CLIMATE RESILIENT SUSTAINABILITY STRATEGY AS A CATALYST FOR GROWTH AND INNOVATION OF BANKING CORPORATES IN ASIA AND AFRICA

by

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ABSTRACT

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Dissertation Chair: <Chair's Name>

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Climate change is a potential threat in this modern era as it affects several sectors. The business of the modern era tries to be focused on implementing climate change strategies for combating the crisis of the climate. In this regard, the banking sector has initiated sustainable practices such as green practices, and digitalisation that help this sector to reduce its carbon footprint. Sustainability strategies of the banks and other financial institutions have been discussed in the background of this research, apart from that the problems that are created for implementing these practices and it has been elaborated in the problem statement section. This research has aimed to demonstrate the relevance of the incorporation of strategic approaches relating to sustainability and climate resilience on the growth and innovation performance of banking organisations operating in Africa and Asia. The usage of an interpretivism research philosophy is expected to demonstrate previously published information.

The research used primary qualitative data collection through interviewing twenty-three participants from the Asian and African banking sector, and thematic analysis for data analysis. It should also be mentioned that reliability test has been included within the study which will ensure the validity of the research. Some significant ethics has been maintained throughout the research process as it helps the research to be more meaningful and reliable. Climate resilient strategies are significant aspect for financial corporate as they help to mitigate the climate vulnerability and handle the haphazard situation. The climate resilient strategies that address the climate vulnerability have been discussed in this topic. Green financing which is an innovative strategy for the finance companies to develop their sustainable planning has been elaborated in this topic.

Climate resilient sustainable strategies have an effective role in the profitability of the finance company that has been discussed in this topic. Climate resilience strategies implemented by financial institutions and banks in the banking sector have impactful incorporation of innovation and strategies for combating climate change that affect business performance of companies. Furthermore, climate resilience strategies influencing the development of sustainable solutions and digital innovations for empowering climate concerns acknowledgement among companies have also been discussed. Climate resilience is capable of being implemented as corporate strategy, and it faces certain threats and challenges, both financial and non-financial in nature. Moreover, climate resilience and its contributions to innovative financial solutions have also been discussed.

Keywords: Climate change, banking sector, financial sector, climate resilience, innovation, sustainability, ESG factors

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CHAPTER 1: INTRODUCTION

1.2 Research Background

Climate risks actively contribute to innovation and growth opportunities in the banking sector. Environmental factors and climate change affect the business and financial conditions of the banking sector. Environmental factors and climate change affect the business and financial conditions of the banking sector. The environmental factors include the physical risks and the climate change effects such as cyclones, storms, and floods, which may affect the physical and valuable things. Due to these climate factors, banking sectors face financial loss due to the banks' insurance and non-repayment of loans by their customers. A green banking system helps the banking system obtain competitive advantages by creating a strategy-implementing process within the banking sector (Nwokolo *et al*. 2023, p. 100). The policies affect the assets the banking sectors own and the incorporation of low-emission and environment-friendly technologies into production, which helps the sectors grow. These transitions can create a difference in the financial assets the banking sector owns.

Another factor that leads to liability risk is the claim for the damage to their properties that people face due to climate change effects such as storms. These claims affect the banks and their credits. The banks, however, could be affected by climate change. Elaborating on the natural effects, such as storms caused by climate change, leads to the loss of bank reserves. Customers who take loans on behalf of their homes as collateral need more time to repay their loans due to the destruction caused by climate change (Nwokolo *et al*. 2023, p. 110). Loans that are not being repaid and customers that lose the ability to repay the amounts due to the destruction caused can reduce the bank's efficiency. Moreover, it increases the expense due to disasters and decreases the bank's profitability.

Climate change affects banks. As a result, credit risk increases as loans that the banks provide to the farmers are a matter of concern in climate change. The gradual rate of the

insurance cost of the banking sector is the major impact of climate change, as flooding and severe storms cause damage and create hindrances within the working process of banks. Banking sectors want to protect themselves from the aftermath of the climate change consequences, and thus, the insurance cost is gradually increasing. Due to climate change, these residential places face high impacts, which in turn affect the performance of banks' assets. Natural disasters actively impact the economy and society. Due to climate change, these residential places face high impacts, which in turn affects the performance of banks' assets. Natural disasters actively impact the economy and society. Climate change negatively affects crops and fields. As a result, the government forces the banks to help recover from the effects that the people face, which leads to high risks (Park and Kim, 2020, p.21). Increasing insurance and investments in green finance is vital in the banking sector. Innovations in the banking sector due to climate change are rapidly increasing. Banking sectors are adapting new techniques to combat environmental challenges and promote sustainability.

Banks are introducing green financing techniques to promote environment-friendly resources, including renewable energy production, energy-efficient buildings, sustainable agriculture, and allied sectors. This type of production or project helps the banking sector to grow and maintain profitability. Conventional banking sectors are gaining profitability in eco-friendly innovations. Banking institutions support promoting eco-friendly projects, and the banking sector invests in such projects (Park and Kim, 2020, p.5). Moreover, the banking sector is changing its strategies to promote eco-friendly projects and products. Banking institutions have to face various challenges, including the long-term shifts of the weather change effects to the closing of retail branches, negatively impacting the "creditworthiness" of clients and adversely impacting the asset price. The banking sector is becoming conscious of lending to any individual or organization that damages the environment and affects the climate. A large number of banks are promoting the growth of green financing techniques.

Banks are incorporating carbon accounting and evaluating the carbon footprint for better project investment. They also evaluate the climate challenges and the effects they can face and act accordingly on operations (Gulluscio*et al*. 2020, p. 31). After scrutinizing the impact of the climate-changing consequences within the banking institutions, they initiate suitable steps to find innovative solutions to those issues to face the challenges. The sector conducts research and provides information based on that research to address environmental issues and tackle the issues to promote innovations and solutions. Climate change is the top risk among the emerging risks to tackle these commonly raised funds for investing in climate-friendly and environment-friendly projects. The banking sector also empowers the corporation with details and financial tools required to reshape low carbon emissions and encourage sustainable practices.

The banking sector's involvement in the climate change risk to manage the strategies for their operations. This strategy includes decreasing the financial risks that are integrated with climate change, such as extreme weather conditions, and developing innovations to minimize these kinds of climate change effects. The banking sector is promoting green loans, green banking products, going paperless, and many more sustainable improvements are being made to improve the carbon footprint (Gulluscio*et al*. 2020, p. 25). The banking sector is one of the sectors where paper is mostly used for various purposes, which include bills, forms, etc. The excessive use of paper decreases the number of trees, ultimately contributing to climate change. The banking sector is going paperless, removing the use of printed documents and engaging in online billing. The banking sector is promoting surveys for customers and giving them more information on how the climate is being affected and the consequences of climate change.

The whole finance sector has been effectively influenced by artificial intelligence (AI) functions to access the information that comes with climate change and help businesses grow

without the impact. The impact of extreme climate weather can have various effects on the sector. However, AI helps make more informed decisions and develop strategies to decrease the effects of climate change (Javaid*et al*. 2023, p. 18). Artificial Intelligence is an important area for understanding the risk involved in investments, and artificial intelligence algorithms are used to understand the risk involved in investing in the business and the impact of climate change. Using Natural Language Processing (NLP) in the banking sector involves great profitability in the market.

NLP is a subset of artificial intelligence; it allows the machine to understand human behavioural language, articles, and reports. This language is processed to access the information in the reports, which can be further evaluated and used to identify the risk involved. The risks involved can be eliminated by analysing all the reports and economic, social, and governmental data (Javaid *et al*. 2023, p. 24). Artificial intelligence within banking institutions helps create sustainability by processing a larger amount of data, creating automatic tasks, boosting customer services through a catboat, and predicting market change trends. All these activities help those institutions maintain their sustainability and initiate strategic decisions for future marketing so they can easily handle those challenges. This data processing also includes the risk involved in climate change and gives the data to mitigate the risk involved. Machine learning (ML) is another sustainable way to mitigate the risks involved in investment. The banking sector also uses machine learning algorithms to analyse trends. It also helps the banking sector analyse decision-making patterns and train models to prevent faults. This machine learning process is used to identify the patterns of rain and climate change, which gives the reports as data and predicts correct responses based on the consequences made to analyse the risk.

ML is used to identify patterns of rain and climate change, which gives the reports as data. Machine learning models are trained to analyse the risk.

Banks and financial sectors needed to act fast and bring up the advancement tools to enhance profitability and mitigate the environmental risk involved in the sector. Adopting and practising current innovations when dealing with climate-related issues can benefit the banking sector. The risks involved in credit loans during climate change can affect banking institutions' services and working procedures. The risks involved in credit loans during climate change can affect the business and the banking sectors. Advancement tools can decrease the risks involved and bring up strategies to understand how to overcome the situations (Pai, 2023). These modern tools can actively contribute to increasing the profitability of the banking sectors. The predictions that the ML models in financial sectors are making help make decisions regarding credit evaluations. Climate change is actively affecting the banking sectors; however, the risks that are involved can be minimized by green evolutions. The practice of using modern financial tools also reduces the risks that are involved in the banking sector.

The impact of climate change reshapes the business of the modern era. As per this context, the corporate business has to shift towards a green economy that effectively uses resources, lowers carbon emissions, and many more. The sustainable strategy of climate resilience can be defined as a more significant part of corporate business, and it enables the banking industry to combat the impact of climate change (Huiskamp, ten Brinke and Kramer, 2022, p. 1765). These strategies extend to implementing sustainable practices in the business's core operation and reducing the harmful behaviour that impacts the environment. Climate-resilient strategies catalyse innovation and growth of banking corporations in Asia and Africa. It helps this sector operate by following environmentally sustainable strategies, a concerning area of today's business.

Customers become attracted by sustainable business practices, which indicates that this particular region's banking sector can be responsive to customer demand. The banking

sector takes initiatives such as sustainable lending and green bonds that impact climate change mitigation through sustainable infrastructure (Muhammad *et al*. 2023, p. 33). These sustainable business initiatives enable businesses to address the vulnerability of the environment, a common issue worldwide. The banking corporation uses innovative business strategies to facilitate its customers, which impacts the growth of this sector's business. The innovative initiatives help the banking corporations develop their business on this competitive edge. It also indicates that the corporate banking sector fulfils its environmental responsibility with the help of innovative climate action. Climate resilient practices are an innovative initiative providing a path to corporate banking towards global sustainability.

Climate change is a potential threat to this modern globe, and this crisis has had several impacts on every world sector. Increasing temperature and pollution result from this climate change crisis, which largely harms the world. Collaboration with diverse platforms largely focused on taking action on sustainability and climate change impact is beneficial for the business to implement sustainable business practices (Chan *et al*. 2021, p. 247). As per this context, the business is largely concerned with maintaining sustainability and taking action to mitigate such adverse impacts. Reducing emissions is a sustainable practice initiated by most businesses to reduce the air pollution that largely impacts the environment. It indicates that such practices significantly impact a business's maintenance of environmental commitment. Climate change action has now become a global agenda that insists that organizations include innovative practices related to climate actionsuch as needing to provide climate change disclosures and working on reducing emissions (Hinkel *et al*. 2020, p. 2-3). The business can generate potential revenue by having these practices in its operational area.

The effect of climate change has been increasing, and it affects the economic sectors. Climate change risks create transactional and physical risks in the financial sector. The banking sector also supports the country by adopting climate-changing initiatives and

enhancing financial resilience (Park and Kim, 2020, p. 2). Based on this perspective, the banking sector can reduce climate change-related risks and mitigate these risk factors by including financing in the climate-sensitive sector. Corporate banking is vital in adopting their business towards a green economy. Focusing on the impact of climate change, the corporate banking sector initiated several projects and programmes that were largely connected to the environment and economic perspective. It allows the banking sector to mitigate the risk factors created by the climate crisis. This practice enables these organizations to increase their customers, as the customers of this modern era are largely aware of environmental sustainability.

The corporate business takes several climate action plans to maintain its reputation from the global perspective. This plan includes more resilience in green practices so that pollution, such as air and water, can be mitigated. Climate action is also a strategic plan under sustainable business practices that helps regulate all risks generated by the climate crisis. This sector expands its business landscape by developing green financial products based on this context. Green banking has been introduced from the perspective of helping the banking sector become sustainable in terms of environmental, social, and economic aspects (Park and Kim, 2020, p. 3). This isndicatesthat the banking sector offers excellent service to its customers by implementing environmental practices such as reducing carbon footprint.

A wide range of banks, especially commercial banks and private banks have initiated greening in their operation with the help of managing climate change-related risks. Countries have recently improved their digital skills, organized digital infrastructure, and offered digital financial services accessible to everyone (Gul *et al*. 2024, p. 2). The digitalization of the banking sector is a significant initiative that helps the banking sector to reduce the use of paper. These digital banking practices are also beneficial for reducing the carbon footprint, which is considered the aim of climate change action in the banking industry.

Engagement of new business models which prefer to prioritize climate change can be altered with climate finance. Financing investments play an important role in banks' integration of the decision-making process, which is racially balanced with social, ethical, and environmental boundaries. Sustainable banks are the ones that can understand and value the importance of and manage the risks involved with sustainability issues. Sustainable banks analyse the risks involved in implicating and opportunities in business that are caused by increasing environmental issues and climate change (Grijalva and García-Wang, 2022, p. 2). Banks improve their engagement with clients and stakeholders by adopting certain financial activities that enhance the physical and transition risks that affect climate change.

According to a sustainable business model, the main aspects a banking sector tries to achieve are target, sustainable value proposition, and sustainable value creation to improve climate change's effects. Comparisons of each bank or financial institution's data are used to analyse the patterns. Each bank achieves the best practices it can follow through this data to improve its managerial process. The financial institutions aim to achieve sustainable social and environment-friendly activities (Miah, Rahman and Mamoon, 2021, p. 2). Practising this kind of collection can increase the bank's profitability and margin and reduce the contributions towards climate change. The patterns can motivate researchers to establish a clear goal for achieving climate finance. Specific actions required for development and innovation can be given to achieve the goal of a sustainable business model with limitations regarding climate.

1.3 Problem Statement

Climate change increases the major risks to the global economy, energy costs, and availability of potential resources. The financial industry has faced a tough scenario due to the adverse effects of climate change, which indicates that it affects customers and businesses. The banking sector has to face credit-related risks as the potential policies for

reducing carbon emissions create high operational costs in the financial sector (Bank Track, 2024). It indicates that the corporate banking sector should invest more money to initiate the projection of climate change management. The cost of projects that focus on reducing carbon emissions is high, indicating the banking sector has to face an increment of cost due to high price volatility in the global carbon market. In addition, initiating high technologies is also a core need for green management in the banking sector. It indicates that due to climate change, the banking sector has faced problems due to traditional infrastructure, which adversely impacts the development of their business in the global context.

Customers in the corporate banking sector largely focus on environmental sustainability. Customers are not satisfied with the banking service, and these agencies could implement risk management regarding environmental impact. This means that due to the impact of climate change, investment in these banks has decreased. The investors are changing their perspective on combating climate change. They focus on investing in the financial institutes that follow green management in their operation (Bank Track, 2024). Lack of innovation and implementation of green strategies adversely impact investors as they do not invest in such financial institutes that could not shift their focus towards green. The corporate banking sector cannot generate revenue. The world's financial sector is responsible for managing economic and environmental sustainability in its operation as it faces the climate crisis.

The value assets of the banking sector and financial institutions are largely affected by the indirect impact of climate change. The development of advanced technologies and the changing behaviour of customers and global investors have become a potential threat to the financial institutions in the sector. Global customers and investors focus on the effect of climate change on determining the pricing of potential financial assets and the allocation of investment portfolios (Capasso, Gianfrate and Spinelli, 2020, p. 1). Ineffective environmental

performance is mainly connected with credit ratings, and the increasing cost of corporate banks and bank loans is due to concerns about diverse environmental factors. According to this context, environmental policy needs to be initiated by the banking sector, and it increases the capital cost of the banking sector. In addition, bank loans and financial services have a crucial influence on mitigating carbon emissions in different economic types(Obiora *et al.* 2020, p. 2). The banking firms with carbon-related risks cannot be responsive to the Carbon Disclosure Project (CDP). The banking sector faces a challenging situation in transforming green business with the help of CDP.

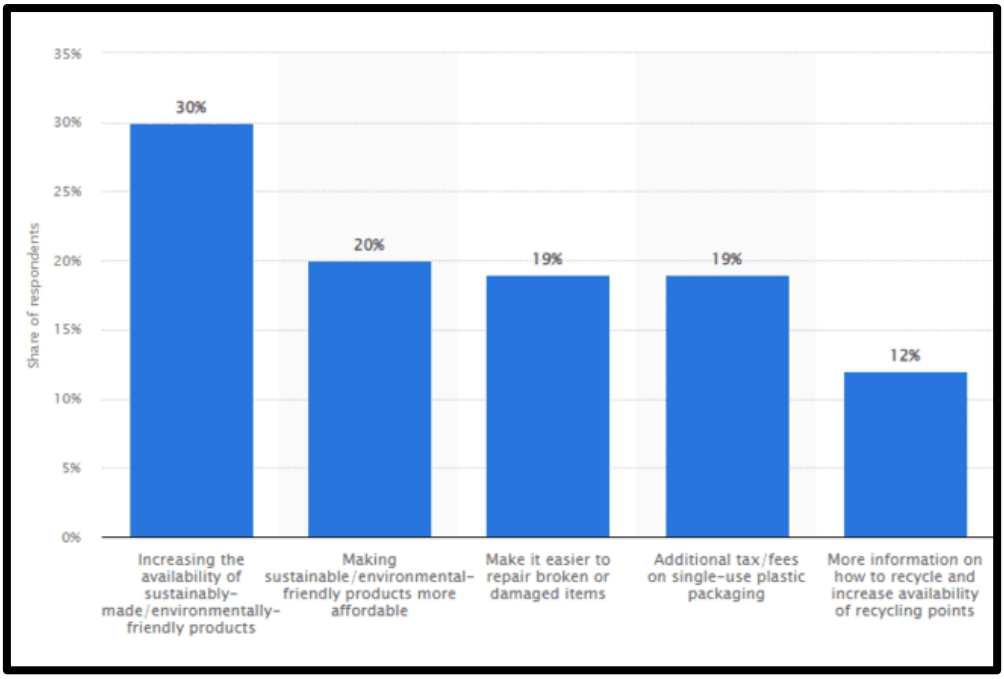

Figure 13.1: Sustainable consumption in the Indian context(Source: Minhas, 2024)

The availability of environmentally sustainable products is increasing in India due to increasing awareness of sustainable practices. The availability of environmentally sustainable products is increasing in India due to increasing awareness of sustainable practices. The availability of sustainable products is 30% in India, and based on this, the Indian banking sector has a large demand to initiate sustainable practices in their operation (Minhas, 2024). 20% of environmentally sustainable products are affordable in the Indian context, and the implication of green practices in the banking sector has not been implemented effectively.

Regarding this, India's banking sector, which is an Asian country, faces many issues in implementing sustainable practices. Sustainable business practices are a new trend in Asian countries and have been developed based on customer demand. A potential lack of motivation towards green practices is seen in the Asian context. The banking sector faces different issues in implementing potential action towards sustainable green practices due to the different challenges in adopting it (Gunawan, Permatasari and Sharma, 2022, p. 5). Awareness is a key factor in implementing sustainable practices in the banking sector. Awareness is a key factor in implementing sustainable practices in the banking sector. The banking sector of this modern world has faced several challenges due to a need for more awareness among employees, and they organize training programmes to generate awareness among their employees and customers.

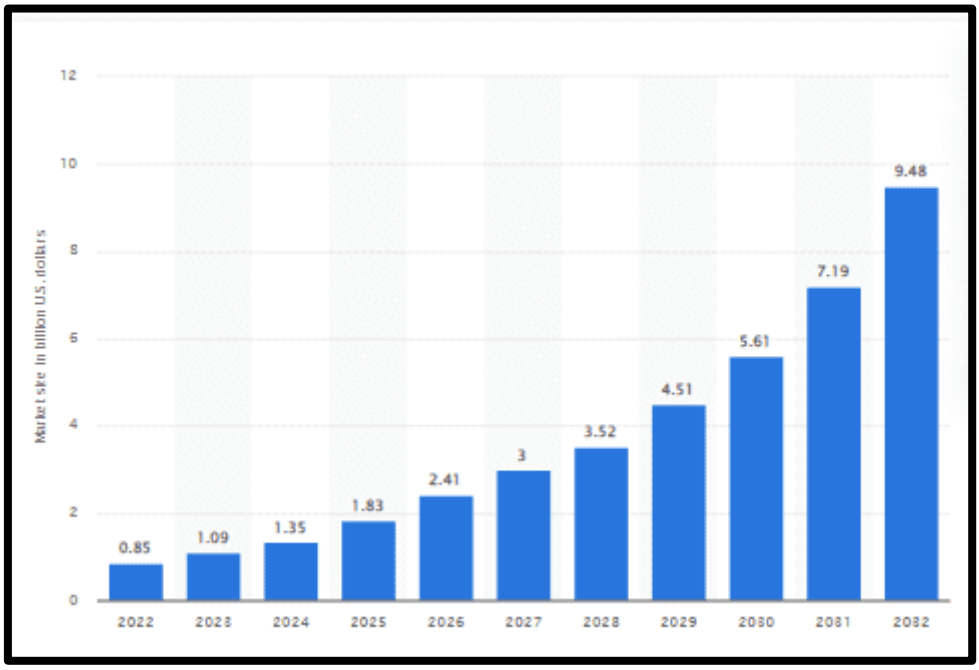

Figure 1.3.2: Generative AI market in the financial industry(Source: Statista, 2024)

The market size for implementing artificial intelligence (AI) has been developed, and the banking sector is implementing AI based on sustainable business practices. The generative AI market in the financial service industry was 0.85% in 2022 and has been

transformed to 1.09 in 2024 (Statista, 2024) as mentioned in figure 1.3.2. The generative AI market in the financial service industry was 0.85% in 2022, which has been transformed to 1.09 in 2024 (Statista, 2024). The use of AI increases the potential issue related to cybersecurity in the banking sector. Cyber attacks are a potential threat to the banking sector as the sustainable practice of the banking sector is expanded by implementing digital technologies. In recent times, the banking sector has largely relied on digital practices that allow it to offer more effective practices to its customers. The banking sector faces challenges in handling data privacy, which indicates the banking sector loses sensitive data. The banking sector records the customers' credentials, and the attack of cybercriminals can lose these data.

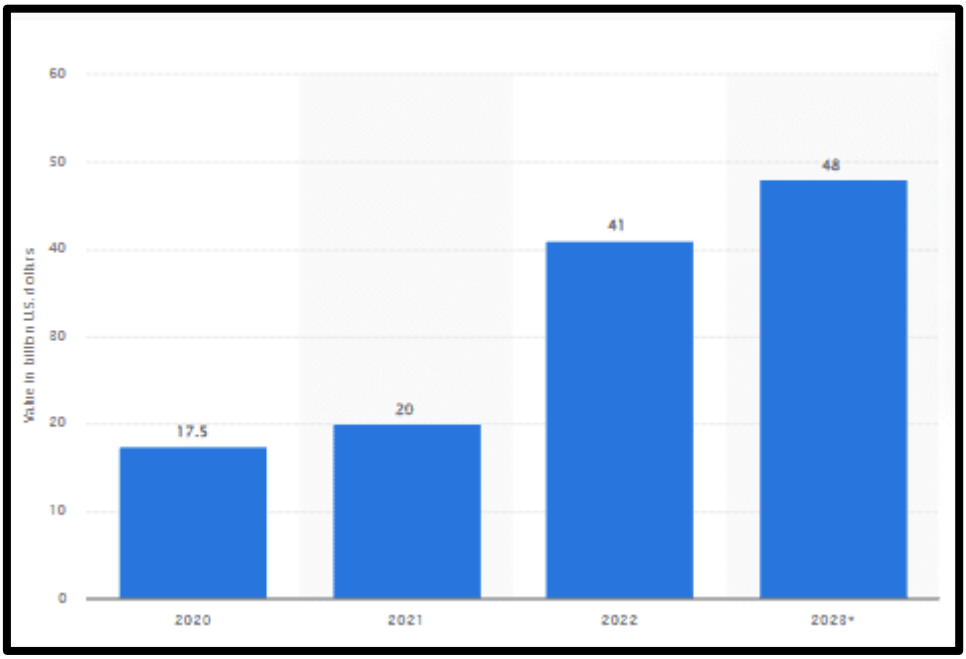

Figure 1.3.3: Online payment fraud cases due to e-commerce platforms(Source: Coppola, 2023)

A technological implementation that is part of innovation leads the banking sector to introduce the e-commerce section in their operation. Fraud cases are increasing from the perspective of online payment, which impacts the banking sector's financial losses, and its reputation is also damaged. The case of online fraud worldwide was 17.5 billion in 2020, and this value was transformed to 20 billion in 2021, as mentioned in figure 1.3.3 (Coppola,

2023). Global customers in the banking sector face huge monetary losses as a result of online fraud on e-commerce sites. Digitalization is largely connected with the banking sector, and the popularity of e-commerce is increasing daily. The online fraud cases in e-commerce sites were 41 billion in 2022, which increased by 48 billion in 2023. The e-commerce platforms need to be updated day to day, and updates are necessary for this platform to face challenges in their operational area. Studies have discovered that global banking frauds have been prominently on the rise, with over 13 banks from the Asian region and several banks from the African region suffering from fraud (Sood and Bhushan, 2020). The global banking sector, as well as the Asian and African banks, suffers from online fraud cases, and this sector could not develop revenue.

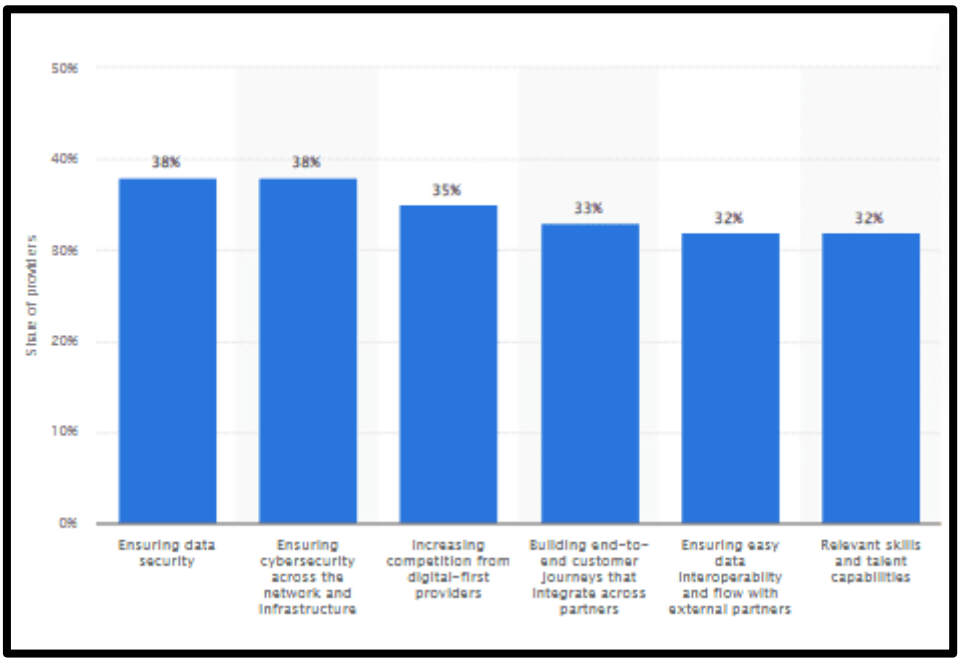

Figure 1.3.4: Challenges in digital banking (Source: Statista, 2023)

Digitalization is one of the significant parts of the banking sector, and it has been introduced in the technological era. The bank is concerned with the climate-changing issues that impact its business. Based on this context, the banking industry tries to implement digital innovation in their business practices. One of the challenges for the digital banking sector is ensuring data protection, and 38% of cases are included based on data privacy issues in 2021,

as mentioned in Figure 1.3.4 (Statista, 2023). This means that the banking sector faces issues regarding data security with digital initiatives. With a lack of data protection measurements, the banking sector protects its data securely. The banking sector uses innovative digital tools to facilitate their customers as modern customers want to get service quickly. Regarding this, the banking sector become focused on implementing digital banking that is environmentally friendly for the customers. Money transactions are also initiated without the physical appearance of the customers, which means the customers can credit their money without visiting any physical banking store.

Digital banking is a sustainable business practice as it aims to reduce the use of paper using mobile banking, bill payment online, and many more sustainable practices. Reducing paper statements is beneficial as it helps to reduce deforestation so that environmental sustainability can be maintained. Digital banking also helps the banking sector reduce its carbon footprint, adversely impacting the environment. Digital banking has some disadvantages that impact customers. 32% of challenges are faced by digital banking as a result of inadequate talent management and lack of potential skills among the employees in the banking sector. Bank employees' lack of skill and ability in digital management leads to challenges in handling digital practice in this sector. In addition to that, competition is a common factor for any kind of sector, and the banking sector faces a tough situation due to increasing competition from digital providers. 35% of challenges are included in the competition of the digital service providers in the banking sector. This problem adversely impacts the operation of the banking sector, and the development of this sector cannot be implemented. The banking sector must expand money to provide more effective customer service.

