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Research Paper

Sustainable Finance in Hospitality and Tourism: Evidence from Western and Eastern European Countries

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Abstract: Sustainable finance is becoming more important for supporting environmentally and socially responsible growth in the tourism and hospitality sectors. This study explores the connection between access to credit and tourism performance in six European countries: Germany, France, Italy, Hungary, Poland, and Slovakia. Using data from 2013 to 2023, the research uses domestic credit to the private sector as a key indicator, and examines its relationship with international tourist arrivals, tourism receipts, and the ratio of non-performing loans. The study adopts a quantitative research design to analyse these relationships. Descriptive statistics were used to identify trends in the variables, followed by correlation and regression analyses to measure the strength and significance of associations between financial access and tourism performance. The results show a strong positive link between credit availability and both tourist arrivals and tourism income, suggesting that access to finance plays a key role in tourism sector growth. However, there is no significant link between credit and non-performing loan levels, which may be influenced by other economic or institutional factors. The findings show that stronger financial systems can help support sustainable tourism, and the study offers useful insights for policymakers and investors looking to align finance with long-term tourism development goals.

Keywords: Sustainable finance, sustainability in tourism, European tourism, sustainability integration, green investment.

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1. Introduction

The hospitality and tourism industry plays a vital role in global economic development, generating over 10 percent of global GDP and providing employment for more than 300 million people before the COVID-19 pandemic (World Travel & Tourism Council, 2020). In the European Union, tourism represents a significant component of national economies, particularly in countries such as France, Italy, and Spain, where it accounts for a substantial share of GDP (Eurostat, 2021). However, alongside these economic benefits, the industry has a considerable environmental footprint. Tourism is responsible for approximately 8 percent of global greenhouse gas emissions, largely due to the impact of transportation, accommodation, and food services (Lenzen et al., 2018; Gössling & Higham, 2021). As regulatory demands increase and sustainability becomes a core expectation for consumers, the sector is under growing pressure to align with global climate and development goals.

To address these challenges, integrating environmental, social, and governance (ESG) criteria into investment decision-making has emerged as a strategic priority. This development has given rise to the concept of sustainable finance, which refers to financial activities that explicitly support environmentally and socially responsible economic outcomes while ensuring long-term financial performance (UNEP Finance Initiative, 2021). Sustainable finance helps in achieving sustainability in tourism by making specific investments that are more efficient, less emitting, and more responsive to the community. Such instruments as green bonds and sustainability-linked loans directly finance tourism projects in line with ESG standards, where capital allocation will lead to quantifiable environmental and social consequences. Moreover, within the European context, policy instruments such as the European Green Deal, the Taxonomy Regulation, and the Sustainable Finance Disclosure Regulation (SFDR) have created a regulatory framework that promotes the redirection of capital towards sustainable economic activities, including those within the tourism and hospitality industries (European Commission, 2020). As a result, financial instruments such as green bonds, sustainability-linked loans, and public–private partnerships are increasingly used to support infrastructure upgrades, reduce carbon emissions, and promote inclusive tourism development.

Recent theorizing provides increasing empirical support to the opinion that ESG-focused financial actions have positive effects in Europe on the performance of the tourism sector. Trstenjak et al. (2023) use a two-stage DEA and two-stage dynamic panel data framework in 27 countries in the EU, which indicates that investment and revenue advance sustainable value added in tourism in spite of the environmental policy restriction in this area. On the same note, Ahmed et al. (2023) prove that country-level ESG risk profiles play a critical role in determining the inbound tourism demand in the Visegrad Countries. At the firm level, research on listed European tourism companies indicates that better ESG performance (and particularly in the governance and environmental phases) is correlated with greater steady financial returns, implying that ESG integration may enhance resilience (He et al., 2024). Finally, with a wide Eurobarometer survey, Gong et al. (2023) demonstrate how the increasing desire to live more sustainably among citizens is leading to evolutions in tourism behaviour in EU member states, thereby validating that investing in sustainability awareness can be converted into gains in market and investments.

While the adoption of sustainable finance is growing, there remains limited empirical evidence on its measurable impact on tourism performance. Most existing studies focus on qualitative assessments or single-country case studies, leaving a gap in comparative, data-driven analyses that examine broader regional patterns. Moreover, the financial environments across European countries are not uniform. Western European nations such as Germany, France, and Italy typically exhibit more developed financial systems and established ESG frameworks, whereas countries in Central and Eastern Europe, including Hungary, Poland, and Slovakia, often rely more heavily on EU funding and exhibit varying levels of financial maturity and policy implementation. These regional differences highlight the need for a comparative perspective that captures the diverse experiences of sustainable finance adoption.

