample size. Frequencies and percentages were selected to summarize respondent characteristics, institutional backgrounds, professional experiences, and categorical responses concerning green financing practices and barriers. Because proportions estimated from 15 respondents are imprecise, each percentage reported for the questionnaire items is accompanied by a Wilson 95% confidence interval (Wilson, 1927), which provides better coverage than the conventional normal approximation in small samples (Brown et al., 2001). Because sampling was purposive, the intervals indicate imprecision only and do not support inference to a defined population. These statistical measures were intended to describe the responses of the 15 participants without implying that the observed distributions represented the entire Philippine banking sector. For Likert-type barrier statements, the analysis reports the number and percentage of respondents who agreed with each statement. In line with this approach, individual ordinal responses were not treated as precise interval measurements (Jamieson, 2004). The framework also provided for descriptive comparisons across barrier dimensions to identify constraints that received relatively stronger agreement among respondents. Any resulting rankings were intended to reflect the perceptions of the participating sample rather than establish a statistically representative national hierarchy of green financing barriers. Overlapping confidence intervals were interpreted as indicating relative emphasis rather than statistically distinct priorities. Where open-ended responses were available, thematic analysis was used to examine recurring explanations, institutional concerns, and suggested improvements. Braun and Clarke (2022) described reflexive thematic analysis as a systematic yet flexible method for developing, analyzing,

and interpreting patterns of meaning across a qualitative dataset. The analytical process involved familiarization with respondents' statements, coding, generating initial themes, developing and reviewing themes, refining and naming themes, and writing up the resulting interpretation. The quantitative and qualitative components, where both were applicable, were designed to complement each other in explaining the perceived financing barriers encountered by participating financial personnel. Given the sample size of 15 and the nonprobability sampling procedure, the analytical framework did not emphasize population-level hypothesis testing, predictive regression, or claims of statistically significant relationships. Instead, it prioritized transparent descriptive reporting, careful interpretation, and the identification of practical implications for sustainable lending policies, institutional capacity development, and MSME financial inclusion.

3. Results and Discussion

3.1 Perceived Barriers to Green Financing for MSMEs

3.1.1 Awareness and Professional Experience in Green Financing

Twelve of the 15 respondents (80.0%; 95% CI [54.8, 93.0]) had experience with MSME lending or credit assessment, while nine (60.0%; 95% CI [35.7, 80.2]) reported familiarity with green financing concepts and institutional sustainability initiatives. Only five respondents (33.3%; 95% CI [15.2, 58.3]) indicated direct involvement in evaluating or processing green financing applications. The remaining 10 (66.7%; 95% CI [41.7, 84.8]) had not evaluated or processed a green financing application. This exposure gap matters for interpretation: two-thirds of the respondents assessed green-finance barriers without having processed a green application, so their ratings reflect professional perceptions rather than direct transactional experience. These results suggested that general lending experience did not necessarily correspond with specialized knowledge or practical involvement in green financing activities. The findings were consistent with concerns identified in the literature regarding the uneven integration of sustainability considerations into banking operations. The OECD (2023), in its survey of financial institutions, emphasized that integrating climate-related considerations into SME lending required new internal capacities, sustainability-related data, and internal assessment frameworks. By contrast, the BSP (2024b) reported that 90.3% of banks responding to its 2023 Banking Sector Outlook Survey planned to finance sustainable projects. The contrast between expressed institutional interest and the specialized requirements of green credit evaluation suggested that capacity development remained important for translating sustainable financing objectives into operational lending practices.

