

**THE IMPACT OF CONSUMER NATIONALITY AND AGE ON THEIR  
AWARENESS AND PERCEPTIONS OF IRISH BANKS INVOLVED IN  
CARBON EMISSION REDUCTION INITIATIVES**

Research dissertation presented in partial fulfilment of the requirements  
for the degree of  
**MSc in Accounting and Finance Management**

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**Date of submission: 08/01/2021**

## Candidate Declaration

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I certify that the dissertation entitled: 'THE IMPACT OF CONSUMER NATIONALITY AND AGE ON THEIR AWARENESS AND PERCEPTIONS OF IRISH BANKS INVOLVED IN CARBON EMISSION REDUCTION INITIATIVES', submitted for the degree of: **MSc in Accounting and Finance Management** is the result of the my own work and that where reference is made to the work of others, due acknowledgment is given.

Candidate signature:



Date: **08/01/2021**

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Date:

## **Dedication**

I dedicate my thesis to my parents and my younger brother who always supported me, whatever I want to achieve.

I also dedicate this work to my family and my best friend in Uruguay.

To all my friends in Dublin who encouraged me in such a remarkable year.

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## **Abstract**

Climate change, and carbon emissions as one of its causes are considered to be one of the major issues that companies must face today. Non-assessment of the negative impact of such a matter can, in time, jeopardize the continuity of businesses. This is not only because of the physical damage that they could generate but also due to the negative results that not acting towards climate change might have on customers of companies, leading to a loss of reputation that could deteriorate the company's market position.

The purpose of this study is to examine the impact that the adoption of strategies by Financial institutions in Ireland have had so far on their customers, to determine how aware the customers are in regards to these actions, and how their financial performance was affected by examining their variation from the London market of shares and volumes.

The findings revealed that people are aware of this global issue and that nationality of customers makes a difference with regard to their level of awareness of activities towards sustainability and carbon emission reductions being adopted by Irish Banks.

**Keywords:** climate change, carbon emissions, financial institutions, stakeholders, awareness, nationality, share value

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## **1. Introduction**

### **1.1 Overview**

Climate change is certainly one of the new greatest challenges companies must face to ensure their continuity. Companies have a critical role within sustainable development. Climate change and its effects and environmental risks are problems that existed for some time but it has worsened over the last years. The negative impact that climate change causes on business dates back a long time. Nonetheless, it has only recently been considered as a challenge for companies as it can affect their processes, costs and even reputation.

To classify a business as socially responsible, it must act in a manner that generates a positive impact on the society, rather than a neutral one. In a study conducted by Shih-Fang Lo and Her-Jiun Sheu (2007), when companies behave that way, they are meeting the definition of corporate social responsibility, a multidimensional concept who seeks to consider at the same time the stakeholders' interests, and social and environmental matters as per.

What is ethically questionable is that many times, businesses' decisions related to sustainability are only taken when economic penalties are put on them. A considerable amount of literature has been published on the steps to becoming green. These studies agreed that such a movement is not easy and that external factors like government and social pressures make it even harder. Snell and Schmitt (2012) illustrate this point on their research about the boundaries that electricity companies may face while implementing sustainable approaches. In recent years, financial punishment or penalties have been introduced for companies not complying with climate requirements. For this reason and because damage is already done to our planet, there will be a moment in the foreseeable future in which the costs of doing nothing will be greater than the costs of changing. However, Shih-Fang Lo and Her-Jiun Sheu stated in 2007 that the ethical behaviour of stakeholders has greatly improved and it has been proven by their focus in investing money in models of businesses which are more sustainable.

## **1.2 Research purpose**

The personal interest for looking at this specific issue stems from the author's interest in environmental issues and climate change coupled with an accounting and finance background. The seeks to examine how companies' ambitions to reduce their carbon footprint impact their performance with respect to consumer loyalty, and ultimately their performance, if undertaken on a large scale. Commentary among the media and society at large would suggest that companies ought to make a major effort to consider environmental issues in their strategies. Thus, companies should be able to create a favourable impact on the environment and at the same time, to add stakeholder's value and improve their financial performance.

Carbon emission can be measured through the carbon footprint and it is possible to reduce it individually but also at the level of businesses. There are different actions that can be taken by companies to reduce their carbon footprint. First, companies have to be aware of which and how the activities they carry out generate greenhouse gases (GHGs). Second, adhering to international protocols such as 'Kyoto Protocol' might help them to understand, quantify, manage and report greenhouse gas emissions. This Protocol provides some guides on how to develop monitoring mechanisms and to comply with emission commitments. After this, companies could develop an action plan based on their assessment of climate impact.

This dissertation will focus on the study of four Irish Banks that are working to cut their carbon emissions significantly by the year 2030. These banks have been selected because they all took a public stance on the need to cut GHGs since they are taking certain actions to do so. Firstly, signing the carbon emission reduction pledge and secondly disclosing such information on their annual reports.

The purpose of this research is to evaluate the effects of applying strategies to reduce carbon emissions from both financial and social points of view with the aim of providing indications and motivation for companies that are evaluating the merit of such strategies.

This research will also aim to study the impression and behaviour of banks' consumers by examining their awareness of banks' sustainability efforts and the potential impact thereof on their decision-making when choosing banking providers.