The banking sector invests huge amounts of money in adopting innovative technologies that help to boost customer service. The banking sector of this digital era offers

digital banking, such as mobile applications, ATMs and Internet banking (Kaur *et al*. 2021, p. 107). It enables this vector to provide customers with effective qualitative service and reduce operational costs. This digital implementation has a negative side that impacts the servicing of the banking sector. Payment disruption is a common problem of digital banking, and it decreases customers' customers' trust when they face such issues. Technological disruption leads to customers' failure to pay while they use online banking modes. They face monetary losses due to a lack of infrastructure and slow connection to the internet. It largely impacts the banking sector's business. Cyber attacks are one of the leading threats to using such technologies. Hacking sensitive information in the banking sector creates issues for the customer.

Incorporating climate resilience has become pivotal for business organizations operating in different sectors, while organizations operating in the banking sector maintain a direct connection with consumers. Indeed, encountering climate challenges has become imperative and incredibly noticeable for organizations, increasing consumer concern. As Long (2021, p. 51) mentioned, the growing concern among customers, investors, and policymakers has led financial organizations to prioritize the climate crisis by incorporating sustainable attributes. The consideration and relevance of different forms of sustainability practices have increased to a great extent in both Asia and Africa. In Asia, the interest in integrating ESG or "environmental, social and governance" factors has emerged as an incredibly pivotal strategic approach for enhancing business performance relating to finance. As of 2021, the ESG rating market coverage has been recorded as 11% in the financial sector of Asia (OECD, 2022). Massive sustainability attributes have been adopted within the banking sector in Asia in the modern era due to increased climate challenges and concerns among customers.

Banking organizations have gained an incredibly severe role in enhancing the climate resilience of business sectors by promoting sustainability strategies and enhancing their significance among stakeholders. Banking corporations in Asia and Africa have implemented net-zero commitments to promote ESG factors through their services. However, data gathering and tracking in Asia have emerged as a key constraint for banking corporations aiming to mobilize capital (Mckinsey, 2022). Encountering challenges relating to data tracking and recording can be destructive for banking companies aiming to foster climate resilience by incorporating sustainability strategies. Besides this, the lack of sustainable investment and long-term benefits has limited access to natural incentives for providing capital to sustainability projects. A diverse range of complications have been observed that can create incredibly disruptive issues and complications regarding implementing climate-resilient sustainability strategies within the banking corporations of Asia and Africa.

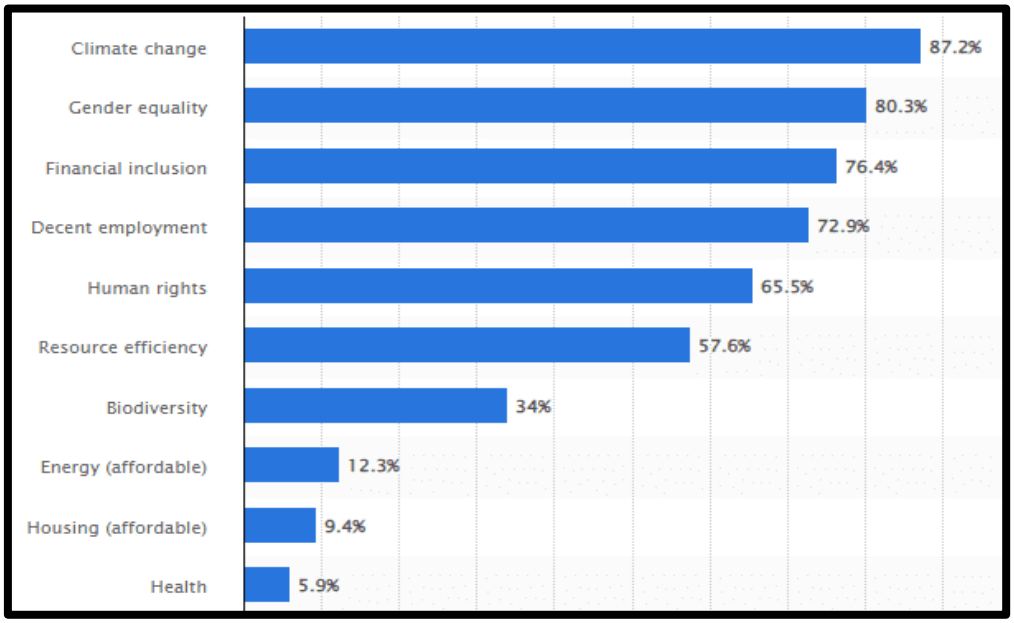

Figure 1.3.5: Social and environmental goals adopted within sustainability strategies in banks throughout the world (Source: Statista Research Department, 2023)

Improved access to capital is incredibly advantageous for banking corporations, which have encountered disruptive challenges in the past years. Most small-sized banking organizations have encountered complexities in accessing the required capital to incorporate

climate-resilient sustainability approaches into their business. Understanding the incredible role banking organizations play in fostering climate resilience through sustainability practices is important. Some key goals highlighted regarding sustainability adopted in banks include gender equality, climate change, decent employment, financial inclusion and human rights, as described in Figure 1.3.5 (Statista Research Department, 2023). Besides this, climate change has gained the highest significance, 87.2%, in banking corporations worldwide. These goals demonstrate the relevance and importance of sustainability and climate change that have been fostered among banking organizations. On the contrary, Africa stands among the key continents with the lowest impact on climate change through harmful emissions despite the lack of financial sustainability among most of the population residing on the continent.

The relevance of responsible banking and maintenance of financial activities that are performed via banking has increased to a great extent in this content due to the need for more awareness among the general public residing in Africa. The banking companies in Africa need to focus on aligning their sustainability and climate resilience goals within their corporate strategies and prioritizing the management of transitioning risks and sustainable development (Business Tech, 2023). In the modern era, many financial companies, fintech companies and banking corporations have prioritized incorporating advanced technologies and cloud-based infrastructure within their services, which has caused a critical threat to other banking corporations. Besides this, many African banking corporations have shifted their focus to incorporating sustainability strategies integrated with SDGs. The growing need for hiring talents has taken a leading role in reshaping the banking sector, and Africa is no contrary to this fact.

Adopting alternative recruitment approaches can support fostering a sustainable atmosphere within banking corporations, which is evident in the enhancement of climate resilience. Indeed, the relevance of green bonds and loan issuance has increased rapidly

worldwide in the past few years. However, in Asia, banks and other financial organizations must establish partnerships with regulators and governments regarding adopting policies and incentives that can support net-zero goals (Mckinsey, 2022). Moreover, establishing an incredible financing platform through the partnership between the Asian Development Bank or World Bank and governments can be incredibly supportive and beneficial for fostering climate resilience. Therefore, Asian banking corporations support incorporating climate resilience within their sustainability strategies and intend to promote sustainability through financing activities. Fostering a sustainable credit portfolio has been critical for Asian banking corporations.

The governance framework and attributes have transformed to a great extent in the past years due to the rapidly changing financial environment and emerging issues of climate change and environmental sustainability. Moreover, the World Bank has introduced the "Africa Climate Business Plan", through which around 19 billion dollars will be invested via grants and loans (Mikulewicz and Taylor, 2020, p, 626). Fostering resilience in sustainability and corporate strategies can support incredible innovation and business growth among banking organizations based in Asia and Africa. Climate resilience has been crucially essential for banking organization's ability to maintain innovative business growth performance due to the increased significance of sustainability. A diverse range of climate plans have been adopted in the contemporary era, which includes the Delta Plan, NDC, NAP and Mujib Climate Prosperity Plan. India has ranked the highest in receiving multilateral climate funds in Asia, followed by Bangladesh (Arfanuzzaman, 2024, p. 9). Other than that, the amount of funds received by other Asian countries, including Sri Lanka, Maldives, and Bhutan, is comparatively lower than that of these countries.

Africa has taken a mediating role in combating climate change worldwide, enhancing the significance of establishing climate resilience and sustainability strategies within their

corporate strategies. Indeed, implementing green finance within the banking sector has become key to responding to climate change in Africa (Ncube, 2024). Increased climate change issues have presented incredibly disruptive impacts for countries with low carbon emissions, including Africa. Besides this, many regulatory organizations and agencies have provided incremental support for maintaining sustainability performance by implementing green initiatives. It is mentioned earlier that Africa is responsible for a minimal contribution towards global carbon emission; however, the country has encountered severe complexities relating to sustainability, contributing to the increased need for climate resilience through banking corporations. It is expected that green financing will lead to establishing climate resilience by influencing the banking corporations of both countries.

Establishing green banks can be incredibly helpful and supportive towards accelerating the transition of financial organizations towards sustainability in Africa. The African government can provide major support in these activities. The impact of climate change and inefficient consideration of environmental sustainability have possessed crucially disruptive challenges, which have been enhanced more due to the emergence of the COVID-19 pandemic. This crisis has affected the economic capability and sustenance of the continent, while sustainability performance has also encountered issues (Nhamo and Chapungu, 2024, p. 102836). By considering the implications, the South African Reserve Bank has declined its interest rates for banks to safeguard the economic vulnerability encountered in the continent. Various financial organizations, including the African Development Bank and the World Bank, have contributed to maintaining climate resilience and finance in African countries.

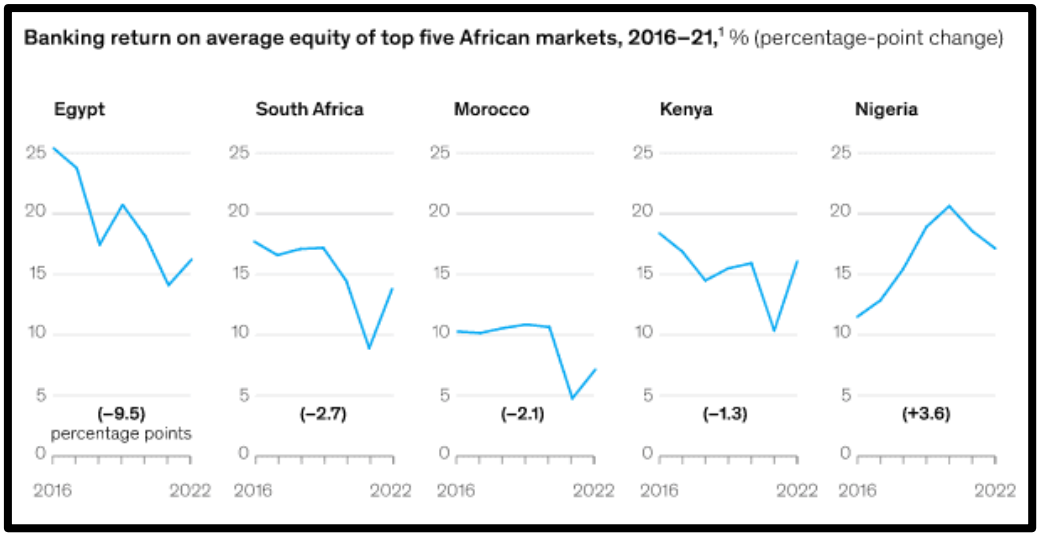

Figure 1.3.6: Return on average equity in banks of the top markets in Africa (Source: Dayi *et al*. 2022)

In recent years, African banks have projected enormous growth by incorporating incredibly innovative technological attributes despite unprecedented uncertainties. In 2021, a strong rebound has been introduced in Africa. However, in most countries except Kenya, the value of return on equity of banking organizations remained lower than in the pre-pandemic state, as per the information in Figure 1.3.6 (Dayi *et al*. 2022). The above image has presented a significantly comprehensive reflection on the past and current profitability relating to the banking sector in Africa, indicating that the sector is encountering constant issues in enhancing innovation and profitability. Despite prioritizing incredibly innovative acts and strategic approaches, the need for significant activities has remained before increasing the banking sector's profitability. Besides this, Nigeria has remained the only economy that has achieved an increase in banking profitability. Encountering constant downward drift in the profitability level can simultaneously impacted by the declining net interest income of banking corporations in the continent, reflecting the major issues and problems that are being encountered by the sector.

1.4 Research aim and objectives

This research has targeted demonstrating the relevance of a climate-resilient sustainability strategy for supporting the innovation and expansion of banking organizations operating in Asia and Africa and addressing related challenges and solutions.

The key objectives that will be prioritized in this research include,

- To investigate the relevance of climate-centric sustainability strategies and their implications on the business performance and growth of banking corporations operating in Asia and Africa
- To explore the interconnection between innovation and climate-centric sustainability strategies of banking corporations in Asia and Africa
- To examine the issues and challenges encountered by banking corporations in Asia and Africa regarding the incorporation of climate resilience in the corporate strategy
- To address the relevance of climate-resilient strategies in boosting innovation and business growth among banking corporations based in Asia and Africa
- To recommend more innovative strategies for growth in the banking sector in Asia and Africa

1.5 Research Questions

- What is the role of climate-centric sustainability strategies in the business growth and performance of banking corporations based in Asia and Africa?
- What is the interconnection between climate-centric sustainability strategies and innovation in banking corporations in Asia and Africa?
- What are banking organizations' main issues and challenges in Asia and Africa due to integrating climate resilience and sustainability attributes in their corporate strategies?
- How do climate-resilient sustainability strategies support fostering innovation and business growth among banking corporations operating in Asia and Africa?

- What are the innovative strategies for growth in the banking sector in Asia and Africa?

1.6 Research Significance

This research has targeted the exploration of the incredible role of climate-resilient sustainability strategy towards achieving innovation and growth in banking organizations that are being operated in Asia and Africa. Indeed, scientific studies involve exploring a lot of concepts and attributes relating to the main research area, which supports the formulation of a better understanding of the subject. There is a potential need for studies focusing on the financial sector and segments regarding Asia and the African context (Kass-Hanna, Lyons and Liu, 2022, p. 4). Therefore, the successful completion of the present research contributes to identifying the role, significance, and current condition of sustainability and climate resilience within the banking sector of Asia and Africa. This research contributes to a better understanding the strategic approaches adopted by banking organisations in the countries above and explores the need to prioritize climate resilience. It is expected that the insights presented through this research can be facilitated to improve the research problem.

The insights and knowledge presented through this study can be utilized by future scholars who aim to explore the role of climate resilience and sustainability initiatives on the business expansion of banking organizations. Besides this, incredibly significant research methods have been prioritized in this study, contributing to collecting and analyzing crucially reliable and relevant information regarding the research phenomenon. Proper maintenance of these aspects can result in the formulation of incrementally essential knowledge that can mediate in generating an understanding of climate resilience for promoting innovation and growth in business. An incredible focus has been placed on adopting and maintaining sustainability performance in Asian banks, while Africa stands among the countries with minimal emissions. These aspects reflect the distinction relating to the sustainability

approaches and climate resilience interventions implemented within the banking sector of these countries.

1.7 Thesis structure

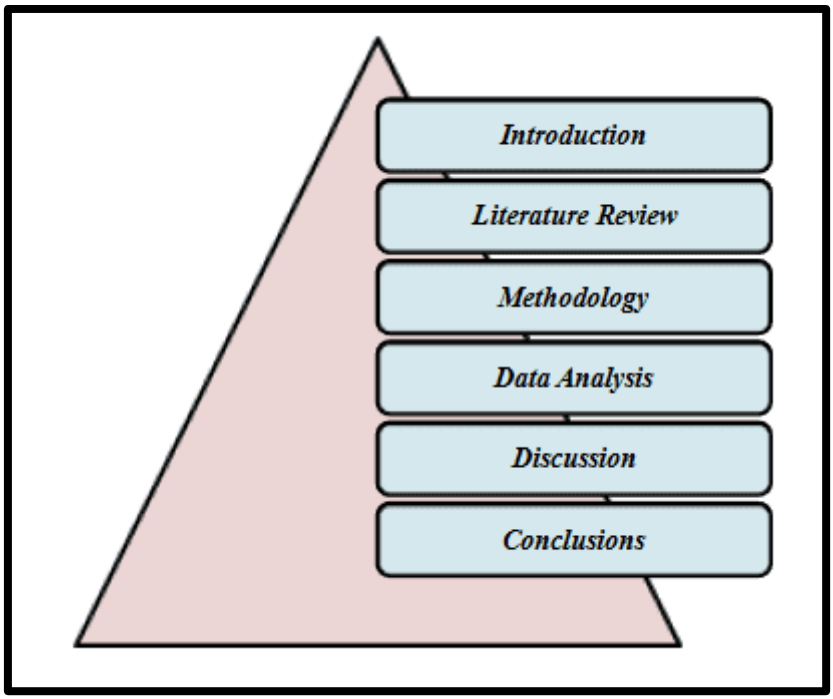

Figure 1.7: Thesis structure(Source: Self-developed)

CHAPTER II: LITERATURE REVIEW

2.1 Introduction

Integrating climate action within the business strategy has been considered a great way to reduce greenhouse gas emissions. By adhering to climate change policies, organizations can successfully reduce their operation costs and improve the profitability aspect of the company. The present chapter is highly informative as it has introduced different theories that will be relevant in understanding organizations' responsibilities towards society and how adequate strategies can be built to support the organizational vision and environmental goals. Different pieces of literature on climate change and its impact on banking corporate performance have been observed within the section to identify the research gap, which will be explored throughout the research. The literature discussed within the chapter sheds light on some key concepts relevant to today's market, and understanding the thought processes of the different researchers on the subject will further help carry forward the research.

2.2 Theoretical framework

2.2.1 Triple bottom line

The Triple Bottom Line concept is an accounting framework focusing on the organization's social, environmental and financial dimensions. The triple bottom line theory aims to make organizations more socially responsible and increase the company's profit (Conway, 2018, p. 21). The objectives followed within the banking sector can integrate this concept to promote long-term profitability and sustainable business practices. The need for corporate social responsibility (CSR) has never been as high as right now, with the ongoing financial crisis and global economy requiring stability which can only be achieved through sustainable practices. John Elkington was one of the first researchers to propose the triple

bottom line; his article mentioned that companies should maintain three separate bottom lines (Żak, 2015, p. 253). Every company exists to generate profit, and therefore, it should be the first bottom line; the second is the "people account", which measures the social responsibility of the operations that are run within the organization, while the third and final bottom line is "planet" or the measures which the organization takes to become more environmentally responsible. As the research deals with integrating climate-centric protocols within businesses, the triple bottom line theory will help conserve energy and use natural resources for energy that are safe for employees.

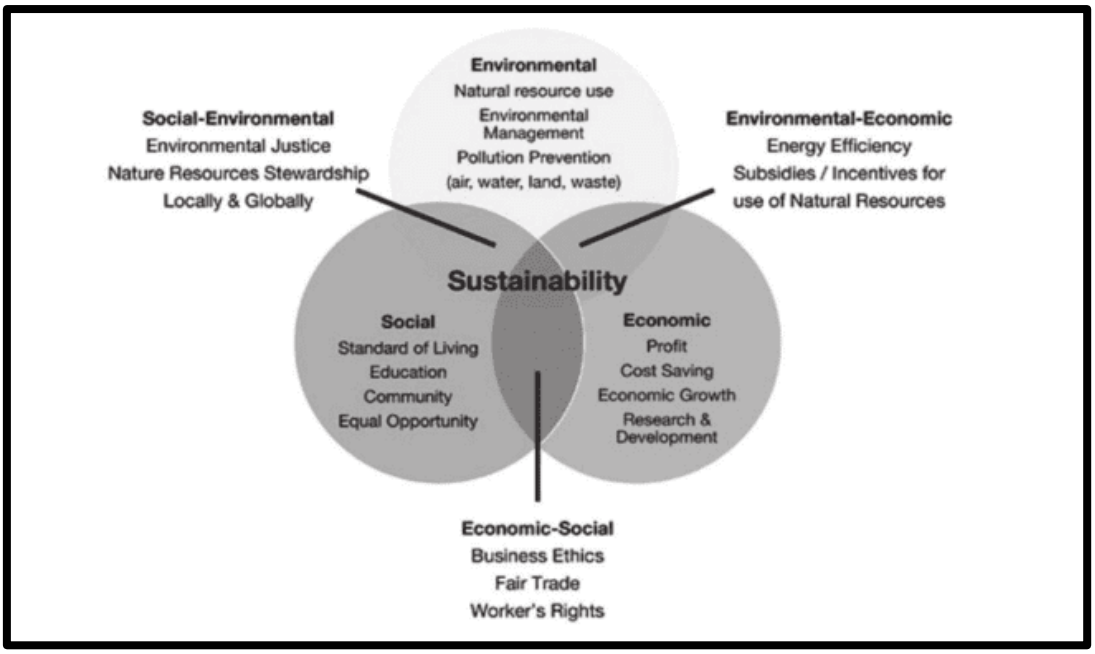

Figure 2.2.1: Three Spheres of the Triple Bottom Line Theory(Source: Żak, 2015)

The triple bottom line is, therefore, the overall idea of how a banking sector needs to be run; the bank's overall performance needs to be evaluated in the process to make sure the business processes contribute to economic prosperity, environmental quality and social capital. This theory effortlessly captures the essence of sustainability within banking activities, not only the profitability aspect measured but also environmental protocol factors considered by shareholders before investing. There are many advantages of using the triple

bottom line theory; it helps in creating a stronger company culture and better relationships with the consumers by being environmentally cautious, reducing the risks of regulatory penalties and strengthening supply chains while simultaneously creating value for the investors (Hammer and Pivo, 2017, p. 28). As the framework considers the social, environmental and economic factors, it can provide meaningful ways for the organization to develop economically.

2.2.2 Carroll's corporate social responsibility pyramid

The corporate sector is undergoing a major transformation under the sustainability movement of the modern era; planning sustainability practices for organizations can often be hard for the banking sector as internal and external stakeholders need to be considered. Carroll's Pyramid of CSR is a theory that can help explore the different aspects of CSR activities in the baking corporate sector. Carroll believed that the managers and higher-ups needed to be moral for organisations to be sustainable. Carroll's pyramid thus focused on four important areas of the organization, including economic, legal, ethical, and philanthropic responsibilities (Carroll, 2016, p. 3). The number of branches and balance sheet with different CSR activities show the integrated initiative of its business or application of philanthropic aspect. Baden (2016, p. 8) mentions that the different stages on the pyramid have been ranked according to their importance. As a result, the economic or profit aspect of the financial needs to come before the ethical and legal responsibilities of the organizations. The theory has been based on different assumptions of what might be needed by society and organizations to prosper. The philanthropic responsibility of the organization is ranked at the top because while it helps build brand recognition, organizations are not required to practice it.

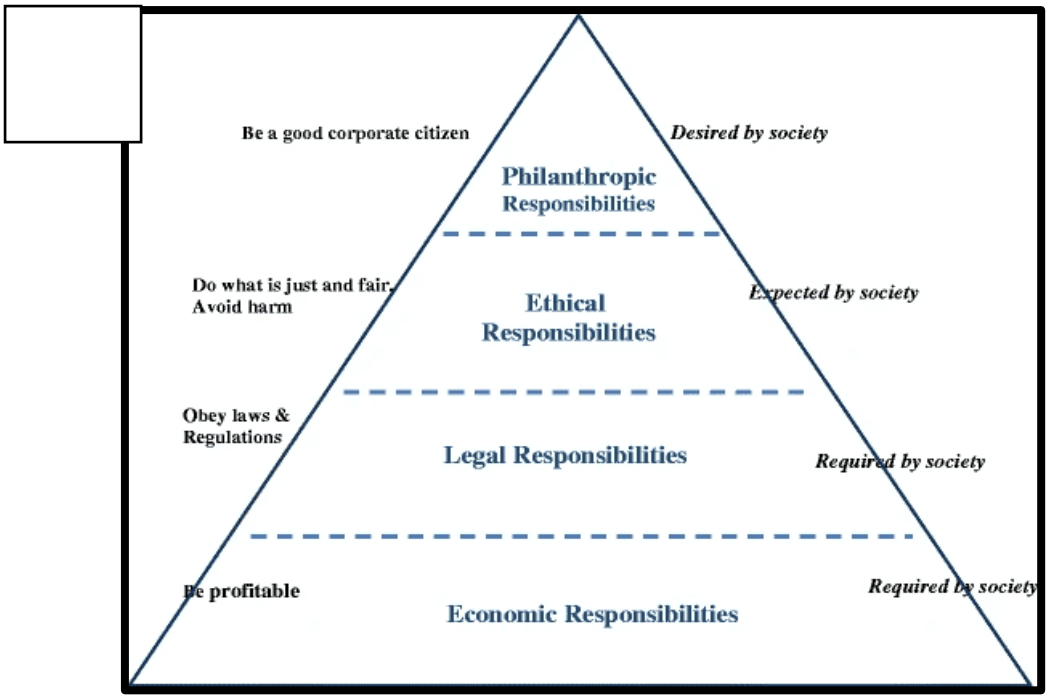

Figure 2.2.2: Carroll's CSR Pyramid(Source: Carroll, 2016)

While the present study deals with strategies focused on climate and environmental aspects, organizations must prioritize their business goals to take these protocols. Many researchers have praised Carroll's theory for being both pragmatic and realistic, advising organizations to prioritize profit margins before indulging in their other responsibilities towards society (Ehie, 2016, p. 12). The organization's economic responsibility helps maintain the profit margins, increase the company's overall income, and develop business aspects that can be applied in the long term. Financial risks can only be mitigated when the company's economic aspect is met; when an organization is economically responsible, it can create jobs that sustain the environment. In the present context, using this theory can help improve the reputation of the banking organization. The strategies created with the help of this theory can provide a competitive edge within the market. This theory further helps attract talented individuals and motivates them to take initiatives that lead to the organization's growth. Focusing on renewable sources also saves costs and supply chain efficiency; similar

to the triple bottom line theory, this theory also enables the company to focus on profit, people and the planet.

2.3 Innovation and climate action planning within the banking sector

Climate action plans can be understood as strategic roadmaps which are responsible for helping organizations reduce their greenhouse gas emissions while increasing resilience towards environment-friendly protocols. In the research carried out by (George, Merrill and Schillebeeckx, 2021, p. 1001), the researchers have different finance sectors, and others are adopting technologies that can help mitigate sustainable challenges. The changes implemented by the banking sector have successfully raised the focus and interest level of the workforce. Some key innovative strategies that continue to help organizations with business strategy planning include smart contracting and layering. While smart contracting controls the transaction flow of the organization, layering collects adequate digital evidence to introduce sustainable products and services within the market. Innovation is a key driver in this new technological movement as it balances power and information within the banking sector to achieve business solutions (Bouchene*et al*. 2021, p. 7). Banking sectors are adapting new techniques to combat environmental challenges and promote different sustainability fundamentals.

The potential that climate change protocols can provide the organization has led many banks worldwide to take necessary actions to reduce the company's emission levels. Investing in external and internal factors, such as customers, suppliers, and the different stakeholders, need to be made aware of the emission reports (Damert and Baumgartner, 2018, p. 476). On the other hand, for the successful implementation of environmental planning, the employees need to become more cautious; a strong culture focused on sustainability within the organization is needed to develop action plans further. The first step is to set goals that are achievable by the businesses. Sustainability needs to be made part of the organizational

culture, and the waste generated by the company also needs to be evaluated to reduce wastage and use of materials for production that are harmful to the environment (Nunhes, Bernardo and Oliveira, 2020, p. 11). Setting goals is also essential to reducing the impact on the organization and improving operational efficiency.

In order to implement a climate action plan, the banking sector also requires sustainable suppliers; it is part of the organization's responsibility to choose suppliers that follow good environmental practices. Working closely with suppliers that harbour these factors can be beneficial towards increasing the performance of the organization. The type of energy used within the company also plays a pivotal role in the fight against climate action planning. The company also needs to invest in green and environmentally friendly equipment. Products and items made of sustainable materials also have a much longer life cycle and thus help the organization in the long run. Encouraging employees to work remotely also reduces emissions (Shabanpour*et al*. 2018, p. 566). The digitalization of documentation reduces paper usage and has many other ecological advances. The banking sector must prioritize sustainability to attain market needs and future goals. Climate changes affect the physical environment in all aspects of the business system, including economic and social conditions. Different plans and environmental changes affect the ecosystem, leading to climate change, the emission of greenhouse gases, etc.

Research shows that while innovation will play a major role in the decarbonization movement, the development of technologies that can help with this procedure could be faster and requires more attention for improvement. Climate and energy policies show how both climate and innovation are interrelated; innovative technologies such as renewable energy, smart grids and distributed energy storage all contribute to reducing climate change problems (Matos *et al*. 2022, p. 2). Government supsport can significantly affect the adoption rate of newer technology; regulations established by the government lead to carbon taxation, tax

rebates and price subsidies to compensate for eco-friendly alternative technological sources. Consumer perception of the technology used within the organization also plays a vital role; production information and a decrease in carbon dioxide emissions are perceived positively by the general stakeholders. Introducing climate action planning to the bank can mitigate the problems faced by the company (Mi *et al*. 2019, p. 584). The transition process of energy usage is further paved through policy and management within the bank.

Private sector finance continues to upscale its practices, which helps with the climate action protocols used; the limited availability of public resources has led to adopting these technologies. The study suggests that in mitigating climate impacts and making organizations adapt to climate action, the Governments of the countries will be required to implement market regulations that lead to personal investments in sustainable business procedures (Adhikari and SafaeeChalkasra, 2023, p. 1116). The traditional methods previously used for making businesses accountable for their actions no longer work in the modern scenario; research has shown that rating agencies are working closely to observe the sustainability performances of organizations to present data that will help investors determine the risk premium rate of the bank. Investing in these technologies can improve the performance of the finance organization through proper reporting of the business performance.