3.1.2 Financial and Credit-Related Barriers

The questionnaire responses indicated that conventional financing requirements remained prominent barriers to MSME green financing. Twelve respondents (80.0%; 95% CI [54.8, 93.0]) identified limited repayment capacity and unstable cash flows as major concerns, while 11 (73.3%; 95% CI [48.0, 89.1]) considered collateral requirements and inadequate credit security major financing constraints. Ten respondents (66.7%; 95% CI [41.7, 84.8]) also perceived the relatively high initial investment costs of environmentally sustainable projects as a barrier to loan accessibility. These results illustrate that conventional credit requirements remain relevant alongside the financial characteristics of proposed green investments. Respondents' ratings indicate that conventional creditworthiness requirements remained salient in green financing assessments. This pattern is consistent with credit-rationing theory, under which lenders facing imperfect information may ration credit rather than raise interest rates, because higher prices or tighter collateral terms can worsen the risk composition of applicants (Stiglitz & Weiss, 1981), and with bankers' accounts that green lending is constrained by a lack of bankable projects rather than of finance (Aguila et al., 2026). The findings aligned with the OECD (2022), which attributed SMEs' limited uptake of sustainable finance to resource constraints and reluctance to invest under uncertainty, alongside traditional supply-side barriers such as information asymmetries and collateral requirements. Taken together, these sources indicated that increasing green financing accessibility required attention to both borrowers' creditworthiness and the financing characteristics of environmentally beneficial investments.

3.1.3 Information Asymmetry and Sustainability Documentation

Documentation-related barriers received particularly strong agreement. Thirteen respondents (86.7%; 95% CI [62.1, 96.3]) perceived the lack of reliable sustainability documentation among MSMEs as a major financing constraint, while 12 (80.0%; 95% CI [54.8, 93.0]) identified difficulties verifying environmental benefits and technical project eligibility. Eleven respondents (73.3%; 95% CI [48.0, 89.1]) considered incomplete financial and project information an obstacle to evaluating green financing applications. These patterns placed information availability and environmental verification among the most frequently endorsed barriers. From an information-asymmetry perspective, these results are consistent with the view that green eligibility introduces a second object of verification—the environmental outcome of the financed activity—for which MSMEs may hold soft, contextual information while taxonomy and lending procedures require hard, verifiable data (Liberti & Petersen, 2019). Loan officers already find decisions based on soft information more difficult (Trönnberg & Hemlin, 2014), their interpretation of such information can be prone to bias (Campbell et al., 2019), and banks integrating sustainability into small-business lending rely mainly on hard data (Rink, 2024). The OECD (2025a) emphasized

that SMEs often lacked the resources and technical capabilities necessary to produce sustainability information required by financial institutions. The ADB (2025a) similarly identified reporting costs, limited expertise in reporting ESG metrics, and ESG compliance requirements as challenges affecting MSME green financing across participating APEC economies. As noted earlier, a stronger sustainability orientation among SMEs has been associated with greater access to bank credit (D'Apolito et al., 2024). This evidence suggests that reliable sustainability information could strengthen financing relationships, while incomplete or unverifiable documentation could complicate lending assessments. Consequently, simplified and proportionate environmental reporting procedures represented a potential means of addressing information asymmetry without weakening appropriate credit and sustainability safeguards.

3.1.4 Regulatory Compliance and Institutional Capacity

The responses also reflected difficulties associated with implementing sustainable finance requirements. Ten respondents (66.7%; 95% CI [41.7, 84.8]) perceived uncertainty regarding green financing classifications and regulatory requirements as an operational challenge, while nine (60.0%; 95% CI [35.7, 80.2]) identified insufficient personnel training and specialized environmental assessment skills. On the financing-product dimension, 10 respondents (66.7%; 95% CI [41.7, 84.8]) regarded the limited availability of financing products tailored to MSME environmental investments as a constraint. These findings suggested that institutional readiness and product development could influence the operational feasibility of green lending. The BSP (2024a) established the Philippine Sustainable Finance Taxonomy Guidelines through Circular No. 1187 to promote consistent assessment of environmentally sustainable economic activities. The BSP (2024c) subsequently issued a user guide to assist banks in interpreting the taxonomy, while the BSP (2025) provided further clarification on the taxonomy's scope and classification system. These regulatory developments strengthened the policy foundation for sustainable finance but did not automatically eliminate institutional implementation challenges. The OECD (2023) emphasized that financial institutions required technical expertise and better sustainability-related data, while the ADB (2025a) identified capacity-building initiatives as important mechanisms for improving green financing delivery. Bu et al. (2026) further showed that officers' own environmental values affect how green small firms are assessed, implying that clear assessment procedures may matter for the consistency of officer judgment. The BSP's extended single-borrower's-limit and reserve-requirement incentives (BSP, 2026) act on bank balance sheets and do not by themselves equip officers to assess a small green project. The pattern therefore highlighted the potential importance of aligning regulatory requirements with practical assessment tools, personnel development, and institutional lending capacity.