### 1.3 Significance of the study

This research seeks to give an additional point of view to the existing literature by way of providing an in depth analysis of companies who have adopted this approach. In a practical sense, the study aims to give positive motivation to companies who are deciding on whether or not to take actions to adopt a sustainable approach towards controlling carbon emission.

The Green Party in Ireland is looking to cut carbon emission by 7% every year until 2030 (The Green Party, 2020). If this was to come into effect it would mean a greater responsibility on all companies to reduce their carbon emission. This project would provide an insight into how companies are working to achieve this aim.

Certainly, Governments play a vital role in combating climate change but businesses have growing opportunities and responsibilities to make a change and, they can be carried out quicker than changes in Governments. The literature encapsulates this idea, for example Asif et al. (2011) found that there was a lack of international established standards available which guided corporate sustainability. Companies are positioned where the action has to be taken to make things happen and as Kashmartian et al. (2011) found, there is still a need for an incorporation of sustainability in the core of more business models.

There are a variety of reasons as to why companies are still reluctant to take sustainability into consideration in their strategies. To mention some of these reasons, firstly, sustainability is a relatively new approach and therefore is in continual transformation. This implies that the application of sustainability-oriented strategies occurs through trial and error and this may deter companies from adopting such approaches (Verma et al., 2018). Secondly, it is important for individuals and companies to be creative and innovative in order to tackle climate change. For example, Maletič et al. (2016) found that a lack of innovation may be affecting the tendency of companies to implement sustainable practices in the core of their businesses. Is the future in the hands of businesses? Hanelt et al. (2017, p. 489) points out that even though innovation is a desirable aspect for companies that want to incorporate sustainability into the core of their strategy “this is not the case in all firms”.

The existing literature shows that sustainability-oriented practices have started to be considered by companies and that the impact tends to be positive in the long term from

the financial point of view. This research aims to examine, for the banking industry in Ireland, how the adoption of measures to reducing carbon emission affect their financial position and how is being seen by its customers.

#### **1.4 Research objective**

The following are the objectives that the author plans to address through the research:

- To determine if the nationality of consumers impact on their knowledge on Irish Banks taking actions to tackle climate change.
- To determine if the nationality of consumers impact on their perception of the actions that Irish Companies are taking to face climate change.
- To establish what customers believe is the main reason for banks to commit with carbon emission reductions, according to their nationality.
- To analyse the data collected and to determine which would be the most important reason for consumers for changing their banking service provider and for changing their reputation' perception, according to their nationality.
- To establish if the age group of the consumers makes any difference on the objectives mentioned above.
- To design a conceptual framework that describes the relationship between primary and secondary data collected that gives information about the relationship between companies acting towards sustainability, disclosure of such activities, awareness and perception of stakeholders.

From the study the author seeks to give recommendations to firms which are evaluating on whether to invest in strategies to reduce their carbon emission or not.

#### **1.5 Structure of the study**

##### Chapter Two: Literature review

This chapter outlines the review of the existing literature regarding climate change, carbon emissions and the regulation pressuring governments and companies to committee with such an issue. It also gives an insight into carbon footprint and activities that can be adopted by companies in order to reduce their carbon footprint and consumers' perception and knowledge about climate change and its consequences.

Finally, this chapter reviews existing literature regarding financial impact on the companies that have decided to implement sustainable practices as a core part of their strategies.

### Chapter Three: Research Methodology

This chapter outlines the philosophical approach adopted and the approach used. It also describes the strategy that builds the research and the tools employed to gather the primary and secondary data. This chapter will also outline the process followed to gather and analyse the data collected. This chapter also presents a summary of the ethical issues presented in the collection of data.

### Chapter Four: Findings

This chapter outlines the findings from the primary research after getting the answers from the survey. The findings of the research explain the impact that carrying out activities to reduce carbon emission has had from a social and financial point of view.

### Chapter Five: Discussion

Once the findings are presented, the author will discuss and compare them with the literature reviewed in chapter two and with the secondary data analysed in chapter three. This chapter seeks to achieve the research' objectives applying the findings discussed in chapter four.

### Chapter Six: Recommendations and conclusions

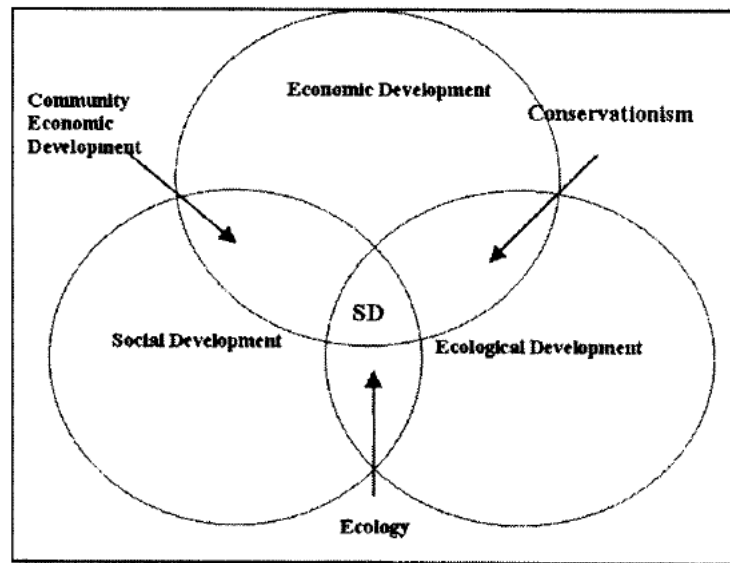
This chapter gives the recommendations and conclusions of this study and presents directions that can be used by future researchers in this area.

