International Journal of
Financial Studies

MDPI

Article

The Impact of Geographical Factors on the Banking Sector in El Salvador

Anders Lundvig Hansen [1] and Luís Lima Santos [2,*]

[1] The Salford School of Business, University of Salford, 43 Cresent, Salford M5 4WT, UK; anders.hansen@osew.org
[2] CiTUR—Centre for Tourism Research, Development and Innovation, Polytechnic University of Leiria, 2411-901 Leiria, Portugal
* Correspondence: llsantos@ipleiria.pt

Abstract: This study explores how geographical factors shape El Salvador's banking sector, particularly focusing on regional disparities, urbanization, and vulnerability to natural disasters affecting access to financial services. By employing a mixed-methods approach that combines quantitative data and qualitative interviews, the research analyzes how these geographical challenges impact financial inclusion and banking development. Data from the Central Reserve Bank of El Salvador and financial institutions is examined alongside Geographic Information Systems (GISs) to illustrate the spatial distribution of banking services. Interviews with stakeholders, including bank representatives and clients from urban and rural areas, reveal a significant urban–rural divide, with approximately 75% of bank branches and 80% of ATMs situated in urban centers, particularly in San Salvador. Rural areas face limited access to formal banking due to challenging topography and inadequate infrastructure, leading to increased financial exclusion and reliance on informal systems. Natural disasters further disrupt banking infrastructure and heighten the need for emergency loans. While urbanization has spurred financial growth, it has also resulted in informal settlements with restricted access to formal services. As its main contribution, this study provides one of the first in-depth, geographically grounded analyses of financial exclusion in El Salvador, offering original insights into how spatial inequalities and disaster vulnerability intersect to shape banking access and economic participation. The study calls for a more inclusive banking sector, recommending mobile and digital banking expansion, agent banking in underserved areas, and improved disaster risk management to enhance economic participation across all regions.

Keywords: financial inclusion; geographical factors; banking sector; urban–rural division; El Salvador

Academic Editors: Babacar Sène and Zied Ftiti

Received: 4 April 2025
Revised: 29 April 2025
Accepted: 6 June 2025
Published: 13 June 2025

Citation: Lundvig Hansen, A., & Lima Santos, L. (2025). The Impact of Geographical Factors on the Banking Sector in El Salvador. *International Journal of Financial Studies*, *13*(2), 110. https://doi.org/10.3390/ijfs13020110

1. Introduction

Geographical factors play a significant role in shaping the structure, access, and performance of banking systems worldwide (Alessandrini et al., 2005) dive into the functional, operational, and physical distance between banks and their clients from the perspective of EU while suggesting *that the geography of banking power may be relevant at the international as well as at national and inter-regional levels*, especially with regards to *home-banking or phone-banking*. In the case of El Salvador, a country characterized by complex topography, densely populated urban centers, and persistent socio-economic inequalities across regions, geography significantly influences the banking sector, its participants and clients. One study (Vides de Andrade et al., 2002) described one of the influences in their working

paper as social exclusion related to geographic isolation, which is increasing the cost of transactions and thereby preventing or hindering economic participation of approximately 37% of the Salvadorian workforce, this factor alone is effectively limiting the banking sectors reach in the country as we will attempt to demonstrate. The banking sector's ability to provide financial services, promote economic growth, and extend financial inclusion to all regions of the country depends not only on economic factors but also on spatial considerations and appropriate infrastructure, such as electricity and mobile networks, as banks are not widely represented in rural areas and that is one of the reasons why for example the digital alternatives to physical, formal banking present a challenge to rural populations in El Salvador, and therefore remains one of the barriers to financial inclusion especially in rural areas. One study (Brown et al., 2013) explored the link between exclusion from formal financial services provision for low-income sectors across Latin America and the unstable nature of regional financial services architecture and economies.

With expanding urbanization and the end of the civil war in 1992 came also the terrorizing fear of the murderous gangs that would plague the country for decades. In today's El Salvador, things have changed significantly in many areas and in a very short time, only a few years ago, it was unsafe to walk the streets almost anywhere in El Salvador—it was literally known for being the murder capital of the world. Now, the country has changed significantly and has become much safer. However, the economy is still struggling, and people are still poor, but their joy of living has returned, and the fear of walking the streets has disappeared.

Since Nayib Armando Bukele Ortiz was elected in 2019, he made his pledge to take back the country from the grip of the gangs that have plagued it since the end of the civil war in 1992. He did that by increasing the police and military budget to over USD 100 m. However, a week of a bloody gang war in March 2022 amounted to approximately 60–80 casualties, according to different news outlets (Muth, 2022; BBC, 2022). President Bukele deployed the military to clean up once and for all and announced a state of emergency nationwide, which is still in effect at the time of writing in November 2024. The state of emergency involved the suspension of certain constitutional rights in order to allow the police and military to arrest suspected gang members at all costs, without the usual legal procedures. The controversial decision has led some skeptics to believe he is establishing a dictatorship, calling him the most successful or coolest dictator in the world (Sherman, 2024; Culver et al., 2024). Until now, more than 70,000 criminal gang members have been arrested in the crackdown on gangs in El Salvador. Although many gangs are still active in the country, the results have so far been a good improvement for further economic and social development, which includes an expanded banking sector. El Salvador went from being the country in the Americas with the highest murder rate to being the one with the lowest, even lower than the United States in comparison. He remains supported by a majority of Salvadorians, as he regained another term in the presidential office in February of 2024 (Morbiato, 2023).

Considering this broad context, this study aims to examine how these geographical factors, including regional disparities, urbanization, and vulnerability to natural disasters, influence the banking system in El Salvador, and it is expected that the results of the study will help decision-makers promote the development of this country in the context of its specific geography.

The relationship between geography and financial inclusion has gained increasing attention in development studies, particularly in the context of emerging and low-income economies where uneven spatial development shapes access to formal financial services. Research shows that geographic isolation, low population density, and weak infrastructure continue to be significant barriers to inclusive financial systems, especially in rural areas of

developing countries (Beck et al., 2007), are foundational, while recent years have seen a paradigm shift in the field, prompted by rapid advances in digital technology, the global expansion of fintech (financial technology) and the socio-economic shocks of the COVID-19 pandemic has spurred new approaches to bridging financial access gaps. Recent studies (Ozili, 2018; Sahay et al., 2020) argued that digital financial services, especially mobile payments, e-wallets and agent banking, can dramatically improve financial inclusion by bypassing physical infrastructure constraints such as the erection of new bank branches. However, despite this, it should be noted that cell tower expansion is still a critical form of physical infrastructure needed for digital financial inclusion strategies. Similarly, Yang and Zhang (2022) provided empirical evidence that fintech adoption affects household consumption and consumption inequality. Another study (Krogstrup & Oman, 2019) examined the role of banks in climate adaption, disaster response and recovery financing through geographically sensitive strategies. Despite this progress, literature still lacks granular, country-level case studies that explore the intersection of geography, politics and banking development in post-conflict and disaster-prone environments. El Salvador represents a timely and important case, especially considering its recent policy innovations (e.g., Bitcoin adoption), declining rural financial access and urbanization-driven informality.

This study offers an original contribution to the literature on financial geography and development by considering and providing a comprehensive, country-specific analysis of how geographical factors influence the structure and accessibility of the banking sector in El Salvador, including factors that impact and impede the efficacy, reach, functioning and development of the banking sector in the nation. The study highlights inadequate digital adoption with specific emphasis on the absence of critical infrastructure in remote and rural areas. This absence contributes to the slow adoption of mobile and internet banking in these regions, further contributing to the persistence of social inequality and a lack of formal financial participation from rural citizens.

While prior research has addressed spatial disparities in financial inclusion at regional or global levels, this work uniquely situates El Salvador within a multidimensional framework that incorporates topography, infrastructure, natural disaster vulnerability and socio-political dynamics. The originality of the study is threefold. Firstly, it integrates quantitative analysis, qualitative stakeholder interviews, although few and GIS-based spatial mapping to explore the Urban–rural divide in banking access. Secondly, it contextualizes the financial system within El Salvador's evolving security landscape, particularly the post-conflict era and the recent anti-gang policies, as well as its adoption of Bitcoin as legal tender. Thirdly, it presents updated empirical data on the capital structure and distribution of the country's 15 operational banks, offering one of the most current and detailed overviews available in academic literature. By linking geographic isolation, regional inequality and disaster vulnerability to financial exclusion, the study advances a nuanced understanding of banking sector dynamics in low- and middle-income and disaster-prone countries.

Considering the above-mentioned assumptions, the primary objective of this study is to investigate how geographical factors, including regional disparities, urbanization and vulnerability to natural disasters, affect the structure, accessibility and development of the banking sector in El Salvador. It aims to assess the extent to which spatial and infrastructural constraints contribute to financial exclusion, particularly in rural and marginalized communities. The study furthermore seeks to evaluate the role of digital and mobile banking as potential mitigators of geographic barriers to financial access. The central hypothesis is that geographic isolation, infrastructural deficiencies, and disaster risk significantly limit financial inclusion in El Salvador and that targeted policy interventions such as expanded digital infrastructure and agent banking can help reduce these disparities and promote more equitable economic participation.

This study contributes to the evolving literature by providing a mixed-methods, GIS-supported assessment of how geographical and infrastructural barriers shape financial inclusion in the Salvadorian context. The study shows that a more inclusive and resilient financial system is essential for sustainable development in El Salvador. By expanding digital financial services, strengthening infrastructure, and enhancing disaster risk management, rural and marginalized communities can better access and participate in the formal economy. It concludes with policy-relevant recommendations aimed at enhancing financial inclusion through mobile banking, agent networks and disaster risk preparedness, making it both academically and practically significant.

2. Literature Review

2.1. Geography and Financial Inclusion

The relationship between geography and financial inclusion has been extensively studied, especially in developing countries. Geographic isolation, low population density, weak infrastructure, and difficult terrain often restrict access to financial services in rural areas.