3.1.5 Positive Perceptions of Green Financing Opportunities

Despite these barriers, the responses indicated a constructive outlook toward sustainable financing. Fourteen respondents (93.3%; 95% CI [70.2, 98.8]) agreed that green financing offered opportunities for supporting environmentally responsible MSME development, while 11 (73.3%; 95% CI [48.0, 89.1]) perceived green lending as a potentially viable area for financial institution growth when supported by appropriate risk management measures. Twelve respondents (80.0%; 95% CI [54.8, 93.0]) also considered the development of financing products specifically designed for MSME environmental investments beneficial. These findings suggested that lending-related challenges and favorable perceptions of green financing could coexist. This favorable view is consistent with Mirza et al. (2023), who found that green SME lending was associated with stronger net interest margins and reduced default risk among commercial banks in BRIC economies. Their findings provided evidence that sustainable lending could be compatible with financial performance objectives, although the relationships were context-specific and did not establish universal benefits. Similarly, the OECD (2024) stressed the importance of ensuring SMEs' access to tailored sustainable financing solutions for their net-zero investment needs, while the ADB (2024) highlighted the role of green MSMEs in promoting climate-responsive economic growth. These findings suggested that green financing represented a potentially productive area for balancing financial intermediation with environmental responsibility, provided that institutional and borrower-level constraints were appropriately addressed.

3.2 Secondary Findings: Opportunities for Improving Green Financing Accessibility

Respondents expressed strong support for practical measures intended to improve MSME access to green financing. Thirteen respondents (86.7%; 95% CI [62.1, 96.3]) supported simplifying sustainability-related documentation requirements, and 13 (86.7%; 95% CI [62.1, 96.3]) favored specialized training for banking personnel on green project assessment and sustainable lending procedures. Twelve respondents (80.0%; 95% CI [54.8, 93.0]) endorsed the development of financing products with terms better suited to environmentally sustainable investments, while 11 (73.3%; 95% CI [48.0, 89.1]) supported greater use of digital assessment and documentation systems. Additionally, 12 respondents (80.0%; 95% CI [54.8, 93.0]) favored stronger government–financial institution cooperation, including technical assistance and appropriate risk-sharing arrangements. These responses indicate support for several improvements, with no single measure clearly preferred. The OECD (2025b) emphasized that scaling up SME sustainability financing required an integrated approach combining financial instruments with nonfinancial support, such as advisory services, technical assistance, and capacity building. Likewise, the ADB (2025a) identified digital financial services, improved sustainability information

systems, and public–private collaboration as approaches for expanding green financing accessibility. Quintiliani (2025) found that FinTech development within a country's banking ecosystem was associated with stronger SME sustainability performance through the mitigation of information problems in bank–firm relationships. Evidence that public funding complements rather than replaces external finance for SME eco-innovation (Cecere et al., 2020) further supports such combined approaches. In the Philippines, the BSP (2026) extended bank-level regulatory incentives for eligible green and sustainable financing, including provisions concerning the single-borrower's limit and reserve requirements for sustainable bonds. These policy instruments reflect continued regulatory efforts to mobilize sustainable finance, although they did not automatically provide direct subsidies or preferential lending terms to MSMEs. The findings therefore illustrated how the improvements respondents endorsed could be interpreted alongside existing institutional and policy initiatives.

3.3 Documented Philippine Context and Implications for Sustainable Financing

Independent national evidence underscores the economic significance of improving MSME financing accessibility. According to the DTI's 2024 Philippine MSME Statistics (DTI, 2025), the country had 1,236,908 MSMEs, representing 99.63% of all recorded business establishments and providing employment to approximately 6.25 million individuals, or 66.58% of total recorded employment. Despite this substantial economic presence, MSME loans accounted for only 3.9% of Philippine bank lending in 2024, down from 6.1% in 2019 (ADB, 2025b). Meanwhile, the BSP (2024b), through its 2023 Banking Sector Outlook Survey (147 responding banks), found that 90.3% of responding banks planned to finance sustainable projects. These independently documented figures established the contrast between MSMEs' economic importance, their limited participation in total bank credit, and the banking sector's expressed interest in sustainable financing. The documented evidence highlighted the importance of distinguishing policy intentions from realized financing accessibility. In the ADB (2025a) survey of eight APEC economies, including the Philippines, half of the responding economies reported that MSME demand for green finance was limited by low awareness, and a quarter reported that growing demand was constrained by a lack of relevant products. These findings suggested that stronger connections among regulatory initiatives, financial institution capacity, and MSME financing needs could support more inclusive sustainable investment.