## 2. Literature Review

### 2.1 Introduction

In 1987, the notion of sustainable development had its first appearance and it was introduced by the United Nations (UN). According to Beheiry et al. (2006) such a concept looks at merging economic development and environmental protection.

To understand this concept, a clear idea was explained by Beheiry et al. (2006). The authors showed through the following diagram the meaning of sustainable development.



**Figure 1:** The three pillars of sustainability Beheiry et al.( 2006)

This author explains why the concept is also known as the ‘triple bottom line’ and means that when companies are determining their value they have to consider not just financial aspects but environmental and social impact that their activities produce in the community. Thus, a company will develop sustainability in the core of their businesses whenever the three elements are met at the same time.

A long time before, in 1979, as Kefalas (1979) mentioned in his study there are two factors which act as barriers to companies’ growth. First, limitations in relation to profitability and secondly, obstacles imposed by the environment and community in which the firm operates. At that time, the concept was already broad and encompassed five separate matters: “population, resources, pollution, technology and government regulation in response to public attitudes”. Indeed, the author also found that a company cannot be extended in the long term without the respect of the environment with which the firm

operates. Thus, the importance of caring for the environment has been researched for more than three decades.

Even though greenhouses gases are a natural and necessary process occurred in the atmosphere to keep the temperature, over the last century the action of human beings and corporations have been produced big and unnecessary amounts of gases into the atmosphere (Velasquez, 2013).

When regulations are settled most companies might be affected by them, but this impact it is higher for those that present high levels of carbon emissions. Public censure might be the outcome for businesses that do not adapt their strategies to the low- carbon economy requirements (Grobbel et al., 2004). The authors pointed out the importance of comparing the competitors' strategies for companies which levels of emissions are high because that could lead to re-adapt their strategies to do not loss market participation.

There is no doubt that the trend of sustainable business strategies is a positive one. However, integrating sustainability for the first time as a core part of a company's strategy involves the real risk that they might end up failing. Consumers and shareholders of a company will want to see that a company is committed to protecting the environment. The company will have to demonstrate for example that they are ready for a low carbon future. With encouragement and pressure on businesses, a revolution in sustainability will arise. This will benefit the company itself but also society and the planet upon on which we all depend.

Adding value for all stakeholders, not only for shareholders, but also for customers, employees, suppliers, society and environment is the first task that a company must undertake. Taking a broader view to serve society means to add value to a broad sector and, consider the existence of external factors that could impact the company. If done well, it would result in an appropriate treatment of shareholders at the same time. Meeting the mentioned above rely on 'Corporate social responsibility' which is a multidimensional concept who seeks to consider at the same time the stakeholders' interests, and social and environmental matters as per Shih-Fang Lo and Her-Jiun Sheu (2007).

Within Europe and due to its geographic location, Ireland is not in the group of countries most at risk to be affected by climate change but even though the country is actively acting to fight this issue. In 2016, Michalak (2016) reported that when looking at

the whole Europe, the agriculture will be the most affected industry by climate change and its negative effects.

In Ireland, there is a forum for sustainability called 'Business in the Community' that helps companies in their efforts to lower carbon emission rates. For the first time, in the year 2018, about 50 Irish companies have committed to such an effort (Business in the Community Ireland, 2018).

The proposed study aims to research the literature that already exists in relation to sustainable businesses, carbon emissions reduction and its social and financial impact. The author seeks to establish the impact that practices applied by four of the main Banks operating in Ireland to reduce carbon emission have on their financial performance and on their customers. Indeed, the author seeks to determine the awareness of these Irish Banks' customers in relation to their engagement with carbon emission reduction.

This chapter will examine different steps towards to reduce carbon emission in order to identify the factors that play an important part of the Irish Banks' decisions and the impact that such decisions have had on their financial performance and on their customers.

Having researched and analysed the existing literature concerning green strategies and its impacts on businesses performance, it is clear that more research is needed in order to provide further insides into the positive effects of adopting sustainable strategies.

## **2.2 Carbon emission and carbon footprint**

A concept that has to be mentioned when talking about climate change and sustainability is the footprint. Such a concept can be seen from an individual or a corporate point of view. For instance, Parker, (2007) stated that carbon emission is the most influential element in the increase of most carbon footprints.

Global warming is seen as a challenging issue facing companies and sustainability is considered an important approach to deal with such a matter which has considerably increased in recent years. The root causes of this problem are diverse. However, based on scientific evidence, carbon emission is the main cause for climate change and global warming (Velasquez, 2013). In order to comply with laws and regulations or to proactively fight against carbon emission, many companies have decided to take actions against global warming. Companies' responsibility is a key word at the moment.

Sustainability development was conceived in 1987 in the Brundtland Report of the United Nations (United Nations, 1987). Such a report described for the first time what a sustainable development involves and the path to achieve it. According to the Brundtland Report "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs." From a research carried out by Janicka (2016), some examples of environmental activities that a company could incorporate to run a business under the principles of Corporate Sustainable Development include: "reducing gas emissions, responsible waste and wastewater management, reducing consumption of energy and water".