One foundational work (Beck et al., 2007) explored the relationship between financial development and income inequality, particularly focusing on how access to financial services can impact the economic well-being of poor populations. They argue that a well-functioning financial system can help reduce inequality by providing the poor with better access to credit and financial services, thereby enabling them to invest in education, health, and business opportunities. The authors provided empirical evidence in their paper supporting the idea that financial development contributes to economic growth while simultaneously helping to alleviate poverty and reduce income inequality. In countries with diverse topographies like El Salvador, where the distribution of banking services is frequently uneven, urban centers enjoy more banking facilities, while rural areas lag behind. Distance to banking services can create a financial inclusion gap, limiting opportunities for savings, credit, and investments for populations outside urban hubs. To further understand the impact of geography on financial inclusion in El Salvador, one major factor that cannot be overlooked, as mentioned, is the urban–rural divide. Rural regions face infrastructural challenges that limit access to financial services, such as banking and microfinance, which are much more concentrated in urban centers like San Salvador. A World Bank report highlights that the rural population has lower financial inclusion rates due to geographical isolation, with only 31% accessing formal financial services, compared to 48% in urban areas. Moreover, remittances, a significant financial flow in El Salvador, particularly influence financial inclusion by enabling recipients in rural areas to open a savings account, as noted in the World Bank working paper. However, the reliance upon remittances also reduces the need for credit from formal financial institutions (Anzoategui et al., 2014).

2.2. Regional Economic Disparities and Banking Development

A country's economic geography, which includes regional disparities in income, employment, and infrastructure, directly impacts the banking sector. One study (Guiso et al., 2004) examined the impact of local financial development on economic growth and individual welfare in Italy. Although this paper was not specifically about El Salvador, their theory could very well be applied in El Salvador. They argued that local financial development plays a critical role in enhancing access to credit and financial services, which can significantly influence entrepreneurial activities and overall economic performance. Their empirical analysis suggests that regions with more developed financial systems tend to experience higher rates of economic growth, and this development is particularly beneficial for smaller firms and new entrepreneurs. Regional disparities often reflect the distribution of banking services and the demand for financial products. Poorer, less developed regions

tend to have weaker banking infrastructure and higher operational costs for banks due to lower transaction volumes and higher risks, thus creating a higher probability of being financially excluded. They rely on the thesis that individuals and firms have easier access to external funds in developed financial markets, which allows them to measure financial development on a local level. They find that the odds of a newly started entrepreneur increase by 33% if he moves from a less financially developed region to a more financially developed region, for example, from a rural region to a city. The notion was, however, to make rural areas more financially included by facilitating more financial options available to people living in isolated regions and rural areas rather than forcing them to leave their homes and crops in search of a more economically viable, sustainable and affordable life and business with equal opportunities as the people in bigger cities. Unfortunately, the data does not suggest a wider opportunity base in those isolated and rural regions.

However, mobile banking could be the solution for the people of El Salvador's rural regions. One study (Mbiti & Weil, 2015) showcased the example of M-PESA from Kenya, which proved to be a great success for people in isolated regions with great distances to the nearest infrastructure and civilization. With this financial tool available to them, they would have more time to tend to their crops and families without having to journey for days in isolated territory with the dangers along the way that could hinder their safe return to their families. Another study (Claessens & Leaven, 2004) investigated various determinants of bank competition, including market structure, regulatory frameworks, and macroeconomic conditions. They find that factors like market concentration, entry barriers, and the level of financial development significantly influence competition levels among banks. While their paper does not directly focus on El Salvador, its findings can be relevant to understanding the dynamics of banking competition in the country. El Salvador has indeed faced challenges related to financial inclusion, regulatory environments and economic development. Insights from this research could help to inform policymakers and financial institutions in evaluating the competitive landscape of Salvadorian banks and the broader implications for economic growth and access to financial services. The availability of banking services in more economically active regions, such as larger cities and capitals, on the other hand, fosters more robust growth and financial access, a fact that remains true for a vast majority of the smallest economies in the Caribbean and Central America, including El Salvador.

2.3. Natural Disasters and Banking Vulnerability

Vulnerability to natural disasters is another key geographical factor that influences banking. Countries prone to frequent natural disasters, such as earthquakes and hurricanes, must contend with the resulting economic disruptions. Disasters often lead to an increased demand for loans, changes in risk assessment, and disruptions in the physical banking infrastructure. Another study (Skidmore & Toya, 2007) argued that more economically developed countries tend to experience fewer negative impacts from natural disasters due to better preparedness, infrastructure and institutions; this paper provided empirical evidence on how development mitigates disaster impacts and explores the role of economic policies in building resilience. For countries like El Salvador, which is highly vulnerable and exposed to earthquakes and volcanic activity (Teperek, 2024c), hurricanes, droughts, and floods, disaster risk management becomes a crucial aspect of banking operations, and as such, natural disasters significantly increase the vulnerability of the banking sector in El Salvador. These natural and unpredictable events disrupt economic activities, leading to a rise in non-performing loans as affected borrowers face challenges in repaying their debts. Furthermore, damage to existing physical banking infrastructure, such as branches and ATMs is also limiting access to financial services, especially in rural areas. According to

the International Monetary Fund (IMF), natural disasters exacerbate pre-existing financial vulnerabilities by destabilizing the economy and increasing the likelihood of liquidity shortfalls in banks across the country (IMF, 2019).

2.4. Urbanization and Financial Growth

Urbanization plays a critical role in the development of banking sectors. Urban centers tend to have higher population densities, better infrastructure, and a higher concentration of economic activities, which in turn foster the growth of banking services. One study (Levine, 2004) discussed how financial systems can support economic growth and resilience and may provide a backdrop for understanding how geological factors like earthquakes or seismic and volcanic activity influence the stability of the banking sector in El Salvador. While Levine's work does not directly focus on geological factors or El Salvador in particular, it is indeed helpful in understanding how geological risks affect and impact investment decisions of banks operating in the country. However, rapid urbanization can also create challenges, such as the development of informal financial systems in areas where formal banking is not sufficiently accessible. One study (Beck & Martinez Peria, 2010) analyzed the impact of foreign bank participation on financial outreach in Mexico. Although this study does not directly focus on El Salvador or address the challenges of natural disasters or financial sector growth, the authors explore how foreign banks differ in their approach to providing financial services compared to domestic banks, particularly in terms of expanding access to underserved populations and could be compared with El Salvador and provide relevant context for understanding these issues in the Salvadorian banking landscape, as many of the same conditions are present such as financial isolation in rural areas. Moreover, they find that foreign banks often have a broader outreach and highlight challenges related to their commitment to long-term investments in local markets. Among these challenges are the banking outreach in vulnerable and disaster-prone regions. Effective outreach is crucial for providing financial services to communities that may otherwise rely on informal systems during recovery from natural disasters. In regions where formal banking is insufficient or inaccessible, like parts of El Salvador, the reliance on informal financial systems often increases. Understanding the role of banks in expanding access to credit can shed light on how to strengthen formal financial services and reduce dependence on informal options. This study also contributes to insights that can lead to important discussions about how to build a more resilient financial system that serves people better in times of natural disasters and post-disaster aftermath. Having access to banking services is critical for recovery and rebuilding efforts.

2.5. El Salvador's Banking Sector

Currently, there are 15 different banks operating in El Salvador besides the Central Reserve Bank of El Salvador (Banco Central de Reserva de El Salvador), which serves as the country's central bank, responsible for the issuance of physical cash, oversight of monetary policy and financial regulation according to (Privacy Shield, 2024). Out of the 15 operational banks in the country, 13 of them are private and listed below:

1. Banco Agrícola S.A.: Parent Company: Bancolombia S.A. (San Salvador, El Salvador) One of the largest banks in El Salvador, offering comprehensive financial services. As of 31 December 2023, Bancolombia reported a total equity of approximately COP 35.5 trillion (around USD 9.5 billion). The bank's capital is divided into common shares, with Grupo de Inversiones Suramericana and the Colombian government among its major shareholders (Bancolombia S.A., 2023)
2. Banco Cuscatlán de El Salvador, S.A.: Parent Company: Grupo Terra (San Salvador, El Salvador). Provides a wide range of banking services to private and corporate

clients. Grupo Terra is a diversified conglomerate with investments in energy, real estate, and financial services. Specific capital details for its banking operations are not publicly disclosed.

3. Banco Davivienda Salvadoreño, S.A.: A subsidiary of Colombia's Davivienda, offering personal and corporate banking services. As of 31 December 2023, Banco Davivienda reported a total equity of approximately COP 15.2 trillion (around USD 4.1 billion). The bank's capital comprises common shares, primarily held by Grupo Bolívar (San Salvador, El Salvador), a Colombian conglomerate (Banco Davivienda, 2023).
4. Banco de América Central (BAC): Parent Company: BAC Credomatic (San Salvador, El Salvador), owned by Grupo Aval (Colombia). Offers various financial products and services. Grupo Aval, as of 31 December 2023, reported a total equity of approximately COP 30 trillion (around USD 8 billion). BAC Credomatic operates as a subsidiary within this structure, with capital allocated across its Central American operations (Banco de America Central, 2023).
5. Banco G&T Continental El Salvador, S.A.: Parent company: Banco G&T Continental (San Salvador, El Salvador). Provides a range of banking services to individuals and businesses. As of 31 December 2023, Banco G&T Continental reported a total equity of approximately GTQ 7.5 billion (around USD 970 million). The bank's capital is divided into common shares held by various private investors (Banco G&T Continental, 2023).
6. Banco Promerica, S.A.: Parent Company: Promerica Financial Corporation (San Salvador, El Salvador). Offers financial services, including savings and checking accounts, loans, and credit cards. Promerica Financial Corporation operates across nine countries in Latin America. As of 31 December 2023, it reported a consolidated total equity of approximately USD 1.2 billion. The capital is distributed among its subsidiaries, including Banco Promerica in El Salvador (Banco Promerica, 2023).
7. Banco Azul de El Salvador: A newer bank that began operations in 2015, providing various banking services. Established with the ownership of several Salvadorian investors in 2015, specific capital structure details are not publicly disclosed or readily available, the webpage was blocked for international access, and data was unattainable.
8. Banco ProCredit: Parent company: ProCredit Holding AG & Co. KGaA (San Salvador, El Salvador). Focuses on providing financial services to small and medium-sized enterprises (SMEs) and individuals. As of 31 December 2023, ProCredit Holding reported a total equity of approximately EUR 700 million (around USD 800 million). The capital is distributed among its network of banks in developing countries, including Banco ProCredit in El Salvador (Banco ProCredit, 2023).
9. Banco Industrial El Salvador, S.A.: Parent company: Banco Industrial (San Salvador, El Salvador). Offers a range of banking services to private and corporate clients. As of 31 December 2023, Banco Industrial reported a total equity of approximately GTQ 10 billion (around USD 1.3 billion). The bank's capital is divided into common shares held by private investors and corporate entities (Banco Industrial El Salvador, 2023).
10. Citibank, N.A. Sucursal El Salvador: Parent company: Citibank, N.A. (San Salvador, El Salvador). Provides corporate and investment banking services. As of 31 December 2023, Citibank, N.A. reported a total equity of approximately USD 150 billion. The bank's capital comprises common shares held by public investors, with Citigroup Inc. as the holding company (Citibank, 2023).
11. Scotiabank El Salvador, S.A.: Parent company: The Bank of Nova Scotia (San Salvador, El Salvador). Formerly a subsidiary of Canada's Scotiabank, the bank's operations in El Salvador were sold to Imperia Intercontinental Inc., the main shareholder of Banco Cuscatlán, in 2020. As of 31 October 2023, Scotiabank reported a total equity of ap-

proximately CAD 70 billion. The bank's capital comprises common shares, preferred shares, and other equity instruments held by public investors (Scotiabank, 2020).