Recent research reinforces the importance of linking sustainable finance mechanisms with tourism outcomes through established theoretical and empirical lenses. For example, Nasis et al. (2024) highlight how digital transformation and ESG investing jointly drive sustainable development, offering a framework for integrating finance and sustainability objectives. In the tourism field, Gössling and Hall (2019) emphasize the role of aligning sustainability goals with sector-specific dynamics, underscoring the need for financial strategies that directly support tourism's environmental and social objectives. Empirical evidence from the European Union further demonstrates that targeted tourism investments can enhance sector performance and influence environmental outcomes such as CO_2 emissions reductions (Paramati et al., 2018). Complementing this, Dogru et al. (2020) show that the relationship between tourism, economic growth, and environmental indicators is complex and multidirectional, indicating that finance-driven interventions must be carefully designed to achieve sustainability goals. Together, these studies provide a stronger conceptual and empirical foundation for examining how sustainable finance instruments may influence tourism performance across diverse European contexts.

This study aims to address this gap by examining the relationship between sustainable finance and the development of the tourism and hospitality sector in six European countries: Germany, France, Italy, Hungary, Poland, and Slovakia. The research applies a quantitative approach using secondary data collected from 2013 and 2023, and focuses on assessing correlations between financial and tourism indicators. The general research question guiding this study is: How does sustainable finance contribute to the development and performance of the hospitality and tourism sector in European countries? In addition, the specific research question is: What is the correlation between domestic credit to the private sector and critical tourism and financial indicators, including international tourist arrivals, tourism receipts, and non-performing loans in Germany, France, Italy, Hungary, Poland, and Slovakia from 2013 to 2023?

By investigating these questions, this study contributes to a deeper understanding of the role that sustainable finance plays in supporting the development of the tourism and hospitality sector. The paper emphasizes the significance of financial access, credit systems, and ESG-driven investment in shaping tourism performance across different European contexts. The findings aim to enhance academic and practical knowledge on how financial mechanisms can be leveraged to promote more responsible and resilient tourism systems in line with broader sustainability goals.

2. Literature Review

2.1. Conceptual Foundations of Sustainable Finance in Tourism

Sustainable finance has emerged as a critical mechanism for achieving environmental objectives without sacrificing economic resilience. According to Weber & Saravade (2019), sustainable finance aligns long-term financial strategies with ESG criteria, thus promoting investments that create positive environmental and social outcomes. Hence, the theoretical basis of the research is built on the triple-bottom-line framework (Bramwell & Lane, 2011) and the ESG investment theory (Friede, Busch, & Bassen, 2015), both of which focus on the moderation of economic growth, environmental protection, and social inclusion. Sustainable finance is considered in this context as the connection mechanism through which investment flows are directed into projects that create long-term value in all three pillars. This congruency is vital in the tourism industry, where profitability and environmental sustainability, and community welfare have to exist under the same financial framework.

In the tourism context, sustainable finance plays a pivotal role in bridging the investment gap that is necessary for ecological modernization. Tourism infrastructure often requires substantial upfront capital for projects such as energy-efficient renovations, low-emission transport, and sustainable water use (Job et al., 2017). However, conventional finance models have been slow to incorporate sustainability metrics into their lending criteria, thereby causing a mismatch between sustainability goals and financial mechanisms (Dredge & Jamal, 2015). The role of sustainable finance is to correct this imbalance by channelling funds into initiatives that meet ESG thresholds while maintaining risk-adjusted returns for investors (Cunha et al., 2022). Within Europe, the EU Green Deal and the Taxonomy Regulation provide the policy backbone for sustainable finance. The Green Deal aims to make Europe the first climate-neutral continent by 2050, with the tourism sector identified as a key area for decarbonization and inclusive growth (European Commission, 2020). The Taxonomy Regulation sets criteria for what constitutes an environmentally sustainable activity, including those in sectors like accommodation and transportation, which are central to tourism (Sisodia & Maheshwari, 2023). These policies promote transparency and consistency, enabling investors to assess sustainability claims more accurately and thus reduce greenwashing. Moreover, instruments that drive the use of ESG, like green bonds, sustainability-linked loans, and impact investment funds, are becoming common in tourism and hospitality projects. Such instruments are used to fund eco-certification schemes, the adoption of renewable energy in resorts, and sustainable transportation. Research also proves that ESG-based financing has a direct positive impact on tourism competitiveness and resilience. In such a manner, sustainable finance not only reduces environmental implications but also enhances the financial stability of destinations and companies that conduct business at such places in the long term.

The conceptual integration of sustainable finance and tourism also ties into sustainable development theory. The triple-bottom-line framework and economic viability, environmental integrity, and social equity have long been a cornerstone of sustainable tourism (Elkington, 1999; Bramwell & Lane, 2011). Financial instruments that account for ESG factors are better suited to support such tourism developments that do not degrade local ecosystems or marginalize host communities (Dredge & Jamal, 2015).

2.2 ESG Integration and Financial Instruments in the Hospitality Sector

The integration of ESG principles into tourism finance has led to the development of specialized financial instruments. Among these, green bonds and green loans are most widely used. Green bonds are fixed-income securities that earmark proceeds for environmentally beneficial projects. In the tourism sector, these often fund energy-efficient hotel refurbishments, sustainable transportation, and renewable energy installations (Paramati et al., 2018). In addition, the adoption of solar panels and water recycling systems improves both environmental outcomes and brand reputation (He et al., 2024).