Developing technologies that help with climate change has been prioritized across multiple platforms. Furthermore, organizations looking for investments in the company also have incentives for creating patents, which serve as financial signals for the investors. Patents improve the banking sector's innovation process while increasing the organization's market opportunities. Patents prevent other market organisations from imitating the product and, as a result, create new opportunities. Patent statistics provide accurate data that evaluates the industry's performance rate (Pasimeni, Fiorini and Georgakaki, 2019, p. 2). All of the research on climate change suggests the need to create an action plan that establishes

communication with the partners and supply chains. Climate change planning is a detailed procedure; the primary mission is to reduce emissions and the organization's negative environmental impacts.

2.4 Corporate social responsibility of banking corporate towards the environment

Banks are emerging as major players in the global economy, and their different financial activities greatly impact environmental sustainability. The banks influence the adaptation and development of sustainable practices in different sectors by directing the ultimate current flow. Its role always tries to create an extent that goes beyond traditional banking services, including financing projects that promote low-carbon technologies, renewable energy, and resource efficiency. These all-strategic capital redirections significantly approach to promote sustainable developmentand mitigate environmental degradation. Understanding the incredible role banking organizations play in fostering CSR practices through sustainability measures is important. Corporate social responsibility (CSR) within organizations helps assess organizations' potential for the people (Morgera, 2020). The integration of decision-making, budget allocation, and oversight helps in making better decisions that are beneficial for the organization. Corporate responsibility also leads to higher communication between all stakeholders involved.

In the research carried out by Levashova (2018, p. 46), special attention has been provided to understanding how investment policies have emerged over the years; the new treaties and policies motivate organizations to reveal corporate data to become more responsible and meet the obligations they have towards the investors. The study shares that these provisions are twofold. While the involved parties are seen to take necessary steps to help maintain CSR standards within the banking sector, the banks also need to implement internal laws and regulations to ensure the company is complying with the CSR protocols. Simultaneously, organizations incorporating indirect investors into their businesses must

ensure international CSR standards are being recognized and followed by the organization. As can be seen, the policies in the banking sector include guidelines that help reduce the operational carbon footprint, minimize waste, and promote energy efficiency.

Green financing is a significant contribution from banks towards the sustainability of the environment. It involves capital provided for projects that help create a better environmental impact, such as suitable agriculture, energy efficiency, and renewable energy. The backs are also structured to offer green financial products to different sectors, including sustainable-linked loans, green loans, and green financial products (Boucheneet *al*. 2021, p. 2). In many cases, it has been found that while the organizations have strong CSR and stakeholder engagement policies set in place, the involvement of locals is low, which causes further conflicts involving the local communities and, therefore, needs to be practised. CSR is known to help organizations pursue their interests while also meeting the needs of the region's local communities (Banerjee, 2018, p, 804). Climate change also degrades financial growth, and different institutions and financing products help create environmentally friendly projects, which also attract investors and countries to contribute to sustainable development criteria.

Despite the potential that corporate responsibility can have towards a bank, only a few organizations are known to explore the engagement levels that this method can provide. Institutional initiatives help govern corporate outcomes in both the environment and society. While research has been carried out on the impact of corporate social responsibility, it has generally been conducted from a firm perspective and not the impact that the practices have on society. Different countries like Asia and Africa have set environmental compliance policies, and being socially responsible can address these issues. Four types of normative institutional initiatives are known to lead to the sustainable development of organizations: principle-based initiatives, certification initiatives, reporting initiatives, and process-based

initiatives. Principle initiatives urge companies to practice certain commitment levels daily (Van Zanten and Van Tulder, 2018, p. 212). Certification initiatives deal with the developmental issues of the organization, and reporting initiatives exist to make the companies report information related to their social and environmental policies, which are known to govern the corporate outcomes of companies.

Despite the different initiatives and programs, the bank needs help implementing environmental CSR policies. The primary challenge is under the role of sustainability balances the profitability of the sector. Many banking sectors need more systematic environmental scanning and stakeholder management protocols responsible for CSR initiatives' success. The African Development Bank and its other partners galvanize the resilience of climate change and aim to spend $12.5 billion to modernize different key economic sectors (Boucheneet *al*. 2021, p. 2). Furthermore, while developed Asian and African countries have set environmental protection rules and regulations, developing countries' governments must have such policies (Tan and Taeihagh, 2020, p. 2). Green projects also require a substantial initial investment and yield only a short return on finance. Any organization needs to assess their role within society as they are at the forefront of bringing changes to society; understanding CSR is an important aspect for banking organizations to improve their business performances (Yunis, Jamali and Hashim, 2018, p. 4). CSR allows organizations to carry out environmental assessments and prevention frameworks that can be used to identify opportunities and threats in the business environment. Global CSR models can systematically identify the problems faced in developing countries. CSR can also be implemented in an organization holistically to influence managerial discretion and maintain legitimacy on a global platform.

Banks have also pledged to achieve net-zero carbon emissions by aligning a target year while aligning the goal with international agreements like the Paris Agreement. The

banks are emerging, integrating Environmental, Social, and Governance (ESG) concepts into investment through decision-making processes and ensuring that environmental considerations are factored into the financial activities (Boucheneet *al*. 2021, p. 24). el-Gamal (2020), in their research, has described how CSR could be a more novel approach as it is constantly upgrading. Banks need to be updated with the changes and adopt necessary CSR protocols that help them maintain positive relationships with the communities. Research points out that national companies create team members within the organization that focus on programs targeted at local communities to get themselves more involved with the business (Bondy and Starkey, 2014, p. 12). A negative perception of corporate responsibility in an organization can lead to catastrophic implications for the company; companies, therefore, need to practice sharing information publicly, which causes collaboration and improves the strategies taken by the organization.

Organizations, therefore, need to practice CSR practices at different levels; high-level local CSR practices can raise universal standards. Previously, CSR was a one-way communication, where consumers and investors were on the receiving end of the relationship; however, with the rise of digitalization, organizations can keep the stakeholders constantly informed on the changes and practices that are being adopted within the organization (Mazur-Wierzbicka, 2021, p. 4623). Companies have become conscious of their communication with the local communities, and the digital platform provides the opportunity to interact with the stakeholders and share the organisation's core strategy. Climate resilience is crucially essential for banking organizations' maintaining innovative business growth performance due to the increased significance of sustainability. Implementation of digitalization is an innovative way to address climate change, while innovative financing plays a neutral role in building resilience and helping prevent a climate risk

2.5 Contributions of digital technology in tackling climate change

The rise of digital technology can help tackle the climate crisis in many different ways; using sustainable technology will reduce the greenhouse gas emissions made by different industries. Smart devices powered by the Internet of Things (IoT) will lead to better monitoring of resources and energy consumption, giving the organisation a good perception of its practices (Jones and Wynn, 2021, p. 6612). Green technology also has the potential to reduce emissions and lead to technological emissions in the corporate world. The use of technology will also cause better waste collection; the process can be made more efficient (Zhang *et al*. 2023, p. 1098). Digital transformation involves replacing analogue or manual labour from organizations with automated services. However, adopting digital changes in the organization also causes technological and cultural changes in the workspace. If employees have the right skills or willingness to learn, it will be possible to transform the organization and its practices digitally. Digital technology also provides organizations with strategic leverage that radically improves the company's organizational procedures. Employees of the organization can create new value for the organization that is environment friendly with the help of digitalization.

With the help of digitalization, employees' living and working conditions can be improved, which will, in turn, help them focus on creating appropriate environmental strategies (Mondejar *et al*. 2021, p. 8). The changes brought in through digital transformation also help raise people's commitment levels. The environmental strategies are directed towards driving the local carbon economy by directly contacting the suppliers and consumers. Waste and water management are both important factors that organizations need to consider; the application of digital technology in the business procedure improves operations and helps in replenishing regions that have their water developed; the organization can, therefore, do good for the environment through its business procedure. The relationship between digital

transformation and sustainability is often considered a complex procedure as a wide variety of environmental and social issues are addressed through joint commitment. The positive impacts digitalisation brings and its impact on sustainability can act as a catalyst in integrating digital technology within the business. The predictable nature of digital technology can also allow organizations to meet their sustainability goals effectively.

The proper use of digital technology can allow banking organizations to measure their emissions and take necessary precautions for improving the climate issue. Mendes (2022, p. 72), in their study, has elaborated on nine different digital technologies that are transforming the ways banking corporations perform: big data, analytics, autonomous robots, simulation, horizontal and vertical system integration, IoT, cybersecurity, additive manufacturing and augmented reality (AR). Additionally, researchers believe that there have been four different digital technology breakthroughs. Industry 4.0 radically connects the entire Finance sector, transforming the organization and producing value chains that are important for the survival of the financial business. As digital technology continues to spread across different domains, policymakers within the banking sector are responsible for seeking opportunities and participating in the digital race. Banking requirements for disclosing opportunities and financial risks are climate-related, as outlined in the structure of "Task Force on Climate-related Financial Disclosures (TCFD)". Industry standards like the Equator Principles help to manage social and environmental risks in projects of banks (Auzepy*et al*. 2023, p. 25). Developing countries often depend on Western technologies; as digital technology advances, they will be able to produce their own.

Digitalization will lead to articulation and communication within the banking organization, letting the organizations share their vision. The widespread adoption of the narrative allows for a quick proliferation of climate governance on multiple scales, experimental call answering, and climate governance adoption of new methods and models.

Deliverance of sufficient capital funds is a major climate project that remains an arduous task. A staggering amount of money is needed for effective climate action, generating an estimated range of $3,8 trillion per year from $1,6 trillion to 2050 from 2016 while meeting transition goals of low-carbon energy (Long, 2021, p. 55). It also estimates that nearly $90 trillion between 2015 and 2030 will be used to meet the infrastructure of climate-resilient needs. Organisations also need digital leadership to raise their competency level and team effectiveness within companies (Soon and Salamzadeh, 2021, p. 242). As digital technology continues to adapt, they will be more able to deliver innovative ICT solutions that will contribute to digitally transforming the different industries and causing economic growth for the organizations. The growth of digital technology in this sector will reduce the digital divide in developing countries and bring network stability, making the banking organization organisation's practices greener and enabling economies to prosper sustainably.

Banks are taking the initiative to expand environmental efforts while focusing on CSR efforts. With the help of digital technologies, finance businesses can upgrade their power grid and supply chain management systems, leading to better infrastructure monitoring (Berning, 2019, p. 194). Kennard (2020, p. 186) effectively points out in their research that policies needed to mitigate global climate change require high economic costs. Therefore, Digital technology is a key player in this context as it can help provide the technologies at an affordable rate to the people. The policies to combat climate change might be expensive, but they vary across firms; investing in digital technology can be expensive, but it also brings fruitful organisational changes. Technological advances, like artificial intelligence and blockchain, offer new opportunities while focusing on creating green financing efficiency and enhancing transparency. Digital technology is required to fight against foreign competition and create a market hold.

2.6 Private sector investment and enhancement for climate change

As the private banking sector is a leading contributor to pollution, it needs to play a key role in supporting the global decarbonization process through scientific innovation, reducing emissions and making its operations and value chains more environment friendly. Adequate investment and collaboration from the private sector tortoise their commitment levels towards renewable energy. The focus of the investment is on the practices that help reduce carbon emissions and investing in financial projects that can lower the GHC emissions of the company (Steenbergen and Saurav, 2023). Using greener technology is cost-effective and efficient and helps make banking activities more transparent. The UN Development Programme (UNDP) understands the importance of private banking sector involvement as the climate change protocols can only be achieved through commitment and influencing the private sector to adapt to green financial practices. As per the Adaptation Finance Gap Report (UNDP, 2023), the international public finance reserved for climate change practices in 2014 was US$23 billion; however, by 2030, it has been projected to rise to US$140-300 billion yearly.

Even if the public banking sector contributes, the cost of maintaining the green support system would require the help of the private banking sector. Therefore, one of the main goals of the UNDP has been to introduce adaptive initiatives that can enhance business procedures while reducing risks associated with climate change. Bjørn *et al*. (2022, p. 58) in their study have pointed out how organizations need to make business investments with the Paris-aligned. In recent times, over 1000 different large companies have set science-based standards to reduce their emissions. The UK government also supports organizations with strong climate credentials in their business structure. The Biden administration of the USA has also suggested the need for larger federal suppliers for science-based targets (SBT) within both private and public sectors. Market research has shown that well-established banking

organisations with a decent market presence often set green targets to further improve their reach within the market and increase trust among consumers (Sun *et al*. 2021, p. 698). The target-setting companies with higher emissions understand the risk that their business model poses to themselves and society and, as a result, have set ambitious targets.

While there is little evidence on how climate-related investments will be sufficient for the targets the company has set, the companies have been seen to be making good progress in achieving their goals. The research suggests a substantive commitment of the organizations investing in these aspects rather than the symbolic relationship(Bjørn *et al*. 2022, p. 59). The literature suggests setting internal targets and achieving emission reduction through better investments. Climate change affects banks. As a result, credit risk increases as loans that the banks provide for the farmers are a matter of concern in climate change, and different residential places face high impacts of climate change. As a result, the banks are also actively affected by the changes.

The Sustainable Development Agenda (2030) set during the Paris Agreement of 2015 had set 17 goals and 169 targets; as the private sector is the key stakeholder, they are responsible for implementing sustainable development goals (SDG) through partnership, investments and leadership. Economic investments have been identified as a crucial player in bringing change to society through voluntary efforts; they need to not only focus on the financial benefits they can bring but also consider the social and environmental impacts they can have (Mayer, 2021, p. 894). A holistic approach adopted by the finance organization can greatly help with this movement and lead to further use of technology and innovation within this sector; investing in technologies carries several benefits, which in turn will help the organization attain sustainable growth. SDGs and CSR are directly related as the strategic investment will help the organizations improve their public-private partnerships (Rashed and Shah, 2021, p. 2936). The SDGs' success almost entirely depends on the commitment of the

different stakeholders and their willingness to drive a change in society and within their own businesses.

Through engaging efforts, the private banking sector will be able to invest in storage and energize their investment in cleaner burning of natural gases and renewable energies; organizations can't switch to renewable energy sources overnight, and as a result, adequate investment needs to be made on meeting green energy goals, cleaner burning of the natural gas will lead to lesser pollution, highly significant to the oil and gas sectors. Research on investments has found that GDP growth, poverty alleviation, investment, and economic growth are all factors directly linked to positive relationships that the organization builds. Investments would pave the way to knowledge sharing and developing public-private partnerships through updated supply chain methods (Anwar*et al*.2022, p. 5). Both sides involved in these procedures will benefit; developing countries can increase their position within the global economy with the help of this. Investments provide organizations with realistic opportunities to improve their business procedures.

Banks Banking is responsible for caring for the environment and the safety of its stakeholders; CS CSR techniques can significantly help these organizations focus on the right investments that can help the companies fit. People generally believe the finance sector should develop sustainable strategies that positively impact the climate and environment. The banking corporation needs to plan its steps carefully and balance the responsibility they have for the people and the profitability aspect of the company. Ethiopia is one of the fastest-growing countries on the African continent. The country has successfully attracted investments through the different opportunities it has provided (Gereziher and Shiferaw, 2020, p. 37). Studies carried out by Gereziher and Shiferaw (2020) have shown that companies that prioritize CSR as part of their business procedure can generate more profit

through sustainable activities. The joint effort of the private sector with the UN has successfully provided safe water and education in many parts of the country.

2.7 Climate change innovation and growth for banking corporate

Addressing the climate crisis would require the active participation of all the stakeholders of society; it was expected that the government would be a key actor and solely responsible for bringing climate change initiatives to society, as banking corporations are a large part of the global economy, they have the potential to finance their projects in ways that leads to growth and innovation while deploying adaptive measures which reduce the climate change aspects (Averchenkova*et al*. 2015, p. 4). Climate change innovation focuses on innovative business solutions while connecting customers, suppliers, and communities through efforts. Research finds that the pursuit of green innovation is positively linked to the firm's value in the long run. These innovations' advantages will help the organizations in the long run. The environmental competitive advantage this provides also increases the organisation's exposure through long-term growth orientations. A loan guarantee is an innovative strategy for the financial corporation, and innovative financing impacts the lower rates of loan sanction.

Through proper innovation, the banking corporation can avoid external costs for contracting, increase their efficiency levels, and introduce new regulations that are environment friendly and can further help meet the challenges associated with international businesses. The value creation ability of the finance sector strategies must be addressed properly to investigate the developmental changes they can bring. The corporate environmental strategies can be coupled into two different groups; the first involves groups which invest in strategies which are aimed at minimizing the cost of environmental regulations, while the second one exploits cross-country differences in environmental regulations to manufacture their products in a toxic environment where they will not be

required to follow certain regulations (Kim, Pantzalis and Zhang, 2021, p. 2). These practices reduce compliance costs and attract more foreign investment to avoid risky projects. Green innovation activities involve dimensional plans, which can provide this organisationsadvantage in the long run. Banking corporations that are espoused to markets with environmental pressure are more likely to invest in green patent applications.

The impact of green innovation depends on the home or host country aspects; places that rely on electricity produced by nuclear and water power are more productive, and green innovation for climate change aspects in these countries tends to be more effective. Green innovation and banking corporate exposures also contribute to better regulations. In the study conducted by Zhang *et al*. (2020, p. 1097), different organizations that are responsible for fighting against climate change were observed. Collaborative initiatives and banks partnering with stakeholders, governments, and non-profits can drive some significant impact on the environment. The demand for sustainability and increased consumer awareness also push banks towards adopting more environmentally friendly and robust policies. On the other hand, Walmart introduced Project Gigaton, which aims to reduce the company's carbon emissions significantly.

Developing countries like Asia and Africa, actively involved in the fight against climate change, need to adopt more climate action to attract investments. Alam *et al*. (2022, p.7) argue that climate change protocols alone have contributed to 6.6% of innovation investments. The study's findings have shown how climate change activities and protocols vary significantly across multiple firms. In organizations that have high growth and more access to resources, the attitude towards climate change is generally positive. Climate change innovation is one of the best ways to ensure the efficient use of limited resources and challenge the organization's vulnerability. Climate-sustainable strategies are significant for developing the sustainable business goals of financial organizations, but implementing

sustainable strategies is quite risky. Innovative financing plays a major role in reducing the risk factors for adopting climate resilience. Technologies are implemented to introduce climate-sustainable strategies and solve financial companies' problems. Studies have shown that climate change and innovations are directly linked and help managers of banking corporations develop strategies that the organization can easily adopt.

Jaiswal, Arun, and Varma (2022, p. 1183) share in their study how multinational corporations in modern times are actively investing in logic and knowledge-based AI tools driven by data and information. These tools can significantly transform the workplace by introducing logic-based programming, robotic process automation and other changes. Innovation of AI technologies has helped reduce human labour by linking the different technologies to mitigate the harmful impact the organizations previously had on the environment.

Digital innovation, the rise of the fourth industrial revolution, has been considered the future by Dilyard, Zhao and You (2021, p. 579); the findings of the study have argued that organizations which invest in digital innovation can introduce autonomous systems AI and other kinds of machine learning tools that can help in making the organization more flexible and resilient to perform in the market. In the post-COVID-19 period, firms had to become more environmentally cautious and develop methods that help in sustainable ways of living. The problems that the climate crisis has caused pose significant challenges to the company's value chains. As a result, appropriate steps must be taken to increase the organisation's viability.

2.8 Challenges faced by organizations with climate change corporate innovation

The adoption of cutting-edge technology to influence business activities often comes at a cost; while almost all organisations understand the impact that climate change innovation

can have on the organization, there are often challenges that prevent climate change solutions. The uncertainty of where to begin is a major setback for many organizations; a lack of data on company activities prevents them from understanding the issues (Das, Konietzko and Bocken, 2022, p. 276). Lack of support from the organisation's stakeholders is also an important factor preventing climate-centric protocol integration. Akpan, Soopramanien and Kwak (2021, p. 611) have suggested that big data and predictive and visual analytics are key tools to help with the business environment crisis. The need for more sustainable resources to adapt and switch business procedures continues to cause many organizations to struggle. It prevents them from gaining the advantages that recent technological changes have contributed.

The market is also riddled with complexities that serve as a barrier to the competitive landscape, and getting a thorough understanding of the value proposition continues to be a barrier for many different organizations. The company's external factors need to be analyzed to see if they impact the organisation's value creation (Mohsin, Ahmed and Streimikiene, 2020, p. 408). Setting goals significantly helps with the issue, but challenges in the implementation process pose a barrier to succeeding. However, Organisations can learn from their mistakes and introduce strategies that can help with the procedure. Focusing on the impact of climate change, the corporate banking sector has also initiated projects that are largely connected to the environment and economic perspective.

The financial sector must develop sustainable strategies that positively affect the climate and environment. Innovation also plays a large role in the company's climate-resilient strategies under the implementation of the digitalization process, which is a process of innovation to address climate change. The scalability of the innovation offers that the organization has to make needs to be evaluated to ensure the beneficial aspect of and the potential of adopting these technologies with the resources that are available to the

organization (Akpan, Soopramanien and Kwak, 2021, p. 612). Another significant issue that the study has found is social media integration for businesses; in the present time, social media helps in the creation of brand visibility, but some organizations are seen to struggle in maintaining the operational, economic, legal and infrastructural factors necessary for the growth of the climate centric business strategy. Corporate banking plays a vital role in adopting their business towards a green economy, and climate action is the strategic plan under sustainable business practices that helps regulate all types of risks generated by the climate crisis.

The banking sector also needs to consider the drivers that motivate investors to invest in a particular company; failure-based approaches need more insight from the banking sector to adopt climate action in the business protocol. The organization also needs to realize the policy developed to fight the climate crisis is not merely an intervention method but is rather part of the market creation and has the potential to shape the entire business procedure (Mazzucato, Kattel and Ryan-Collins, 2020, p. 427). The banking sector needs to share its vision of climate change protocols with its investors to ensure failure-based approaches can be avoided within the sector. The study further points out the need for the challenges to include the public and all of the stakeholders possessed by the organization to achieve measurable success.

The COVID-19 pandemic has created several new opportunities in its wake. However, organizations need help to seize these opportunities. Studies have revealed that only close to 30% of the executives of an organization feel confident in adopting the changes (Am *et al*. 2020, p. 5). The area in which they have been found to struggle the most is delivering growth opportunities for the organization. Motivating employees is highly important to implement climate change protocols within the organization. Intense focus and

agility of the individuals are required to create value through this method. The challenge of engagement, therefore, continues to be a major problem for people.

Research has shown that in low competition levels, the organisation's resources can be strained by focusing on consumer action, and the individual markets will contribute to reducing profit growth. Strategic orientation and implementation procedures can also serve as a challenge, as the success of the strategy implementation depends on the organisation's senior-level management (Lee and Griffith, 2019, p. 25). Research has found that country-based interactions also lead to orientation problems that affect customer engagement levels and the different customer segments of the company.

Global industrialization and excessive dependence on non-renewable technology and energy sources have led to many environmental problems; research shows that the increasing use of bio-based materials in the manufacturing procedure of organizations continues to act as a barrier for many different organizations (Yang *et al*. 2023, p. 64). Energy consumption is another hurdle many organisations face that needs help. Global infrastructure is still largely dependent on fossil fuels. The research suggests how implementing a circular economy strategy within the business can address the ongoing issues. Gannon and Curran (2019, p. 12) effectively point out how these challenges that organizations face are diverse; while some arise from stretching the organisation's human resources and technical capacity, others are caused due to the structural issue of the organization.

2.9 Social innovation strategies for climate change

Social innovation is the process through which development and implementation can occur within organizations to address the complex problems caused by climate change and bring in strategies to improve the conditions. In this context, the path on which the organization embarks is one in which the organisation's top managers need to understand the

importance of value creation and make changes that can benefit both themselves and the planet. Banking organizations need to make strategic investments in innovative technologies that align with the organisation's economic goals and social values (Lind *et al*. 2022, p. 214). Banking organizations need strategies for CSR initiatives and introduce initiatives that can significantly improve the workplace culture and engage all stakeholders.

The banking sector can implement different strategies, such as creating positive green outcomes and partnering with different government and NGO bodies while also measuring the greenhouse emissions caused by the company. Banking corporations can improve their business procedure through business innovation, technological innovation and strategic change within the workplace. The use of these modern tools can actively participate in increasing the profitability of the banking sectors, and the predictions that the ML models in financial sectors are making help make decisions regarding credit evaluations. (Akpan, Soopramanien and Kwak, 2021, p. 611). The innovative initiatives help the finance sector develop its business on this competitive edge. It also indicates that the corporate banking sector fulfils its environmental responsibility with the help of innovative climate action. Climate resilience is an innovative initiative providing a path to corporate banking towards global sustainability.

While organizations have successfully generated both market and social value, the priority levels between these notions have been drastically different; the organization needs to interact with society in an inclusive way that identifies its market presence. Incorporating social innovation within the business strategy has been one of the leading ways to achieve value creation. The corporate sector can be more engaging by encompassing different forms of innovation and gaining competitive advantages in operational and organizational co-creation (Lind *et al*. 2022, p. 215). Another way organizations can strategize is by getting a partner with full-fledged responsibilities; partnerships can solve different kinds of problems

faced by the organization and lead to knowledge sharing, raising the commitment levels of both companies in the process. Social innovation supports co-creation, which can help bridge the gap between the different finance sectors.

Climate resilience is an essential aspect of the plan within the financial sector. Resilient strategies effectively address the impact of climate change and its effect on businesses' financial performance. Strategies of Climate-resilient impact innovation through product development, partnership, collaboration, and effective engagement with clients. Sustainable development solutions are important for this banking corporation as they positively impact the environment. The organization also needs to prioritize their learning orientation; this will help the organization learn about the new potential markets (Torkkeli and Durst, 2022, p. 3). Employees who interact socially on digital platforms can gather more insight into social innovation and sharpen the management skills of the organization in the process. The strategic orientation of the finance sector needs to address cost risks, braiding, stakeholder and policy issues that the organization might be facing. Strategic approaches can lead to the formation of newer business models that will eventually lead to collaborations and increase the organisation's efficiency levels to improve the company's bottom line.

The baking sector needs to constantly learn and use the information to develop new ideas that can positively impact the developmental and innovation procedures of the organization. Societal aspects must be incorporated to increase the company's innovative efforts. Social innovation is self-regulatory, and as a result, organizations can use it to their advantage. The central bank applies the risk management framework based on environmental sustainability, and social governance initiatives heavily influence financial inclusion. The organization must recognize that the business's profitability could change by implementing climate-sustainable practices (Gannon and Curran, 2019, p. 12). Sustainable strategies have a

leading role in innovation and financial performance. It has been found that climate-resilient strategies for the banking sector play a big role in financial company's operations.

To promote sustainable growth, many financial organizations in Europe have been transforming their business structure by setting annual strategies that can help reach sustainable growth for the company. The bank has started focusing on the emerging European markets' people, society and climate (Allal-Chérif, Guijarro-Garcia and Ulrich, 2022, p. 12). The study shares that banks determined to make a difference can combine open and social innovation and create open social innovation. Open social innovation has the potential to create collaborative networks that can lead to sustainability and sustainable growth, which also implies that disruptive strategy is more accessible and respectful for both society and the environment. The research also suggests that among the different global companies struggling to make a difference, those with a circular economy tend to be more emblematic within the market. The circular economy is a concept that states that human society is interrelated to nature and its resources. Closed material loops can facilitate sustainable development across different levels of the economy. Banks must invest in short- and long-term strategies within their organization to promote growth.

2.10 Literature Gap

The previous literature analyzed within this section of the study has only illustrated climate action integration within organizations in a general context. In this context, more research needs to be carried out on how climate change business strategies can affect corporate banking sectors that belong to different sectors. The literature has undergone detailed research to identify the need for climate change protocols within an organization and the potential digital technology possesses in bringing positive change to the organization. However, there is yet to be a clear idea of the impacts it can have on the different finance sectors. More information has been provided on describing the factors rather than defining

the implications of technology and green innovation in the business context. The identified gaps in the research will help with future research.

2.11 Summary

As concluding remarks for the present research, there is huge potential for finance sectors; the chapter has provided an overall understanding of the scope of the research phenomenon. The need for innovation and better organisational action planning has been analyzed in great detail. Attention has also been given to how digital technology can help lead the new industrial revolution, which will inevitably make the technology usage of the organization greener. The study has also identified the challenges organizations face in adopting changes and different strategies that can help solve these issues. The literature review has further highlighted the gaps pertaining to the impact of these climate action strategies on growth and innovation within the organization, which will be researched in this study. Hence, the literature review has successfully highlighted the gap that needs to be explored.

CHAPTER 3: METHODOLOGY

3.1 Introduction

This chapter supports identifying the most incredibly suitable and relevant research methods by exploring various techniques and procedures. Indeed, evaluating and demonstrating different methods helps address the most relevant and suitable techniques required per the research questions and objectives. This chapter presents the research approach, philosophy, designs, and data collection and analysis methods. This chapter is expected to guide further procedures in the research.