According to Carrera-Gómez (2006) ecological footprint is a useful tool to measure sustainability and social impact and represents the ecologically productive area required to produce all consumed resources and assimilate the resulting waste. The authors explained that once the ecological footprint and the current capacity are calculated, the 'net footprint' can be determined as the difference between the above variables. If the result is a positive figure, it means that there is an inefficient use of resources.

In the research that Mateo-Mantecón et al. (2011) carried out through two port authorities located in Spain, the authors analysed their level of sustainability using two measures: Corporate Ecological Footprint (CEF) and Corporate Carbon Footprint (CCF). The relationship between both variables gives an effective way to find out both the influence of human beings on the world's ecosystem and the actions that can be taken to minimize this impact. CEF measures the ecological impact in hectares and from it the carbon footprint can be established using the carbon emission as a tool. On their study, the authors used the method of financial accounts to calculate the CEF-CCF. To quantify the eco efficiency that the port authorities under study meet, the authors used four different ratios; two of them measure the relationship between revenue and footprint.

A recent analysis by Lee and Pati (2012) suggests that companies should work towards incorporating a sustainability strategy which aims to "reduce waste and improve supply chain sustainability performance" as this helps to target reducing carbon footprint in a cost effective manner. Their study provides guidance into how a firms' economic performance is impacted by sustainability effort.

Back in the year 2012, the United Nations started to work on the Agenda 2030 which contained the Global Sustainable Development. Such agenda contains matters from the 17 sustainable developments goals until the framework available to meet the goals and

the tools to assess compliance with it (United Nations, 2015). Nowadays carbon emissions is a hot topic, high on the global agenda and it should be used as a basis for designing and implementing sustainable strategies. Today, companies from all over the world are more sensitive to environmental performance as part of their corporate social responsibility. Nonetheless, this trend is more visible in developing countries.

The Intergovernmental Panel on Climate Change has stated that we have up to 10 years to reduce carbon emissions to zero if we want to cut risk of extreme heat (Intergovernmental Panel on Climate Change, 2018). This statement places companies under great pressure to take action against global warming. Customers could decide not to buy from companies that are destroying the future of the planet. Investors might decide not to invest in those companies. If the point is to drive quick changes across businesses, it is necessary to get to a stage where the cost of doing nothing is greater than the cost of doing something.

The above issues are going to prompt a very big change in businesses, in order to survive companies will have to adapt quickly to changes. It is all about risks and challenges for companies.

### **2.3 Carbon emission reductions in Banks**

A huge challenge for companies that are trying to develop sustainability is that such a concept is rapidly changing. It looks like the main issues that need to be faced by going green are continuously.

The first step taken in the UK towards sustainability was to become a member of the 1997 Kyoto Protocol. Such a protocol introduced specific emission reduction purposes for the European Union (Lawton, 2016). By being part of such a framework, the UK has agreed to manage a reduction of gas emissions by 80 per cent from 1997 levels by 2050.

According to Pinkse (2005), the geographical area in which a company operates, seems to affect its engagement with the reduction of carbon emissions. Levels of commitment with such a matter are higher for companies located in Europe than for their subsidiaries or branches placed in Asia or North America. Pinkse concluded that not all the industries are pushed to reduce carbon emissions at the same level by policies issued by Governments, and energy industry is one of the most pushed by them to commit with this issue. The pressure that is prevalent in Europe has been also study by Mateo-Mantecón et al. (2011). They stated that during the first ten years of the 21<sup>st</sup> century,

Europe has created a list of companies that must comply with a fixed level of carbon emission. For those companies in which that volume is exceeded, as a punishment they are required to buy carbon emission credits in the market. This is also known as carbon offset and it means that companies could compensate their remaining emissions by finding an activity by another party that reduces emissions and purchasing its credits; according to Snell and Schmitt (2012) this is one of the major action taken with the aim of reducing the carbon intensity involves an improvement of fuel efficiency and diversification. Therefore, these studies have identified a strong pressure by the geographical area in which companies are located in relation to their tendency to engage with reduction of carbon emissions.

On the 22<sup>nd</sup> of April 2016 Ireland became one of the 197 countries that have signed the Paris Agreement. It focuses primarily on finding ways to avoid the increase of global temperature in more than 2 degrees Celsius in the coming 100 years (United Nations Framework Convention on Climate, 2015). In Ireland, 'The Leaders Group on Sustainability' has been established to provide support to Irish Companies to improve their sustainable practices and to make their transition to a low carbon economy easier. For that reason, the organization issued the Low Carbon Pledge which was signed by Irish companies. Such a pledge has two main purposes, to make Irish businesses to engage with carbon emission reduction by taking actions and to help business out to reach their reduction targets. According to the BITC (2020), there are a number of different practices that are being carried out by those firms related to the efficient use of water, electricity, transports, energy and waste to mention a few (Business in the Community Ireland, 2020).

'Scopes' were first introduced by the Kyoto Protocol and were used as foundations of many researches. For instance, Delmas et al. (2015) used the mentioned scopes to measure the GHG emissions for the companies object of their research. Carbon emissions are 'Scope 1' when they are emitted from sources directly owned or operated by the responsible firm and 'Scope 2' when they are resulting from purchased electricity, heat or steam. The last category is the Scope 3 which involves the emissions included in all other sources (Delmas et al., 2015).