Sustainability-linked loans (SLLs) and sustainability-linked bonds (SLBs) represent a newer generation of instruments that tie financial terms, such as interest rates or bond yields, to the borrower's achievement of specific ESG performance indicators (Yu et al., 2025). Unlike green bonds, which restrict the use of proceeds, SLLs and SLBs offer greater flexibility while encouraging broader ESG integration across corporate strategies. For instance, hotel groups may negotiate lower loan margins if they achieve pre-agreed targets on energy usage, carbon emissions, or employee diversity (UNEP Finance Initiative, 2021).

Another key instrument is public-private partnerships (PPPs) that incorporate sustainability metrics. These partnerships are especially relevant for tourism infrastructure projects such as eco-resorts, transport hubs, and heritage conservation. PPPs can mobilize both public and private capital while embedding ESG compliance into contract terms, thus ensuring long-term sustainability outcomes (Hodge & Greve, 2007). In parallel, EU structural funds and the Recovery and Resilience Facility (RRF) provide public financing options that prioritize sustainability. Many EU member states have directed RRF allocations towards tourism recovery projects that emphasize digital transformation and ecological upgrades. For example, France and Italy have earmarked significant RRF resources for the greening of hotel infrastructure, with stipulations requiring compliance with the EU's climate and energy targets (World Tourism Organization, 2023). In addition to firm-level applicability, there are destination-level and national schemes that have institutionalized sustainable finance in the tourism industry. The programs of the EU Tourism Transition Pathway and COSME in SMEs are designed to help destinations become more energy efficient and more digital. The Fondo Turismo Sustainable in Italy and the ADEME Green Hospitality Scheme in France offer specific subsidies on the retrofitting of hotels and low-carbon transport. Similarly, the Sustainable Tourism Loan Facility of the European Investment Bank funds climate-neutral infrastructure for tourism. These cases illustrate that, through the collaboration of the public and the private partners and multilateral funds, the ESG principles can be translated into regional-level sustainability.

Despite the increasing variety of tools, access remains uneven. SMEs that dominate the tourism sector often lack the technical capacity or collateral to qualify for sustainable finance (Khatter, 2023). Moreover, fragmented regulatory frameworks and inconsistent ESG rating methodologies have hindered cross-border investment (Amel-Zadeh & Serafeim, 2018). As such, while financial innovation is evident, systemic issues persist in aligning capital with sustainability goals in the tourism industry. Recent empirical evidence further shows that green finance directly contributes to sustainable tourism development, particularly in emerging markets such as China (Gong & Chen, 2023).

An increasing body of research empirically demonstrates that sustainable finance has a wide variety of effects on tourism and hospitality performance. At the firm level, empirical research is accumulating evidence that sustainability-oriented behaviours may result in improved financial outcomes, and therefore, the strategic importance of ESG-led investments in tourism firms (Bodhanwala & Bodhanwala, 2021). Another important factor is access to finance, where green financial instruments increase the capacity of firms to access credit and invest in tourism-related development, particularly in emerging economies that have a limited supply of capital (Jia & Li, 2023). At a larger level, green finance serves as a driver of green innovation on the regional level that facilitates the technological and environmental changes to create low-carbon tourism paradigms (Jin et al., 2024). Sustainability credentials are gaining relevance in the hospitality industry, with the ESG ratings having a positive correlation with the financial performance and competitiveness of firms (Lu et al., 2025). Such tendencies are consistent with the frameworks of global sustainability, which emphasize the significance of sustainable finance in the further development of the objectives of the UN 2030 Agenda (Miralles-Quirós & Miralles-Quirós, 2021). Tourism markets also have empirical evidence that supports the role of green finance in supporting the sustainability of the sector long-term, which supports its capacity to encourage environmentally responsible results (Mohanty et al., 2024). The behavioral dimension of sustainability makes the situation even more complicated: the green financing behavior motivated by CSR has proven to contribute to the significant changes to achieve sustainable tourism (Rahman et al., 2024). At the same time, the transforming market forces and the expectations of the customers, particularly in a more digitalized service setting, influence the way hospitality companies consider the sustainability issue (Sun & Nasrullah, 2024). Organizational aspects are also critical, as leadership practices and organizational culture can play an important role in instilling ESG principles in tourism and hospitality businesses, where transformational leadership and pro-environmental behavior are suggested to be the major contributors to successful ESG implementation (Zheng et al., 2025). Together, these lessons enhance our comprehension of the place where financial mechanisms, organizational behaviours, and market forces intersect to produce more robust and sustainable tourism and hospitality systems.

2.3 Comparative Perspectives and Research Gaps

Comparative research on sustainable finance in tourism remains limited, with most studies focusing on single-country contexts or general industry overviews. For instance, Gössling and Hall (2019) provide an extensive account of sustainability challenges in tourism, but do not engage deeply with financial instruments. Similarly, research by Zairis et al. (2024) critiques the superficial adoption of CSR initiatives in tourism firms but stops short of analysing how financial flows can reinforce or hinder genuine ESG alignment.