12. Banco Azteca El Salvador: Parent company: Grupo Elektra (Mexico City, Mexico). Providing consumer banking services. As of 31 December 2023, Grupo Elektra reported a total equity of approximately MXN 100 billion (around USD 5 billion). Banco Azteca operates as a subsidiary within this structure, with capital allocated across its operations in Mexico and Central America (Banco Azteca, 2023).
13. Banco Atlántida El Salvador: Parent company: Banco Atlantida (San Salvador, El Salvador). Offering various banking services. As of 31 December 2023, Banco Atlántida reported a total equity of approximately HNL 15 billion (around USD 600 million). The bank's capital is divided into common shares held by private investors and corporate entities (Banco Atlantida El Salvador, 2023).

In addition to the private, foreign, and local banks and the central bank in El Salvador's banking sector, the country also has two state-owned banks listed below:

14. Banco Hipotecario de El Salvador: Specializes in mortgage financing and offers other banking services. The state-owned bank was established in 1935, focusing on providing financial services to various economic sectors, including small and medium-sized enterprises (SMEs). As of 31 December 2023, Banco Hipotecario reported a total equity of approximately USD 150 million. The bank's capital is divided into common shares held entirely by the Salvadoran government (Banco Hipotecario, 2023).
15. Banco de Fomento Agropecuario: El Salvador's second state-owned bank was established in 1973 and focuses on agricultural development financing. As of 31 December 2023, Banco de Fomento Agropecuario reported a total equity of approximately USD 100 million. The bank's capital is fully owned by the Salvadoran government (Banco de Fomento Agropecuario, 2023).

With the vast banking infrastructure available in El Salvador, it would be obvious to assume that facilitating bank accounts to the majority of the population would be an easy task, but due to its isolated, remote, inland rural towns and villages, financial services in these parts of the country are not profitable enough for the banks to establish branches across these regions. This makes people move towards more densely populated areas where opportunities are more available, leaving the people unable to afford a relocation stuck and unbanked in the isolated parts of El Salvador.

2.6. Geographical Overview of El Salvador

El Salvador, the smallest and most densely populated country in Central America, is characterized by its diverse geography, which significantly influences its ecology, agriculture, and settlement patterns, which indeed present both opportunities and challenges for its banking sector. The country covers an area of approximately 21,041 square kilometers, with mountainous regions, fertile plains, and a coastline along the Pacific Ocean in the southern part of the country, with neighboring Guatemala to the northwest, Nicaragua to the southeast and Honduras to the northeast (Figure 1). In contrast to its vast mountainous terrain, the Pacific Coastal Plain features flatter terrain that gradually slopes towards the ocean, providing fertile land for agriculture. This region is characterized by its tropical climate with significant rainfall during its wet season, which contributes to the richness of its soil. The Lempa River is the longest river in El Salvador and traverses the country from the east to the west. It flows into the Pacific Ocean and also serves as a vital resource for irrigation and hydropower generation. It has a population of around 6.5 million, with a significant portion concentrated in the capital, San Salvador, and other urban centers such as Santa Ana and San Miguel. Key information in this section was retrieved from

the World Bank (World Bank, 2024), Central Intelligence Agency Factbook (CIA, 2024) and other publications (Teperek, 2024a, 2024b).

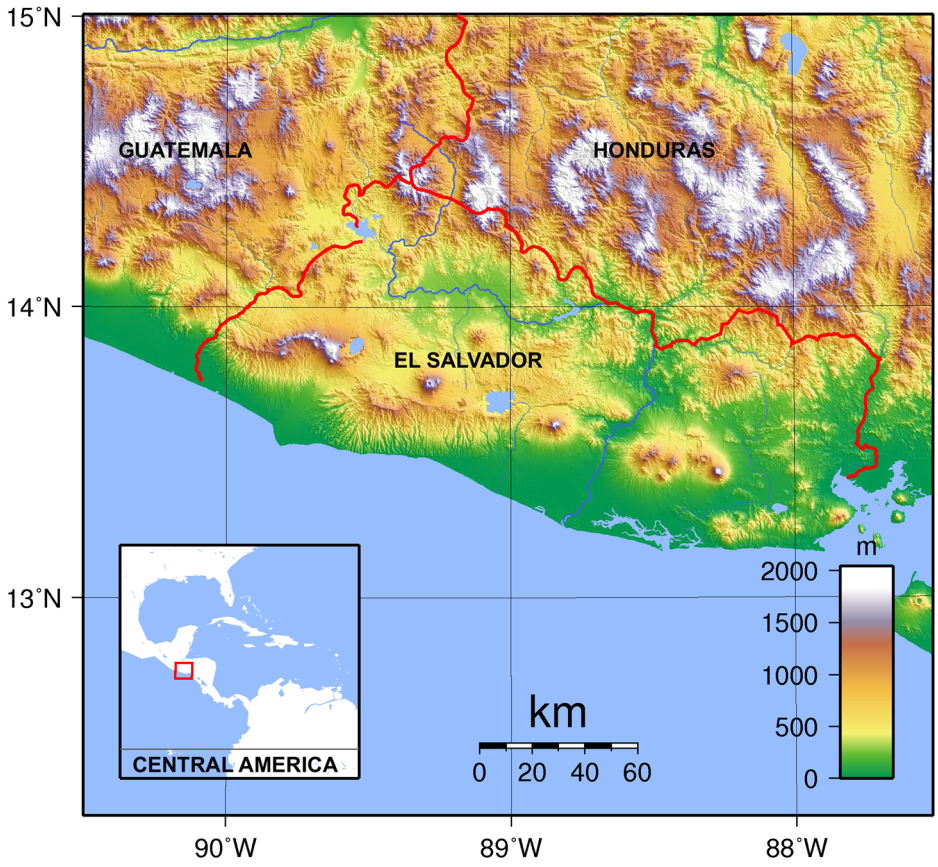

Figure 1. Map of El Salvador (Sadalmelik, 2007).

2.6.1. Topography, Soils and Waterbodies

El Salvador's mountainous terrain, characterized by the Sierra Madre, is a mountain range running from east to west, creating a diverse landscape of highlands and lowlands. The central highlands is home to several volcanic ranges with active and dormant volcanos, such as San Miguel, San Vicente, and Izalco. The volcanic soil in these areas is particularly fertile and supports a variety of agricultural activities, such as coffee cultivation, one of the country's key export commodities. However, the terrain also presents significant logistical challenges for the banking sector, among others, particularly in rural regions. Many rural communities are geographically isolated due to poor infrastructure, which limits access to banking services. These regions tend to rely more on informal financial systems, as formal banking services are scarce (World Bank, 2024; CIA, 2024).

El Salvador's soils are very significant due to its volcanic origins. The volcanic soils, particularly in the highlands, are rich in nutrients and organic matter, making them highly suitable for agriculture. However, they are also susceptible to erosion, especially in areas of deforestation and unsustainable farming practices. The coastal areas typically have sandy and clayey soils, which can influence agricultural productivity and land use patterns (World Bank, 2024; CIA, 2024).

In addition to the Lempa River, which is an impressively long and agile river system flowing through most of the El Salvadorian territory and forms a natural border with Honduras in the North, El Salvador has numerous lakes and smaller rivers that are critical for local ecosystems and agriculture. Lake Ilopango is located east of San Salvador and is a volcanic crater lake; it is one of the largest and most significant water bodies in the

country, providing water for irrigation and recreation. Other important lakes include Lake Coatepeque, south of Santa Ana, and Lake Suchitlan, an artificial lake north of San Salvador which is supplied by the Lempa River close to the town of Colima, both of which contribute to the biodiversity and tourism appeal of the region. Northwest of Santa Ana, Lake Guija is shared between Guatemala and El Salvador (World Bank, 2024; CIA, 2024).

2.6.2. Urbanization

Around 79.2% of El Salvador's population lives in urban areas, with a high concentration in the metropolitan area of San Salvador. This has been a steadily increasing trend forcing the populations towards the city centers of the country, increasing significantly more in the period from 1955 to 1995, decreasing the rural population in 2024 back to below the level of 1955 as the cities expand (Figure 2). This urban–rural divide is also reflected in the distribution of banking services, with most bank branches and ATMs concentrated in urban centers. Urbanization also leads to a disparity in the availability of financial products, with urban residents having more access to credit and savings accounts than their rural counterparts. ATMs in rural areas are known for being out of cash or simply not working, and thus provide an extra challenge for people in rural regions to access cash without having to travel to the bigger cities, according to the ATM Travel Guide (2024).