Even though the pledge is a non-binding document, the companies pledging this agreement hereby acknowledges that they will record all Scope 1 and Scope 2 Carbon Emissions and that they will try markedly to reduce both Scopes. Companies are also

required to publish relevant information regarding their emissions and to review their annual outcomes with the objectives settled.

Batten et al. (2016) noted that banking industry is also affected by external regulations and such regulations aim to mitigate or avoid potential physical effects associated to climate change. One example of these policies is priced carbon taxes on Banks' operations. Going deeply in the sort of policies adopted by Governments, tax relief appears as one of the implemented by them. Among the literature, the following concept of green tax was adopted: a 'tax whose base is a physical unit (or a proxy of it) that has a proven negative impact on the environment' defined by the Organization for Economic Cooperation and Development. As Lawton (2016) stated on his research, such a tax is imposed both to impact on companies' behaviour and for creating an extra source of revenue for Governments.

Lately, institutions within the financial markets have commenced to be more aware of the importance of eco-friendly activities and the repercussion that such activities have on the potential investors (Janicka, 2016).

According to Batten et al. (2016), who studied the impact that climate change has had in European Central Banks, since the 197 members have engaged with the Paris Agreement in the year 2015, the Agreement has had a considerable impact on the financial system and the macro economy. The physical risks associated with climate change include extreme temperature change and increases in sea levels. These risks may lead to floods and droughts. The financial sector plays a crucial role in term of the activities they perform, especially those institutions that have a high level of emissions of CO<sub>2</sub> because such activities contribute directly to increase the physical risk related to global warming.

When consumers believe that Corporate Social Responsibility is a substance element of companies' strategies, their levels of loyalty to those firms is high. This fact is broadly covered within the literature and was the starting point for Beneke et al. (2012) to research the relationship between CSR and consumer loyalty in the banking industry. Overall, and in contrast to earlier findings, their study found that the adoption of CSR activities by banks do not affect the opinion of their customers about them. However, the authors highlighted that race affects customers of banks' attitudes and behaviours. Black people presented the highest level of awareness of CSR activities than other race groups and their level of loyalty is high when they are aware of those activities. Gender was also analysed and their research pointed out that attitudes and behaviours are more

likely to change for men than women when they are aware of the CSR activities carried out by banks. Thus, Beneke et al. (2012) concluded that with the objective of having an impact on customers, banks should orient their 'CSR activities with both their target market and their products and services' to improve their loyalty. The authors suggest that to impart awareness, banks have to focus on channels of communicating their CSR activities but do not make it sound as a just marketing strategy which is also crucial if they want to succeed with word-of-mouth marketing.

A lack of trust in banks was one of the findings from a study carried out by Patterson and McEachern (2018). Some of the consumers interviewed in their research, agreed that banking with ethical institutions leads to a sense of having made a contribution to their community. Their study supports the notion not only that customers appreciate banks that behave ethically, but that loyalty and positive word-of-mouth marketing are considered as differentiators within the industry.

According to Bhat et al. (2018) banks had to adapt their business' strategies to keep their customers satisfied in a market with a high number of competitors. The authors researched on the influence that Customer Knowledge Management (CKM) has as a tool on this sort of industry. As noted by Bhat et al. (2018) the relationship built with customers has to be controlled periodically by banks to determine if customer behaviours remained the same. This is crucial for the financial institutions since allows them to maintain the perception that their customers have about them, and to build loyalty and improve the reputation.

#### **2.4 The social impact**

Sulkowski and White (2009) researched Corporate Social Responsibility practices and disclosures and examined if such practices are affected by the financial and environmental performance that a firm aims to reach. Their results show that companies' decisions in this matter are more affected by the type of the management style rather than for financial or environmental objectives.

##### *Nationality*

Another study that discusses the impact of different variables that may affect carbon emissions disclosure was carried out by Luo et al. (2010). The authors studied in which way independent variables such as social, market, economic and regulatory pressure impact on the likelihood of public disclosure of carbon information by largest

companies. This research concludes that bigger companies are affected more by social pressure to disclose their carbon emissions. However, they did not find evidence to indicate that the market is pressuring the companies on this matter. Thus, it may be the case that what matters most for firms is to develop transparency on this issue so as to enhance society's perception of them. In the sample employed by Luo et al., only one Irish company was included. As such further research in the Irish context may reveal further insight in this regard.

The influence of social and political pressures was also researched by Bu et al. (2016) who analysed how globalization impacts climate change. Their findings show that there is a positive relationship between the levels of carbon emissions and globalization from a social, economic and political point of view.

The social pressure is also high, and according to Raith and Siebold (2018), a population's appreciation of climate change, economic and social issues increasingly pressured the United Nations who had to include on its program until the year 2030 this three dimensional problem.

Eccles et al. (2014) found that those companies that do not attach to sustainable business models are considering social and environmental elements as aspects that the company has not under control.