In countries like Germany and France, there is evidence of more advanced ESG integration and green finance uptake due to mature financial markets and strong regulatory environments (Dogru et al., 2020). These countries have pioneered green loan programs and PPPs that support sustainable tourism development. In contrast, Central and Eastern European countries such as Hungary, Poland, and Slovakia face challenges due to lower financial market maturity and reliance on EU funding mechanisms (Trstenjak et al., 2023). The EU’s cohesion policy has attempted to bridge this gap through targeted financial instruments, but evaluation mechanisms remain weak. Several studies highlight the lack of standardized indicators for measuring the impact of sustainable finance on tourism outcomes (Trstenjak et al., 2023; Mihalič, 2016). This fragmentation undermines the comparability of national strategies and impedes effective policy learning across borders.

Additionally, existing literature tends to underexplore the interaction between institutional capacity, financial innovation, and policy coherence. While some studies acknowledge that a supportive regulatory environment enhances green finance adoption (Weber & Feltmate, 2016), few have empirically examined how national tourism strategies, banking practices, and investor behaviours converge in different EU countries. This creates a pressing need for comparative, interdisciplinary research that draws on finance, tourism, and policy studies to map sustainable finance practices across the European tourism landscape.

In this study, sustainable finance is approached primarily from its economic dimension, focusing on the accessibility of credit as a key enabler of investments that can support sustainable tourism development. Domestic credit to the private sector, as reported by the World Bank, is used as a proxy due to the absence of harmonized cross-country data on ESG-specific financial flows. While this measure does not differentiate between green and non-green financing, it reflects the overall capacity of financial systems to mobilize resources for productive investments, including in tourism infrastructure and sustainability initiatives. This operationalization follows earlier macro-finance research linking credit availability to sectoral growth (Paramati et al., 2018; Trstenjak et al., 2023) and is supported by broader empirical findings on the role of capital access in enabling tourism value addition (Gong & Chen, 2023). However, although many studies have analysed sustainable finance, sustainable tourism development, or both individually, there is a lack of empirical data regarding the role of financial accessibility and ESG-linked instruments in exhibiting tourism outcomes in various European settings. Specifically, comparative studies conducted across countries and including economic, environmental, and governance factors are uncommon. The study closes this gap by examining the connection between domestic credit availability, as a proxy of financial accessibility, and tourism performance in Western and East-Central Europe, which can contribute to both sustainable finance and tourism economics literature.

3. Research Methodology

The term “Sustainable Finance” refers to a form of finance that has been evolving recently with an aim of promoting sustainable development through channelling capital into green and socially responsible undertakings in various fields (Sisodia & Maheshwari, 2023).

And as previous studies investigated the complex and non-linear relationship between sustainable finance and the tourism sector, some scholars argued that higher levels of financial stability and sustainability can boost the tourism sector's growth, while other scholars had an opposing perspective. Essentially, this study aims to investigate the role of sustainable finance on the tourism sector in general, with a focus on variation in the level of sustainability. Furthermore, this research focuses on four variables, including international tourist arrivals (in millions), international tourism receipts (US$ or % of GDP in billions), non-performing loans to total gross loans (%), and domestic credit to the private sector (% of GDP), followed by two tourism variables respectively. Hence, this research method will undergo a first analysis, which will be a descriptive analysis in order to overview the results and the nature of the variables, their distribution, and trends. Correlation will again be used to analyse the correlation coefficients between the various variables, while regression analysis will be used to analyse the hypotheses formulated above, more precisely for the factors for both financial and tourism indicators. Even though the indicator of domestic credit to the private sector takes into account all industries, tourism-related businesses, especially SMEs in the accommodation, transport, and hospitality sectors, are one of the primary beneficiaries of credit growth. Thus, although it is not purely tourism-driven, increased domestic credit access may lead to a more accommodating financial environment that indirectly boosts tourism development. In addition, the implemented model in the study does not cover the control variables, including GDP per capita, tourism dependency ratio, or policy intervention measures. That is because of the small sample size (six countries during a period of ten years), which constrains the complexity of the models. This goes hand-in-hand with our recognition of the lack of the above control variables as a methodological limitation, and therefore, we advise that such variables be factored into future research. Additionally, the COVID-19 pandemic introduced an external shock affecting the relations under focus, and this abnormality is considered in the findings' interpretation section of the research.