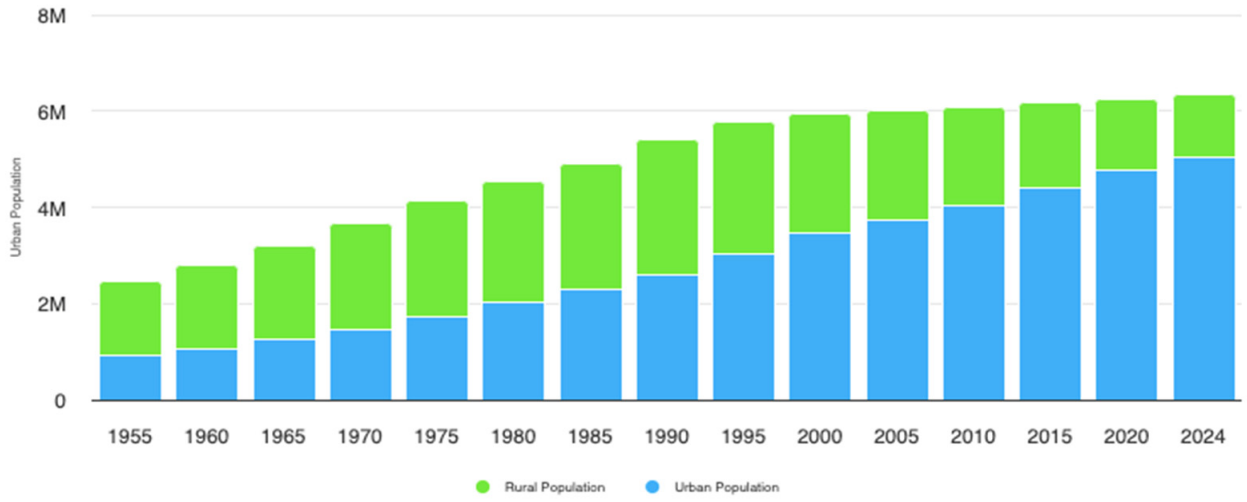

Figure 2. Urban vs. Rural Populations in El Salvador from 1995 to 2020 (Worldometers, 2024).

2.6.3. Natural Disaster Vulnerability

El Salvador is prone to natural disasters, particularly earthquakes, volcanic eruptions, and tropical storms. These events can disrupt banking services, damage infrastructure, and create significant economic challenges. The banking sector must, therefore, invest in disaster preparedness and risk management strategies to mitigate the impact of these events. For example, on 13 January 2001, the largest earthquake in recent history with a magnitude of 7.6 on the Richter scale affected approximately 1,329,806 people in El Salvador and consisted of 79.9% of the natural disasters occurring in the country for that year, with 844 deaths and 4723 people injured, it meant that more than 100,000 homes were completely destroyed and some 169,000 homes were left damaged by the quake and the people were in desperate need for loans and credit to rebuild their lives. Sadly, the month after, coincidently, also on the 13th, another major earthquake struck the country with a magnitude of 6.6, meant that the total of destroyed homes increased to just below 150,000 and 185,000 homes damaged, with a death toll of nearly 1200 people, over 8000 injured and 1.5 million affected in total by the disaster (Table 1).

Table 1. Number of people affected by natural disasters (Relief Web, 2001).

Earthquake	Deaths	Injuries	People Affected	Homes Damaged	Houses Destroyed
January, 2001	844	4723	1,329,806	169,632	108,226
February, 2001	315	3399	252,622	15,706	41,302
Total	1159	8122	1,582,428	185,338	149,528

Natural disasters are not unknown to the population of El Salvador; just in the last 40 years, they have seen it all, from floodings, droughts, earthquakes and landslides to epidemics, storms, volcanic activity, and extreme temperatures (Figure 3). Although floods, storms and landslides are the more frequent natural disaster hazard in El Salvador, earthquakes have claimed more lives and done more damage to infrastructure and housing in the country.

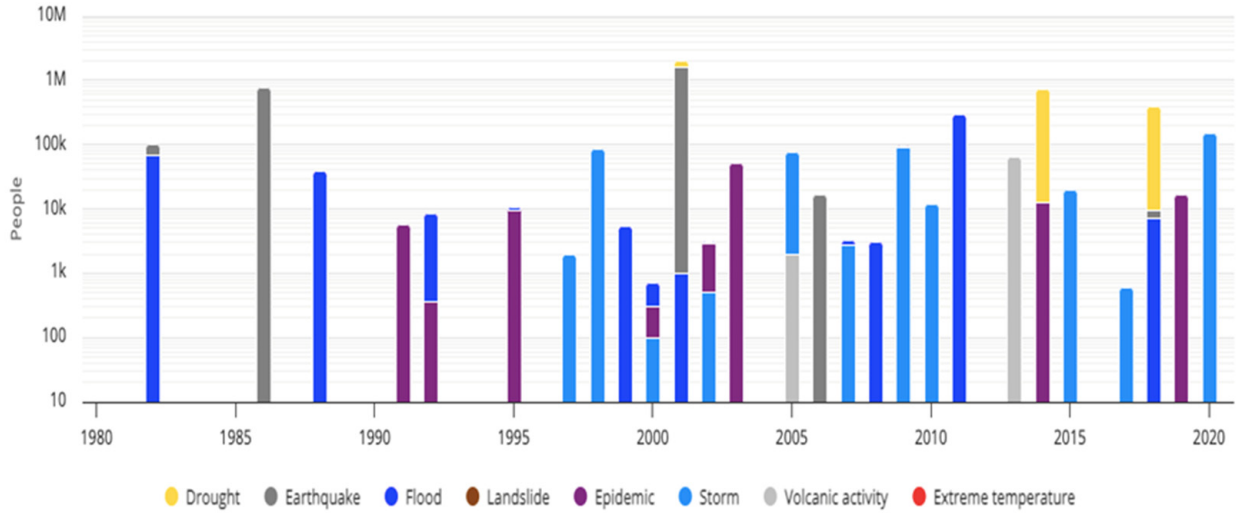

Figure 3. Natural hazards from 1980 to 2020—number of people affected (World Bank, 2020).

3. Methodology

This study employs a mixed-methods approach to analyze the impact of geographical factors on the banking sector in El Salvador. The methodology integrates both quantitative and qualitative data to provide a more nuanced understanding of the issue. Other authors on the topic have also used a mixed-method approach (Balliester Reis, 2020; Rastogi & Ragabiruntha, 2018; Senyo et al., 2021).

Quantitative data on banking sector performance were obtained from official reports of the Central Reserve Bank of El Salvador and other financial institutions. Key indicators such as the number of bank branches, ATMs, and the volume of loans and deposits were analyzed in relation to geographical variables such as population density, urbanization rates, and regional income levels. Geographic Information Systems (GIS) were employed to visualize the spatial distribution of banking services across different regions of El Salvador. To complement the quantitative data, semi-structured phone interviews were conducted with key stakeholders, including representatives from commercial banks, regulatory authorities, and clients from both urban and rural areas. These interviews focused on understanding the challenges faced by the banking sector in providing services across diverse geographical regions, the impact of natural disasters on banking operations, and the strategies used to promote financial inclusion.

The combination of quantitative and qualitative data allowed for triangulation, where multiple perspectives on the same issue were compared to enhance the reliability and

validity of the findings. This approach helped identify both the measurable impacts of geography on banking and the subjective experiences of those involved in the sector.

To align data collection with the research objectives and to ensure relevance and depth in the qualitative component of this study, interview participants were selected randomly by combining the most popular first and last names. To select names for emails or cold messages, we opted for their general popularity and frequency; obviously, there are many more variations in names existing in El Salvador; however, the chosen ones were as follows:

- The three most popular male first names were Jose (545,311); Juan (140,959); Carlos (122,815).
- The three most popular female first names were Maria (565,457); Ana (224,666); Rosa (134,638).
- Combined with the six most popular surnames in El Salvador, including Hernandez (246,359); Lopez (143,989); Rodriguez (109,131); Perez (105,669); Martinez (191,223); and Garcia (133,801).

This provided us with a combination of 18 different names per gender and 36 in total, with the names being obtained from the website (https://firstnam.es/el-salvador, accessed on 12 February 2025) for first names and from the website (https://surnam.es/el-salvador, accessed on 12 February 2025) for surnames.

Interview participants were also based on four key criteria:

1. Geographical location (e.g., urban centers with high population density such as San Salvador, Santa Ana and La Libertad) and lesser populated rural regions (e.g., Morazan, San Francisco Gotera, and Chalatenango).
2. Professional affiliation (e.g., commercial banks, regulatory institutions, and financial technology providers or job specificity).
3. User status and experience (e.g., current clients of formal banks vs. informal system users).
4. Experience with financial services in disaster-prone or infrastructure-deficient regions.

Ethical approval for the interview process was obtained from the participants prior to questioning and all participants gave their informed consent and their following responses were anonymized to protect confidentiality. Only gender, geographical location, professional affiliation, user status, and experience were used as contributions to this study.

The results were quite difficult and time-consuming to harvest due to the strategy of random cold messaging on the applications LinkedIn and Facebook; 4 days and 6 h per day was dedicated to the gathering of qualitative data.

A total number of 52 participants were interviewed out of more than 400 cold messages prompting participation. These included five representatives from urban banks, 39 participants from urban communities, seven participants from rural communities and one representative from a rural bank; the semi-structured interview guide comprised four core questions corresponding to the aforementioned criteria, and these criteria directly informed the semi-structured interview guide, which comprised four primary questions:

1. Where do you live? (Geographical location, infrastructural/logistical challenges, and disaster risk exposure).
2. What is your occupation? (Professional affiliation, risk management practices, and banking system engagement).
3. Do you have a bank account? (User status and barriers to formal financial participation).
4. What is your experience with banking in general, and have you ever experienced issues with access to financial transactions? (Experience, perceptions of digital banking, and access barriers during and after disasters).

The responses were then analyzed thematically using a deductive-inductive approach with the predefined themes in parentheses above. They were used as a coding framework while allowing for emergent insights from participants' narratives. This approach ensured that the interviews were not only grounded in participant realities but also analytically aligned with the broader objectives of the study. By directly mapping selection criteria and interview questions to thematic categories, the study enhances the internal coherence and interpretive strength of its qualitative findings.

The aim of this approach was to capture both institutional constraints and lived experiences of financial exclusion. Unfortunately, no governmental representatives or regulatory professionals were interviewed during this study.

4. Results and Analysis

4.1. Geographical Distribution of Banking Services

The overall data indicated that El Salvador has 21 bank branches per 1000 m^2 but has been as many as 33 when branch quantity per 1000 m^2 was at its peak in 2018 (Figure 4). Quite impressive when you consider the size of the country and its metropolitan areas where you usually find branches and ATMs; for comparison, the United States has 8 branches per 1000 m^2, Denmark has 20, and Russia has 1.5, which is equally impressive considering the size of Russia. Finally, in Japan, you will find 101 branches within each 1000 m^2.