3.2 Research Philosophy

The research philosophy guides further procedures in scientific research through philosophical assumptions, which mostly involve the data collection and analysis procedures. Indeed, this method is interconnected with the nature and source of knowledge of the research phenomenon being studied. This method includes different parts, which include positivism, realism, pragmatism and interpretivism. These methods are facilitated by the differences in their characteristics and relevance towards the research purpose. As revealed by Junjie and Yingxin (2022, p. 10), in interpretivism philosophical attributes, an incredible focus is placed on the relativist view for perceiving reality and considering different experiential and social factors.

On the contrary, a positivist philosophy supports exploring factual data based on objective reality, reflecting the differences among these methods. It is important to understand that exploring the relevance of climate resilience and sustainability strategies towards the growth and Innovation of banking organizations can be quite comprehensive. Applying an interpretivism philosophy in scientific research can delve into the demonstration of social backdrop and human experience, reflecting its critical relevance for studying human

behaviour (Pervin and Mokhtar, 2022, p. 419). Based on the relevance of this specific philosophy towards enhancing knowledge of climate-resilient sustainability strategy within banking organizations in Asia and Africa, it is selected to apply in the present study.

3.3 Research Approach

The research approach is also referred to as a framework that contains the broader plan and steps of the research, reflecting its relevance towards guiding the specified procedures and activities. In addition, this research method is often categorized into inductive, abductive, and deductive; each consists of different characteristics and values related to the research procedures. As revealed by Al-Ababneh (2020, p. 75), the key methods under research approaches include inductive and deductive. Besides this, the deductive approach guides the collection of numerical data, which can be quantified along with testing and confirming research hypotheses and existing theories. Also, employing an inductive research approach supports meeting the research objectives by gathering previously published data.

Exploring the research aim and objectives is critical for better understanding the research area. Due to this, the inductive research approach has been selected to be utilized in this research. The inductive approach is well-known for its subjectivist nature (Varpio*et al*. 2020, p. 989). Indeed, employing this specific research approach will support promoting the relevance of climate resilience in banking organizations in Asia and Africa. Utilizing this method can support formulating a better understanding of the key aspects by exploring this study's main aim and objectives.

3.4 Research Design

The research design is another framework involving the study's selected methods and techniques. This method depends on the type of data required for formulating answers to the

research questions due to close interconnection with this area. Moreover, diverse research designs are available that support the demonstration of the research questions, which include descriptive, correlational, exploratory and explanatory. It is important to understand that utilizing qualitative approaches and research methods can be somewhat comprehensive (Tomaszewski, Zarestky and Gonzalez, 2020, p. 1). Moreover, the correlational research design helps investigate the interconnection between two different variables within a study, while the explanatory research design involves exploring the research phenomenon and providing explanations.

On the contrary, the descriptive research design is mostly utilized to demonstrate the overall phenomenon and gain answers to the "how" and "what" questions through discussion. As opined by Doyle *et al*. (2020, p. 443), applying the descriptive approach can provide a broader insight into the research phenomenon. The demonstration of the relevance of facilitating climate resilience and sustainability strategies on Innovation and growth performance has been emphasized in this research, and employing descriptive research design can support formulating broader insights relating to the phenomenon. A research design is an overall framework of a research proposal and approach with the help of various tools and techniques to gather information related to the research topic. Based on these, a descriptive research design is chosen in the present study to develop an understanding of the key implications of incorporating strategic approaches relating to sustainability and climate resilience within banking organizations in two different regions.

3.5 Data collection method

This section deals with one of the most complex and comprehensive scientific research processes, as the information-gathering method selection depends on many aspects. Despite the availability of a broader literature on the methods used for data collection, this secondary data collection process is considered comprehensive (GHR and Aithal, 2022, p.

455). Despite the availability of a broader literature on the methods used for data collection, this process is considered comprehensive (GHR and Aithal, 2022, p. 455). The key types of methods being utilized for data collection include primary and secondary. Utilizing a primary method is decided to be more convenient and incredibly supportive for the present study, while it will also allow facilitating innovative methods, such as surveys or interviews.

This is because the primary method supports gathering original data through direct involvement with the research population, while the secondary method depends on previously published sources (Mengist, Soromessa and Legese, 2020, p. 9). The key benefits of facilitating a primary method for gathering information are direct access to original data and exploring the research population for incredibly reliable and critical insights relating to the studied social phenomenon. On the other hand, a secondary method helps access a diverse range of sources for gathering insights based on available data, which can indulge in ethical complications and dilemmas.

The research study initially opted to select and implement an online survey. The questions implemented for the research study's survey questionnaire are open- and close-ended. The survey successfully provided informative and intuitive information through open-ended questions. Apart from this, most of these answers had resulted in string variables due to most of these answers being qualitative and detailed. Hence, it was decided that the collected responses would be converted and presented as interviews. Interviews are described as a method for generally gathering primary qualitative information through questioning, possibly gathering both qualitative and quantitative information, including the respondents delivering information through specific descriptions and choices for their responses to the questions (Taherdoost, 2022, p. 39). An interview is often considered an effective technique for selecting and evaluating detailed information based on the opinions and insights shared by the participants.

An interview is an informative and detailed data collection method that includes gathering descriptive and conceptual information that cannot be quantifiably interpreted. Interviews are commonly taken among individuals, with the interviewer questioning and the participating interviewees responding to the questions (Mazhar *et al*. 2021, p. 7). Different interview methods exist, often developed through structured or unstructured methods. These methods often focus on collecting information through predetermined questions or non-systematically recording the responses and information.

Different interview methods for collecting information include face-to-face, only voice or text-based, telephonic, and interviews through chats and instant messages or electronic forums (Lobe, Morgan and Hoffman, 2020, p. 2). These platforms of gathering information through interview methods involve including detailed or short responses from the interviewees that provide information from their knowledge or experience. Interviews could be conducted by more than one participant at a time, and interviews can be provided with information that is "multivalent" in nature and prone to a diverse range of interpretations (Knott *et al*. 2022, p. 2). Interview methods are identified as a successful form of data collection technique for gathering primary qualitative information from the selected participants.

3.6 Population

The research has selected certain criteria for choosing the sample population for this study. Since this research is focused on gathering primary and directly accessible information from participants regarding the subject of climate resilience as a corporate strategy for the banking sectors in the regions of Asia and Africa, this necessitated that the volunteering participants for the interview this research would be carrying out and it would mean that the interviewees need to have knowledge and experience in the field of the selected sector and regions. Initially, the study's researcher has a target to include 20 senior management

professionals in the banking sector and practitioners as a data source. Firstly, the study's researcher aims to include 20 senior management professionals and practitioners in the banking sector as a data source. However, the research has covered 23 participants for the study, with the interview participants working in the banking sector of different countries in Asia and Africa. The chosen participants had rich experience in banking services and operations and held high-level positions such as executive and managerial positions.

3.7 Sampling

The research includes purposive sampling to select the research study's participating interviewees. The purposive sampling method is identified as a suitable form of sampling method designed to select participants based on their "judgment/discretion", and the features such as the opinions and experience of the determined population group can be accessed (Vadakedath, and Kandi, 2023, p. 9). This research method is a non-probability sampling method identified as a technique for gathering information from the participating members of the target population group for gathering opinions and responses of the population to gather and accumulate information regarding the subject being researched.

Purposive sampling lets the researchers gain access to information essential for gathering detailed information to expand on the research questions. The use of purposive sampling is often focused on gathering information for qualitative information aligned with the context of the study (Obilor, 2023, p. 4). There areas more suitable forms of sampling for gathering information from large populations than purposive sampling. Still, it is an effective form of information-gathering method that is a cost-effective research method for the evaluation of selecting information from a small and particular group of people. Researchers can select and implement detailed information from fitting participants and exclude possible dilution of information by eliminating irrelevant information and population members.

Sampling methods are essential for the research, and their implementation of the study research methods is effective in incorporation into the entire development of the research about the overall logic of the study. Purposive sampling methods are effective for the collection of information through the development of understanding. The use of the purposive sampling method is effective in implementing the research methods that are effective for sampling and selecting the participants based on the aims and objectives the study indicates exploring (Campbell *et al.* 2020, p. 654). The use of purposive sampling in this research has been influenced by these aspects of this sampling method, particularly in the case of being cost-efficient and effective for selecting knowledgeable participants from a small and specific population demographic.

3.8 Data analysis process

The research includes using a primary data analysis method focused on developing the research through a qualitative data analysis method for evaluating the collected information from the participants. The research integrates a thematic analysis method to develop an interpretation and evaluation of this research's collected information from the interview. Thematic analysis is often identified as an effective form and approach to data analysis for research directed towards qualitative research (Peel, 2020, p. 2). This is an effective data analysis technique for this research as this study includes data collected from interviews.

The research method for data analysis effectively accumulates essential findings through the data collected from the research data collection that has been already gathered. Thematic analysis is regarded as a widely accepted technique for qualitative study. It differs from other forms of qualitative analysis as it is more focused on developing evaluation than being overall integrated as a methodology (Braun and Clarke, 2022, p. 3). Developing a thematic analysis for research is focused on the researchers being able to evaluate and

interpret the qualitative information for the subject. Thematic analysis is also a flexible method for evaluating information and data collected for the study.

The study would integrate a six-phase analytical process for thematic analysis. A study regarding thematic analysis mentioned that according to Braun and Clarke, six phases are "organized in a logical, sequential order" that requires the researchers to go "back and forth" within the phases throughout the process (Byrne, 2022, p. 1398). These first and second phases involve "familiarisation with the data" that would require the researchers to read the dataset, in this case, the interview transcript thoroughly and "generating initial codes" that would facilitate in developing brief, describable and "interpretive labels" for the information from the interview relevant to the research questions. The third and fourth phases after this would be "generating themes", which involves reviewing coded data by conceptualizing them into a thematic map, and "reviewing potential themes", which require the researcher to conduct a repetitive review of the initial themes into a finalized thematic map. The fifth and sixth phases include "defining and naming theme", requiring the researcher to present a descriptive evaluation of the thematic framework and "producing the report", focused on logically addressing the reported themes.

Thematic research is an effective form of data analysis method for this study. This is because this research implements the use of qualitative research methods. Qualitative research is often implemented to support researchers in developing a focused and varied comprehension of a "given phenomenon" being studied (Lester, Cho and Lochmiller, 2020, p. 95). This is effective for preserving the research method that lets the researchers evaluate and carry out thorough studies and effective research that can make data more valuable and meaningful. Thematic analysis is potentially related to assisting the researchers in evaluating qualitative data through diverse data evaluation methods. Thematic data analysis for research

that implements an interview would be essential for thematically evaluating the interview transcript and the data gathered.

3.9 Reliability and validity

Reliability and validity of research are important for determining the relevance and consistency of the information gathered for research. Reliability and validity in terms of qualitative responses to the research are often concerned with determining whether the decisions and applications in research are effective in relation to the research purpose in fitness (Coleman, 2022, p. 2041). The implementation of reliability and validity for qualitative research is focused on evaluating and securing the trustworthiness of the research information being relevant and valid in connection to the purpose and aim of the research questions. This is identified as an effective element of research methodology.

Reliability is one of the essential concerns for errors that occur during measurement. Reliability can be identified as the performance expectations and how constantly the measurement is done. Validity is concerned with the definition and explanation of a scale. Moreover, reliability is a statistical measure that analyses the statistical data and how reused the data are (Bannigan and Watson 2009, p. 3240). Reliability can be accessed in various ways, including test-retest reliability for stability and inter-item reliability for data equivalence. There are different types of testing validity; moreover, various ways and approaches are introduced for testing any of the indexes. This research also includes many reliable sources from the secondary open-access database, making this study more reliable and valid. This research also included a reliability test, which helped the researcher determine the validity of the research. A reliability analysis of the collected data was done to identify whether the study was reliable.

Besides this, the reliability of the secondary data has also been maintained throughout the study and will be maintained further. Highly reliable sources and databases have been

used to incorporate secondary data within the study so that the accuracy of the research can be maintained. Hence, as the reliability of the research has been maintained, the research will be valid, too.

3.10 Ethical Considerations

Ethical considerations in research are the principles that guide the research design and practices. This practice includes gaining the vital information required from the participants rather than obtaining information, decreasing the risk to the researcher. Moreover, protecting confidentiality and keeping personal information secret are ethical considerations (Suri 2020, p. 41). Avoiding misleading information or the data provided is a positive approach towards the research. The right to pull out the information and engagement of the participant is encouraged in Ethical consideration. During research, these ethical considerations should be considered as good practices. The research used documents accessed publicly and analysed in a systematic review. Rather than these supporting documents, the research does not contain any misleading information or data.

This research also follows some ethical considerations and practices for the information accessed. As primary research has been conducted, it includes access to the personal information of the people who have been interviewed. Thus, the research has taken care of the personal information of the participants, and the information has not been disclosed. Besides this, the participants were aware of the purpose of the interview and had the flexibility to answer each question. The participants have not been pressured to change their responses, and their responses have not been manipulated. This research also included some secondary information, and the researcher has maintained the ethics in which information has yet to be incorporated without in-texting or mentioning them.

3.11 Chapter Summary

This chapter of the research identifies and elaborates on the methods by which the research was done. A qualitative approach has been adopted to gather non-numeric data to understand the topic and concepts. According to this research, the experiences and opinions of various people were analysed to understand the result. The research also includes interviews with senior management people to understand the theory and analyse its conception. The research explains the importance of sustainable business development in banking sectors and the factors that affect the environment. The research explains the importance of sustainable business development in banking sectors and the factors that affect the environment. The chapter ends with the consideration of ethics and the establishment of measures of reliability and validity.

CHAPTER 4: FINDINGS AND INTERPRETATION

4.1 Introduction

This chapter reviews the findings of the resources and analyses the data from the interviews conducted. The interpretation of the data contributes to the identification of the findings, and based on those findings, an analysis and discussion of the research take place. Hence, the interpretation and identification of the findings are crucial for any study. It includes the data received from the interview; moreover, the data is interpreted to understand the concepts involved in the study. This chapter elaborates on the research findings and the concepts required to understand sustainable development. This includes the innovations and concepts that have evolved in the banking sector. Moreover, opinions are given on the participants' understanding of green finance, which will be analyzed in this section.

4.2 Data interpretation and Primary findings

Interviewee 1 mentioned their designation as a Senior Product Manager in India, in a legally entitled small finance bank or fintech company with a portfolio size of 4 trillion USD operating in India, the UK, the US, and Spain. The interviewee agreed that climate-resilient strategies are catalytic for financial corporations. A resilience strategy capable of giving immunity to environmental shifts is welcoming finance institutions to help companies reach sustainability (Zhao, 2021, p. 18). The interviewee believed climate resilient strategy as a strategic planning process for climate hazards is possibly considered by financial corporations and agreed on its importance for achieving business operations' sustainable growth. Pricing service fees on transaction amounts was a strategy that Interviewee 1's company had implemented.

Interviewee 1 mentioned that their company's profitability changed by 40% due to climate resilience strategy-related changes and that they firmly believed that resilient

strategies address climate change. Interviewee 1 also mentioned that their organization needs time and energy investments for success. Climate resilient strategies are very important to develop sustainable solutions for positively influencing the environment due to the broad connections between climate and economy (Sun *et al*. 2022, p. 33064). Innovation through financing solutions is necessary for enabling sustainable strategies such as issuing refund money through prepaid debit cards for continuing card processing. The interviewee expressed little threat to their company's undertaking climate resilience and innovation in corporate strategies. Interviewee firmly believed short-term financial burdens hinder long-term climate resilience, awareness and vision, act as potential limitations on sustainability implementation and tapping into unexplored markets is capable of innovating the financial corporate industry.

Interviewee 2stated they worked as a Global MSME lead in Kenya in the NGO Water.org and as a financial consultant for banks mainly operating in African countries Uganda, Tanzania, Ivory Coast, and Nigeria and their portfolio size is 45 million USD as of 2023. They believe climate-resilient strategies present new investment choices; this strategy is highly considered strategic planning for climate risk reduction and essential for sustainable growth, mentioning that their company has dedicated 45% of its lending to climate resilience. Implementing a climate resilience strategy against emission assets increases business profitability and sustainability (Capasso, Gianfrate and Spinelli, 2020, p. 2). They mentioned their company's case, profits rose by around 25%, believingresilient strategies have the potential to address climate change.

Interviewee 2 highly affirms that innovation is important, having introduced new products and lending models for developing sustainable solutions for climate change. Innovation could address climate concerns through innovating financing products and climate-related incentives, as innovative financing solutions such as infrastructure help build climate resilience and fight climate sustainability risks (Timilsina, 2021, p. 2). They believed

their company faced a mediocre threat for undertaking climate resilience as corporate strategy and financial burdens obstructed continuous climate resilience in the industry. Available financial resources should be considered more by Interviewee 2 due to their company's challenges with adequate liquidity for new products, and lack of knowledge capacity, corporate exposure. The interviewee added that climate resilience-focused innovation could expand financing vulnerable groups and innovate the industry.

Interviewee 3 is a managing director of a larger microfinance institution in India. The company operates their business all over India. The interviewee agrees that climate-resilient strategies are a catalyst for financial corporations and their business. The persons highly considered that the climate-resilient strategy is part of the strategic plan for reducing the haphazard related to climate change. The interviewee agrees that implementing the climate-resilient strategy is beneficial for a company to achieve its sustainable goal. This person suggests that sustainable financial development activities are the climate-resilient strategy implemented for the rural community. The interviewee disagrees that the profitability is charged with implementing the climate resilient strategy. The person agrees that these climate-resilient strategies are ineffective in addressing climate change and its impact on the financial corporation's business.

The interviewee also agrees that climate-resilient captions contribute to the organisation's innovation. Banking organizations must develop sustainable strategies that positively affect the climate and environment. The respective person agrees that Innovation plays a large role in the company's climate-resilient strategies. Implementation of the digitalization process is a process Innovation to address climate change. The person states that fewer threats are seen when undertaking a resilient strategy in the company. However, the interviewee disagrees that the burden exists in the long-term implementation of a climate-resilient strategy. This organization has available resources to implement the resilient

strategy. Innovative financing plays a neutral role in building resilience to prevent climate risk. The interviewee needed help identifying the scenario where climate-sustainable strategies play a role in Innovation in the corporate industry**.** Digitalization transformation leads to impacts on generating financial development in the finance sector (Diener and Špaček 2021, p. 5). It also facilitates the clients of the finance sector to access services quickly.

Interviewee 4 is a strategic project manager of a financial institution, which works in the Philippines. The person agrees that climate-resilient strategies are a catalyst for financial corporations. This person highly considered climate-resilient strategies to help financial corporations reduce climate problems. The interviewee moreover agrees that the implementation of climate-resilient action is important for achieving sustainable growth and the use of green technologies. The interviewee needs to learn about changing business profitability by adopting climate-resilient strategies. The person states that the strategies of climate resilience effectively address climate change. Climate resilient and sustainable strategies contribute to the utilization of loans and the offering of new products. These individuals state that developing sustainable solutions is extremely important for this company.

Innovation plays an important role in implementing climate-resilient strategies; for instance, the financial sector uses waste management. As per the interviewee, the threat is moderate for undertaking sustainable climate change in an organisation's corporate strategy. The interviewee also says that implementing long-term sustainable initiatives may hinder the short time burden. According to the interviewee, innovative financing is essential in preventing climate risk. The interviewee identified that the guarantee of a loan can mitigate the problem of financial risk. It is found that climate-resilient strategies play an effective role in developing sustainable plans for the organization. A loan guarantee can be an innovative

strategy for the financial corporation, and innovative financing impacts the lower rates in sanction of the loan (Mishchenko *et al*. 2021, p. 192). It is beneficial for clients to apply for loans in times of disaster.

Interviewee 5 is a director of a bank in the Philippines, and this person states that a "climate resilient strategy" can be considered a catalyst for financial companies in particular cases of cash flow and repayment. The person considered climate-resilient action part of strategic planning for reducing the climate change issue. The person concurs that implementing resilient strategies helps companies develop their goals. The company's profitability has increased by implementing the sustainable climate resilient strategy by less than 5%. This person states that the climate resilient strategy addresses the impact of climate change. Climate-resilient strategies contribute to identifying risks in the innovation of financial strategies. As per the interviewee, innovation is extremely important in enabling companies to develop climate-resilient strategies. The innovative way for this company is to credit and save products made for climate-responsiveness. This person states that effective threat for undertaking climate resilient strategy.

The interviewee states that the organization has potential resources for implementing climate resilience strategies. Innovative financial strategies play a large role in mitigating the climate and sustainable risks. This person identified the introduction of climate-responsive funds to address the damage to the clients. It indicates that climate-sustainable strategies are significant for developing the sustainable business goal of the financial organization. There is quite a risk in implementing sustainable strategies. Innovative financing is active in reducing the risk factors for adopting climate resilience. The technologies are implemented to introduce climate-sustainable strategies and solve the problem in financial companies (Javaid *et al*. 2022, p. 204). Climate-responsive funds are impactful in addressing the clients'

damages in the financial sector. Climate-responsive funds are impactful in addressing the clients' damages in the financial sector.

Interviewee 6is an Executive Vice President of a bank in the Philippines, and this person states that climate-resilient strategies are the catalyst in the financial organization. These strategies are highly relevant in strategic planning that reduces climate risk factors. The person agrees that climate-resilient strategies are impactful for sustainable business growth. The person states that the central bank applies the risk management framework based on environmental sustainability and financial inclusion, which is heavily based on social governance. The person must recognize that implementing sustainable climate practices could change the business's profitability. The person needs to learn that the profitability can be decreased or increased. As per the interviewee's words, resilient strategies are less effective for addressing the impact of climate change on financial performance. It is difficult for this interviewee to answer the question of the contribution of resilient strategies to innovation.

The interviewee states that developing sustainable strategies is important for the organization. This individual provides instances in which the company develops ESG-related loans and collaborateswith social enterprises that provide environmental solutions. The threat is less effective for the company when undertaking climate-resilient planning. The short-term burden may hinder the long-term implementation of the resilient strategies. This person states that the company needs more resources to implement resilient strategies successfully. Loan size is a potential challenge for the company when implementing sustainable climate strategies. Staff building is another limitation for the company when attempting to initiate the strategy. The solution of innovative finance has an active role in establishing climate resilience for present climate risks. The person states that climate-resilient strategies play a crucial role in Innovation, and partnership with mission-oriented companies helps Innovation

and collaboration. Microfinance faces various challenges, including financial constraints, poor quality of loan recovery system, lack of common people's interest, and weak leadership quality along with the lower rate of maintenance of the financial products (Nabami, Petre and Mersland, 2024, p. 2059).Microfinanceindustry has faced challenges due to insufficient loans that adversely impact adopting strategies (Nabami, Petre and Mersland, 2024, p. 2059). It is identified that loans play a significant role in implementing resilient strategies for financial companies.

Interviewee 7is a vice president of a microfinance institution in the Philippines. The person stated that climate resiliency is the core consideration of the institution that can be implemented by financing the programme. The interviewee slightly considered climate resilience strategy to be part of strategic planning. Implementing a resilient strategy facilitates the achievement of business goals, and the interviewee agrees with that. This person's company has implemented it by renewing an interest-free loan to rehabilitate the current business. This person needs to learn about changing profitability due to implementing a resilient strategy. Most of the interviewees agreed that the climate-resilient strategies of the banking institutions have less impact on the performance level of the banking sector. As per the interviewee's opinion, the climate-resilient strategy needs to address climate change and its impact on the performance of financial companies more effectively. These strategies largely contribute to raising portfolios and borrowers. The person states that it is largely important for the company to develop sustainable strategies.

Innovation is an important aspect of implementing climate-resilient strategies in the company. The person stated that the company innovatively adopted environmental-related financing. It is a high threat for the company to undertake the climate resilient strategy. The short-term burden may be created for the long-term implementation of the resilient strategies. The company has the potential resources to implement the strategies. Innovative financing

can be vital in establishing a resilient strategy for preventing environment-related issues (Stefani *et al*. 2020, p. 315). The person cannot identify an example of a scenario in which resilient strategies impact Innovation. Climate resilience is a potential strategy for a financial corporation.

Interviewee 8is the comptroller of a microfinance NGO situated in the Philippines. The interviewee stated that climate-resilient strategy is the catalyst for financing companies, and the country has organized several financing programmes. Interviewee 8is the comptroller of a microfinance NGO situated in the Philippines. The interviewee stated that climate-resilient strategy is the catalyst for financing companies, and the country has organized several financing programmes. The 8th interviewee agrees that a climate-resilient programme can be a significant part of strategic planning. Based on the person's opinion, implementing a climate-resilient strategy is important for achieving the operation goal of a company. The company has implemented a WASH programme and green financing. Profitability is increased by implementing climate-centric strategies. The person mentioned that Climate resilience can be considered an essential aspect of the plan. Resilient strategies effectively address the impact of climate change and its effect on businesses' financial performance. Climate-resilient strategies impact Innovation through product development, partnership, collaboration and effective client engagement. Developing sustainable solutions is important for this company as it positively impacts the environment. Innovation plays an active role in implementing sustainable strategies for climate resilience. This company launched KalikASAn to reduce plastic pollution and initiate non-interest-bearing loans.

This person states that there is an extreme threat to undertaking the climate resilient strategy. Short-term burdens exist behind the long-term implementation of resilient strategies, and the company has sufficient resources to initiate climate-resilient strategies. Innovative financing has a significant role in building strategies for climate resilience and is impactful in

mitigating climate-related risks. Based on the interviewee's perspective, sustainable strategies are leading in innovation and financial performance. It has been found that climate-resilient strategies have a big role in the success of financial companies. This strategy impacts Innovation. The Innovation in reducing plastic pollution can be an effective, resilient strategy for the company, and it positively impacts the environment (Nikiema and Asiedu, 2022, p. 2). Awareness of mitigating plastic pollution positively impacts the finance company's achievement of its goal.

Interviewee 9is an investment portfolio director working in different countries in a bank/microfinance institution operating in more than 25 countries, with a portfolio size of 187 million USD. Undertaking a climate-resilient strategy includes carbon footprint reduction through avoiding travel, flexible work conditions, funding entities for climate-resilient business models, and increasing profitability (UNESCAP, 2023). Stating that climate resilient strategy is considered a strategic planning process for climate risk management and its implementation helps achieve sustainable development, Interviewee 2 mentions that their company implements this by limiting preventable travel. The interviewee needs to be made aware of the climate resilient strategy-based profitability of their company and has no opinion on resilient strategy's effectiveness acknowledging climate change impacting business performance. Climate resilience strategies contributed to Innovation within financial services industry organizations with growing attempts to go paperless in financial transactions, boosting IT Innovation and banks funding corporations based on carbon emissions (Gupta,Abrol and Bhattacharya, 2022 p. 52). They highly supported innovative financial products that build climate resilience and sustainability, Innovation in industry through such strategies, and sustainable business growth.

Interviewee 10is a risk management officer in the Philippines working for CARD SME Bank, which operates in the Philippines. Its size portfolio as of 31st December 2023 is

165M USD. They admitted that climate vulnerabilities affect business operations and resilient strategies. Financial corporate strategic planning processes are extremely important for climate risk reduction, with strategy implementation essential for business sustainability. Business continuity plans and hazard assessments are related to strategies implemented for climate resilience and sustainability by financial corporation's (Settembre-Blundo *et al*. 2021, p. 107). After reporting no profitability changes to their company, they specified these strategies are for-profit maintenance and effective for handling climate change impacting financial and corporate performance by addressing innovations for strategically enhancing resilience and sustainability.

Interviewee 10 admitted the extreme significance of sustainable solutions positively affecting climate being used in their company. Further, innovation also has a major role in climate resilience. They ranked 4 for the broadness of risks their company might face when implementing climate resilience as a corporate strategy. Innovative financing solutions have a major role in sustainability development and climate resilience by changing the financial services industry through digital marketing and operations (Pu *et al*. 2021, p. 7). Believing that short-term financial burden challenges long-lasting resilience strategy implementation and adequacy of financial resources for its achievement, Interviewee 10 mentioned resistance to change by both company and client as an obstruction, and Innovation is changing the industry in the context of climate resilience.

Interviewee 11is a Senior Manager from Kenya for a company legally entitled as a bank/NBFC/microfinance institution. Mentioning that sustainability in lending is vital for determining repayment capability, the interviewee agreed on a climate-resilient strategy possibly being part of a financial corporation's strategic planning process. Climate resilient strategies implemented in business operations to achieve sustainable growth include ESG reporting on all lending clients, with banks implementing internal ESG systems (Grijalva and

García-Wang, 2022, p. 2). The resilience strategy reportedly increased the business profitability of the interviewee's employer company. Climate resilience strategies are effective for climate change impact on business performance and important for sustainable growth (Alam *et al*. 2022, p. 2). Credit scoring parameters assisting in improving banks' lending practices are effective, sustainable strategies and solutions that impact climate. They believe that innovation has a critical role in enabling companies to develop sustainable strategies and think that there is a moderate threat to climate resilience-based corporate strategies. Not having any opinion on the financial burden affecting resilience strategy, the interviewee identifies a lack of available financial resources limiting strategy implementation, agreeing that Innovation in financial products changed the industry through sustainability and profitability.

Interviewee 12mentions being designated as Head of Liabilities in Cambodia for Phillip Bank, which also operates in Cambodia. According to the interviewee, climate resilience is catalytic for financial corporate business, and its strategy is also regarded as a strategic planning process. The climate resilience strategy effectively used for sustainable growth includes assisting existing customers and choosing quality customers experienced in multiple sectors, working alongside the government to back MSME and SMEs having flexible potential and extensive possessions (Anaman *et al*. 2023, p. 6). They report that this strategy decreased business profitability and is likely effective for handling climate change impacts on corporate and financial performance.