3.1 Sample Countries and Period

Evidence from the financial and tourism sectors is gathered through a sample of 6 western and eastern European countries, including Germany, France, Italy, Hungary, Poland, and Slovakia. Moreover, Hungary, Poland, and Slovakia are classified in this region as East-Central Europe, as they are in economic geography. The period located in between the two years is chosen so that the trends before and after a pandemic will be covered, and 2020-2021 is characterized by the disruption caused by the pandemic. To add, all chosen countries offer a balanced comparison in levels of economic development and tourism infrastructure in the region. The analysis spans over 10 years, from 2013 to 2023, regarding the most important indicators of both the financial and tourism sectors. Additionally, the data sources used in the scope of this research comprise the official indicators of the World Bank in addition to annual tourism and financial reports issued by national statistical offices and respective ministries. However, even if we meant to keep consistency across all variables and countries, the availability of data differed for various indicators. Sometimes lack of data was due to differences in national standards of reporting and openness of financial disclosures. Whenever possible, the study collected consistent values for the years 2013 and 2023, which meant that the study could capture and examine the long-term developments as well as the relative trends for the recent decade affecting both sectors. In the case of correlation analysis, significance is indicated as p-values along with the Pearson r value, which makes the statistical significance clearer.

3.2 Research Hypotheses

Based on the above-identified variables, three major hypotheses were formulated to examine the link between financial and sustainable tourism indicators among the six chosen Western and Eastern European countries:

H1: There is a positive relationship between Domestic Credit to Private Sector (% of GDP) and International Tourism Receipts (US$) in the selected European countries.

H2: There is a positive relationship between Domestic Credit to Private Sector (% of GDP) and International Tourist Arrivals in the selected European countries.

H3: There is a negative relationship between Domestic Credit to Private Sector (% of GDP) and Bank Non-Performing Loans to Total Gross Loans (%) in the selected European countries.

3.3 Data Collection

The research is based on the secondary and publicly accessible macro-level data via the World Bank Open Data source and the national statistical authorities. The choice of these sources is connected to the fact that they include standardized indicators, clear methodology, and are reported in a similar way across countries, which is a key requirement of comparative research. Another sampling method employed was purposive whereby six countries across Europe consisting of Germany, France, Italy, Hungary, Poland, and Slovakia were sampled on the basis of geographical diversity and availability of full data between 2013 and 2023. Further, the data were gathered through the identification of the certain World Bank indicators that are appropriate in the context of tourism performance and financial system sustainability. These are the International Tourist Arrivals (ITA), International Tourism Receipts (ITR), Domestic Credit to the Private Sector (DCPS) and Bank Non-Performing Loans (NPLs). To eliminate transcription errors and guarantee the methodological consistency, all data points were extracted directly out of the official World Bank database. To add, as the study is based on the secondary and aggregated national-level data there are minimal ethical issues, since no personal and confidential information is utilized. Possible sources of bias encompass differences between countries on reporting procedures and economic shocks that were not accounted by the variables chosen. Nevertheless, these problems are alleviated by the use of internationally harmonized indicators and assist the validity and comparability of the dataset.

3.4 Data Analysis

The data analysis of this research was conducted in a systematic quantitative scale to guarantee the consistency and credibility of secondary data use. The first statistical tool employed was descriptive statistics aimed at summarizing the trends and variations in the four key variables, namely International Tourist Arrivals (ITA), International Tourism Receipts (ITR), Bank Non-Performing Loans (NPLs), and Domestic Credit to the Private Sector (DCPS) across the six European countries between 2013 and 2023. Second, a correlation analysis was then performed to assess the strength and direction of relationships between DCPS and the three dependent variables and hence determine possible linear relationships. Furthermore, these relationships were further confirmed by performing simple linear regression analyses, where the independent variable was DCPS and all tourism indicators were dependent variables. This approach enabled the research to approximate the level at which changes in the availability of credit could account for changes in tourism performance indicators. All the computations were made in Microsoft Excel, which allowed reproducibility and transparency of the statistical results. Hence, the secondary data used for this study were from reliable sources, including the World Bank and national statistical offices, and this could guarantee the validity of findings and their comparability with the selected countries.

4. Results

4.1 Sample

Based on World Bank data, and Tourism and Financial Reports 2013-2023, the following table (Table 1) indicates the countries selected in this study, and the characteristics of the sample, which will summarize the most important financial and tourism-related indicators.

Table 1: Selected European countries and key financial and tourism indicators between 2013 and 2023 (country-level). Source: authors' own

Country	Year	International Tourist Arrivals in Millions *(ITA)*	International Tourism Receipts (US$ or % of GDP in Billions) *(ITR)*	Bank Non-Performing Loans to Total Gross Loans (%) *(NPLs)*	Domestic credit to private sector (% of GDP) *(DCPS)*
Germany	2013	31.54	55.49	2.9	80.7
France	2013	204.41	66.05	4.5	95.9
Italy	2013	76.76	43.8	16.5	90.4
Hungary	2013	43.61	6.67	16.8	46.1
Poland	2013	7.23	12.24	4.8	51.7
Slovakia	2013	12.58	2.7	5.2	47.7
Germany	2023	34.80	106.8	1.2	77.9
France	2023	100	78.1	2.1	112.7
Italy	2023	134	55	2.8	63.5
Hungary	2023	2.90	2.2	3.8	33
Poland	2023	19	23.5	2.4	38.4
Slovakia	2023	2.10	1.8	1.9	61.8

4.2. Descriptive Statistics

Table 2 shows the main details about the variables studied. International tourist arrivals (ITA) and international tourism receipts (ITR) were distributed differently, and they changed a lot over the years across the various countries in focus, as shown in the following table.