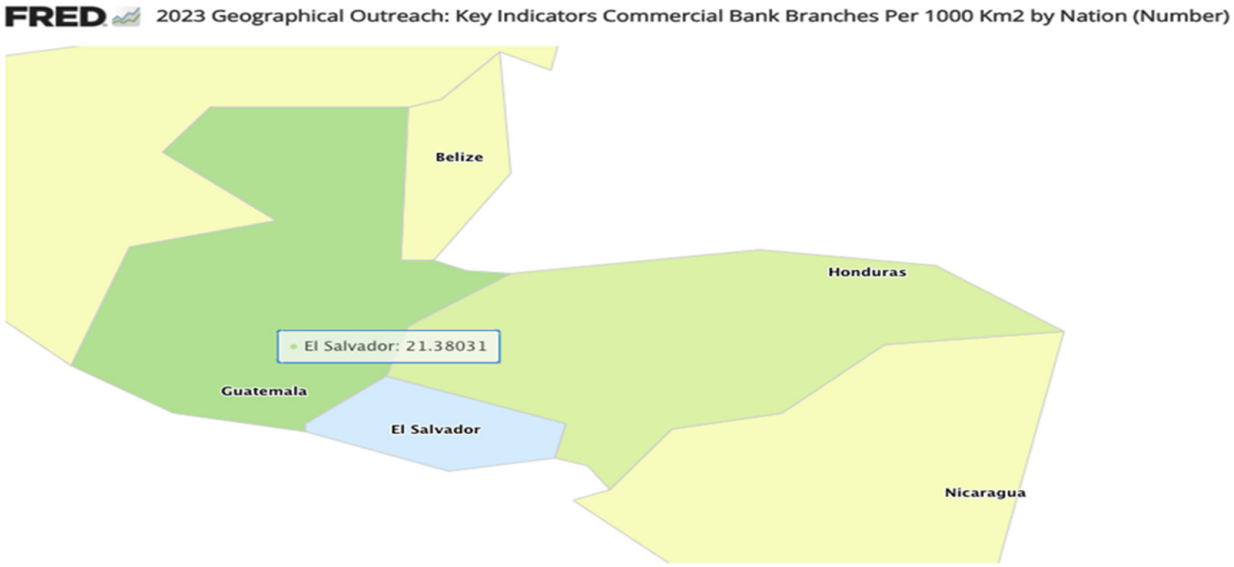

Figure 4. Bank branches per 1000 m^2 in El Salvador (IMF, 2024).

The most significant numbers were reached in 2017 and 2018, with 33 and 34 bank branches per 1000 km^2 (Figure 5).

The quantitative data revealed significant disparities in the distribution of banking services across El Salvador. Approximately 75% of bank branches, 178 in total and 80% of ATMs, 116 in total (Figure 6), are located in urban areas, particularly in the San Salvador metropolitan region. Rural areas, particularly in the eastern and mountainous regions, are underserved, with limited access to formal banking services. This Urban–rural divide in banking access is consistent with the country's population distribution but exacerbates financial exclusion in less developed regions.

As shown in Table 2, there is no direct relationship between the number of bank branches and existing ATMs in the different regions.

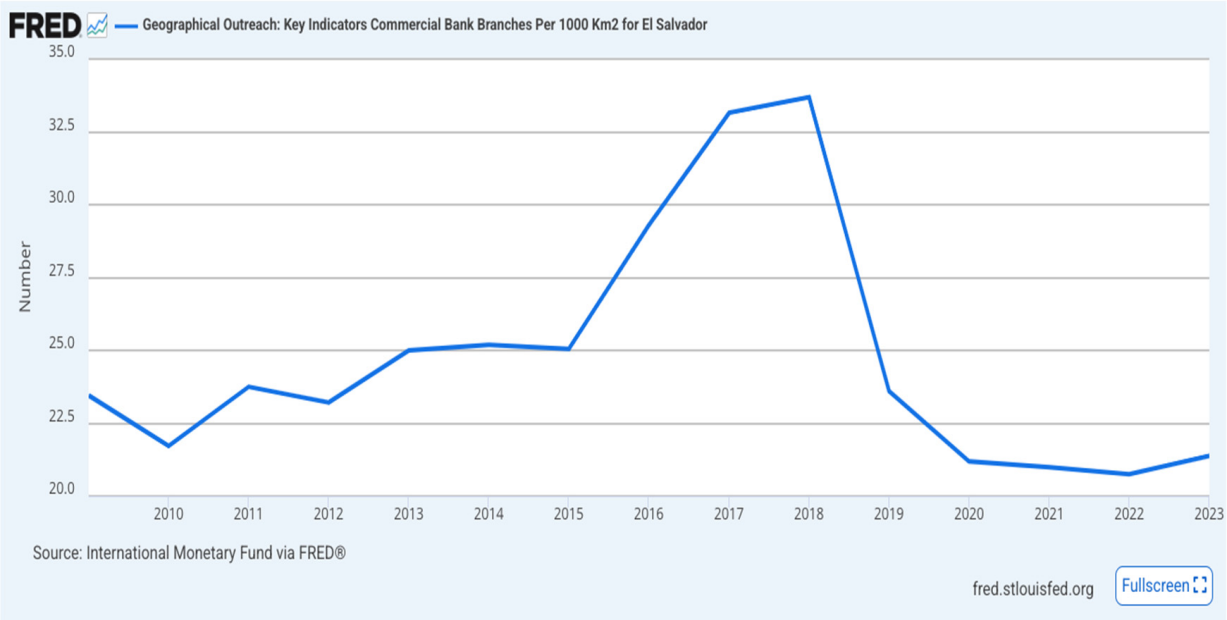

Figure 5. Bank branches per 1000 m^2 in El Salvador from 2009 to 2023 (IMF, 2024).

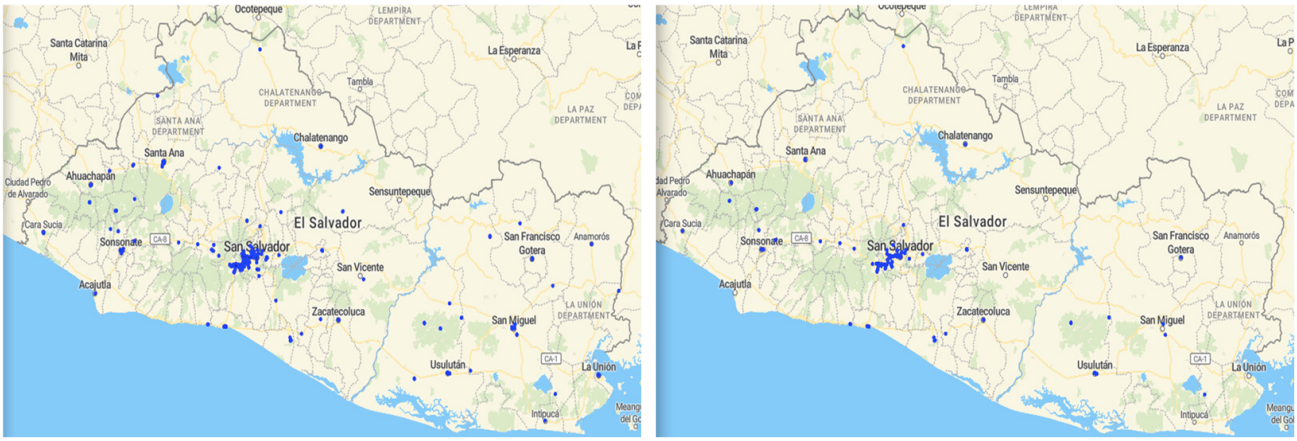

Figure 6. The bank branches (**left** map) and the ATMs (**right** map) in El Salvador (MAPOG, 2024).

Further analysis using GIS mapping illustrated that regions with higher population densities and income levels, such as San Salvador, Santa Ana and La Libertad (Figure 7), clearly have a higher concentration of banking services, while poorer and more rural regions like Morazán with San Francisco Gotera being the only town in the region and Chalatenango (Figure 8) also being the only town in the entire region, which have fewer banking facilities.

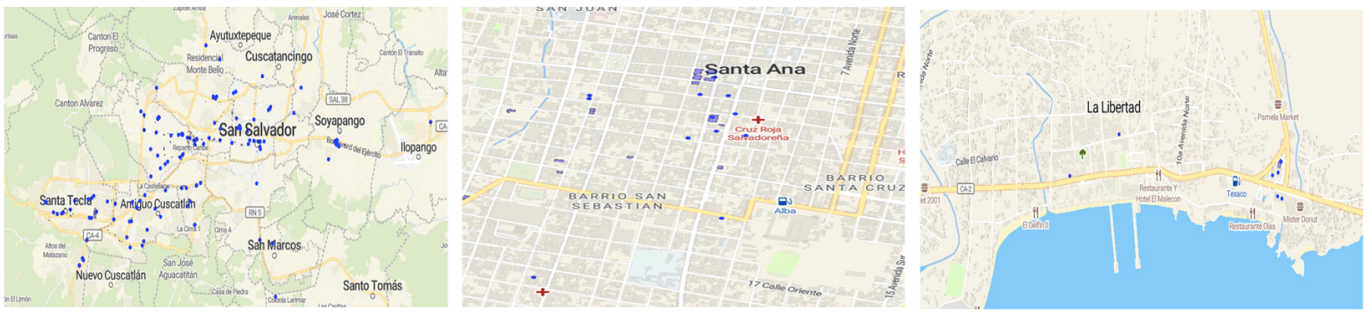

Figure 7. San Salvador, Santa Ana and La Libertad bank branches (blue dots) (MAPOG, 2024).

Table 2. Bank Branches and ATMs by region (MAPOG, 2024).