3.4 Relationship Among Financing Barriers and Institutional Opportunities

The analysis identified financial, informational, regulatory, and institutional barriers, none of which clearly dominated. The single most frequently endorsed item was the lack of reliable sustainability documentation, cited by 13 respondents (86.7%; 95% CI [62.1, 96.3]), followed by repayment-capacity concerns and environmental verification difficulties, each cited by 12 respondents (80.0%; 95% CI [54.8, 93.0]). At the same time, 14 respondents (93.3%; 95% CI [70.2, 98.8]) recognized potential environmental and economic benefits from green financing, while 13 (86.7%; 95% CI [62.1, 96.3]) each supported simplified documentation and specialized training. These distributions illustrated how respondents could recognize substantial implementation challenges while maintaining positive views regarding the prospects for sustainable lending. However, relationships between individual variables were not statistically tested, and the aggregate counts did not establish correlations or causal associations. Because no test of differences was conducted and the confidence intervals overlap substantially—for example, 86.7% [62.1, 96.3] for the lack of reliable documentation compared with 60.0% [35.7, 80.2] for insufficient personnel training—these distributions indicate relative emphasis rather than a statistically established ranking. The OECD (2022) framed SME access to sustainable finance as shaped by supply- and demand-side drivers and constraints within an ecosystem of financial institutions, regulators, and policymakers, and by the policies and instruments available to support it. The OECD (2025a) further emphasized the importance of sustainability reporting systems proportionate to SME capabilities, while the ADB (2025a) included capacity development, technology, and knowledge sharing among its proposed policy actions for improving MSME access to green finance. D'Apolito et al. (2024) additionally linked a stronger sustainability orientation to greater bank-credit access among SMEs, and Quintiliani (2025) linked FinTech-enabled mitigation of adverse selection and moral hazard to stronger SME ESG performance. These studies supported the conceptual argument that green financing accessibility required coordinated improvements in credit assessment, environmental documentation, institutional knowledge, and financing innovation. In relation to the Sustainable Development Goals, these considerations were relevant to SDG 7 (Affordable and Clean Energy), SDG 8 (Decent Work and Economic Growth), SDG 9 (Industry, Innovation and Infrastructure, including Target 9.3 on small enterprises' access to financial services), SDG 12 (Responsible Consumption and Production), SDG 13 (Climate Action), and SDG 17 (Partnerships for the Goals) (United Nations Department of Economic and Social Affairs, 2025; United Nations General Assembly, 2015). Descriptively, the first sensitizing expectation was supported: informational and verification items (73.3%–86.7%) were endorsed at least as often as conventional credit items (66.7%–80.0%), although the intervals overlap. The second was consistent at the aggregate level only: 33.3% of respondents had direct green-loan experience, while 66.7% reported regulatory uncertainty and 60.0% reported training gaps. The third received partial support: simplified documentation (86.7%) was among the most endorsed remedies, but digital assessment and documentation systems received the least support (73.3%), and endorsement was spread across all five measures. Theoretically, the results point to an extension of the information-asymmetry account of SME finance. Whereas conventional accounts treat opacity as a single problem concerning the borrower's capacity

to repay (Berger & Udell, 2006; Stiglitz & Weiss, 1981), green lending adds a second verification task concerning the environmental outcome of the financed activity. This dual verification framing, which the present exploratory data illustrate rather than test, links borrower-side evidence on reporting burdens (ADB, 2025a; OECD, 2025a) with lender-side evidence on data dependence and officer judgment (Bu et al., 2026; Rink, 2024). It yields two propositions for future research: that MSME green-loan approval depends more on documentation quality than on environmental performance as such, and that low-cost, standardized verification raises approval most for borrowers with limited relationship history.