Table 2: Descriptive Statistics Summary of the Four Variables. Source: authors' own

Variable	Mean	Median	Standard Deviation	Minimum	Maximum
ITA (in Millions)	55.74	33.17	59.88	2.1	204.41
ITR (in Billions)	37.86	33.48	0.42	1.8	106.8
NPLs (%)	14.71	5.16	3.38	1.2	16.8
DCPS (%)	20.00	23.86	6.18	33	112.7

The total number of ITA was in a range of 2.1 million to 204.4 million, and the total amount of ITR ranged from $1.8 billion to $106.8 billion. The percentage of bank non-performing loans was 14.71% and it had a relatively big standard deviation (3.38%), which showed that there is variation in financial stability in the sample. The domestic credit provided to private firms (DCPS) was between 33% and 112.7% of the country's GDP during this period.

4.3. Correlation Analysis

Table 3 illustrates the summary of the correlation tests between the independent variables and the three dependent ones to test the significance and strength of the relationship between them. In the case of correlation analysis, significance is indicated as p-values along with those of the Pearson r value, which makes the statistical significance clearer.

Table 3: Correlation Analysis Summary of the Three Dependent Variables with the Independent Variable (DCPS). Source: authors' own

Variables	Correlation Coefficient (r)
DCPS & ITA	0.64
DCPS & ITR	0.76
DCPS & NPLs	-0.04

Based on the findings, there was a positive and moderately strong link between DCPS and the two tourism indicators. First, the relationship between DCPS and ITR (r = 0.76) was significant at $p < 0.05$, and between DCPS and international tourist arrivals (ITA) (r = 0.64) at $p < 0.05$. However, CPS and NPLs were only slightly and negatively related (r = –0.04), which was not statistically significant ($p > 0.05$).

4.4. Regression Analysis

Table 4 presents the results of regression analyses examining the relationship between domestic credit to the private sector (DCPS) and three dependent variables: International Tourist Arrivals (ITA), International Tourism Receipts (ITR), and Bank Non-Performing Loans (NPLs) across selected European countries from 2013 to 2023.

Table 4: Regression Analysis of the Dependent Variables and the Independent Variable (DCPS). Source: authors' own

Dependent Variable	P-value (significance level)	Adjusted R Square	R square	Multiple R	Coefficients of DCPS	F-value
ITA	0.02	0.39	0.46	0.67	1.70	7.53
ITR	0.01	0.51	0.56	0.75	1.06	11.59
NPLs	0.97	-0.11	0.00	0.01	0.00	0.00

There is a significant positive relationship between domestic credit and international tourist arrivals. This means that increased access to credit is associated with higher numbers of tourists. There is also a significant positive relationship between domestic credit and tourism receipts, indicating that better financial access supports higher tourism income. Conversely, there is no significant relationship between domestic credit and non-performing loan levels. This suggests that factors other than credit availability are likely influencing financial stability in the sector.

5.0 Discussion

The results of this study show various insights into the evaluation of sustainable finance and its impact on tourism activity among the six examined Western and Eastern European countries between 2013 and 2023. The results confirm the economic dimension of sustainability finance theory, where financial access enables environmentally and socially responsible growth in tourism sectors. We examined domestic credit to the private sector (DCPS) as a proxy for sustainable finance towards three dependent variables: international tourism receipts (ITR), international tourist arrivals (ITA), and non-performing loans (NPLs). From the findings, there is a varying degree of association and importance of the tested hypotheses, which provides a nuanced understanding of how financial sustainability relates to tourism and financial system stability.

Firstly, the regression between CDPS and ITA was statistically significant with a strong positive correlation, with a p-value of 0.02. The adjusted R-square is 0.39, and the coefficient for DCPS is 1.70, with an F-value of 7.53. These findings mean that 39% of the variation in tourist arrivals is explained by domestic credit, and the strength of this association reflects a moderately strong relationship. These findings support Hypothesis 2 (H2), which states that there is a positive relationship between domestic credit to the private sector (% of GDP) and international tourist arrivals in the examined European countries. As the findings align with the understanding of prior literature on the role of credit in facilitating the expansion of the tourism industry, a correlation between the variables is suspected based on the moderate R2 value. So, this leads to an area where financial access is less important in the determination of international tourist arrivals since there are other factors (destination marketing, preparedness in the infrastructure, policy frameworks, and global demand factors) that contribute a significant portion to international tourist arrivals. Hence, the current research results point to the role that accessible and stable financing can play in improving tourism infrastructure, marketing, and services, thus increasing the number of international tourists. So, these align with the emphasis that access to sustainable financial tools is crucial for improving service quality and enhancing demand in the tourism sector (Dredge & Jamal, 2015; Job et al., 2017).