Digitally updating, training human resources to use new technology and maintaining business' sustainable growth contribute to financial services organizational innovation (Hussain and Papastathopoulos, 2022, p. 12). They think innovation is crucial for empowering resilience, but sustainable strategies and sustainable solutions development are not important for positively impacting climate change. Digital and human resources leading

the market were mentioned as Innovations addressing climate concerns, and the interviewee rated potential threats as four. The interviewee agreed that short-term financial burdens hindered long-term climate resilience, that no lack of financial resources hindered strategy adoption, and that innovative financial solutions innovated the industry. However, the interviewee also admitted that the need for developing low-cost funding, a customer base, a one-stop service ecosystem and development programs were needed for mitigating non-financial challenges. The interviewee further admitted that local digital payments are one of the innovative financial solutions transforming the industry.

Interviewee 13, a Senior Vice President who works in Luzon and Visayas, Philippines, agreed that a climate-resilient strategy is the catalyst for the finance business. Interviewee 13, a Senior Vice President who works in Luzon and Visayas, agreed that a climate-resilient strategy is the catalyst for the finance business. This participant highly considered a resilient strategy as a part of strategic planning, and implementing this strategy impacts achieving sustainable goals. The climate resilient strategy that the company of this interviewee implements is encouraging the people to tree plantations. This resilient strategy contributes to the innovation company's innovation by promoting effective services that address the challenges of climate change. According to the person, developing a sustainable solution is important, and Innovation plays a crucial role in climate resilient strategy.

Digitalization is an innovative climate-resilient strategy that the company is implementing. As per the interviewee, the threat is high for undertaking these strategies, and the short-term burden will stay behind the long-term implementation. The company has the available financial resources, and the limitation is to encourage awareness among clients and employees. Innovative financing has an essential role, and the interviewee mentioned digitalization as a sustainable strategy that leads to Innovation. It is found that tree plantation is one of the climate-resilient strategies, and digitalizationcan be a sustainable solution.

Finance companies can use digitalization to combat the adverse impact of climate change (Schulz and Feist, 2021, p. 2). Digitalization has a vital role in reducing the use of paper so that it can address climate change.

Interviewee 14works in a microfinance Institution in Cambodia and considers climate-resilient strategy as part of strategic planning. This interviewee stated that implementing a resilient strategy is essential to achieving the company's goal, and this person's company focuses on reducing waste and implementing energy efficiency. Climate resilience states that this resilient strategy may address the impact of climate change and contribute to innovation by generating greenhouses and green buildings. Developing sustainable solutions is important, and Innovation may play an effective role in this context. The company this person tries to reduce waste and recycle and agrees to the high threat of undertaking this strategy.

The interviewee agreed that short-term burdens hinder the long-term implementation of a sustainable strategy. This person identified the green economy and low carbon as the limitations for incorporating the resilience strategy. It has been found that energy efficiency and waste reduction are effective initiatives for a climate-resilient strategy. A green economy can be important in promoting environmental sustainability (Zhang *et al*. 2022, p. 4). A green economy includes eliminating waste, emitting greenhouse gases and utilising resources.

Interviewee 15,who is the COO of a microfinance institution in India, agrees that climate-resilient strategies are a catalyst for a finance corporation. The person moderately considered that resilient strategies can be the strategic plan of the finance corporation for mitigating climate impact. According to this person, climate-resilient strategies help achieve organizational goals and help the company implement green finance. Invasion plays a significant role in enabling a company's resilience strategy; for instance, the company of the interview works with the partners to enhance green. Undertaking climate resilience may be a

threat, and short-term financial burdens can cause the implementation of strategies to remain behind.

The company has sufficient resources; the biggest challenge is low-cost funding and team-building. This person supports innovative financing and has a role in resilience strategy. It has been found that without a change in profitability, a resilient strategy can address climate change. Green finance can be an innovative strategy and sustainable solution for the finance corporation (Akomea-Frimpong *et al*. 2022, p. 2). Green finance helps finance companies combat climate impact.

Interviewee 16,working in a microfinance institution in Mongolia, agrees that strategies for climate resilience are catalysts for financial companies. This person considered resilience strategies part of strategic planning, and a company implements them to achieve sustainable goals. The interviewee's company implements climate resilience strategies such as translation financing, green financing, and climate risk management. As per the view of the interviewee, the threat is moderate, and the short-term burden impacts long-term implementation. The company has sufficient resources, and the problem with implementing strategies is understanding each part of the company and the need for more support from management. It has been found that Innovation plays an important role in developing sustainable strategies and that the development of sustainable solutions is important for a company. Green financing is an effective strategy for finance companies to increase cash flow and implement projects to preserve the environment (Ozili, 2022, p. 2). It helps a company to manage climate-related risk factors.

Interviewee 17, a director of the credit co-operatives, supports climate resilience strategies as a catalyst. This person highly considered climate resilience strategy as a strategic plan which has a role in achieving sustainable business growth. The interviewee's company has implemented product and credit analysis. A resilient strategy may address climate change

and encourage a company to innovate. Sustainable solutions are moderately important for a company, and Innovation plays a role from the perspective of resilient strategy. The company of this interviewee grants loans to people interested in rainwater harvesting. This company needs more financial resources, and human resources are also a problem when implementing this strategy. It has been found that financial companies can implement strategies for granting loans to people who are concerned about the environment. Rain harvesting largely impacts the climate as it leads to water management (Pala *et al*. 2021, p. 1). It can be an effective step to influence people and encourage them to innovate.

Interviewee 18 is a business development manager in a microfinance institution in Ghana. This person highly considered climate resilience strategy as a strategic planning process. This person agrees that a resilience strategy can be effective for achieving sustainable growth, though this person's company cannot implement it. As per this person, implementing a resilience strategy cannot change profitability, and these strategies are less effective in addressing climate change. The innovative session of the company is to organize a session on brainstorming and a series on staff knowledge. As per the person's view, the threat of implementing this strategy is high. Financial resources are unavailable for this company, and budget constraints are the biggest problem in implementing such a project. This person supported the potential role of innovative financing. It has been found that Innovation plays a large role in implementing climate resilience strategies. Staff knowledge facilitates a company to take innovative sustainable strategies for combating climate change (Wang *et al*. 2022, p. 3). Lack of budget is identified as the biggest challenge for the company.

Interviewee 19, a microfinance expert who works in Tanzania, identified resilience strategy as a catalyst and moderately considered it part of strategic planning. This person stated that implementing a resilience strategy is essential, and this person's company grants

loans for water harvesting and agriculture products. The resilient strategy is moderately effective for addressing climate change, and these strategies can be used for renewable energy and sustainable finance. The company has implemented the person's CSR activities in developing community education. The threat of implementation is moderate, and the company needs more resources. Access to capital resources is a potential challenge for the company, and lack of advocacy at the country level is also a problem. The findings are that implementing CSR can be a potential innovation by a company to address climate change. CSR helps a company contribute to community development and manage sustainable practices (Khan, Yu and Umar, 2021, p. 2). Lack of capital resources makes it challenging for a company to implement an innovative climate resilience strategy.

Interviewee 20, a chief executive of a social enterprise in India, supports climate resilience strategy as a catalyst and considers it part of strategic planning. This person agreed with the important role of resilient strategy, but this person's company could not implement it. As per the view of this interviewee, profitability has stayed the same, and it is moderately effective in addressing climate change and its impacts on financial performance. The innovative strategy is to reduce paper use and preserve energy that the company has followed. This company needs to have available resources; the challenge is the operational department. This person identified the initiative of blended finance as innovative financing. It has been found that climate-resilient strategies include reducing paper use and conserving energy. The energy crisis is a potential threat, and climate resilient strategy helps to combat it (Jasiūnas, Lund. and Mikkola, 2021, p. 3). Financial companies can reduce paper use by using sustainable solutions and renewable energy.

Interviewee 21,the SME head of a microfinance bank in Tanzania, stated that climate-resilient strategies catalyse the finance corporate. This person highly considered climate resilient strategy to be the section of a company's strategic planning. According to

this person, implementing a resilient strategy is essential for business growth, and this person's company develops Environmental and Social Due Diligence (ESDD) in all lending. According to this person, implementing a resilient strategy is essential for business growth, and the company this person develops environmental and social due Diligence ESDD in all lending. Profitability is kept the same by implementing a climate resilience strategy that is less effective for addressing climate change. In this person's opinion, the resilient strategy contributes to innovation in a bank by generating innovative ideas, such as initiating a clean energy agenda.

The development of sustainable solutions is largely important, and Innovation supports it. The company has initiated automatic water taps and solar panels as an innovative strategy. This person is considered a high threat to undertaking strategies, and short-term burdens impact long-term implementation. The person stated that the company has available financial resources, but the biggest threat is insufficient funding. Green bonds are a climate resilience strategy that impacts Innovation. Green bonds are issued to fund investments that provide environmental benefits (Tuhkanen and Vulturius, 2022, p. 1197). Innovative solutions like automatic water taps and solar energy help a company combat climate change. Solar energy helps to address the energy crisis that is sustainable practices on climate change.

Interviewee 22,a head of project management in the microfinance institution of Kenya, agreed climate resilience as a catalyst and considered it a strategic plan. Implementing a resilient strategy is important; this person's company focuses on ESG mapping. According to the person, profitability is increased by implementing strategies and climate resilience strategies that enable the interviewee's company to initiate a new section for acquiring new customers and expanding propositions for energy, water, and agricultural financing. Innovation plays an effective role and is a sustainable solution that the company has implemented by introducing value propositions and products in a sustainable area. This

interviewee identified organization leadership as a threat and highlighted the development of the WASH (Water Access Sanitation Hygiene) project as innovative for finance corporates. WASH project works in water, sanitization, and hygiene, and it can be a sustainable livelihood programme (Pandey, Prakash and Werners, 2021, p. 138). The finding is that ESG mapping can be an innovative solution for finance corporations, and the WASH project has been initiated as a climate-resilient strategy.

Interviewee 23agreed that strategies on climate resilience pose a catalyst for finance business and considered these strategies as strategic planning. Implementing resilient strategies has a crucial role in achieving business growth and depends on the sector, though it increases profitability. The resilient strategy contributes to Innovation through capacity building, product development and technical assurance. Sustainable strategy development is less effective, and innovation plays a role in a company's strategy implementation. According to this person, the threat is moderate for implementing strategies, and short-term burdens hinder the long-term implementation. The person identified that resilience strategy led to Innovation in credit appraisal and product development in finance corporations. The person identified that resilience strategy led the Innovation in credit appraisal and product development in finance corporations. It is found that climate-resilient strategies include technical support and improving banking sector services. It is found that climate-resilient strategies include technical support and product development. Climate risk can be mitigated with the help of technologies and developing products such as green finance in finance companies (Miglionico, 2022, p. 126). Innovative products can be a sustainable solution for finance corporations, and they help address climate resilience.

4.3 Chapter Summary

This chapter elaborates on the data interpretation and the core findings. The data interpretation is generated by interviews in which different opinions are collected based on

interviewees. These data lead to sort out the potential findings that facilitate discussion of the research. Interpretation of data helps in clear identification and understanding of the research topic. A questionnaire that includes different questions on climate resilient strategy in finance corporate or companies is prepared for generating data. Multiple strategies addressing the climate impact are identified and explained in depth based on the interviewees' responses. The data interpretation leads to finding out the primary insights of this topic, which are elaborated for making depth knowledge on this particular research topic.

CHAPTER 5: DATA ANALYSIS AND DISCUSSION

5.1 Introduction

This chapter analyses the data that allows a researcher to discuss the research topic in detail. In other words, a researcher aims to convert the cluttered data set systematically and more easily through the data analysis section. This ensures that the researcher presents the obtained data in an easily understandable way and helps in a better decision-making process. Therefore, this chapter will include a section for analysing the data and conducting a brief discussion based on the analysis. This section will also discuss the research problems and challenges to mitigate the study's objectives.

5.2 Primary Data Analysis

Theme 1: Climate resilience as a strategy for catalysing climate vulnerability hazard management, financial and business operations in the financial corporate

The strategic planning process includes an effective climate resilience strategy that is important for handling vulnerability and reducing climate hazards. Recently, finance companies have focused on climate resilience and included it in their strategic planning process. The international financial institution has been committed to adopting resilience financing as a part of climate change initiatives. The Green Climate Fund of the United Nations Framework Convention on Climate Change (UNFCCC) has committed to allocating its half finance to climate change resilience and adoption (Timilsina, 2021, p. 2). The Green Climate Fund of the United Nations Framework Convention on Climate Change (UNFCCC) has committed to allocating its half finance to climate Resilience silence and adoption (Timilsina, 2021, p. 2). The World Bank has initiated the development of its sustainable strategy and action plan under climate change resilience and adoption. The Multilateral Development Banks (MDB), which includes the Asian Development Bank (ADB), the

African Development Bank (AfDB) and many more, are the key sources of adoption financing that are related to climate change (Timilsina, 2021, p. 4). These banking agencies execute and implement financing for client countries of these banks.

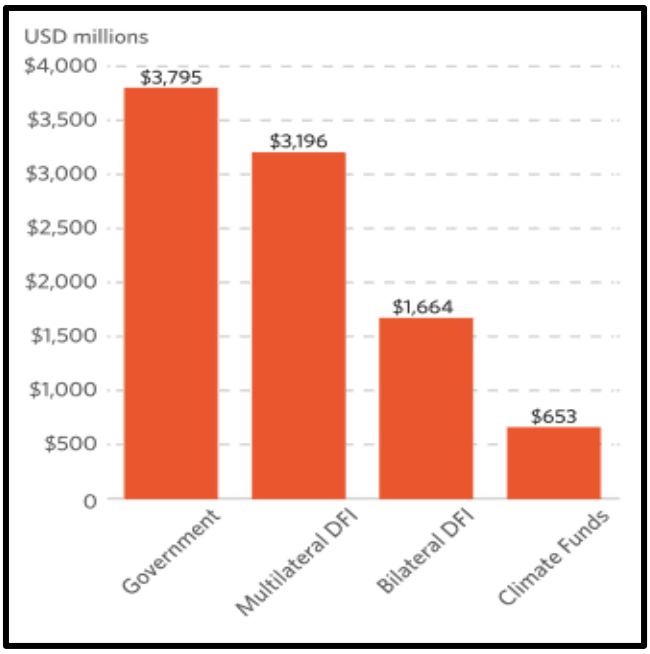

Figure 5.2.1: Annual commitments for the international climate finance for thedevelopingcountries (Source: Lipper *et al*. 2021, p. 1532)

MDB plays a large role in adopting financial transformation to handle shortcomings. This banking sector largely encourages people who are concerned about environmental sustainability. These MDBs are largely associated with the e International Fund for Agricultural Development (IFAD), and the project of IFAD is financed by green financing. Nationally Determined Contributions (NDCs) is a new instrument that is a national climate change policy created under the Paris Agreement. 75% of countries adopted the target of NDCs, which includes 92% of Asian countries and 100% of African countries, as mentioned in Figure 5.2.1 (Lipper *et al*. 2021, p. 1529). As per the annual commitment, 1.7% of total climate finance is tracked under the same period; the IFAD and MDB established their separate fund, which aims to adapt the action against apatite climate risk through different commitments. The primary aim of IFAD projects, which MDB supports, is to enhance access

to financial activities that promote climate resilience strategies for commercial banks and microfinance institutions.

Climate change is crucial in areas of today's globe, and every organization uses effective strategies to address the impact of climate change. Many financial institutions use the Climate Policy Relevant Sectors (CPRS) to assess investors' exposure to climate risk (Battiston, Dafermos, and Monasterolo, 2021, p. 5). This CPRS facilitates the financial organization by classifying potential economic activities from the perspective of risk exposure of climate finance. As per this context, energy technology that indicates high or low carbon plays an active role in the value chain of energy and changes in sensitive climate policy. Financial companies can strongly address climate change to develop sustainable solutions. In addition, many financial institutes have initiated carbon intensity and environmental performance indicators. Considering this, the banking sector has issued green bonds that facilitate them to reduce carbon-intensive. These strategic plans are largely impactful in catalysing climate vulnerability in the finance sector.

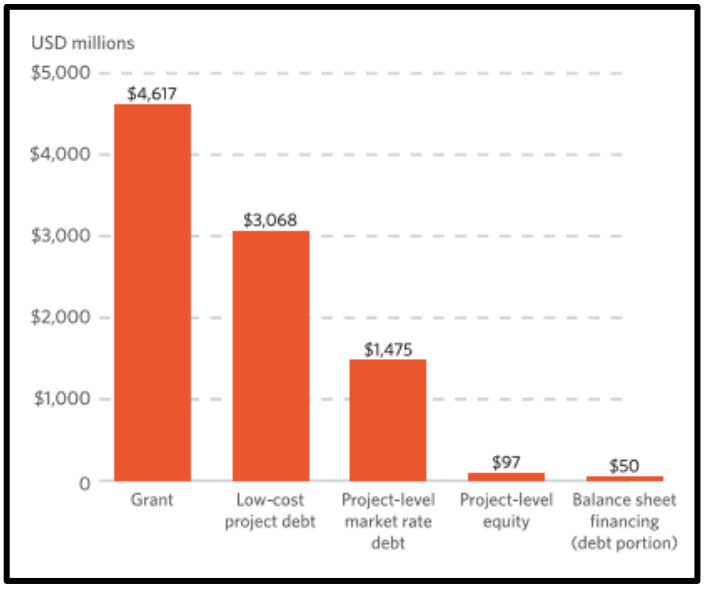

Figure 5.2.2: Annual commitments of public finance internationally for developing countries through instruments.(Source: Lipper *et al*. 2021, p. 1535)

The financial institution utilizes technology as a part of innovation that helps these institutions initiate a resilience strategy for climate change. Concessional lending is widely used for agricultural investment projects to generate positive financial returns. This instrument also allows lending per the market rates and is used as a significant climate financing share to different small-scale agriculture. The grant instrument is used under technical assistance, Capacity building and Adaptation investment activities, which led to a value of USD 4,617 million, as mentioned in Figure 5.2.2 (Lipper*et al*. 2021, p. 1535). The financial industry has rapidly changed due to technological development, and the banking sector has especially shifted from its traditional service to digital financial service (Niemand *et al*. 2021, p. 2). The banking sector has developed a strong vision towards digitalization and offering new services to its clients. Digitalization is a process that is beneficial for reducing the use of paper and can be referred to as a strategic implementation towards climate change. It indicates the concern of the finance sector towards the environment and the effective provision of services to their clients. The banking sector has provided an instance for their clients by promoting Digitalisation, an innovative, sustainable solution for the finance sector. This strategic implementation of the finance sector is to manage the hazardous situation. As per this context, it is identified that Digitalisation is an effective tool for financial institutions to address the impact of climate change by reducing the use of paper.

The transition to low carbon is a potential threat for financial institutions, and the rapid expansion of evidence concerned with the transition to risk is noticeable in the financial sector. Financial institutions acquire the resources for executing innovative plans that include the credit creation (Semieniuk*et al*. 2021, p. 4). Credit creation is an innovative strategy initiated by the banking sector. It is impactful for developing a sustainable strategy focused

on climate change. As per this perspective, digital implementation helps banks change the form of paper money, which leads to deforestation. The financial institutions of the present world try to reallocate their investment to firms with a low carbon intensity. The sector of high carbon manages the shrinking of its balance sheet, which indicates a continuation of interest payments.

Theme 2: Green financing, waste reduction, ESG mapping, climate risk management as climate resilient strategy building sustainable business operation

Climate risk management is a core target for finance companies, and it indicates that these companies focus on managing the risk factors in their business. Green bonds are a key feature of sustainable financing, which is the strategic planning by the finance companies. Green bonds aim to shift capital towards more sustainable activity, impacting organizational work and sustainability (Maltais and Nykvist, 2020, p. 1). Green bonds have a significant role in advancing sustainability in the finance sector, and they also facilitate the refinancing and financing of green assets and projects. In this preset scenario, the concept of green banks is rapidly growing and provides more innovative ways for the finance sector to develop sustainable strategies. "Green recovery initiatives" are started by Asian countries and aim to promote and mobilize green investment in sanitation, energy, transportation and agricultural sectors by utilizing green instruments such as environmental investment, climate credit, and climate bonds.

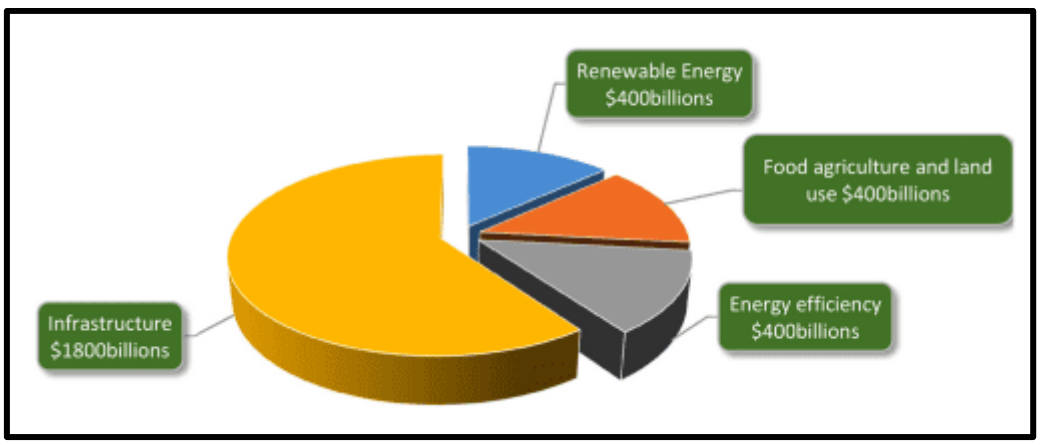

Figure 5.2.3: ASEAN green finance opportunities sector-wise(Source: Jahangir *et al*. 2023, p. 3)

Green finance is defined as an investment or loan promoting environmental sustainability activities. Green financing is a potential climate-resilient strategy that helps to build sustainable business operations. Green financing fosters economic growth by developing a healthy workplace, using high-quality resources and enhancing green productivity. As a financial institution, banks can act as the potential driving force offering grants and credit for green finance to the commercial, social and industrial sectors. Green financing facilitates the sustaining and accelerating economic development and a sustainable environment. The climate shock effect in ASEAN nations impacted the development of the regional economy by a decline of 11% in 2023 (Jahangir *et al*. 2023, p. 2). Green financing encompasses green bonds, green investment, green insurance, and climate initiatives bonds that strengthen the economy by reducing environmental shock. It indicates that green financing helps financial institutions focus on managing environmental sustainability so that their business can combat climate change impact.

Green financing is considered a financial instrument, supporting the potential transition towards a climate-resilient economic structure. It enables organizations to develop sustainable initiatives such as the emission of greenhouse gases, improving the structure of climate resilience and reducing energy use. The financial sector is identified as the effective stakeholder of green finance as this sector directly invests in green finance (Debrah, Chan, and Darko, 2022, p. 3). It is required to develop the financial institution for contributing sustainability loans and green financing. Green Climate Fund is an integral part of green financing. It was released to provide financial assistance to developing countries so that they can adopt and mitigate the impact of climate change. It is also beneficial for following

sustainable development goals and reducing the risk factor of disaster management. Green financing is the core aspect of climate change action in the financial institution.

Figure 5.2.4: Global e-waste generated(Source: Rau, Bisnar and Velasco, 2020, p. 2)

One of the primary challenges for megacities in developing countries is the environmental impact due to the generation of huge amounts of solid waste. The financial sector of the recent timer largely depends on electronic gadgets such as scanners, computers and printers, which generate e-waste such as used batteries and printer cartridges. The financial responsibility includes economic responsibility that financially supports the e-waste production to complete its goal of managing e-waste (Rau, Bisnar and Velasco, 2020, p. 3). This indicates that financial institutions can manage waste by supporting producers so that they can be inclined to recycle the products. Globally, 44.7 Mt of e-waste was generated in 2016; 15%–20% of e-waste gets recycled (Rau, Bisnar and Velasco, 2020, p. 2). In a company, the producers become responsible for physical movement, such as recycling, collection, and disposal of e-waste.

The ESG mapping refers to environmental, social, and governance (ESG), and the investors use it to be involved in corporate activities connected to social, environmental, and governance sections. ESG can be utilized to identify the issues of corporate social responsibility, business ethics and corporate governance (Kim and Li, 2021, p. 1). A potential

relationship between corporate finance and ESG factors exists and largely impacts corporate profitability. Based on the concept of the ESG factor, it can be stated that the finance sector of Asia and Africa can handle their financial risk factors. ESG is considered a part of CSR, and financial companies generate positive outcomes of CSR when they effectively focus on corporate social responsibility, which impacts financial performance. It helps the banking sector of Asia and Africa spread awareness among investors and customers.

Theme 3: Climate-centric resilient strategies contributing to profitability, innovation, and climate change strategies impacting business performance

Climate-resilient strategies largely contribute to innovation and the profitability of financial firms as implementing the climate-resilient strategy influences the clients of financial institutes. The climate-resilient strategies that are implemented by the finance sector need to have the support of governmental policy and regulation. It is essential to use risk-based planning tools for the local government and monitor them so that the confidence of the finance sector is developed for implementing sustainable strategies (Lawrence, Blackett and Cradock-Henry, 2020, p. 10). The climate-resilient strategies are innovative, which indicates that the finance company needs to pay money to implement them. However, it also impacts the profitability of the finance company as the clients of the finance company are largely influenced to invest money. In contrast, the company takes initiatives towards environmental sustainability.

Climate resilient strategies have diverse impacts on the business performance of finance corporations. It has been noticed that the financial sector of the present time is largely involved in adopting a strategy that addresses climate change. Financial supervisors have identified climate change as a potential source of financial instability and risks (Battiston, Dafermos, and Monasterolo, 2021, p. 2). The correlation between institutions and the economy is a significant factor that influences financial risks at the global level. The ultimate

fact is to effectively co-relation with all the aspects of innovation so that risks generated from the climate change perspective can be mitigated.

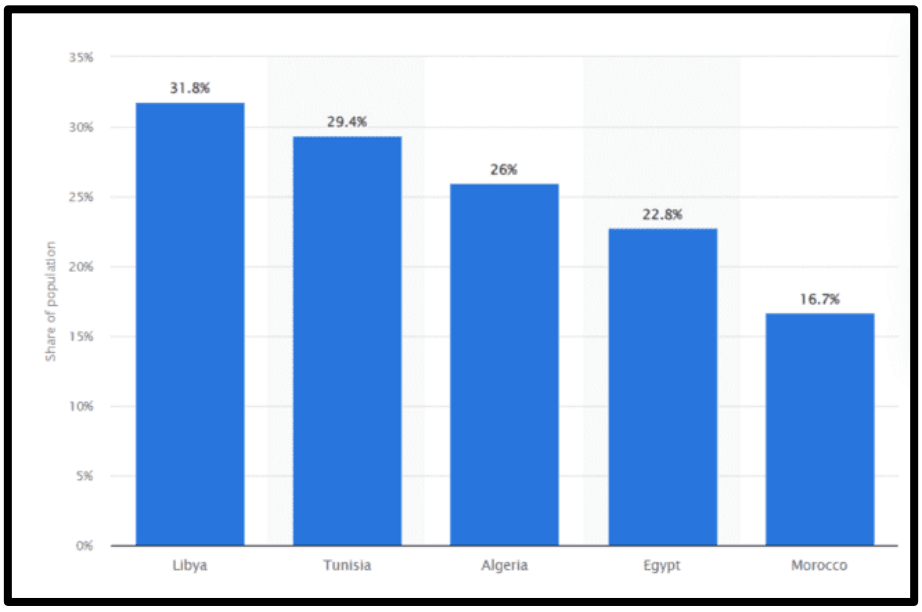

Figure 5.2.5: Population of Digital Payment in Africa(Source: Galal, 2024)

The development of digital innovation within the financial corporate industry has been successfully integrating the digital transformation of financial services and corporate business operations within the industry. Diverse digital innovations such as AI, cloud computing, and blockchain technology have supported the digitized growth of financial services and optimized company efficiency, positively contributing to their performance (Chahal, 2023, p. 67). Digital payment is strongly supported by Interviewee 12, and this person has described it as an innovative financial solution. Digital payment has been significantly popular in Africa as it has stepped towards Digitalisation as part of its climate-resilient strategy. The report shows that in 2022, 31.8% of the population of Libya has received digital payment, while 22.8% of the population has been facilitated with digital payment (Galal, 2024). It indicates diverse country implements effective strategies for developing their strategic implication.