Smith et al. (2012) review the literature from the period and found little evidence of the social aspect related to climate change. These authors particularly studied the social process of resilience to climate change. Their findings show that when individuals do not feel strongly connected with a group, the more likely that these people will look for information about 'the impact of local climate change'. On the other hand, those who feel strongly part of a social group or organization agreed that they have access to a broad range of information to build their opinion and beliefs about climate change. According to Smith et al. (2012) people who feel deeply attached to an individual and familiar identity believe that have more to lose due to the negative impact of climate change; therefore they would be interested in dedicating time and resources to gather information about climate change and their possible impacts. An interesting outcome of their research is that when people use natural resources (for instance a local forest) individuals would be more aware of the harm that climate change could make to this resource and hence they find themselves more motivated to change their behaviour to avoid or to be ready to potential damages caused by climate change.

Further research found a positive relationship between awareness of global warming and age and education was carried out by (Kvaløy et al., 2012). The authors studied this level of awareness of people across the world, including 47 countries. However, Ireland is not among these countries. Worldwide, global warming does not appear to be seen as the more alarming environmental hazard. One of the most unexpectedly findings of these authors was that people that live in countries regularly affected by natural disasters (usually developing countries) are less worried about global warming, which it can be due to a lack of sources of information and lower levels of education. Overall, awareness of this environmental issue is equally distributed among countries with large and low carbon emissions.

There are relatively few historical studies in the area of awareness of climate change from a worldwide perspective. Even though, some authors have somehow researched on this area. According to Lee et al. (2015) the developed world is the one that presents the highest level of awareness of this issue. On the other hand, a large number of people from developing countries agreed that have never heard of climate change. These authors combined nationality with other demographic variables such as gender, age or education and, their findings show that to encourage people to face and avoid the consequences of climate change, individuals must be educated to understand the potential risks to which they are exposed to.

### *Age/ Generation*

According to Zaczekiewicz (2019) Generation Z and Millennials must be in the focus of companies since they are the group of people that appear as the one that is changing personal attitudes towards climate change. In order to address sustainability, youths seems to make their purchase decisions choosing those goods and services that produce as less harm as possible to the environment. The author researched on the textile industry and mentioned that in the CGS's 2019 Retail and Sustainability Survey, they found out that consumers see sustainability as a key requirement that has to be met by brands.

Van Beek (2015) also highlights the need to consider millennials on the core businesses. When companies do not consider sustainability in their strategies, their public reputation is in jeopardy of being affected due to negative perceptions from people against climate change (Lash and Wellington, 2007). According to the authors, carbon emission is one of the main issues that might be addressed when firms are designing

their climate strategies; starting with quantifying the carbon footprint and continuing with identifying the risks and opportunities associated to their emissions with the aim of improve the competitiveness.

A recent study by Besel et al. (2017) have also found that in general, the young adults or millennials agreed that climate change is occurring at the moment and they are aware of its potential risks for the human being.

According to Michele Nestor who is the president of Nestor Resources Inc., based in the Greater Pittsburgh area in the United States, Generation Z expects actions towards sustainability within firms and they are generally attracted to professions that could provide rewards to the environment. Therefore, businesses should design their strategies based on their needs and expectations.

### *Social Classes*

Demographic characteristics of population do have an impact on how people perceive climate change and how behave as a consumer to face it. The study by Wells et al. (2011) offers a comprehensive analysis of the incident of sociodemographic variables using a measure called 'General Environmental Responsiveness (GER)'. The result of their study shows that the levels of responsibility with climate change as consumers depends on the sex and age of the people. From the gender point of view, women' responsiveness to environmental issues is higher and; according to the age group and in contrast to earlier findings, people older than 65 years appears to be the more aware of their responsibility with climate change as consumers. These authors support the notion that education does impact on consumers' behaviour about climate change, however and opposite to the literature they found that consumers of all social classes are somehow aware of their behave as consumers regarding climate change. Another finding that supports the current literature is about knowledge, since Wells et al. (2011) stated that a lack of information about the potential negative impact of their behaviour as consumers might be a reason for them to not be aware of their environmental responsiveness.

Householders' behaviours and carbon emissions are variables strongly related (Wells et al., 2011). As noted by Wells et al. (2011) aspects such demographic location, values, knowledge and emotions for instance impact on people' proclivity toward environmental-sustainable attitudes. With the aim of determine the effect of demographic variables on the participants' behaviours, attitudes and beliefs about their

consumption decisions and the impact on climate change these authors used a survey. They have been able to show that there is a demographic influence; however it is not always significant. Surveys such as the one conducted by Wells et al. (2011) have shown that consumers agree with the idea of a collective responsibility when facing issues as climate change.

In the same vein, Pearson and Schuldt (2018) in their research studied climate change as a social issue. According to the authors data from several studies suggest that in relation to gender, females are more careless about climate change than the males.

To determine the effects of demographic characteristics on the environmental perception and knowledge, O'Connor et al. (1999) compared what people believe from a gender point of view. Particularly, the authors found that the more the people are aware of the risks associated to climate change, the more they consider themselves to know about it, the more likely is that they will be inclined to face and try to mitigate environmental issues. They also pointed out that women are more prone to act voluntarily environmental friendly such as choosing electric vehicles or making their homes more energy efficient.