Regions	Branches	ATMs
Ahuachapan Department	6	4
Cabanas Department	2	0
Chalatenango Department	2	2
Cuscatlan Department	1	3
La Libertad Department	37	29
La Paz Department	4	5
La Union Department	11	1
Morazan Department	7	2
San Miguel Department	11	2
San Salvador Department	61	45
San Vincente Department	1	0
Santa Ana Department	15	2
Sonsonate Department	8	12
Usulutan Department	12	9
Total	178	116

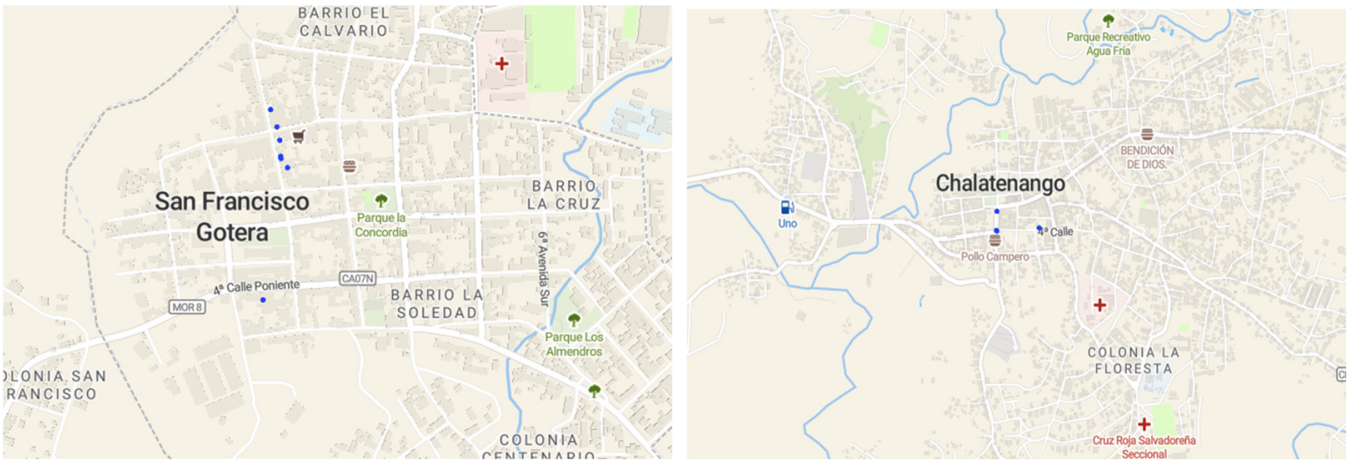

Figure 8. San Francisco Gotera and Chalatenango bank branches (blue dots) (MAPOG, 2024).

4.2. Challenges in Rural Banking

Interviews with banking professionals highlighted several challenges in providing services to rural areas. Poor infrastructure, including inadequate roads and communication networks, makes it difficult and costly to establish and maintain bank branches in remote regions. Additionally, the lower transaction volumes and higher risk of default in these areas deter banks from expanding their services. As a result, many rural residents rely on informal financial systems, such as community savings groups, or must travel long distances to access formal banking services. Rural clients interviewed for this study expressed frustration at the lack of banking infrastructure in their communities. They pointed out that the absence of nearby bank branches and ATMs forces them to incur additional transportation costs and lost work time when they need to visit a bank or handle monetary transactions such as withdrawals and deposits.

4.3. Impact of Natural Disasters

El Salvador's vulnerability to natural disasters significantly impacts the banking sector. Earthquakes, floods, and hurricanes disrupt banking operations, particularly in rural and coastal regions. Bank managers reported that natural disasters often lead to temporary closures of branches, damage to ATMs, and increased demand for emergency loans.

Interviews revealed that the banking sector has been slow to adopt comprehensive disaster risk management strategies. While some banks have established contingency plans, such as backup data centers and mobile banking units, these measures are not universally implemented across the sector. Clients in disaster-prone areas noted that they are often unable to access their funds during and after natural disasters, exacerbating their economic vulnerability. Natural disasters also impact critical infrastructure such as road accessibility, telecommunication and electrical power networks and other resources like hospitals and first responders like ambulances, fire departments, NGOs, and law enforcement that remain crucial for emergency preparedness and rescue efforts in disaster-prone regions.

4.4. Urbanization and Financial Services

The high level of urbanization in El Salvador has led to the concentration of banking services in metropolitan areas, particularly in San Salvador. This urban focus has contributed to the rapid development of financial products and services in the city, including digital banking platforms and consumer credit. The influx of cryptocurrencies has also made significant changes to the financial services aspect of El Salvador. President Nayib Bukele introduced Bitcoin (BTC) as a legal tender currency in El Salvador in 2021 to promote cheaper remittance costs from abroad and to attempt to increase accessibility to financial services. All businesses in El Salvador must now be able to accept payment in Bitcoin; thereby, the government attempted to incentivize anyone who would get a BTC account was given USD 30 worth of BTC. However, most of the citizens who used the opportunity to spend the free USD 30 never used the BTC system again, according to (BTI, 2024). However, rapid urbanization has also created challenges for financial inclusion, as the influx of rural migrants into urban areas has led to the growth of informal settlements, where residents often lack access to formal banking services. Interviews with banking professionals revealed that the urban banking sector is highly competitive, with banks offering a wide range of products tailored to the needs of urban residents. However, the informal economy in urban and rural areas remains a challenge, as many residents of informal settlements in cities and remote regions lack the documentation or stable income required to be eligible to access formal banking services.

5. Discussion

The results of this study highlight the significant impact of geographical factors on the banking sector in El Salvador. The country's topography, regional economic disparities, and vulnerability to natural disasters create distinct challenges for the provision of banking services, particularly in rural and underserved areas.

5.1. Financial Exclusion in Rural Areas

The geographical isolation of rural areas, coupled with poor infrastructure and lower economic activity, has led to significant financial exclusion. Rural residents are less likely to have access to formal banking services, which limits their ability to save, invest, and obtain credit. The reliance on informal financial systems in these areas also increases vulnerability to economic shocks, as informal savings groups lack the security and regulatory oversight of formal banks. The initial idea of President Bukele, to implement BTC as a legal tender currency in the country, was a good idea in order to increase accessibility to alternative financial services, despite the claims that it was done for other corruptive and illicit purposes (BTI, 2024). The idea would be better if BTC was the backing collateral, sort of like a form of a digital gold reserve of a national digital currency or mobile money that could be used by rural and informal communities and could help to overcome the hurdle of traveling long distances when the need for banking arises, and it would also eliminate the need for

branches in these remote and isolated communities and promote a more inclusive system that does not only benefit urban and formal residents.

5.2. Natural Disaster Risk Management

El Salvador's vulnerability to natural disasters presents a major challenge for the banking sector. While some banks have taken steps to improve their disaster preparedness, the sector as a whole has been slow to adopt comprehensive risk management strategies. In order to mitigate the impact of natural disasters on banking services. It is essential for the sector to invest in disaster resilience measures, such as an expansion of digital banking and mobile banking units, decentralized data storage, and flexible loan repayment options for clients affected by disasters. The International Organization for Migration (IOM, 2024) implemented a comprehensive crisis response plan to strengthen Institutional and community capacities in order be able to reduce risks and vulnerabilities arising from disasters, addressing humanitarian needs to be better prepared for crisis situations locally and nationally in El Salvador against the El Nino phenomenon. Some of the initiatives provided by IOM include immediate life-saving assistance, protection and support; IOM has targeted 19 entities to assist with internal migrants, internally displaced persons, international migrants and local populations and communities, requiring USD 7,380,000 in funding for the benefit of approximately 45,000 people in need. Another initiative involves the strengthening of health systems, government and strategic partners to meet the demand for available and inclusive health systems for vulnerable communities and groups, employing Community-Based Disaster Risk Management (CBDRM) with the proper (MICIC) Migrants in Countries in Crisis guidelines, targeting five main entities and requiring an additional USD 3,600,000 in funding for the benefit of approximately 18,000 people in need. (IFRC, 2023) volunteers also step in to reduce risks and prepare vulnerable communities in El Salvador and 24 other distressed communities around the world by building community knowledge and educating their populations on disaster preparedness. Initiatives such as ensuring community perceptions and concerns are taken into account, providing assistance to displaced people on the move, preventing health emergency outbreaks and responding accordingly to the needs of distressed communities. The objective is to help them be prepared for future disasters by setting up early warning systems and providing cash and emergency voucher retrieval assistance from ATMs to financially illiterate victims of natural disasters. Twelve EU countries, in cooperation with the European Union, participate in disaster relief initiatives with the International Federation of Red Cross and Red Crescent Societies (IFRC) called the Programmatic Partnership; among the participants are Austria, Belgium, Denmark, France, Finland, Germany, Italy, Luxemburg, Netherlands, Norway, Spain and Sweden.

5.3. Urbanization and Informal Finance

Urbanization has contributed to the growth of the banking sector in metropolitan areas, but it has also created new challenges. The growth of informal settlements in urban areas, where residents often lack access to formal financial services, underscores the need for innovative solutions to promote financial inclusion. Banks must develop strategies to reach marginalized urban populations, such as offering microfinance products, simplifying account opening procedures, and expanding digital banking services. In 1992, just after the civil war in El Salvador (Cuevas & Graham, 1992) purported that 45% of rural households in El Salvador had no access to formal loans from financial institutions or banks, and 81% of all credit transactions were of an informal representation. Slightly better was it for residents of urban households, with 26% having little or no access to formal loans and 78% relying

on informal credit providers such as family and friends or community pooling of funds to support the credit demands of their community members.

6. Conclusions

This study has examined the complex interplay between geography and the banking sector in El Salvador, highlighting how topography, urbanization, socio-economic disparities, and vulnerability to natural disasters collectively shape access to financial services. The findings underscore that while financial inclusion has progressed in urban areas, rural regions still lag behind significantly, resulting in a distinct urban–rural divide that continues to shape economic participation and financial security for large segments of the population.

6.1. Geographical Disparities and Financial Exclusion

Geography undeniably influences the distribution of banking services in El Salvador. The country's mountainous regions and remote rural areas face infrastructural and logistical challenges that make the establishment of bank branches and ATMs difficult. As a result, around 75% of bank branches and 80% of ATMs are located in urban centers, as illustrated with GIS mapping, particularly within the metropolitan areas of San Salvador and La Libertad. This concentration of financial services creates a disparity where urban residents enjoy relatively easy access to banking services, while rural inhabitants are left with limited or no options. The lack of access to formal financial services in rural areas has profound implications for financial inclusion and economic participation. Rural residents face barriers to credit, savings, and investment opportunities, which limits their ability to improve their financial stability, invest in education or small businesses and weather economic shocks.

Furthermore, the absence of nearby banking infrastructure means rural residents often incur additional costs in both time and money to access banking services in urban centers, further widening the financial inclusion gap. This financial exclusion perpetuates poverty and restricts economic mobility, making it difficult for rural populations to engage in the formal economy. For those in isolated regions, access to formal savings accounts, credit, or insurance remains out of reach, leaving them more vulnerable to economic fluctuations and personal emergencies. While some community-based savings groups and informal lending systems have emerged to fill these gaps, these systems lack the security and regulation of formal banking, leaving individuals at further economic risk.