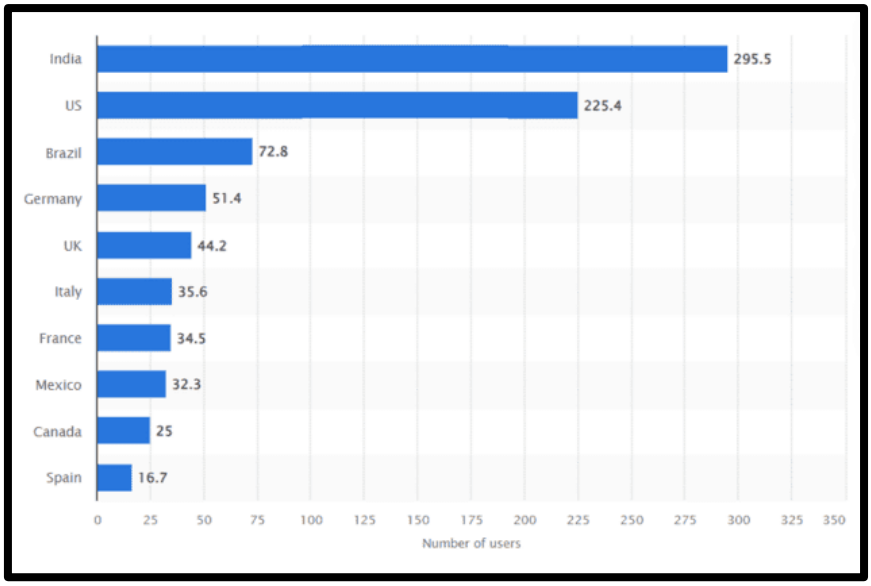

Figure 5.2.6: Users of the digital banking in Asia(Source: Statista, 2023)

Innovation has led to developing several newer solutions and approaches for financial services companies to identify the incorporation of various means for improving the industry's situation in the context of climate-centric strategies and development. Digitalization within business operations and the development of human resources assist in innovative resilience and profitability. 23 technological supports can be an effective, sustainable solution for the finance sector. Technological support has led to digital banking, which is rapidly developing. Based on the 2022 report, India, an Asian country, is in a leading role from the perspective of the increasing users of digital banking globally (Statista, 2023). This means the Asian finance sector largely implements digital practices as a part of the climate action plan. Moreover, operational cost reduction and contribution to profitability lead financial institutions to instil a sustainable financial ecosystem (Hermiyetti, 2023, p. 311). Transforming the financial industry through the digital transformation of business performance also contributed to sustainable financing and financial product development to improve financial corporations' capability to contribute to better climate-resilient operations for addressing environmental and climate issues impacting the corporate and financial development of business performance.

Climate change and its interlink to the development of financial and corporate financial performance have also integrated the development of risk management and actions related to responding to the challenges associated with climate change instigating problems. Lending conditions laid by financial firms in the banking sectors are also relatively impacted by the occurrence of risks of natural disasters, further impacting economic recovery (Ranger, Mahul and Monasterolo, 2021, p. 1378). Different policies and services are meant to support businesses and firms financially in undergoing innovation due to their consciousness of natural climate risk management and the assessment of hazards. This induced the adoption of innovation for the strategic development of financial products and services aligned to innovation and climate resilience within business performance.

Financial sector development and contributions to business performance are becoming unavoidably involved in developing effective responsiveness to climate change and hazards. For example, the Southeast Asian region is among some of the regions in Asia that are extremely vulnerable to critical developmental issues such as "climate change and environmental degradation", with the financial sector having to play a major role in securing funding for "US$5tn of transition projects" till 2030 (Saliya, and Pandey, 2021, p. 2). This further lends a glimpse into the financial services industry's situation in building resilient and efficient strategies. Financial institutions innovate by developing new financial products, loans, lending models and investment strategies that are built to assist companies in integrating climate resilience within business operations.

Theme 4: Climate resilient, sustainable solutions and digital innovation enabling companies to address environment and climate problems

Climate resilient strategies focus on delivering on the issues regarding funding and financial services the industry provides to companies about climate change impacts. Climate resilience-based infrastructural developments have become popular with their connection

with climate change mitigation, further guiding financial operations such as funding for climate responsiveness in diverse necessities such as waste service (Lutfi and Azaki, 2022, p. 62). Climate responsiveness is one aspect closely related to developing climate resilience-driven sustainability solutions. Sustainability growth linked to financial services is likely related to climate responsiveness, which influences financial services practices regarding funding and enabling companies. These developments are closely linked to the responsibility of financial institutions and banks to assist their clients and customers.

Financial institutions and banking sectors have added considerations regarding the necessity of sustainability in driving financial solutions to be offered to businesses to encourage the adoption of a climate resilience strategy. As per the view of interviewee 11, ESG plays an effective role in the finance sector to implement strategic action planning. Sustainable financial solutions that are often regarded as ESG loans are generally issued to larger companies, and these financial solutions are related to decisions connected with sustainability-influenced economic and investment projects and activities (Kaave, 2023, p. 2). This means that financial solutions such as ESG loans are impacted by companies' sustainability performance, further influencing climate resilience's development as a driving force for financial and economic decisions within the industry.

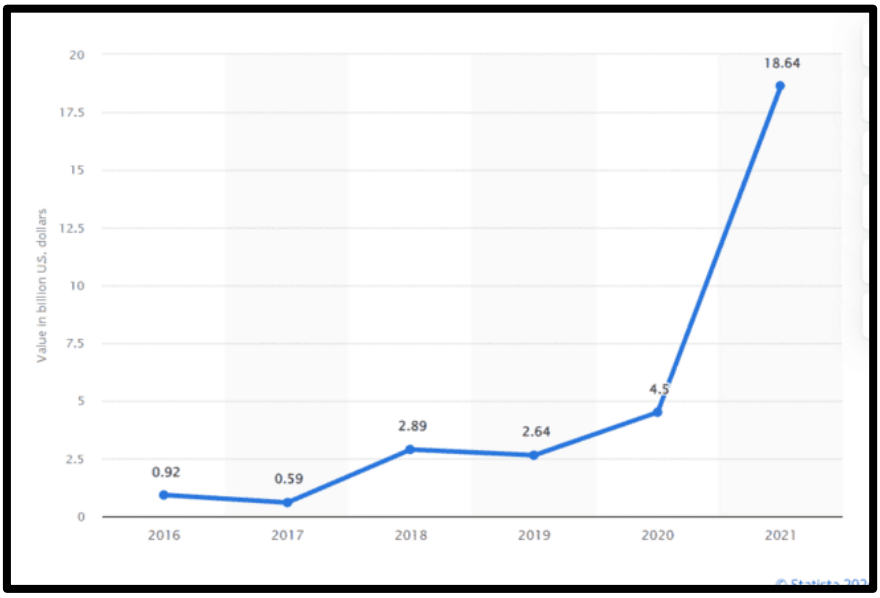

Figure 5.2.7: Sustainable Financing in Africa during 2016 to 2022(Source: Saleh,2023)

Climate resilience influences devising corporate financial services and solutions that empower driving towards addressing issues caused by climate change alongside supporting climate-responsive changes within business operations. Financial solutions, including green financing, have been gaining acceptance with ongoing trends, such as promoting green financing and investment opportunities through collaboration for green and transition financing solutions (Shirai, 2023). Green financing solutions incentivize climate change awareness within business practices, further prompting better, more sustainable practices in response to climate change issues. Green and sustainable finance is an emerging aspect worldwide, and this concept has become popular in Africa. Based on the report, sustainable financing increased in Africa from 2016 to 2022, and the value of sustainable financing was 0.92% in 2016, which increased by 18.6% in 2022 (Saleh, 2023). As per this context, it can be identified that African countries adopt sustainable financing as part of the climate-resilient plan.

Moreover, sustainable solutions in terms of financing companies and clients of the financial and banking institutions are again impacted by the design of new financial products based on the progression of environmental CSR practices. The interviewee supports that CSR is a significant factor in financing corporations to initiate sustainable environmental planning. Environmental obligations of CSR activities for companies involve the performance of organizational supported improvements such as energy efficiency, waste management and recycling (Sadiq *et al*. 2022, p. 322). Deciding and implementing lending and investment-related financial services and solutions have a vital impact on the organizational practices of CSR and its successful performance. It means the banking sector of Asia and Africa can be facilitated by implementing CSR in their operating area. CSR, which includes sustainable

business practices in the finance sector, focuses on initiating action plans to maintain climate resilience.

Sustainable solutions in financial services have been growing rapidly alongside the development of digital innovation within the industry. The growth and expansion of digital innovation have been supported by the rapid adoption and development of digital transformation of banks and financial organizations, providing new methods of carrying out financial activities through digital means (Sendjaja*et al*. 2022, p. 1122). The development of digital integration into financial services and functioning that optimized business operations alongside aiding in acting on environmental and climate concerns. Digital innovation and technological integration within the internal operations of organizations are supportive of delivering efficient management of technological adoption. Digitalization can provide multiple advantages, such as empowering banking to build digitally enhanced functioning, integrating the progressive development of business models, and improving competence.

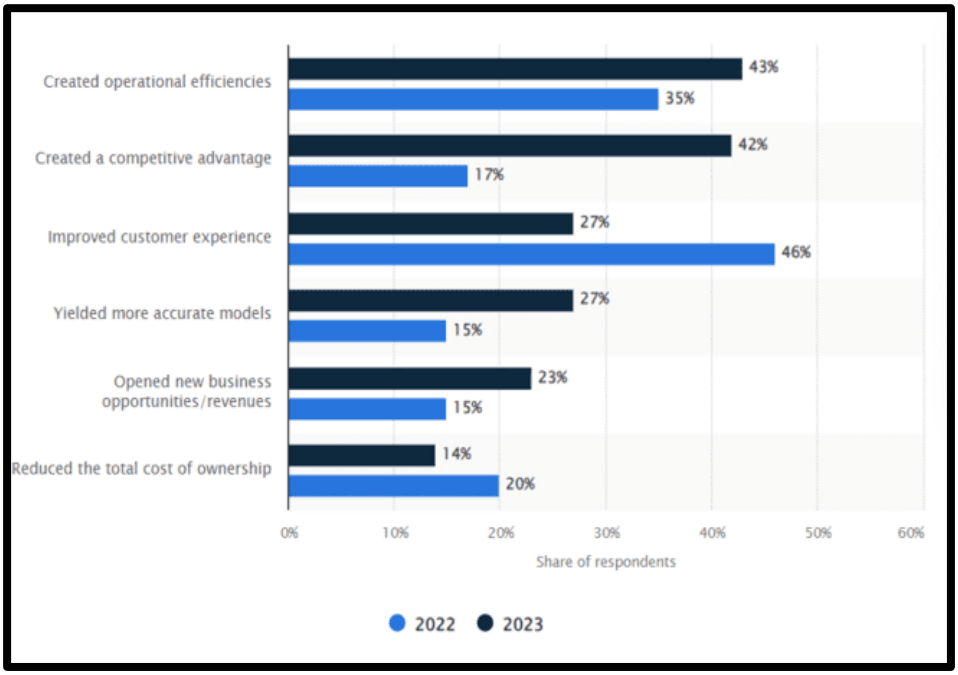

Figure 5.2.8: Advantages of AI in the global finance sector(Source: Statista 2024)

Digital innovation has successfully integrated competent advancements into financial institutions and banks by adopting technology into operations and infrastructure. Digital

innovation platforms have contributed to the business models and human resource involvement to match the upcoming changes integrated by digital technology advancements (Wu and Kao, 2022, p. 1). According to Interviewee 13, digital innovation is the sustainable approach of the finance sector for mitigating the impact of climate change and improving efficiency. AI is part of digital innovation that has rapidly developed. It is seen that with the help of AI, the global finance sector improved its efficiency from 35% to 43% during the period 2022 to 2023 (Statista, 2024).

Digitalization is the sustainable solution that enables this sector to improve its efficiency in terms of environmental sustainability. The integration of digital innovations through internal operations and systems can reshape the direction and application of human resource involvement. Digitization can empower climate- and environmental-concern-based sustainability practices by streamlining and digitizing operations to reduce paper use. Moreover, digital innovation can assist in better sustainable financial practices by enabling features capable of optimizing financial and corporate strategies per climate change mitigation needs.

Theme 5: Climate resilience application as corporate strategy: threats, financial and non-financial resource challenges against sustainable corporate growth

Climate resilience is important for securing strategic and sustainable growth, as almost all 23 interviewees who responded to the study agreed upon. The notion that banks and private sector organizations implement climate change and environmental risk in strategies also supports collaboration among private sectors and banks through financing for mitigating climate change (Park and Kim, 2020, p. 3). Regulatory frameworks are an integral aspect of the financial corporate industry. Problems in connection with climate resilience, such as failing to integrate climate resilience and risk assessment as corporate strategies, threaten the financial corporate industry, as was also admitted to be the case for almost all the

interviewees regarding their companies. The framework for financial institutions is facing a potential need to work on the growing problem of climate change.

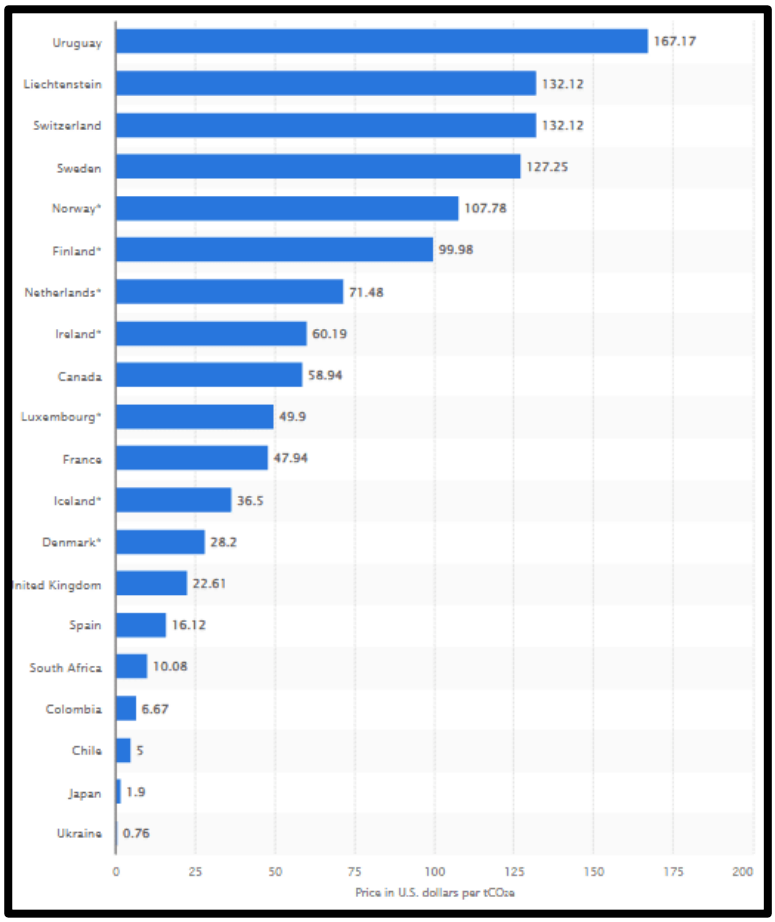

Figure 5.2.9: Carbon Tax as per different countries(Source: Tieso, 2024)

All interviewees had jointly admitted that there were financial and non-financial challenges to successfully implementing climate sustainable and resilience strategies. One of the financial issues that about 17 of the total interviewees had agreed on was the relation of short-term financial burdens against climate change-related issues. For instance, emission tax rates for climate change are associated with managing financial burdens linked with emissions incurred by business models (Schult *et al*. 2024, p. 79). Moreover, regulations such as carbon tax impact these emission-based financial burdens. African and Asia-Pacific countries such as South Africa and Japan have low carbon taxes of 10.08 and 1.9 USD per

metric ton of carbon dioxide in 2023 (Tieso, 2024). Short-term financial burdens obstruct a long-lasting climate resilience strategy, as was also identified from the findings.

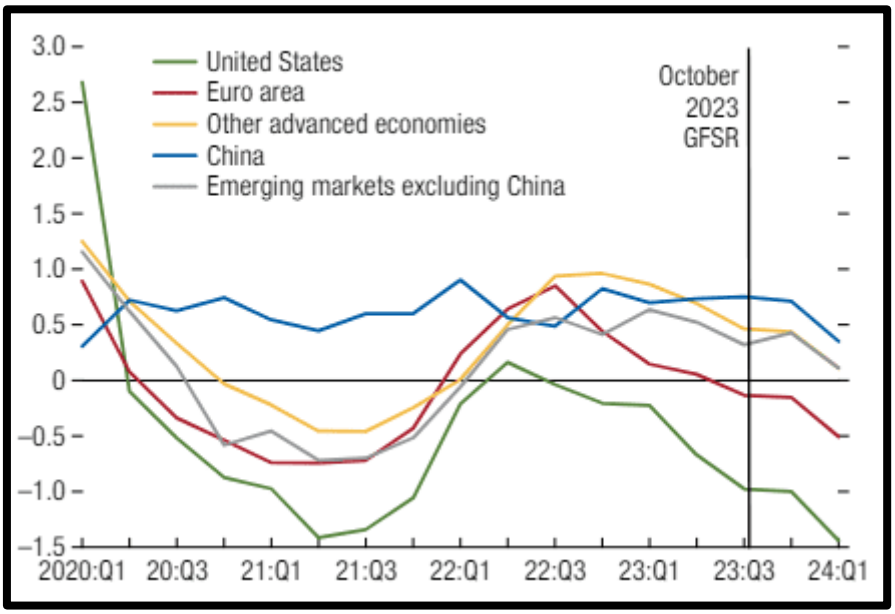

Figure 5.2.10: Global Financial Conditions Index, regional(Source: IMF, 2024)

Unavailability of financial resources and problems regarding financial inclusion through funding was admitted by several interviewees, including respondents 2, 6, 11, 15 and 21. Financial inclusion requires the combined participation of liquidity, "sustainable, low-cost financial services", and accessibility to financial services (Ahmad, Green and Jiang, 2020, p. 754). The unavailability of affordable financial services hurts the development of inclusive financing of clients and customers of financial institutions and banks.

A global trend of disinflation and emerging markets globally and regionally have observed rather mild ease in financial stability globally towards 2023 (IMF, 2024). The significance of low-cost services such as funding and accessibility to financial resources for successful innovation and acceptance of climate resilience as a strategic aspect for financial corporations, as interviewee 21 added. Low-cost funding and lack of financial resources, as further admitted by interviewees 15 and 11, respectively, restrict financial institutions intending to provide financial services to secure progressive resilience to climate change.

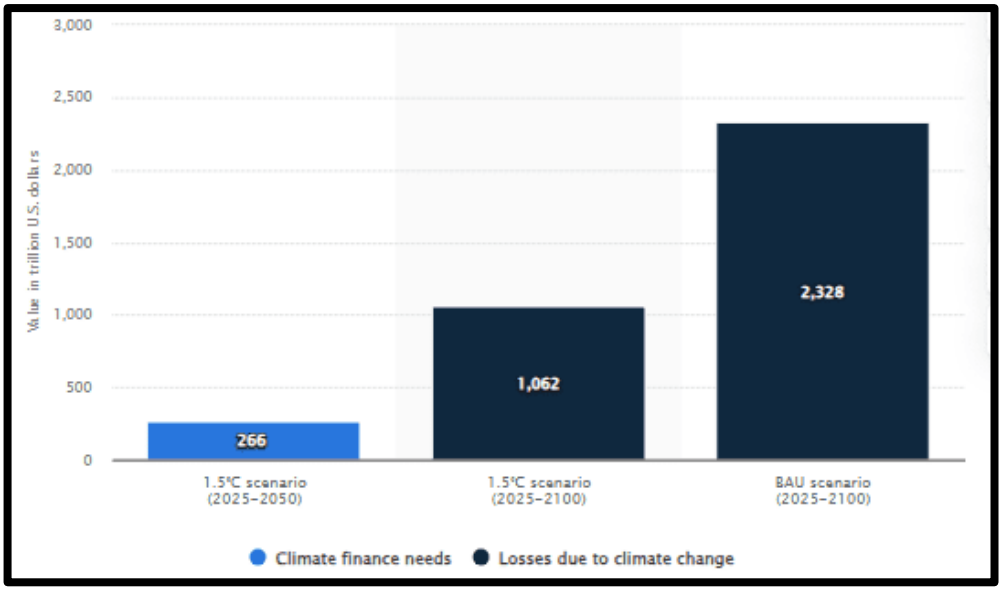

Figure 5.2.11: Global financial losses due to climate change(Source: Tieso, 2024)

As observed through the interviewees' responses, particularly respondents 17 and 19, the industry lacks more access to affordable capital for lending. Climate change has impacted the financial and economic spheres through damage or loss of capital, among other damages and capital market flexibility issues (Fabris, 2020, p. 31). Lack of affordable capital to support funding and hindrance to economic growth due to climate change are some of the relatively challenging financial issues that hinder the successful adoption of climate resilience. Furthermore, climate change has been predicted to cause global financial losses of 1,062 and 2,328 trillion USD due to increasing global temperatures and "business-as-usual" circumstances, respectively, between the years 2050 and 2100 (Tieso, 2024). Lack of financial resources and capital and securing low-cost availability of funding services to customers are some of the recognizable financial challenges towards climate resilience that are encouraged to be adopted as a corporate strategy.

Over 17 of the 23 interviewees claimed that there were non-financial challenges to successfully adopting a climate resilience strategy within the industrial environment. Resistance could stem from within the organization's internal operations, such as employees and staff, and could also originate from the clients or customers, as was also mentioned by

interviewees 10 and 21. Resistance to change is an issue that could be related to hindrance to the innovative development of the organization (Sharma, 2023, p. 189). Lack of knowledge, understanding and awareness, as mentioned by interviewees 1, 2, and 5, 16, further hinders understanding the significance of climate-resilient strategies as mitigations against climate change problems.

Banks and the financial corporate industry also face issues in capacity building, staff development and ensuring mindfulness regarding climate change issues, as interviewees 2, 6, 15, and 17 added. Banks instigating the practice of mindfulness among corporate borrowers could be related to credit accessibility and their emissions and carbon footprint (Light and Skinner, 2021, p. 1921). Such regulatory aspects connected to staff and organization practices are associated with changes in practices that would instil climate resistance strategy. Lack of mindfulness towards the factors responsible for climate change and lack of development and capacity of staff and organizations further hamper the development of climate resilience strategies.

Theme 6: Innovative financing solutions transforming the financial corporate industry by climate-resilient sustainability through financing and digitization

Almost all 23 interviewees agreed that innovative financing solutions and climate-resilient strategies have innovated and transformed the financial corporate industry. For instance, development through "exploring unexplored markets" can gain more customers and the public's attention (Ndeke and Sawe, 2023, p. 96). As interviewee one had reported, penetrating a market and developing new products that would suit the new customers' and clients' preferences and interests innovated the industry's market. This would assist in gaining the potential for further reach of financial institutions and banks to improve financial services to customers as a strategic means of growth through innovative product development.

Climate resilience is one of the leading aspects, and all 23 interviewees admitted to contributing to innovative financing solutions within the banking sector, specifically the financial corporate industry. Climate change and its subsequent climate resilience influence the development of financial services and products, such as sustainability financing and climate financing, designed with environmental and climate considerations involved (Tavares, de Almeida Collaço and Oliveira, 2024, p. 436). Climate resilience sustainability is impactful in developing climate change-oriented financial services that have further contributed to the financial corporate industry. Financial services and activities are transforming due to climate resilience, and financing solutions delivered by the banking sector, such as loans and funding, are integrating climate change consciousness and considering encouraging climate resilience practices within the industry.

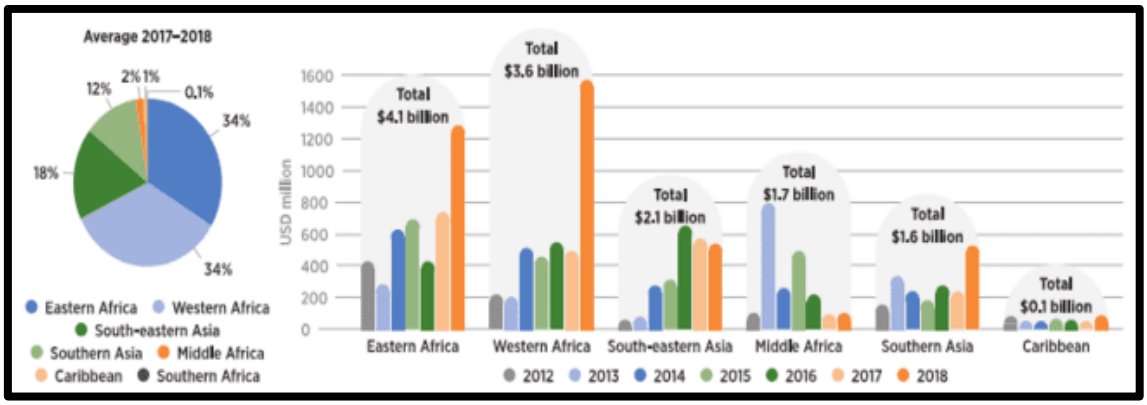

Figure 5.2.12: Regional distribution of blended finance's mobilized private finance in the least developed countries(Source: UNCDF, 2020)

Financing has a significant role in strategically impacting the industry through climate-resilient financing solutions such as blended financing, as mentioned by interviewee 20. Blended financing is regarded as a strategic solution for "low-carbon transition" with its infrastructural mechanism letting investors improve their "investment's risk-return profile" through catalyzed capital and market familiarity (Choi and In, 2021, p. 94). In addition, eastern and western African regions have observed a total distribution of 4.1 and 3.6 billion

USD in blended finance mobilized private finance. In comparison, southern and southeastern Asia had observed 2.1 and 1.6 billion USD by 2018 (UNCDF, 2020). Climate change-responsive financial services and solutions such as blended finance hold the capacity to support the efficient mobilization of private and public funds for attaining climate impact. Climate-responsive financial solutions are integrated to drive climate impact-based development within the financial corporate industry.

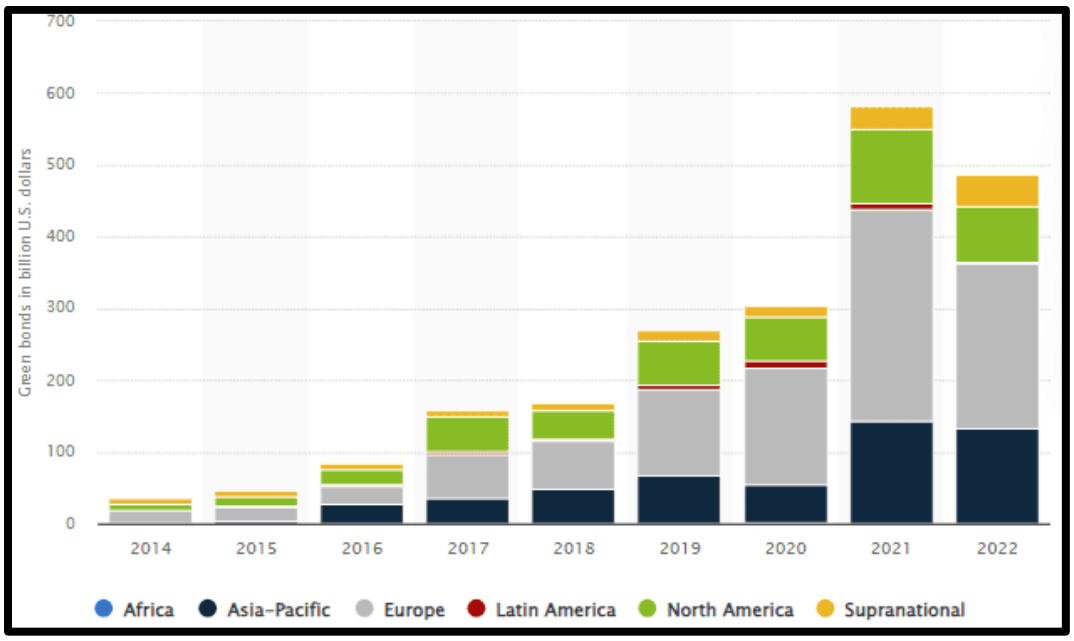

Figure 5.2.13: Value of globally issued green bonds by region(Source: Statista, 2023)

As per the findings, other financing solutions that had further contributed to the transformation of the financial corporate market also include green bonds and emissions-based funding for projects, as mentioned by interviewees 21 and 9, respectively. Green bonds have become increasingly popular as green financing in recent years, using them for "long-term financing" for environmental and climate-resilient projects (Chang *et al*. 2021, p. 2). Green bonds have increased in value globally recently, particularly for Africa to 0.4 billion USD and Asia-Pacific regions to 143.3 billion USD in 2021 (Statista, 2023). Additionally, as noted by interviewee 9, emission-based financial services, such as carbon emission-focused green finance systems, encourage corporate borrowers or financial service users to be

mindful of emission control. Innovative financing through climate-responsive funding solutions has added to the positive and climate-focused transformation of the industry.