As mentioned before, much of the literature emphasises the relationship between access to information and awareness of climate change and its potential impacts. Barkemeyer et al. (2017) analysed newspapers from 41 countries in the year 2008 and found that climate change was widely covered by the media, however the impact of such information was overshadowed by other political and economic events occurred at this time. Otieno et al. (2014) studied how the style of information proportionated to individuals can impact on different ways. Their findings show that when this public information has a sensational style raises more awareness of climate change than if it is neutral and also leads to negative thoughts and high perception of its risk. Regarding to channels of disclosure of climate change, Wagner and Payne, (2017) examined this topic in newspapers from Ireland and how the issue was covered by three of the main media companies in the country. Their findings showed that since the Kyoto Protocol was adopted in 1997, newspapers started to disclosure information about climate change and this trend continued until 2009 since when started to decrease but reaching some peaks in between due to 'the annual international climate conferences and the publication of influential scientific reports'. According to these authors, Irish newspapers are not including on their publications the perception of a big sector of the society.

As the global focus on sustainability intensifies, businesses are facing a growing array of new restrictions and regulations on the materials they use, the products they produce, the safety of their facilities, and other aspects of their operations. These restrictions, both voluntary and involuntary, are coming from a variety of industry initiatives and governmental and nongovernmental organizations as well as consumers.

Hammami et al. (2018) have highlighted that customer' environmental awareness leads to improvements in environmental performance of companies. By drawing on the concept of carbon emissions as the elements that affect the environmental performance of a product or service, these authors have been stated that when companies are looking for improving their profitability, they must not only focus on their product or services prices, but also on their public environmental image.

## **2.5 The financial impact**

In spite of the external pressures, many companies have begun to focus and going beyond legal compliance because they believe that it can bring into their business financial benefits such as product innovation, reduction in costs, and improved quality of products and services.

The financial impact that sustainable practices have on businesses has been widely discussed and the object of many researches. Many researchers have found that the financial impact depends on the period of time considered to analyse such an impact, and results are different in the short and long term.

The consensus in the reviewed literature, is that the result of sustainability applied on businesses not only helps to preserve, but also generates an economic benefit to the company, thus considering it as a viable model of business. For example, Gómez-Bezares et al. 2017, stated that implementing a sustainable development strategy can lead to an improvement in the financial performance. Indeed, it was found by Eccles et al. (2014) that a positive impact of a sustainable approach is that a company which applies such a model will be able to attract employees with better skills and knowledge, evades problems with the society and remain more competitive as a result of having the above social considerations.

Several studies supported the idea of a positive relationship between environmental and financial performance. For instance in 2007, a study about corporate sustainability and how it impacts on the value of a company was carried out by Shih-Fang Lo and Her-Jiun

Sheu (2007). Big corporations from the non-financial sector were analysed and the findings show that businesses that incorporate sustainability as a core part of their strategies are being rewarded for that in the sense that the stakeholders perceive a higher market value. Therefore, ethical behaviour in businesses is well valued by stakeholders including potential investors. Mateo-Mantecón et al. (2011) determined and analysed some indicators over two different Port Authorities in Spain. They used four ratios to determine how eco efficient the objects of study were. Two of the indicators which take under consideration revenue and net footprint indicate that the bigger the indicator, the more efficient the company is. In the same year, a study carried out by Kashmartian et al. (2011) concluded that those companies who are able to include environmental sustainability as vital element of their corporate business strategy will go forward to become leaders in the market. Ameer and Othman (2012) evaluated and compared the performance of companies included in the list of the Top 100 sustainable companies and those not included in such a list. Their findings and statistics show that firms which include sustainable practices in the core of businesses have a positive impact on financial performance. Measurements such as return on assets, profit before taxation, and cash flow from operations can be used to determine such a beneficial impact according to these authors. The fact that sustainability impact positively on the value that stakeholders see on companies was also study by Singal (2014) who carried out research in the hospitality industry and found out that customers perceive a stronger positive reputation, especially those with green inclinations. The authors also affirmed that there is a positive relationship between credit ratings and environmental performance, consequently between financial and environmental performance. Lee and Pati (2012) found that the more intention and achievement of sustainability in a firm, leads to an improvement of economic performance and position in relation to competitors. To meet this, it is also required that the decision makers in a company, have a social and environmental focus. In a later paper Albertini (2013) used a meta-analysis to determine the relationship between corporate environmental management and corporate performance. This research had as a hypothesis that this link is positive. Even though there are some moderators that impact on the magnitude of this relationship, this study found that both variables are positively related. Further evidence for a positive effect of sustainable practices on firms' financial performance was provided by Delmas et al. (2015) who studied the relation between environmental and financial performance in a high environmental regulation context; finding that a development in environmental performance provokes a smaller return of assets ratio. Their results show that even under

non high regulated environments, businesses obtain financial benefits from reducing their carbon emissions because the market sees long-term value in them. A study by Maletič et al. (2016) also found that companies can positively benefit from employing “sustainability-oriented innovation practices”. They found that the two major factors that affect decision making in terms of sustainability are the industry in which the company is involved and also the people who make the decisions. Likewise, Beheiry et al. (2006) reported, the quality or sort of people that are part of the top levels and in charge of planning is also a factor that impacts on the engagement of a firm with sustainability. To overcome this issue, having an independent board of directors and with few members is a recommendation made by Rehbein (2003) which could neutralise the limitation mentioned before. According to Busch et al. (2020) who carried out research on carbon emissions in companies and its impact on their financial performance, the stronger impact of regulations on climate change assessment, the more efficient the investors become in terms of their investments. The reason is that the authors found evidence to prove that high levels of carbon emission impact negatively on financial performances but only for companies operating out of the European Union Emissions Trading System (EU ETS).