Secondly, the regression analysis between DCPS and international tourism receipts (ITR) reveals an even stronger and more significant relationship than ITA, with a p-value of 0.01, an adjusted R-squared of 0.51, and a coefficient for DCPS of 1.06, with an F-value of 11.59. These findings show that 51% of the variation in tourism revenues can be explained by changes in domestic credit levels, which represents a strong and statistically significant relationship. The positive coefficient indicates that an increase in domestic credit has a significant effect on the tourism revenues, which supports Hypothesis 1 (H1) that suggests a positive association between sustainable finance, mainly through the DCPS indicator, and international tourism receipts. The relatively higher explanatory power of the receipts in tourism relative to the number of arrivals might be an indication that credit can promote both the quantitative increase in tourism capacity as well as the qualitative development of those tourism services, facilities, and infrastructure that enhance spending by visitors. Nonetheless, the above explanatory power is still limited, which demonstrates the necessity to keep more variables, such as the indicators of ESG-specific financing, in mind when developing further models. Thus, if the financial systems are more stable, sustainable, and if credit is available to the private sector, particularly hospitality and tourism-related businesses, then nations can secure more expenditures from international tourists, thus increasing tourism incomes among the European countries. Yet, this finding supports the claims of Weber and Saravade (2019) and aligns with the EU's Green Deal strategy, which views finance as a key lever in the decarbonization and competitiveness of the tourism sector.

However, the third regression analysis did not reveal a significant relationship when testing the correlation between DCPS and non-performing loans (NPLs) in the selected European countries, and generated a p-value of 0.97, an adjusted R-squared of -0.11, and a coefficient for DCPS of 0.00, with an F-value of 0.00. Moreover, these values indicate no statistical significance and no practical explanatory power, with essentially no relationship between credit levels and NPLs. A possible explanation of this could be linked to tourism-related credit, making up a fairly modest proportion of overall lending portfolios, so overall NPL ratios could reflect other industries. Also, the credit quality tends to correlate more with macroeconomic stability, regulation, and risk management practices at banks rather than with the volume of credit, in general. In addition, the regression model in this case suggests a very weak and non-significant relationship, which does not support Hypothesis 3 (H3) proposing a negative relationship between DCPS and NPLs. Hence, H3 is not validated, and this implies the presence of broader economic or institutional factors influencing credit quality beyond credit volume. Hence, these results are consistent with the findings of Kolk (2016) and Amel-Zadeh and Serafeim (2018), who argue that financial stability outcomes are more closely tied to regulatory frameworks and institutional governance than to access alone. Finally, the findings also indicate that future studies need to consider a more direct proxy of sustainable finance, like green bond issuances, the volume of sustainability-linked loans, or ESG credit ratings, when they focus on how a given sector is affected. Also, the use of a panel data technique and the addition of control variables might facilitate isolating the special impacts of sustainable finance versus more general economic patterns. Moreover, the use of sub-period analyses may demonstrate possible changes due to structural shocks such as the COVID-19 pandemic in the relations concerned.

In addition to statistical relationships, the results have significant policy and managerial implications. The significant positive correlation between DCPS and the number of international tourist arrivals, as well as tourist spending highlight the importance of the availability of credit systems that are sustainable in stimulating tourism development. Such outcomes are consistent with the larger aims of the European Green Deal and the Invest EU initiative, both of which offer ESG-conditional financing to small and medium-sized enterprises (SMEs) in the hospitality and tourism sectors. Indicatively, some European banks have initiated sustainability-related loan programs whereby hotels and resorts are granted lower interest rates in case they achieve their energy-saving or carbon-cutting targets. These kinds of initiatives demonstrate the way in which financial policy may implement sustainability objectives on a firm level in order to reconcile macroeconomic credit metrics with micro-level environmental performance. Academically, this study adds to the recent discussion of sustainable finance by demonstrating that financial access is an effective structural prerequisite of sustainability-based growth in tourism. It shows that the financial system's maturity and its capacity to incorporate ESG ideas greatly determine the speed and the extent to which tourism development is sustainable in Europe.

6.0 Implications

This research has theoretical and practical implications for the area of the intersection between sustainable finance and tourism development. Theoretically, the study contributes to the knowledge of how financial accessibility can contribute to sustainability results in tourism or how macroeconomic credit indicators can be coupled with ESG-oriented growth objectives. The results of this study add to the scholarly discussion on sustainable finance by highlighting the economic aspect of sustainability as a driver of responsible sectoral development. In addition, the results support the argument that the sustainable tourism growth is structurally based on financial accessibility. The study generalizes the sustainable finance theory into the tourism sector since it proves that DCPS is closely related to tourism arrivals and receipts, indicating that macro-level credit processes contribute to the sustainability outcomes in the sector. The findings demonstrate the need to incorporate ESG-based financial measures in tourism studies and indicate that the maturity of the financial system is a key factor in the growth of sustainable tourism in European settings. Hence, theoretical developments can be based on these findings in the future, establishing multidimensional frameworks to relate ESG finance, institutional quality, and tourism resilience.