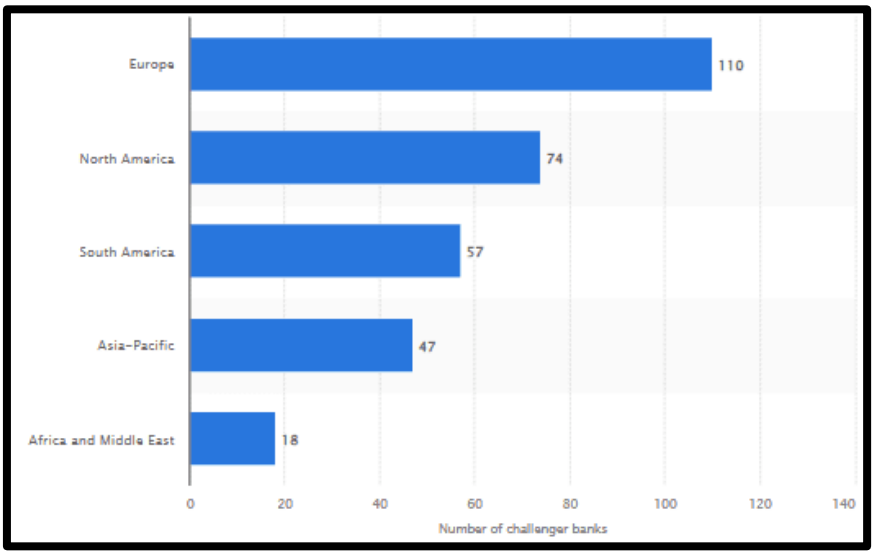

Figure 5.2.14: Digital Banks worldwide, by region(Source: Statista, 2024)

Furthermore, as was also discovered in the findings through interviewees' 10, 12 and 13 responses, digitization financial service digitisation has also played a major part in transforming and innovating the industry through technological augmentations. Financial institutions have developed an enhanced approach to banking services and models through digitization and access to digital platforms, enabling customers to use banking and financial services most prominently through "mobile banking" and "online banking" (Xu, 2022, p. 1). Moreover, the emergence of digital services such as digital banks has regionally impacted the banking sector of Asia and Africa, with Asia reporting to have around 47 and 18 digital banks as of 2024 (Statista, 2024). The industry and market have transformed and continue to innovate and keep up with technological changes, prompting a technologically efficient approach towards maintaining progressive climate resilience and sustainability within the industry. The financial corporate industry is innovating itself through new and emerging innovations to financial solutions that further promote efficient climate resilience and sustainability.

5.3 Discussion

As seen in the above findings and themes, the actions to cope with climate change development of climate resilient strategy have become prevalent among financial institutions. Additionally, climate change has become a major problem for central banks and other financial institutions in securing financial stability (Chenet *et al*. 2021, p. 1). As also observed within the literature review, climate action plans have been considered "roadmaps" and plans for assisting organizations to reduce and mitigate emissions and other related environmental problems associated with climate change and its negative impacts. The banking sector was among the other financial corporations within the industry that have been integrating innovation through climate resilience to secure better climate resilience and action through strategic planning.

Climate change and its mitigation strategy as climate resilience have been influencing multiple roles of effective climate action-related strategies. It holds the potential to catalyse the financial corporate industry and, specifically, the banking sector to improve the scope of strategic planning and sustainability, as observed through the findings. It could be assumed that the financial industry is within the developmental phases of identifying the diverse challenges of climate change (Martin *et al*. 2022, p. 9). Furthermore, the literature review observed that the banking sector is integrating the strategic practice of implementing climate resilience as a strategic procedure for planning the development of climate conditions and facing climate challenges for improving climate resilience within operations.

The banking sector, including finance corporations, relies on technological implementation to address the impact of climate change. This strategic action on climate resilience facilitates the banking sector in combating the sustainable challenges created by the adverse impact of climate change. As per this perspective, the banking sector raises interest in their workforce for technological implementation, and it is seen that the banking sector

largely adopts digital implementation. By executing sustainable practices, digitalization helps the banking sector combat climate change's impact. The core objective of the climate resilience strategy is to maintain sustainability, which depends on advanced practices in the banking sector. Digitalization is beneficial for analyzing data and intelligence so that the banking sector can develop close and effective relations with its clients (Druhova, Hirna and Fostyak, 2021, p. 12). It helps the banking sector implement sustainable business practices and generate awareness among the staff and clients.

Every organization, including the banking sector, stays focused on reports on maintaining sustainability, and the finance companies are aware of their stakeholders regarding this report. Green financing is one of the strategic action plans implemented by the finance sector to develop its goal of combating the impact of climate change. Green financing facilitates the banking sector in boosting its environmental performance, as green financing impacts the relationship between environmental performance and green activities in the banking sector. Green financing generates economic rewards by having environmental protection and banking institutions implement supporting eco-friendly initiatives (Zhang*et al*. 2022, p. 4). It indicates that banking institutions promote environmental protection insights by implementing green financing, and these sustainable practices portray the responsible role of the banking sector in terms of social, sustainable, and environmental factors. Green financing is advancing the green transition, and the ultimate purpose of this green financing is to balance environmental sustainability, monetary events and ecological conservation.

Green financing is a potentially sustainable initiative implemented by the banking sector to mitigate the adverse impact of climate change. Green financing intends to promote the operation's activities by using high-quality natural resources, increasing green productivity, and improving a healthy workforce in the banking sector. Green bonds, green investment, and green grants are included under green financing, which enables the banking

sector to strengthen its economic performance by developing environmental performance (Jahangir *et al*. p. 2). With the help of green financing, the finance corporation becomes focused on ecological issues created due to its operational activity and solves these problems through sustainable green practices. Green financing is the leading concept in the modern world, and it has been introduced in the context of climate change. Green financing is a core factor for addressing environmental degradation through transitioning to a green economy. Green financing enables banking institutes to enhance their economic growth by attracting foreign investors using innovative technology that benefits the transition towards a green economy.

Green bonds are strongly connected with green financing and are beneficial for providing security on a fixed income. The green bonds generate green labels as the finance corporation becomes committed to developing their finance projects focused on environmental benefits (Bedendo, Nocera and Siming, 2023, p. 2). As per the opinion of interviewee 21, green finance can be considered the strategic action plan that focuses on climate resilience. This strategic action plan is highly innovative and enables the company to achieve its sustainable business goal. Green bonds are an advanced tool of financial institutions that facilitates the banking sector to green lending. It indicates that the financial institution develops innovation in their operation area by issuing green bonds that are an instance of sustainable finance. The finance corporations in which the banking sector is included can boost their environmental footprint by issuing green bonds. Green finance is an innovative strategy that impacts the initiating of climate resilience.

The environmental footprint of the banking sector is measured by the environmental score from the ESG factor, and the emission score of this sector is associated with the environmental score. The ESG factor of financial institutes indicates the banking sector's social, environmental, and governance responsibilities. A sizeable and consistent resource for

green bonds impacts improvement in the CO2 emission score of the issuers of green bonds (Bedendo, Nocera and Siming, 2023, p. 5). The annual report of the banking sector is prepared by mentioning the ESG score by which the environmental responsibility of a finance corporation can be identified. The banking sector wants to stay focused on its commitment to sustainable practices by publishing its policies obtained from the ESG score. The financial institutes focus on their ESG score, which is categorized into three sections: use of resources, environmental innovation, and reducing emissions. It indicates the effective ESG score of the banking sector and its efficiency in adopting environmentally sustainable practices.

The innovation of the finance sector facilitates the management of the risk factors of climate change. According to interviewee 23, technological support can be the climate-resilient strategy that helps the financial institution combat the vulnerability of the climate. Due to the Digitalisation of the banking process, banking institutions have provided online services to consumers, providing less impact on the environmental factors as natural resources are used less. The Digitalisation of the banking sector has been a growing trend, and the banking sector offers online services to its clients. Digitalization includes new, advanced technology that allows the banking sector to change its model and business process. This digital practice helps the banking sector to improve its interaction with customers and manage its bank-office operation through effective technology (Kitsios, Giatsidis, and Kamariotou, 2021, p. 1). As per the opinion of Interviewee 20, the company this person follows the strategy of reducing the use of paper, which is a potential climate-resilient strategy. The technological development that fosters digitalisation in the banking sector is beneficial for reducing paper use by the financial sector. This means that the banking sector should take initiatives by stepping towards afforestation by reducing the use of paper, which is an impact of digitization.

Climate resilient strategies play a large role in the innovation process of financial organizations, and they impact the business's profitability. The trend of finance corporates is to adopt digital innovation to grow business profitability. Digital innovation is a strategic planning process enabling finance companies to operate their business sustainably. Cloud computing, AI, and blockchain technologies are significant innovations of finance corporations, and these technological implications improve the efficiency of the finance service. Digital innovation of financial corporations provides several opportunities, including climate resilience strategies in their business operations (Chen, Kumara and Sivakumar, 2021, p. 6). Traditional financial organizations conduct strategic policy that helps these organizations adopt new innovative strategies for their business. Microfinance institutions that are part of the finance corporations utilize blockchain technologies to develop digital investment, money sharing, and automatic saving programmes.

It means the profitability of the finance corporates is enhanced by following these innovative strategies, which facilitate them to offer more effective service to their customer. Technological change is the key factor of digitalisation, and it provides potential opportunities for the finance sector and accelerates its progress. Improvement in progress indicates higher business profitability, and the financial sector is also a progressive sector for developing its climate action plan. The rapid growth of digital technology has transformative potential in the context of climate resilience strategy within the finance sector. Blockchain is a beneficial factor for financial corporations as it plays an active role in developing the innovative concept of digital financing (Schulz and Feist, 2021, p. 2). Blockchain is defined as distributed ledger technology (DLT) and is used as a general-purpose tool to create decentralisation and secure applications within digital networking.

Innovation provides advanced guidance and effective solutions for the finance company so that they can initiate strategic planning on climate change. Digitalization is a

potentially innovative way for finance corporates as it helps this sector reduce operational costs. It is identified that the financial institution deploys a smaller workforce to operate its business, which impacts the reduction of operational costs. With the help of digitalisation, financial institutions can mitigate human error, indicating the effective service provided by the finance company. Regarding this, the number of clients of the finance company has increased to boost profitability. The Digitalisation of the finance sector is also effective in saving time, which means the finance sector can operate its business quickly (Schulz and Feist, 2021, p. 4). This indicates that the clients of the finance sector can get their required service quickly, which attracts them. Financial institutions also focus on meeting sustainability by introducing the digitalization process in their business.

The impact of climate change is largely connected with the development of performance in finance corporates. Financial institutions are also concerned with managing the risk factors of climate change, which enables finance companies to become responsive to the challenges related to the impact of climate change. The resilience of transaction risks impacts the real economy and is co-related with financial stability. The forecast of the natural disaster impacts the reduction of the value of the housing stock and the weakening of the household's balance sheet. Natural disasters impact the financial losses of bankers and insurers, reducing efficiency in leading the household (Batten, Sowerbutts, and Tanaka, 2020). The finance sector is largely involved in implementing its strategic action plan to address the risk factors due to climate resilience. This indicates that finance corporations can overcome the challenges created by climate change.

The profitability of the finance sector is largely connected with innovation as the innovation leads to providing effective service to the customers. As per the opinion of interviewee 5, the profitability of the finance corporates is increased by implementing the sustainable climate resilient strategy. Innovation leads to recognising the risk factors in the

financial organization, which means the financial sector can strengthen its strategy for managing the risk factors. Regarding this, the financial sector develops innovative products, such as focusing on green activity in the finance sector. Green activity is beneficial for finance corporates as it enables the finance sector to take initiatives in waste management. Green activity includes the financial sector's green financial policy; these policies help the financial sector improve its performance and address the vulnerability of climate change. Green financial policies are utilized as a tool that fosters the mitigation of carbon emissions and provides long-term financial stability (Lamperti *et al*. 2021, p. 3). Financial institutes generate economic profitability by implementing innovative climate action plans in this context.

The resilient strategies for climate change have been concerned with issues related to financial services and funding for financial companies. The development of infrastructures is popular in connection with mitigating the impact of climate change on the banking sector. Technological development has facilitated the transaction of financial services through financial transactions, automation processes, and transformation of information across the entire financial market of the world as well as the African banking sector (Kouladoum, Wirajing and Nchofoung, 2022, p. 1). It is identified that most African countries have successfully implemented digital technologies in the banking sector, especially in transferring money through mobile. Digitalization improves communication and connectivity through Internet banking, mobile banking and the Automated Teller Machine (ATM). The African financial system contributes to economic sustainability, and the banking sector of this country has introduced significant changes in this context.

Different banking corporations in Asia and Africa are trying to adopt climate-resilient sustainable solutions and integrate digital innovation with the changing dynamic of climate challenges. These approaches help mitigate the environmental impacts, drive long-term

resilience, and foster corporate growth. Focusing on innovations climate-benign helps firms build a competitive advantage and fulfil customer expectations (Falcke, Zobel and Comello, 2024, p. 406). Innovations in the banking sector due to climate change are rapidly increasing and affecting the market value day by day. Banking sectors also focus on adapting new techniques for combating environmental challenges and promoting sustainability. The banking sector's involvement is important in the climate change risk for managing innovative strategies for their operations. Adopting current innovations and strategies and practising them to help deal with climate-related issues can benefit the banking sector.

Sustainable solutions under climate resilience include practices and strategies that help reduce the emission of greenhouse gases, enhance renewable energy, and promote energy efficiency. Banking corporations translate their financing projects and cultivate supporting sustainable development, like sustainable agriculture, green infrastructure, and clean energy projects. By prioritizing these investments, banks help steer economic activities that support environmentally friendly projects while contributing towards a global effort to combat climate change. Innovation brings out the changes and is expected to play a good role in the process of decarbonization; the diffusion and development of technologies of low-carbon are generally too slow in several countries and sectors for stabilizing the changing phase of climate (Matos *et al*. 2022, p. 1). Innovation is a key driver in implementing new technology while balancing power in the banking sector to achieve business solutions.

Digital innovation, powered by advanced technologies such as the Internet of Things (IoT), artificial intelligence (AI), and blockchain, is a buzzword and a practical tool in enabling climate-resilient strategies. These technologies enhance the efficiency and impact of sustainable practices. For example, AI can analyze large datasets to identify new trends and predict climate-related risks, empowering banks to make informed decisions. Blockchain technology ensures accountability and transparency in sustainability reporting, verifying and

tracking the environmental impact of funded projects. IoT devices manage waste reduction, real-time resource monitoring, and energy use optimization. These technologies are not futuristic dreams but real solutions that banks use today to make a difference in climate change mitigation. The convergence of Digitalisation and sustainability is reshaping the finance landscape (George and Schillebeeckx, 2021, p. 107). Private and public financial institutions are actively experimenting with various digital toolboxes, emerging as key players in the digital sustainability space.

Fintech solutions and digital platforms are helping banks engage in revolutionising dynamics with stakeholders and clients. Sustainability is becoming the broader concept, including social equity and economic prosperity, while focusing on climate change measures and environmental protection. It counted them among the measures of sustainability goals (Puschmann, Hoffmann and Khmarskyi, 2020, p. 4). Digital financial and mobile banking services are focused on extending their reach towards the financial inclusion of the underserved and rural areas. The economic development of the areas also provides access toward the green initiative through access to financial resources. Digital tools also act as an efficient means of managing resources while reducing carbon footprints. They should also focus on the different traditional manufacturing activities and operations. Green economic development supports suitable practices and gives access to green initiatives. The different tools create a path for efficient management that helps reduce the carbon footprint in nature and implements climate-resilient solutions.

Implementing digital innovations and sustainable solutions that are climate-resilient plays a significant opportunity and is taking advantage of the innovation and growth of the banking sector. By aligning strategies under the goal of global sustainability, banks can easily attract environmentally conscious investors and enhance their reputation. These efforts lead the whole dynamic under the development of financial services and products, like

sustainability-linked loans and green bonds, which sustain the growing investment demand. Relationships between financial performance and ESG factors are well documented under the corporate finance system (Zioło, Szaruga, and Spoz, 2023, p. 5). Digital technology also provides organizations with strategic leverage that radically improves the organizational financial performance and ESG factor. It helps finance sector employees create new value for the organization that is environmentally friendly with the help of digitalisation. Transitioning towards climate-resilient practices demands capital investment and proper infrastructure, which will help initiate different projects.

Digital technology continues to spread across different domains of the banking sector, and banks have a responsibility to seek opportunities and participate in the digital race. Adhesiveness to environmental regulations includes some considerable expenses. Banks and different finance systems invest in technologies, which also help strain financial resources. Interviewee 3 states that climate-resilient captions contribute to innovation in the organization, which shows that innovative financing plays a major role in building climate resilience and preventing several climate risks. Supplement based on the reporting information of climate-related discloses the recommendation on the significant risks under which the company can easily expose its influence on the environment and its effect on different business performance while creating a company's value (Mysaka, Derun and Skliaruk, 2021, p. 25). The banking sector, including finance corporations, relies on implementing technological tools and initiatives to address the impact of climate change.

The themes struggle for the bank to adopt projects of finance green, develop financial products, and upgrade infrastructure, which require substantial funds. Climate change and its resilience influence the development of financial products and services. The intersection of sustainability and finance has garnered attention under the grapples of the global community while addressing environmental challenges (Addy *et al*. 2024, p. 760). Climate financing and

sustainability financing are designed to involve environmental and climate considerations. Climate resilience was the key factor and helped drive the development and growth of innovative financing solutions within the banking sector, specifically the financial corporate industry. Green finance fosters financial investment, strategies, and investment to foster environmental practice and reduce carbon emissions. Financial activities and services transform climate resilience by delivering financing solutions by the banking sector and their different investment loans and funding types.

Integrating climate change consciousness and consideration for encouraging climate resilience practices helps to contribute towards combating climate change. The sustainable supply chain of the functioning system merged strategy under the business paradigm, which aims to cultivate economic growth through social responsibility and environmental stewardship (Edunjobi, 2024, p. 1). Transitioning into a banking sector that is sustainable and digitally innovative requires a substantial investment in infrastructure and technology, as well as a cultural focus towards embracing a sustainability shift. Additionally, regulatory frameworks must evolve to support and incentivize these initiatives, ensuring banks are adequately equipped to effectively address environmental and climate problems. Integrating climate-resilient sustainable solutions and digital innovation is crucial for banking corporations in Asia and Africa to address environmental and climate challenges. This approach enhances corporate resilience and drives growth and innovation, positioning banks as key players in the global transition towards a more sustainable future.

Banks can also contribute to achieving climate goals while unlocking new avenues of the economic development process by fostering financial inclusion, investing in green projects, and leveraging advanced technologies. From platforms of carbon trading to green bonds and initiatives of blockchain-enabled transparency, Fintech helps shape the landscape of sustainability (Ugochukwu *et al*. 2024, p. 823). Innovation encouragement in financial

services and products addresses climate risks and creates new market opportunities. Developing products of green finance, like eco-friendly investment and green mortgage portfolios, which drive growth and attract a broad customer base. Investing in comprehensive training programs helps equip employees with important knowledge and skills. This phenomenon also fosters expertise in emerging technologies, sustainability practices, and environmental regulations. Digital services will be assessed as an effective method that helps enable and transform the banking sector and financial corporate industry through the cashless and integrated capacities of remote technology of financial services and transactions.

The "going green" concept is not the cheapest task for the customers as the products and services for the environment add a high cost in maintaining environmental sustainability. The banking sector can offer customers different "Green-Banking" products at no cost to the earth. Besides this, financial institutions can provide green banking products and services that incentivise green choices. Among green products, the banking sector provides "*Green Car Loans*" to customers; the lower interest rates for purchasing electric or lower rate of emission vehicles influence the customers to choose their environment-friendly activities. Introducing "*Green savings and bonds*", banking institutions allow individuals to invest in projects focusing on environment-friendly and challenging issues. By providing "*Green mortgages”*, the banking sector enhances people's capacity to purchase homes efficiently to cope with the challenging factors of climate change. Another important aspect of the banking sector that influences customers to adopt green environments is the "*Modernisation of Green Home Loans.*”

The climate resilience application under a corporate strategy helps create an imperative for changing the dynamic of sustainable growth of the banking sector in Africa and Asia. Digital platform adoption in Africa is to revolutionize and access the dynamic of financial services by allowing great economic empowerment and financial inclusion

(Nwokolo *et al*. 2023, p. 99). Integration of climate resilience helps present some particular challenges based on the financial and non-financial dynamic, as well as approaches that include diversified funding, transparent reporting, collaborative partnerships, advanced risk management, and employee training that can help mitigate challenges. By addressing climate risks and leveraging innovation opportunities, banking corporations easily achieve a norm of sustainable growth and directly contribute toward a global effort to combat climate change. Investment in technologies helps to improve finance organisation's performance by implementing a proper reporting of business performance.

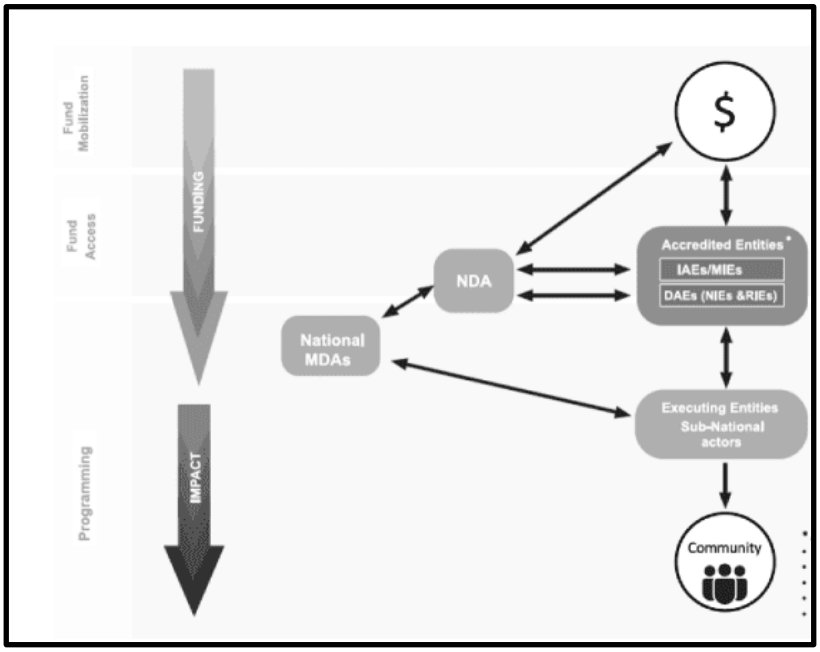

Figure 5.3.1: Flow of climate finance from MCFs to beneficiary countries(Source: Kalaidjian,and Robinson, 2022, p. 5)

It is evident through the findings that climate resilience is emerging as a crucial strategic planning issue in the finance sector, particularly in Asia and Africa. Various financial institutions, including MDBs and international banks such as AfDB and ADB, actively finance resilience to manage climate hazards and vulnerabilities. These institutions are primarily supported by the frameworks of the Green Climate Fund of the United Nations Framework Convention on Climate Change (UNFCCC), which has made a substantial

commitment to allocate significant financing towards adaptation initiatives and climate resilience. The fund's allocations, a key driver in this context, support country groups focusing on African countries, SIDS, and LDCs based on their climate vulnerability quartile. Within these groups, the African LDCs received nearly 18% of total financing, non-LDC and non-African SIDS received 10%, and other African countries received 14% (Kalaidjian and Robinson, 2022, p. 7). The use of CPRS policy enables financial institutions to develop strategies for climate resilience, underscoring their pivotal role in this domain.

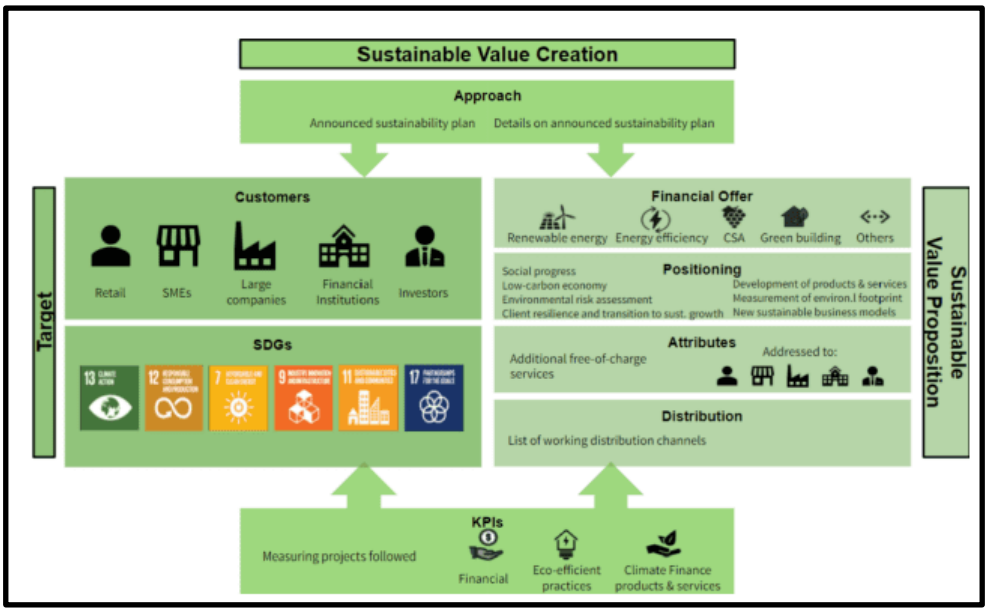

Figure 5.3.2: Transformation models of banking business towards the economy of climate-resilient(Source: Grijalvo and García-Wang, 2023, p. 6)

The study finds that the IFAD projects are supported by the MDBs, which aim to build climate resilience through an implementation strategy for addressing climate risks and fostering sustainable and economic development. The financial sector has shifted towards digitalisation, which helps mitigate the risk of environmental impact. Green financing is the major component of climate-resilient strategies that help foster business operations under sustainability. Green bonds also facilitate the process of financing and refinancing green projects, significantly contributing to the financial institution's sustainability efforts. The

financial sector is not considered among the environment-friendly landscapes. Still, financial institutions play a major role in making a good and profitable impact through efforts to reduce the effects of climate (Grijalva and García-Wang, 2023, p. 1). Climate change affects the economic and financial analysis of infrastructure projects in a way that could help achieve long-pursued but elusive goals, such as better maintenance and greener, more efficient design.

Green financing encompasses insurance, investments, and bonds that promote environmental sustainability and mitigate climate shocks. Financial institutions are also actively supporting the disposal and recycling of e-waste by providing financial assistance to producers. This alignment with a broad environmental goal promotes recycling and reduces waste. As per the Global Climate Risk Index 2021, India ranks seventh among the most vulnerable countries to climate change impact and has incurred losses of USD 69 billion in 2019 (Kadaba, Aithal and KRS, 2022, p. 62). This underscores the urgent need for financial institutions to continue promoting environmental sustainability and resilience. Importantly, climate-resilient strategies have also demonstrated their potential to drive innovation and profitability in financial institutions. Technologies like blockchain, AI, and cloud computing are transforming financial services, contributing to and enhancing the performance of sustainable businesses. Digital payments have gained progress in Asia and Africa, reducing reliance and promoting financial inclusion.

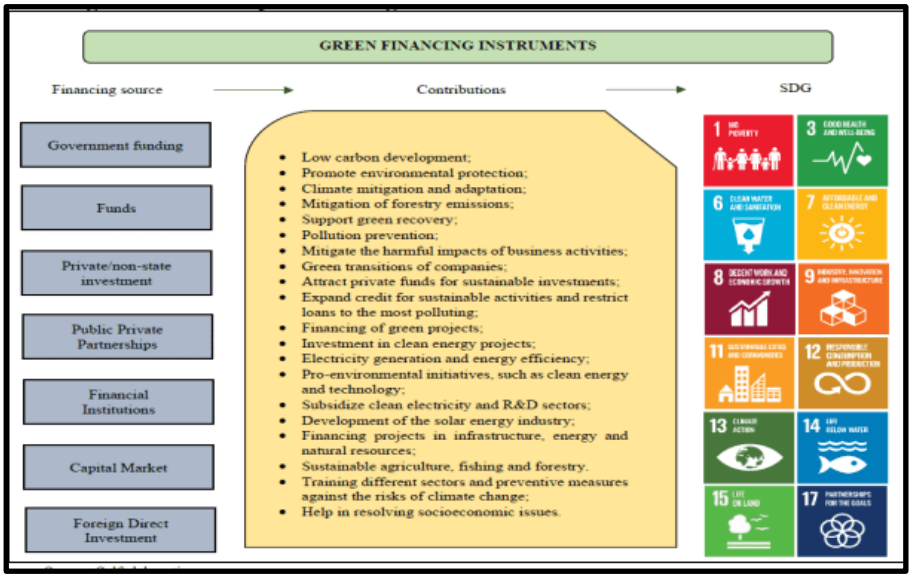

Figure 5.3.3: Financing sources and their contributions towards the SDGs factors(Source: Tavares, de Almeida Collaço, and Oliveira 2024, p, 456)

The financial sector focuses on digital transformation and climate resilience while leading towards a development process for accessing financial services and products. Implantation of the innovative process under the developing phase while supporting the enhancement of e-financial services and products. The new and innovative implementation is important in supporting climate risk and managing economic growth. The investment strategies and new landing model are designed to encourage the whole business to integrate the operation of climate resilience. Green financing is a facilitator that focuses on combatting environmental damages and threats while portraying its origin under the green economy concept (Tavares,de Almeida Collaço, and Oliveira 2024, p. 435). The banking sector also needs to constantly learn and use the information to develop new ideas that can positively impact the development and innovation procedures of the organization.

5.4 Chapter Summary

This chapter summarises all findings by focusing on the objective of themes and the interviewee's point of view. Data analysis is a crucial step that helps a researcher to discover

new outcomes through collected data. The findings and themes show that climate resilience development has become prevalent among banking agencies and financial institutions. Sustainable strategies play a leading role in innovation and financial performance. Besides that, climate-resilient strategies for the banking sector have a big role in financial companies. Climate-resilient sustainability strategies help the banking corporate sector of Africa and Asia innovate and grow. Integrating the process of climate resilience for embracing different digital innovations, promoting green financing, strategic planning, managing e-waste, and ESG mapping helps financial institutions enhance sustainability and profitability. These efforts address different climate risks and contribute to environmental sustainability and economic development.