6.2. Impact of Natural Disasters on the Banking Sector

El Salvador's geographic location and topography also make it highly susceptible to natural disasters, including earthquakes, volcanic eruptions, hurricanes, and floods. These natural disasters pose unique challenges to the banking sector, particularly in rural areas, where financial infrastructure is less robust. The physical damage to branches, ATMs, and communication networks during natural disasters can temporarily halt banking operations, cutting off access to financial resources when they are needed most. This disruption compounds the vulnerability of affected populations, who may rely on emergency loans or savings to rebuild their lives and livelihoods after a disaster. Interviews with bank managers and industry stakeholders revealed that while some financial institutions have taken steps to strengthen disaster preparedness, the response has been uneven across the sector. Contingency plans, such as mobile banking units, backup data centers, and flexible loan repayment options, are in place for some banks, but these are not universally implemented. The banking sector would benefit from a more coordinated and comprehensive approach to disaster risk management, including partnerships with government agencies and NGOs to support community resilience. This could involve investing in alternative infrastructure, such as expanded cell phone tower erection that could accommodate mobile banking

stability or local agent banking networks, to ensure continued access to financial services even in the aftermath of natural disasters. The importance of disaster resilience in the banking sector cannot be overstated. A resilient financial system is crucial for the recovery and rebuilding efforts that follow natural disasters. By ensuring continued access to banking services, financial institutions can play a critical role in helping affected individuals and businesses regain stability. Additionally, disaster preparedness measures could help reduce the sector's own risks, such as the increased likelihood of non-performing loans when borrowers are unable to meet their obligations due to disaster-related income disruptions.

6.3. Urbanization and Informal Finance

Urbanization has accelerated in El Salvador over the past decades, with nearly 79.2% of the population now residing in urban areas. This migration towards cities has driven the development of a competitive and diversified banking sector in urban centers, where a wide array of financial products and services—such as consumer credit, savings accounts, and, more recently, cryptocurrency options—are available. The introduction of Bitcoin as a legal tender in 2021 by President Nayib Bukele aimed to increase financial inclusion by enabling digital payments, especially for those receiving remittances from abroad. While this initiative holds promise, the actual impact has been mixed, as a significant portion of the population has reverted to traditional currency usage after spending their initial government-provided Bitcoin.

The rapid pace of urbanization has not been without its challenges. Urban centers have seen the growth of informal settlements dominated by gangs and a rise in informal economic activities, such as a shadow economy fueled by the drug trade from neighboring countries. For residents of these areas, who often lack official documentation and/or stable incomes, access to formal financial services remains limited. These populations are left out of the formal banking system, relying instead on informal credit networks or savings mechanisms often provided by criminal gangs or other unregulated entities or communities, which lack the security and regulatory oversight of established financial institutions. This exclusion perpetuates a cycle of poverty and limits economic growth, as individuals and small businesses in these communities miss out on the benefits of formal credit, savings, and investment opportunities. To address the urban financial inclusion gap, banks need to adopt more innovative approaches. Simplified account-opening procedures, microfinance options, and increased digital banking access could bridge the divide for marginalized urban populations. By expanding mobile and online banking services, financial institutions can reach populations in both informal urban areas and remote rural regions. These digital solutions offer a scalable and cost-effective way to extend financial services without the need for costly physical infrastructure in hard-to-reach locations.

6.4. Towards a More Inclusive and Resilient Banking System

The study's findings indicate that targeted efforts to overcome geographical and infrastructural barriers could enhance financial inclusion in El Salvador. Mobile banking, which has seen success in other developing countries, holds significant promise as a solution for both rural and urban areas in El Salvador. By reducing the need for physical bank branches, mobile banking can bring financial services directly to people in isolated communities, enabling them to save, borrow, and transact without the burdensome costs of travel. Furthermore, with enhanced digital literacy initiatives, rural residents could be empowered to utilize these services more effectively. Another potential avenue for increasing financial inclusion lies in agent banking, where banks partner with local businesses or community members to provide basic financial services on their behalf. This model has been effective

in other countries facing similar challenges, as it allows banks to establish a presence in underserved areas without the costs associated with building and staffing a full branch.

On the regulatory front, government support for financial inclusion initiatives could create an enabling environment for innovation in the banking sector. For instance, public-private partnerships could support the expansion of financial services to underserved regions, particularly through digital finance and mobile solutions. Policymakers could incentivize banks to serve rural areas through tax benefits or grants, thereby offsetting the higher operational costs associated with these regions. Additionally, the banking sector's resilience to natural disasters could be bolstered through coordinated efforts between banks, the government, and international organizations. Investment in backup infrastructure such as cell tower expansion, reliable electric grid, mobile banking units, and flexible loan options for affected customers could strengthen the sector's disaster preparedness. International organizations, such as IOM and IFRC, have already implemented community-based disaster risk management initiatives, which could serve as a model for building resilience within the banking sector.

6.5. Final Reflections

In conclusion, geography plays a pivotal role in shaping the accessibility, resilience, and inclusivity of the banking sector in El Salvador. The country's mountainous terrain, uneven distribution of economic resources, and susceptibility to natural disasters create unique challenges that demand innovative solutions. The study demonstrates that a more inclusive and resilient financial system is not only possible but essential for fostering sustainable economic development and improving the quality of life for all Salvadorans. A combination of digital financial services, government support, disaster risk management, and infrastructure expansion can bridge the urban–rural divide, providing opportunities for rural and marginalized populations to participate in the formal economy. By adopting these approaches, El Salvador's banking sector can become a model for inclusive and resilient finance in a geographically diverse and disaster-prone context. Only by addressing the geographical and structural barriers to financial access can the country's banking sector support a future where economic opportunity is available to every citizen, regardless of their location or socio-economic status.

In light of these findings, the following improvements are proposed: (1) Expand rural banking services—to reduce financial exclusion in rural areas, banks should invest in mobile banking units, agent banking networks, and digital financial services that can reach geographically isolated populations; the government can support these efforts by improving rural infrastructure and providing incentives for banks to expand their rural operations; (2) Enhance disaster risk management—banks should develop comprehensive disaster risk management strategies, including contingency plans for branch closures, mobile banking solutions, and flexible loan products for disaster-affected clients; the government should also work with the banking sector to establish a national framework for disaster resilience in financial services; (3) Promote financial inclusion in urban informal settlements—to address the financial exclusion of urban migrants and residents of informal settlements, banks should simplify account opening procedures, offer microfinance products, and expand their digital banking platforms. Collaborations with NGOs and community organizations can also help banks reach underserved urban populations; implementation of better network reach in disaster-prone and remote regions could pave the way for a greater mobile banking adoption in these regions; modern network infrastructure could increase response time to prepare shelter and could potentially help save lives when future disasters strike.

By addressing these geographical challenges, the banking sector in El Salvador can play a more effective role in promoting economic growth, reducing poverty, and enhancing financial inclusion across all regions of the country.

6.6. Limitations

The identification of names for cold emailing or sending messages can be considered a limitation, as they were chosen based on their popularity and frequency; the six most popular first names, three male and three female, combined with the six most popular surnames in El Salvador. This resulted in a combination of 18 different names per gender and 36 in total.

Another limitation was the size of the sample, which was a pilot sampling strategy, not exhaustive by far and could, in future research, be conducted in an expanded demographic range with more stratified sampling.

6.7. Recommendations

To address the identified geographical disparities and vulnerabilities, this study recommends expanding mobile and agent banking networks, enhancing rural infrastructure for digital financial access, and implementing disaster-resilient banking strategies. Financial literacy programs tailored to rural and marginalized communities should be prioritized, alongside the development of flexible microfinance options. Strengthening data monitoring on regional financial inclusion and promoting inclusive frameworks for digital assets can further support a more resilient and accessible banking system in El Salvador.

Author Contributions: Conceptualization, A.L.H.; methodology, A.L.H.; validation, A.L.H. and L.L.S.; formal analysis, L.L.S.; investigation, A.L.H.; writing—original draft preparation, A.L.H.; writing—review and editing, A.L.H. and L.L.S.; visualization, A.L.H. and L.L.S.; supervision, L.L.S. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: The raw data supporting the conclusions of this article will be made available by the authors on request.

Conflicts of Interest: The authors declare no conflicts of interest.

References

Alessandrini, P., Croci, M., & Zazzaro, A. (2005). The geography of banking power: The role of functional distance. *Banca Nazionale del Lavoro Quarterly Review*, *58*(235), 129–167.

Anzoategui, D., Demirgüç-Kunt, A., & Martinez Peria, M. S. (2014). Remittances and financial inclusion: Evidence from El Salvador. *World Development*, *54*, 338–349. [CrossRef]

ATM Travel Guide. (2024). *ATMs in El Salvador*. Available online: https://www.atmtravelguide.com/atms-in-el-salvador/ (accessed on 7 November 2024).

Balliester Reis, T. (2020). *Financial inclusion, poverty and income inequality in low and middle-income countries: A mixed-method investigation* [Doctoral dissertation, University of Leeds].

Banco Atlantida El Salvador. (2023). *Memoria anual 2023*. Available online: https://www.bancoatlantida.com.sv/documentos/MemoriaAnualRE/Memoria-Anual-2023.pdf (accessed on 7 November 2024).

Banco Azteca. (2023). *Reportes financieros Banco Azteca financieros*. Available online: https://www.grupoelektra.com.mx/es/banco-azteca-financieros (accessed on 7 November 2024).

Banco Davivienda. (2023). *Consolidated financial statements: For the year ended as of December 31st, 2023*. Available online: https://ir.davivienda.com/estados-financieros/?tab=11#financial-info (accessed on 7 November 2024).

Banco de America Central. (2023). *Estados financieros al 31 de diciembre de 2023 y 2022*. Available online: https://www.baccredomatic.com/sites/default/files/2024-02/sv-informe_anual_auditores-2023.pdf (accessed on 7 November 2024).

Banco de Fomento Agropecuario. (2023). *Informe de auditoría de estados financieros del 01 de enero al 31 de diciembre de 2023 y 2022*. Available online: https://www.bfa.gob.sv/download/informe-de-auditoria-de-estados-financieros-del-01-de-enero-al-31-de-diciembre-de-2023-y-2022/ (accessed on 7 November 2024).

Banco G&T Continental. (2023). *Estado banco*. Available online: https://assets.gtc.com.gt/uploads/b7f2172e-e15e-4f99-8ca4-b4477c62414b/original/Estado_de_Resultados_Diciembre_2023.pdf (accessed on 7 November 2024).

Banco Hipotecario. (2023). *Estado financiero publicación diciembre 2023*. Available online: https://www.bancohipotecario.com.sv/wp-content/uploads/2024/02/Estado-Financiero-Publicacion_Diciembre-2023-sin-firma.pdf (accessed on 7 November 2024).