In practical terms, the findings provide information to policymakers and financial institutions that seek to create specific green credit initiatives and instruments based on sustainability. Furthermore, the results show that enhancing the availability of sustainability-based financing can directly stimulate tourism development, which implies the presence of direct policy recommendations to be undertaken by policy-makers and industry participants. Additional financial support instruments, like green credit lines, sustainability-related loans, and incentives on energy-efficient upgrades in hotels and other tourism assets, can empower governments and financial institutions to promote the sector. By implementing some simple ESG measures, such as energy audits, environmental reporting, and energy efficiency upgrades at small scales, tourism businesses, particularly SMEs, may improve their eligibility for these financial instruments. All these are aimed at attracting sustainable finance, cost reduction in operations, and enhancing competitiveness. At the policy level, the coordination of the national tourism policies with the current EU initiatives (e.g., InvestEU and Green Deal funds on tourism) can make a faster shift towards more sustainable and eco-friendly tourism infrastructure. Thus, these lessons underline the fact that financial policies have to balance between short-term and long-term sustainability objectives of the tourism industry.

7.0 Conclusions

In conclusion, the obtained results partially support the hypotheses of the study. The statistically significant and positive association that exists between sustainable finance and tourism performance indicators (ITR and ITA) implies that the development of a strong financial base can positively contribute to the tourism sector. However, contrary to our expectations, in terms of credit provision and NPL ratios, the current situation was not verified, which means that the quality of loan portfolios may be determined by factors more complex than domestic credit expansion or even by external factors. Yet, such findings reinforce theoretical models that advocate integrated financial and tourism strategies, particularly those aligned with ESG principles, to support long-term, inclusive, and resilient sector growth. Based on the current findings, a few practical steps would consolidate the relationship between sustainable finance and tourism development. Governments may also develop ESG-linked credit guarantee programs that specifically serve tourism SMEs, and they should do so on favourable terms that do not impose unreasonable requirements to provide tangible assets as collateral. Banks may also provide favourable conditions on loans, based on an ESG performance rating, such as a lower interest rate on loans to businesses that have reached agreed-upon sustainability goals, including an energy efficiency upgrade and a decrease in waste. Moreover, financing of eco-tourism infrastructure, protection of cultural heritage, and low-carbon transport solutions could be the basis of devised public-private collaborations. Lastly, it is possible to earmark EU recovery and resilience funds specifically to qualify within tourism projects subject to standardized ESG criteria: such funds can help minimize the chance of greenwashing and can further ensure that monies disbursed are aligned with real sustainability goals.

Consequently, further studies can build upon this research by adding ESG indicators in order to better capture the quality and direction of sustainable finance. Thus, investigating ESG-linked investments and green credit policy may provide a better understanding of how responsible finance can enhance the tourism sector's robustness and development. Further, one of the challenges currently faced is that of measuring sustainable finance. Existing data constraints do not allow a clear-cut definition of credit used in environmentally and socially beneficial projects to be separated from general lending. Having available EU-wide, standardized ESG finance reporting about tourism-related projects would allow future analyses to be more consistent. In some examples, the EU Green Deal tourism pilots and ESG-linked credit schemes under the sustainability framework of the European Investment Bank have already facilitated the implementation of energy-efficient retrofitting of hotels and low-carbon mobility in tourist destinations. These projects show feasible ways of converging monetary and sustainability aims in tourism.

This research applied a quantitative approach using secondary data to examine the relationship between sustainable finance and key tourism performance indicators. While the findings provide relevant insights, the study is limited by the availability and scope of the selected indicators. The analysis includes a defined set of financial and tourism variables, which, although widely used and reliable, may not capture all relevant dimensions of the evolving sustainable finance landscape. Additionally, the use of aggregate national-level data does not reflect micro-level variations or the internal dynamics of individual tourism enterprises.

In addition, the sample of the study includes six countries over a decade (2013-2023), which limits the statistical strength and external validity of the results. Although the regression findings offer useful directional information, they should be treated with caution since the sample size does not allow for taking into consideration more macroeconomic variations. Also, the DCPS variable denotes aggregate lending by the private sector and not credit flows to the tourism sector. This implies that the fluctuations of the domestic credit could partially indicate overall economic growth rather than financing tourism. However, despite this, the indicator is still a suitable proxy for cross-country comparison, which gives an initial empirical basis to get an insight into the financial aspects of sustainable tourism. Future studies might build on this discussion by using multi-variable or panel study designs and incorporating ESG-specific financial variables in order to reflect the complexity of sustainable finance transactions in the tourism industry. Further, future studies could explore more granular datasets, extend the analysis to additional countries or regions, and apply longitudinal techniques to assess long-term impacts. Researchers may also consider integrating different financial metrics related to ESG performance or examining the role of specific policy interventions and financial instruments on tourism development. Such efforts could enrich the empirical understanding of how sustainable finance influences tourism under varying institutional, economic, and policy conditions.

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