CHAPTER 6: CONCLUSION

6.1 Conclusion

The pressing reality of climate change necessitates a transformative approach in the banking sectors of Asia and Africa. These regions face heightened vulnerability to climate-related risks, making it imperative for financial institutions to adopt robust climate-resilient sustainability strategies. This conclusion delves into how such strategies act as catalysts for growth and innovation, influencing financial operations, fostering sustainable business practices, and ultimately contributing to broader economic resilience and environmental stewardship. Climate resilience integration acts as the strategic planning for the financial institutions. This approach involves comprehensively evaluating climate vulnerabilities and implementing measures to mitigate associated risks. Financial institutions are increasingly recognising the importance of resilience financing. This includes leveraging international frameworks such as the Green Climate Fund under the UNFCCC, which allocates substantial funds towards climate adaptation and resilience projects. Profitability is based on something other than the climate resilience strategy that is less effective for addressing climate change.

Green financing is a cornerstone of climate-resilient strategies, enabling financial institutions to support sustainable business operations. This encompasses a range of financial instruments, including green bonds, green investments, and climate bonds, which are designed to fund environmentally sustainable projects. Green bonds, for instance, facilitate the financing of projects that reduce carbon footprints and enhance environmental sustainability. The proliferation of green finance initiatives is particularly notable in Asia and Africa. ASEAN countries have launched green recovery initiatives to mobilise sanitation, energy, and transportation investments through green financial instruments. These initiatives

promote environmental sustainability and drive economic growth by creating green jobs and fostering innovation in clean technologies.

Financial institutions are increasingly addressing the challenge of electronic waste. It influences the widespread use of electronic gadgets in the financial sector and generates significant e-waste, necessitating effective management and recycling strategies. Banks can contribute to reducing environmental impact by financially supporting producers in recycling efforts and promoting a circular economy. This responsibility aligns with broader sustainability goals, demonstrating the financial sector's commitment to environmental leadership. -The adaptation of the different ESG principles in the banking sector in Africa and Asia is growing exponentially as per CSR initiatives. These ESG factors help the bank create a positive environmental and social outcome. It also focuses on enhancing the reputation and attracting the sustainability culture of the financial sector. The financial institutions are taking leverage to enhance the efficiency of the environmental impact on their product and services.

Financial organisations must establish a bond with regulators and governments regarding adopting policies and incentives that can support the achievement of net-zero goals. The new initiatives help to bring out the digital payment system, as these initiatives reduce the need for physical money and contribute to lowering deforestation and carbon emissions. The new technology helps the bank transform their work, and chain transactions help the banking system take less time to complete the payment than the traditional baking procedure. Climate change affects the banks' credit risk and influences the banks' loans for the farmers. In theory, agriculture practices are a matter of concern in climate change. Due to climate change, their residential places are impacted by the climate change. As a result, the banks are also actively affected by the changes.

Banks must implement internal regulations and laws to ensure the company complies with the CSR protocols. Green Technological Innovation (GI) is utilised to reduce CO2 emissions and is well-known for boosting national revenues and lowering costs. The banking sector's implemented changes have raised the workforce's focus and interest level. A strong culture focused on sustainability within the organisation is needed to develop the banking sector's action plans. Climate risk management is important for maintaining stability in the financial dynamic. The financial supervisor also identified the potential sources of climate change that helped establish stability in the action plans. The innovative tools are also risk-based tools that help manage climate risks and ensure financial institutions prepare for overall resilience and sustainability. Sustainability is an important factor and needs to be prioritised in the banking sector to help attain future goals and meet market needs.

The financial sector can manage several climate risks, which are mainly linked with suitability and resilience; the banking sector can take initiatives and be involved in projects that address environmental degradation and climate change risks in Asia and Africa. The financial institution's critical role is to easily assess and secure funding for the transition project. These projects helped enhance resilience to climate change and contributed towards the broader aspect of the sustainable development process. The transition to sustainable energy mainly remains underscored by the environmental challenges posed by conventional energy practices, like ecological degradation, climate change and resource depletion. Investments in these types of technologies help to lead the organisation's financial performance by properly reporting the business performance. The sustainability performance of the banking system in the present data helps investors determine the risk premium rate of the bank.

Climate-resilient strategies in the banking systems of Asia and Africa focus on addressing strategic implementation, which helps them reach their economic development

process. Sustainable business operations, digital intervention, financial institutions, and green financing help drive economic growth and address environmental challenges. A green economy helps build the country's reliance and influences environmental changes, which leads the whole structure to better adaptation while accessing natural disasters and climate change. The green economy also helps challenge the root causes of environmental degradation and helps deal with the degradation under the measures of recycling, reuse, and waste treatment. This system has different and enormous health benefits that help reduce the infrastructure while maintaining general well-being and costs. Climate change mitigating planning is a procedure that helps reduce the emissions and other negative impacts of the organisation towards the environment.

The success of climate-resilient strategies in the financial sector is closely tied to the support of governmental policies and regulatory frameworks. Governments play a crucial role in creating an enabling environment for sustainable finance by providing incentives, setting standards, and ensuring compliance with environmental regulations. Policy support is essential for building confidence in the financial sector's ability to implement climate-resilient strategies. The continued integration of climate-resilient strategies into the banking sectors of Asia and Africa is imperative for sustainable development. Financial institutions must continue to innovate and adapt to the evolving landscape of climate risks and opportunities. This involves adopting new technologies and financial instruments and strengthening collaborations with governmental bodies, international organisations, and other stakeholders. The ongoing commitment to climate resilience will enhance the profitability and competitiveness of the financial sector and contribute to the broader goal of a sustainable and resilient global economy.

Climate-resilient sustainable strategies lead financial organisations to initiate innovative solutions to address the impact of climate change. Financial organisations develop

their infrastructure to become responsive to climate change and mitigate its impacts. In this context, financial organisations, especially the banking sector, implement sustainable strategies such as developing funds to manage waste services. Climate responsiveness is closely related to developing sustainable solutions for climate resilience. It indicates that the finance institutions of Asia and Africa generate awareness among the clients, staff, and customers about becoming responsible for mitigating the impact of climate change. Financial institutions, including the banking sector, have considered the importance of sustainability, and sustainability insists financial institutions adopt exclusive strategies for climate resilience. It is beneficial for the banking sector of Asia and Africa to develop their environment-sustainable planning for combating the adverse impact of climate change.

ESG factor is a potential tool for the financial organisation to initiate climate resilience action planning. ESG loans are a sustainable solution for financial corporations, and larger financial companies issue these types of loans. It indicates that financial organisations are actively concerned with maintaining environmental sustainability. Apart from that, it is noticed that financial solutions impact making sustainable decisions that influence investment activity and projects. The corporate service of financial solutions is influenced by climate resilience, so strategic action plans are implemented by the finance corporations to address the issue of climate change. This strategic action plan enables the finance corporation to support the changes included in becoming climate responsive. The climate crisis is the leading issue of this recent time, and every organisation across the globe is trying to combat it by developing a sustainable action plan.

Green financing has been identified as a sustainable, innovative solution for finance companies that help the finance sector promote green investment and financing. It is an opportunity to collaborate on green activity and the transition of financial solutions. It has been observed that green financing is the current trend that spreads awareness of climate

change and promotes better and sustainable climate resilience strategies. This sustainable practice plays a significant role in developing sustainable business practices that respond to the impact of climate change. It has been identified that green financing, which is a part of sustainable financing, has become popular in Africa. The value of sustainable financing has increased in Africa, indicating that this country has initiated potential efforts towards sustainable financing. The African banking sector is largely concerned with sustainable solutions to climate change that influence them to take sustainable solutions such as green financing.

CSR can be defined as a sustainable solution for financial companies, as the core focus of CSR is to maintain environmental sustainability. Based on this fact, corporate finance is strongly active in implementing effective CSR so that their concern towards the environment can be expressed. Effective CSR practices help organisations manage environmental sustainability by implementing energy efficiency and many more sustainable practices. It indicates the Asian and African banking sectors can initiate a CSR action plan to improve their operational area. CSR is a powerful climate action plan for mitigating the impact of climate change. In addition, the banking sector is involved in developing technological implementation to improve operational efficiency. Digitisation of banking services is a progressive approach to sustainable business practices as it helps this sector to empower its digital functional area. This indicates that the Asian and African banking sectors can develop competence and become responsible for environmental sustainability.

The private sector and banks implement strategies for mitigating the risk of climate change and environmental issues. This approach supports collaboration between both sectors through financing to combat climate risk factors. As per the analysis, it is identified that the finance corporate structure is the regulatory framework for operating their business. The potential problem connected with climate resilience is incorporating risk assessment and

climate resilience. Based on this, the regulatory framework of the financial companies has to work on leading challenges of climate change. It has been noticed that financial and non-financial factors play an effective role in implementing sustainable strategies for climate change. The short-term burden has been identified as a financial issue in the finance sector as short-term financial expenses create challenges for implementing climate action plans in the long term.

The inability of the finance resources has been considered the leading issue for the finance corporation to implement a sustainable strategy. Technological implementation and digitalisation are costly for the finance organisation, and not all organisations need more potential financial resources to implement climate-resilient action plans. Based on the analysis, it has been detected that financial inclusion is a significant aspect of a company's sustainable climate-resilient plan. Financial inclusion leads to the low cost of financial services, liquidity participation, and accessibility to effective financial services. It has been sorted out from analysis that inadequate financial resources affect financial inclusion among the clients and the customers. Lack of financial assistance in a finance corporation means it can not invest in technological implementation to adopt an innovative strategy for climate resilience. Disinflation is a recent trend globally and adversely impacts the financial stability of finance corporations.

Climate change adversely impacts the capital market and disrupts economic growth. The issue regarding flexibility in the capital market is another potential reason that prevents financial organisations from developing strategic planning that targets maintaining climate resilience. This indicates that the banking sector of Asia and Africa needs more potential capital, and this institution could face problems while adopting technological innovation that focuses on combating the impact of climate change. In addition, the low-cost availability of financial services is also an issue when initiating climate resilience strategies. Based on the

analysis, insufficient financial resources play an adverse role in developing a strategic action plan that includes the sustainable climate action plan.

Building capacity and staff development is also a leading factor for the financial corporation to implement sustainable planning in financial business as both factors. As per the analysis, staff development is necessary for adopting an innovative strategic action plan to address the issue of climate change. However, a lack of staff means a company's staff could not be accustomed to the changes initiated to mitigate the environmental issue. This indicates that there needs to be more staff development programmes in the banking sector of Asia and Africa to instigate the corporate borrowers' mindfulness of the issue of climate change. The banking sector needs to develop the staff and build the potential capacity. The strategic approach of climate resilience largely relies on the staff of any organisation. Hence, the development of sustainable climate-resilient plans needs to be improved by a lack of staff management.

Innovative financial solutions and climate-sustainable strategies are important in adopting innovation that transforms finance corporations. It has been found that financial corporations can explore the unexplored market, which is the development strategy for attracting customers and the public in the market. The finance corporations also develop new products that are much more suitable in the market. Innovative financial products largely attract clients and customers. As per this context, it can be stated that the finance sector, especially the banking sector of Asia and Africa, needs to provide their attention to developing sustainable and innovative products. The climate-resilient sustainable strategy is also implemented by the corporate finance department by developing new products that are environmentally friendly. It is a trend in the recent globe to develop environmentally sustainable products so that these products can address the global change issue and help all organisations make a significant step towards maintaining environmental sustainability.

The digitalisation of financial services is one of the core innovative sustainable solutions for finance corporations as it helps these sectors adopt more sustainable practices. The digitalisation of banking services has led to online banking, which is utilised on several digital platforms. Based on the analysis, it has been recognised that the online mode of banking facilitates customers' instant financial service as well as helps finance institutions mitigate the issue of climate change. It has been observed that digital banking has increased in Asia and Africa, which indicates the transformation of the banking sector with the help of innovative technological implementation. This means that financial institutes are adopting innovative solutions to maintain climate resilience, and it also facilitates an increase in the efficiency of the banking sector. Digitalisation can be an effective solution as it leads to reducing the use of paper, and as a result of it, afforestation is increased.

It can be concluded that a climate-resilient sustainable plan for a business is a concern of this recent time as it helps organisations develop their strategic action for addressing the impact of climate change. The banking sector of Asia and Africa is largely concerned with the impact of climate change, and based on it, the banking sector of these continents develops innovative solutions for combating the impact of climate change. Green financing is one of the innovative solutions for the banking sector that insists on green activities such as green investment, green bonds and many more. These sustainable practices help the banking sector develop its climate resilience action plan to mitigate environmental issues. Digitalisation that is supported by technology is another beneficial approach of the banking sector to combat climate change. Online banking has been introduced based on the effect of digitisation, and it has helped to transform the traditional method of banking in Asia and Africa. With the implementation of a digital payment mode, the use of paper has been reduced, and it has also been impactful for using the low-carbon strategy. Thus, a climate resilience strategy is a

powerful approach for financial institutions and the banking sector of Asia and Africa to achieve their sustainable business goal by mitigating the impact of climate change.

6.2 Linking with Objectives

The first objective is met in theme 1, which explores the strategic planning process for mitigating climate vulnerability. It was found that the MDB that encompasses ADB and AfDB has implemented strategic action plans on climate resilience. These banks are initiating green financing, and these banks are largely associated with the IFAD project. The implementation of green financing is such an effective and sustainable solution that Asian and African development banks can develop their permanence. 75% of countries have adopted NDCs that are included in the policy of climate change. Among these countries, 100% are African countries, and 92% are Asian countries.

The second objective has been met in Theme 2, and Theme 3innovations are interconnected with climate-centric sustainability. It has been found that green financing is the climate-centric sustainability strategy that is implemented by the ASEAN countries, and it is beneficial for reducing the use of energy and managing waste. In addition to that, it is found from theme threethat digitalisation is the innovative approach that is implemented by the banking sector of Asia and Africa. The population of digital payment has increased in Africa, indicating Africa has been explored in an innovative way. Apart from that, India, which is situated in Asia, is the leading country in terms of the large number of users of digital banking.

The third theme is met in themefive, which discusses the issues and challenges of incorporating the climate resilience strategy of Asian and African banking corporations. Inadequate financial resource is the leading cause of implementing climate-resilient sustainability within the finance corporation. The emission tax, which includes the carbon tax, is associated with the financial burden on the financial sector. It is found that Asia and

African countries have a low carbon tax, which is a short-term burden for such institutions. The short-term burden of the organisation is adversely impactful for implementing climate resilient strategy in the long term.

The fourth objective was met in Theme Four and Theme 6, which elaborated on sustainable financing that boosts innovation in the banking sector of Asia and Africa. Sustainable financing is an impactful approach to growing the business operation in the financial sector. It has been found that Africa intends largely towards sustainable financing, which has increased in this continent from 2016 to 2022. The global finance sector has introduced AI, which is significantly important in improving operational efficiency. It has been found that digital banking has increased across the world, and successful progress has been seen in Asia and Africa. The approach of digital banking helps to instantly meet the demands of customers as well as address the impact of climate resilience (Ogundipe, Odejide and Edunjobi, 2024, p. 23). Developing digital banking indicates that the banking sectors of Asia and Africa are concerned about climate change and are trying to maintain climate resilience by implementing strategic planning. The fifth objective has been met in the recommendation section and will be discussed later.

6.3 Limitations of the study

The present study delivered intuitive and first-hand information from the interviewees, who were kind and cooperative enough to participate and respond to the interview questions. The interview responses were majorly qualitative. Hence, it provides detailed and conceptual inputs and inferences for the study. However, this study has also faced certain limits to its fruitful exploration of the subject. For example, this study was conducted through a primary data collection method that employed interviewing 23 participants from different countries in the African and Asian regions, particularly the

regions' financial industry. The number of participants present in the sample population may not be entirely reflective of the situation of the financial industry itself.

There also lies the potential limit of the research findings, which means that this study can be biased or partially applicable to the African and Asian financial industries as a whole. This is possibly due to the responses being mostly seen to be related to the interviewees' own experiences and knowledge regarding the situations of climate action, climate resilience, strategic development of industry and corporation for climate change and other related features. Moreover, the findings were primary data, limiting the inclusion of secondary data in this regard. Additionally, this study recognised the lack of detailed information about the banking sector, particularly concerning climate action and climate change policies.

6.4 Future scope

This research study holds the purpose of being a contributing form of research literature for the progressive development of the Asian and African regions' financial industry in general and the banking sector in particular. This study intends to deliver on the purpose of research and development for the banking sectors and financial industry of Asia and Africa for a resilient and strategic approach to adopting and inculcating climate action for financing. This study intends to deliver upon the futuristic scope and purpose for supporting and being capable of providing literary and commendable assistance for research, development and implementation of climate action as a strategy for combating climate change.

This study would act as literature for different actors involved within Asia and Africa's financial industry and banking sector, including corporations, banks, financial institutions, investors, stakeholders, clients and customers of financial services, regulatory bodies, policymakers, and so on. The study intends to provide an overview of the climate change-affected financial industry and understand the importance of climate change in increasing more responsible climate action through financial and banking services. This study

has additional plans to contribute literature supporting research, progress, and decision-making for climate action strategies and recommendations in the Asian and African banking sectors.

6.5 Recommendations

Expand investment and financing towards climate resilient and sustainable projects

The increasing changes and challenging development of climate change have instigated the development of the financial industry to make climate action and climate-change-oriented financing and investments become one of the most significantly important strategies for financing. This can also be considered to be the case for Asian and African banking sectors and financial industries. For example, financial resource mobilisation and development-based financing are capable of increasing resilience to climate change in regions like Africa (Mikulewicz and Taylor, 2020, p. 5). Investments and financing capacity towards supporting resilience to climate change have become important for the Asian and African financial industry and banking sector.

The development of financing and investment capacities and opportunities for climate action and sustainability is gaining increased importance within different financial institutions and industries. The need for developing financial instruments and accessibility incentivising investment and financing for sustainable and low-carbon projects is in alignment with the endeavour to build climate action (Songwe, Stern and Bhattacharya, 2022, p. 11). Sustainable projects being incentivised and supported through increasing investment opportunity and financing capacity would only attract more financial support for the development of sustainable projects. Sustainable projects are capable of strengthening understanding and increasing investment and financing capacity for the sake of improving opportunities for climate action among banking sectors and involved financial institutions.

Focus on increasing mandatory ESG and sustainability-based project funding to promote climate action among clients

ESG and sustainability are closely associated with each other in terms of ensuring the development of a secure and effective form of respective development of climate action in the industry. ESG has become one of the most sought-after aspects for measuring climate action, and it also has a strong influence on investment decisions and is an integrating part of sustainable financing as well (Pentland and Gllavata, 2021). This makes it potentially recommendable to look into ESG as an important and even mandatory tool for improving the opportunity for the enhancement of better investment decisions that are closely associated with sustainability financing. ESG-oriented investments and regulations need to be improved, and transparency needs to be provided for better support implementation as a mandate for sustainability project adoptions and climate action.

The increasing importance of ESG in sustainable financing is becoming increasingly obvious for the issues and challenges that are closely associated with the development of better sustainability-focused projects and actions that could secure a better climate-sustainable future for developing economies such as Asia and Africa. The development of ESG and sustainability-driven development strategies for promoting investments of financial institutions to better improve the approach for increasing potential and investments for transition and major changes in response to climate action possible (Markovitz and Lacina, 2021). This kind of approach is commendable to become mandatory for supporting and encouraging the development of better financial decisions, such as investments and funding of projects and activities that would support efficient development for transitioning in support of climate action and its strategic integration for resilient development.

ESG and sustainability are some of the most significant metrics and intentions for the successful assurance of growth and expansion towards a better and climate-resilient future

that adheres to climate change problems that need to be tackled. ESG could encourage corporations to adopt the metric for better improvement in both societal impacts and subordinate financial benefits through their successful implementations within the organisational operations (Pérez *et al*. 2022). The potential recommendation of ESG to be made one of the mandatory metrics could encourage financial services clients such as companies and corporations to adopt this sustainability metric. This is done through an operational aspect within the organisation to increase the opportunity to gain better and more impactful climate action by securing financing for sustainability projects based on the metric of ESG.

Developing low-cost financing and funding solutions for affordable funding to climate action projects

Financing services and funding tools for improving the conditions of affordable funding of climate action projects is an extremely important strategic recommendation. Although the point below further discusses potential recommendable means for securing better financing capacity accessibility, this point looks into recommendable strategic financial instruments as financial services solutions. There is a diverse range of methods for ensuring that financial services are implemented as instruments for clients' climate action strategies. For example, financing instruments such as disaster risk, catalytic, and outcome-based instruments have the capacity to empower better innovative climate adaptation through financing solutions (Sivaprasad, Pande and Tan, 2024). There are other forms of financial services, such as pool investment funds and climate adaptation bonds that are focused on increasing affordability in funding and improving the awareness and investment empowerment for climate action and adaptability for a better sustainable future.

Financial and funding solutions for improvement for better accessibility to financially support effective successfulness in climate action are capable of improving the issue of

climate change vulnerability in poorer regions. There is a rising concern for poor countries in terms of being efficiently funded by developed economies in climate finance to overcome climate change problems (Fernandez, 2021). It is recommended that the strategy to improve the issues be focused on increasing affordability for funding through flexible means. Flexibility in regulations and measures for approving project funding for better development of climate finance accessibility and encouragement to higher implementation of climate change projects and activities.

Capacity for funding and delivering financial services that are capable of providing better access to funding for climate action projects would improve the level of financial inclusion. The Asian and African banking sectors and institutions involved in the financial industry providing financial inclusion through affordable funding are recommendable. Financial services such as green bonds have a way of extending the market space for investors by widening the base of investors and accessibility features for financing for borrowing parties (Stokel-Walker, 2022). Financial investments and financial services such as bonds and funding have the capacity identified as some of the affordable strategies that could be recommended for better financial inclusion.

Build accessibility to financing solutions for improving low-carbon transition adoption projects

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The increase in climate hazards and climate vulnerabilities has made it increasingly obvious for financial institutions and banking actors to implement financial actions to promote and economically support funding and financial services for climate action projects. Climate change-vulnerable regions such as Asia and Africa are impacted by the development of climate action projects that support green approaches to climate resilience. Mobilising capital from public sources could potentially assist through rapid economic growth, and capital mobilisation from private sources through local finance deployment incentivisation is

potentially suitable (McKinsey, 2023). Increasing climate finance through both domestic and international levels could also support effective accessibility to financing for low-carbon transition projects. Decreasing the gap for climate finance that is developed through, suppose, improvement of leverage ratios for blended financing of MDBs and development financial institutions is also suggested. These hold the capacity for improving the opportunity for accessibility to financial services that could sustainably support low-carbon transition projects.

Moreover, the development of funding could assist in increasing accessibility to funding and developing financing availability to support low-carbon projects. Transition to low-carbon projects and solutions for improving economies into carbon-intensive systems require necessitating flow of capital investment into these solutions, further supporting the implication of a cost-efficient manner for meeting the demands to finance low-carbon transition projects (Kabeyi and Olanrewaju, 2022, p. 25). These require to be supported through expanding accessibility of both the available capital and the potential capacity of funds to be readily available to support these projects. Multi-donor funding initiatives are capable of addressing the issue of climate finance gaps, and their necessary funding to capacitate financial institutions and financing services to be capable of helping emerging economies realise low-carbon transitions into readily financed projects (Maria and Macagno, 2022). Expanding the accessibility to financing solutions through funds and capital is capable of improving the situation for low-carbon adoption and transition projects that could be helpful to improve climate action and resilience in the strategic implementations against climate change.

Expand digital bank services for a faster digitalisation transition in the banking sector to support climate action.

The digitalisation of banking is definitely capable of influencing the increase in the number of transactions and expansion of digital channels. The development of better digitalisation of the banking sector holds the potential for the emergence of new forms of banks operating based on digital medium and transforming banking institution branches, which are all capable of changing the scenario of the banking sector through digitalisation (Balkan, 2021, p. 44). The development of newer platforms is associated with helping banking sectors improve their approach towards a better and accessible means to address climate action and the need to keep up with advancing technology at the same time. Branchless banks often include online banks, e-banks or virtual banks and are capable of providing financial and banking services to their customers through online platforms (Borges, Marine and Ibrahim, 2020, p. 124). The digitalisation of the banking sector could most recommend assisting the banking sectors in developing countries and economic regions through digital banks for wider, cost-efficient and sustainable banking services that would support accessibility through climate action.

Digital banking has become one of the most rapidly efficient means for securing the situation for better accessibility and enhancement of technologically empowered climate action in the banking sector itself. Digital banking is capable of improving banking services, and greeting acceptance for digital banking is capable of transforming conventional banking processes (Kitsios, Giatsidis and Kamariotou, 2021, p. 9). Digital banking and its connected influence on the digitised transition of the banking sector into improving accessibility and the potential for supporting climate action through its internal operations and systems becoming digitally empowered. Digital bank transition is recommended to boost the current situation of the banking sector towards a climate-resilient outcome.

Stronger carbon tax and regulatory measures for offsetting financial burden and supporting finance-based climate action

There are several approaches to the imposition of regulatory policies and mandates that could ensure better and financially bolstering methods for improving their operational activities and alleviate the financial pressures that could be caused by unsustainable practices. Carbon tax or carbon pricing acts as a regulatory measure for financial pricing against carbon emissions (Tsai, 2020, p. 4). Higher carbon tax rates could compel companies and organisations to adopt more sustainable and emission-efficient methods for the production and delivery of services as a means for reducing the financial strain that could come from these regulatory impositions.

The imposition of climate action-based regulations is recommendable for the institutions and sectors that are concerned with securing financial services. Regulatory environments for finance-related sectors are capable of supporting better promotion of considering climate risks (Aleksandrova, Kuhl and Malerba, 2024, p. 4). The development of regulatory measures and compulsory financial impositions such as carbon pricing and taxes are recommended to encourage financial services to be available to customers and clients. It is recommendable in the sense that these regulatory decisions within the banking sector and financial industry of Asia and Africa could improve the adoption of climate action and climate risk identification.

Increase e-waste and recycling regulations for banking sector-related climate action.

The banking sector has an important role in climate action and sustainability within the economies by financially supporting clients and customers of financial services to increase the adoption of climate action. This sector is also responsible for ensuring climate action and resilience to climate change through the development of internal activities and infrastructure based on regulations. Several countries are focused on the implementation of policies and regulations regarding recycling e-waste to reduce the negative impact on the environment(An and Mikhaylov, 2023, p. 175). This is recommendable, with waste

management regulations and innovations potentially maintaining competence among different regional banking sectors for waste management.

Green transformation and the imposition of regulatory measures to improve the banking sector and its internal systems are also recommendable. Green transformation of banking systems could be done through making environmentally-friendly infrastructure and buildings, waste management including e-waste, and attempts to encourage paperless banking, among other initiatives (Samueal and Singh, 2023, p. 7). These developmental aspects contribute to the banking sector improving itself by attempting to build a more climate change-conscious infrastructure for the organisation, and banking that is capable of following through the goals of climate action as well as being capable of providing financial support to the same cause recommendable.

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APPENDICES

Appendix 1: Coding for Thematic Analysis

(https://doi.org/10.1191/1478088706qp063oa)

Theme no.	***Code (keywords)***
1	Climate resilience (climate resilience programs, sustainability) Vulnerability (risks, disaster) Hazard management (climate risks, resilience, long-term sustainability building) Financial (investments, financing programs, repayment ability) Business operations (vulnerabilities impacted by climate vulnerability, business adaptations)
2	Green financing (climate resilience project lending, climate resilient project promotion, loan products) Waste reduction (reduce waste, avoidable travel reduction, energy efficiency, flexible facilities) ESG mapping (ESG/SDG financial inclusion, ESG reporting and mapping) Climate risk management (environmental sustainability risk management, hazard management) Sustainable (developmental rural community activity, green technology, water harvesting, agriculture) Business operation (financial inclusion, credit, supporting businesses)
3	Climate centric (climate-related services, sustainability)

	Resilient strategies (green financing, effective on climate change impact) Profitability (increased maintaining profit, sustainable resilience improvement) Innovation (IT, digital innovation, sustainable finance) Climate change (risk management climate change services, instigating innovation) Business performance (investing development, new products, loan, climate resilience, product development)
4	Climate resilient (sustainability, climate-based, climate-responsive, waste management) Sustainable solutions (important, positively impacts, ESG-based loans, green financing, CSR activities, new product design) Digital innovation (important, enabling climate sustainability, financing products, digital operations, digitizing internal process)
5	Financial resource challenges (short-term financial burden affecting long-term industry climate resilience, funding problems, resource unavailable, low-cost funds unavailable, affordable capital access) Non-financial resource challenges (knowledge, understanding, capacity building, company and client resistance, staff development, mindfulness, climate risk recognition)
6	Innovative financing solutions (unexplored market penetration, product development, blended financing) Climate resilient sustainability (climate issue addressing loans, sustainability financing) Financing (climate response funds, blended finance option, emission-based project funding, green bonds) Digitisation (Digital marketing, digital operation, digital payments)