4. Conclusion & Recommendations

The study examined the barriers to green financing for MSMEs in the Philippines, focusing on financial, informational, regulatory, institutional, and financing-product constraints. Among the 15 respondents, informational barriers—the lack of reliable sustainability documentation and difficulty verifying environmental benefits—were among the most frequently endorsed, alongside conventional concerns about repayment capacity and collateral, while the small share with direct green-loan experience (33.3%) was accompanied by widespread reports of regulatory uncertainty (66.7%) and training gaps (60.0%); individual-level overlap between these responses was not examined. The results are consistent with the possibility that part of the gap between banks' stated sustainable-finance intentions and MSMEs' limited share of bank credit arises at the credit desk, where green eligibility adds a verification task that respondents perceived neither MSMEs nor lending staff as yet fully equipped to complete. Nevertheless, respondents' strong support for practical remedies, together with national banking data (BSP, 2024b) and regional and international policy analyses, indicated opportunities for expanding green financing through institutional capacity development, appropriate financial products, and improved policy implementation (ADB, 2025a; OECD, 2025b). Overall, the study underscored the importance of aligning sustainable finance policies with MSME financing needs to strengthen financial inclusion, environmental sustainability, and climate-resilient economic development.

Based on the findings, the study recommended strengthening green financing accessibility through simplified sustainability documentation, improved credit assessment procedures, and specialized training for banking and financial institution personnel. Given the reported uncertainty about green classifications (66.7%), training could give particular attention to the simplified assessment approach for MSME activities in the taxonomy user guide (BSP, 2024c). Financial institutions were encouraged to develop financing products responsive to MSME investment requirements while maintaining appropriate credit risk management and environmental safeguards. Greater collaboration among banks, government agencies, and MSMEs was also recommended to improve financial awareness, provide technical assistance, and facilitate the implementation of sustainable financing policies. Furthermore, digital assessment systems, supported by 73.3% of respondents, and simpler, standardized environmental reporting procedures may help reduce information asymmetry and administrative costs. Because the BSP's extended incentives operate at the level of bank balance sheets (BSP, 2026), pairing them with instruments that directly lower verification costs or credit risk, such as shared technical-assessment facilities or credit guarantees, may be necessary for their benefits to reach MSMEs. These recommendations were consistent with the institutional and policy measures discussed by the OECD (2025a, 2025b), the ADB (2025a), and Quintiliani (2025) and were intended to support inclusive, responsible, and environmentally sustainable financing practices in the Philippines.

The study was limited to 15 banking and financial institution personnel in the Philippines, which restricted the breadth and generalizability of its findings to the wider financial sector. Differences in institutional policies, banking classifications, geographical locations, and professional experiences could also influence the assessment of green financing barriers. Because 10 of the 15 respondents had not evaluated or processed a green financing application, their responses reflect perceptions rather than direct experience, and the self-reported data may be subject to social-desirability bias. Furthermore, the study focused primarily on the perspectives of financial institution personnel and did not incorporate the experiences of MSME borrowers or independently examine actual green loan approval rates and environmental project outcomes. The exploratory and cross-sectional research design also limited the examination of long-term developments and causal relationships among financing barriers. Future research should therefore include a larger and more geographically diverse sample that permits comparison across bank types, incorporate both lender and borrower perspectives, and examine institutional lending practices and financing outcomes. Vignette or conjoint experiments that vary documentation quality, collateral, and guarantee cover could identify causal effects on officers' decisions, while expert-based structural modeling could organize the barriers identified here into a hierarchy of drivers (Kharb et al., 2026).

5. Compliance with ethical standards

The author declared no conflicts of interest in relation to this study. The research was designed in accordance with established ethical principles for studies involving human participants, particularly banking and financial

institution personnel in the Philippines. The research protocol emphasized informed consent, voluntary participation, and the right to withdraw without adverse consequences. Confidentiality and anonymity were prioritized to protect respondents' identities, institutional affiliations, and professional information. The study also established safeguards against the disclosure of sensitive financial information, proprietary lending practices, and confidential client records. Data management procedures were designed to ensure secure storage, restricted access, and aggregated reporting for academic purposes. As the research focused on professional perceptions of barriers to green financing for MSMEs, the questionnaire was designed to be non-invasive and to minimize potential professional or institutional risks. The research design was aligned with the National Ethical Guidelines for Research Involving Human Participants (Philippine Health Research Ethics Board, 2022).

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