Banco Industrial El Salvador. (2023). *Estados financieros*. Available online: https://www.corporacionbi.com/sv/bancoindustrialsv/estados-financieros/ (accessed on 7 November 2024).

Banco ProCredit. (2023). *Financial reports*. Available online: https://www.procredit-holding.com/investor-relations/reports-and-publications/financial-reports/ (accessed on 7 November 2024).

Banco Promerica. (2023). *Memoria anual 2023*. Available online: https://www.bancopromerica.com/media/512667/memoria-institucional-2023.pdf (accessed on 7 November 2024).

Bancolombia S.A. (2023). *Annual results*. Available online: https://www.grupobancolombia.com/investor-relations/financial-information/annual-results (accessed on 7 November 2024).

BBC. (2022, March 27). *El Salvador: State of emergency after 62 gang killings in a day*. Available online: https://www.bbc.com/news/world-latin-america-60893048 (accessed on 7 November 2024).

Beck, T., Demirgüç-Kunt, A., & Levine, R. (2007). Finance, inequality and the poor. *Journal of Economic Growth*, *12*, 27–49. [CrossRef]

Beck, T., & Martinez Peria, M. S. (2010). Foreign bank participation and outreach: Evidence from Mexico. *Journal of Financial Intermediation*, *19*(1), 52–73. [CrossRef]

Brown, E., Castaneda, F., Cloke, J., & Taylor, P. (2013). Towards financial geographies of the unbanked: International financial markets, 'bancarizacion' and access to financial services in Latin America. *The Geographical Journal*, *179*(3), 198–210. [CrossRef]

BTI. (2024). *Country report 2024 El Salvador*. [Bertelsmann stiftung's transformation index]. Available online: https://bti-project.org/fileadmin/api/content/en/downloads/reports/country_report_2024_SLV.pdf (accessed on 8 November 2024).

CIA. (2024). *The world fact book—El Salvador*. Available online: https://www.cia.gov/the-world-factbook/countries/el-salvador/ (accessed on 8 November 2024).

Citibank. (2023). *Annual reports and proxy statements*. Available online: https://www.citigroup.com/global/investors/annual-reports-and-proxy-statements (accessed on 8 November 2024).

Claessens, S., & Leaven, L. (2004). What drives bank competition? Some international evidence. *Journal of Money, Credit and Banking*, *36*(3), 563–583. Available online: http://www.jstor.org/stable/3838954 (accessed on 10 November 2024). [CrossRef]

Cuevas, C. E., & Graham, D. H. (1992). *Informal finance and financial market integration in El Salvador. Rural finance program—Department of agricultural economics and rural sociology, occasional paper No. 1933* (pp. 1–19). Available online: https://kb.osu.edu/items/9c231af3-5292-52ab-b30e-5fa44d1ec362 (accessed on 10 November 2024).

Culver, D., Alvarado, A., Contreras, E., & Clarke, R. (2024). *Critics denounce their government as a dictatorship. But these people say they've never felt so free*. CNN World. Available online: https://edition.cnn.com/2024/09/12/americas/el-salvador-returners-bukele-crackdown/index.html (accessed on 1 September 2024).

Guiso, L., Paola, S., & Zingales, L. (2004). Does local financial development matter? *American Economic Review*, *7563*, 526–556. Available online: http://www.nber.org/papers/w7563 (accessed on 10 November 2024). [CrossRef]

IFRC. (2023). *El Salvador: Red Cross supports communities before, during and after disasters*. Available online: https://www.ifrc.org/article/el-salvador-red-cross-supports-communities-during-and-after-disasters (accessed on 10 November 2024).

IMF. (2019). *IMF policy paper: Building resilience in developing countries vulnerable to large natural disasters* (p. 55). IMF Publication.

IMF. (2024). *Geographical outreach: Key indicators commercial bank branches per 1000 m^2 for El Salvador.* International Monetary Fund. Federal Reserve Economic Data (FRED) Federal Reserve Bank of St. Louis. Available online: https://fred.stlouisfed.org/series/SLVFCBODCKNUM (accessed on 8 November 2024).

IOM. (2024). *El Salvador Crisis Response Plan 2023–2025*. International Organization for Migration. Available online: https://crisisresponse.iom.int/response/el-salvador-crisis-response-plan-2023-2025 (accessed on 10 November 2024).

Krogstrup, S., & Oman, W. (2019). *Macroeconomic and financial policies for climate change mitigation: A review of the literature. Working paper of the international monetary fund*. Available online: https://www.imf.org/en/Publications/WP/Issues/2019/09/04/Macroeconomic-and-Financial-Policies-for-Climate-Change-Mitigation-A-Review-of-the-Literature-48612 (accessed on 3 December 2024).

Levine, R. (2004). Finance and growth: Theory and evidence. In *Handbook of economic growth* (pp. 865–934). Working Paper 10766. Available online: http://nber.org/papers/w10766 (accessed on 4 December 2024).

MAPOG. (2024). *GIS data El Salvador*. Available online: https://story.mapog.com/app/gisdata/el%20salvador/Financial:%20Bank (accessed on 3 December 2024).

Mbiti, I., & Weil, D. N. (2015). Mobile banking: The impact of M-Pesa in Kenya. *African Successes, Volume III: Modernization and Development*, *3*, 247–293. Available online: http://www.nber.org/books/afri14-3 (accessed on 4 December 2024).

Morbiato, C. (2023). *Detainees in El Salvador's gang crackdown cite abuse during months in jail*. The Associated Press. Available online: https://apnews.com/article/el-salvador-gangs-prison-nayib-bukele-a9e7cae418f5de74837bd666cdeabe98 (accessed on 12 November 2024).

Muth, T. (2022, April 3). *One week under State of Exception gang crackdown. El Salvador Perspectives*. Available online: https://www.elsalvadorperspectives.com/2022/04/one-week-under-state-of-exception-gang.html (accessed on 12 November 2024).

Ozili, P. K. (2018). Impact of digital finance on financial inclusion and stability. *Borsa Istanbul Review*, *18*(4), 329–340. [CrossRef]

Privacy Shield. (2024). *El Salvador—U.S. banks and local correspondent banks*. Available online: https://www.privacyshield.gov/ps/article?id=El-Salvador-US-Banks (accessed on 7 November 2024).

Rastogi, S., & Ragabiruntha, E. (2018). Financial inclusion and socioeconomic development: Gaps and solutions. *International Journal of Social Economics*, *45*(7), 1122–1140. Available online: https://ideas.repec.org/a/eme/ijsepp/ijse-08-2017-0324.html (accessed on 4 December 2024). [CrossRef]

Relief Web. (2001). *El Salvador—Earthquakes final fact sheet, fiscal year (FY) 2001*. USAID. Available online: https://reliefweb.int/report/el-salvador/el-salvador-earthquakes-final-fact-sheet-fiscal-year-fy-2001 (accessed on 4 December 2024).

Sadalmelik. (2007). *Topographic map of El Salvador*. Available online: https://commons.wikimedia.org/wiki/File:El_Salvador_Topography.png (accessed on 5 December 2024).

Sahay, R., von Allmen, U. E., Lahreche, A., Khera, P., Ogawa, S., Bazarbash, M., & Beaton, K. (2020). *The promise of fintech: Financial inclusion in the post COVID-19 era. IMF Departmental Papers. Fintech and COVID-19: Impact, challenges and policy priorities for Asia.* Asian Development Bank Institute. Available online: https://www.imf.org/en/Publications/Departmental-Papers-Policy-Papers/Issues/2020/06/29/The-Promise-of-Fintech-Financial-Inclusion-in-the-Post-COVID-19-Era-48623 (accessed on 10 November 2024).

Scotiabank. (2020). *Scotiabank completes sale of its operations in El Salvador to Imperia Intercontinental Inc*. Available online: https://scotiabank.investorroom.com/index.php?item=3487&s=43 (accessed on 7 November 2024).

Senyo, P. K., Osabutey, E. L. C., & Seny Kan, K. A. (2021). Pathways to improving financial inclusion through mobile money: A fuzzy set qualitative comparative analysis. *Information Technology & People*, *34*(7), 1997–2017. [CrossRef]

Sherman, C. (2024, February 5). *'Coolest dictator' to 'philosopher king,' Nayib Bukele's path to reelection in El Salvador*. The Associated Press. Available online: https://apnews.com/article/nayib-bukele-el-salvador-president-0ab3b1d63d3633c535b2cb9b60c56879 (accessed on 5 February 2024).

Skidmore, M., & Toya, H. (2007). Economic development and the impacts of natural disasters. *Economics Letters*, *94*(1), 20–25. [CrossRef]

Teperek, A. A. (Ed.). (2024a). Geomorphic features of the world's smallest economies. In *Economic development in the world's smallest economies: How geography, demographics, and culture define economic activity* (pp. 36–52). Palgrave Macmillan.

Teperek, A. A. (Ed.). (2024b). The world's smallest economies in the background of the world. In *Economic development in the world's smallest economies: How geography, demographics, and culture define economic activity* (pp. 16–35). Palgrave Macmillan.

Teperek, A. A. (Ed.). (2024c). Utilization of water resources in the world's smallest economies. In *Economic development in the world's smallest economies: How geography, demographics, and culture define economic activity* (pp. 1–15). Palgrave Macmillan.

Vides de Andrade, A. R., de Palomo, A. L., & Martínez, L. C. (2002). *Geographical exclusion in rural areas of El Salvador: Its impact on labor market outcomes. IDB Working Paper No. 151*. Available online: https://ssrn.com/abstract=1814699 (accessed on 15 November 2024).

World Bank. (2020). *Risk > Historical hazards*. Climate Knowledge Portal. Available online: https://climateknowledgeportal.worldbank.org/country/el-salvador/vulnerability (accessed on 15 November 2024).

World Bank. (2024). *El Salvador*. Climate Change Knowledge Portal. Available online: https://climateknowledgeportal.worldbank.org/country/el-salvador (accessed on 15 November 2024).

Worldometers. (2024). *El Salvador demographics*. Worldometers. Available online: https://www.worldometers.info/demographics/el-salvador-demographics/ (accessed on 15 November 2024).

Yang, T., & Zhang, X. (2022). FinTech adoption and financial inclusion: Evidence from household consumption in China. *Journal of Banking and Finance*, *145*, 106668. [CrossRef]