The results summarized above suggest corporate carbon performance may be negatively linked to short-term financial performance, and positively linked to long-term financial performance. This is also a conclusion reached by Delmas et al. (2015).

The banking industry can be financially affected by the effects of carbon emissions. For example and according to Batten et al. (2016) when Banks lend money to help fund and finance to build establishments in areas vulnerable to floods are exposed to suffer a negative financial impact in the case that such floods eventually occur. The occurrence of natural disasters will impact the financial performance of Banks. When householders are impacted by natural disasters, their capacity to re-pay loans to the bank is affected. Thus, is also negatively affected the likelihood of banks to get the borrowed money back from these affected people. Batten et al. (2016) also reported that even natural phenomenon occurring and affecting Banks beyond Europe could damage the financial performance of European Banks when there are economic disruptions such as reductions in tax revenues that might increase the States default risk.

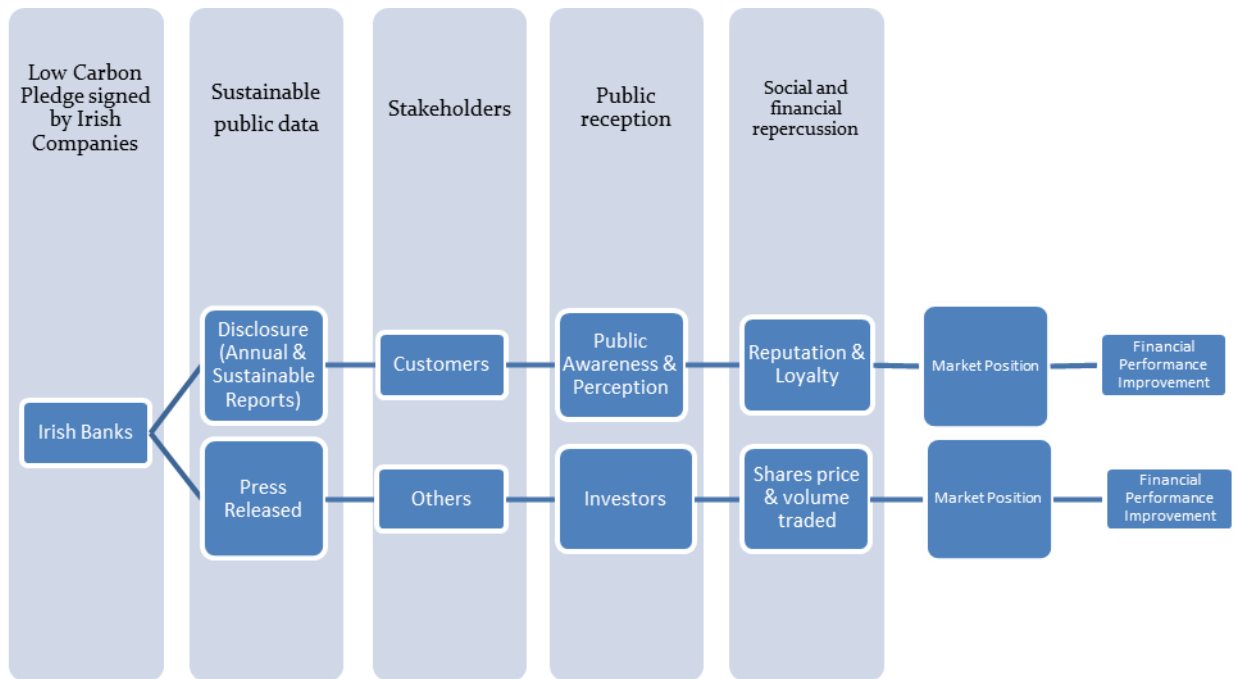
Callado-Muñoz and Utrero-González, (2011) studied the effects of being socially responsible on the banking industry in Spain. The authors examined the impact that

having social participation on the environment with which the Banks operates as part of their CSR activities. They found that customers select their banking service provider, not only considering the cost they will have to face and the quality of the service, but also taking into account the participation of such institutions with the society. Callado-Muñoz and Utrero-González, (2011) concludes that this leads to improve their position in the market and therefore consequently that will boost up their financial performance.

A worldwide study on financial institutions was carried out by Hoje et al. (2015) which measured how environmental costs affect the financial performance of the banking industry. The authors demonstrated through testing formulated hypotheses that a reduction of environmental costs helps to build banks' reputations. This facilitates them to hire qualified staff and therefore, to improve their productivity which all together will have a positive repercussion for their financial performance. They point out that this positive relationship between reduction of environmental costs and impact on financial performance is stronger in Europe and North America. This finding was related to the effect of differences on global individual perceptions of climate change as an issue. This empirical examination of financial institutions reducing environmental costs by Hoje et al. (2015) showed that when such costs decrease, the financial performance of financial institutions improve in the short term in 'well-developed countries' but it takes longer in 'less-developed countries'.

## **2.6 Conceptual Framework**

The following diagram represents a conceptual framework originated from the literature reviewed. The author used the model to analyse the outcomes and to find the relationship between the variables of the process. The diagram shows how and in which order the collecting of data was conducted. Surveys were conducted to gather the primary data.



**Figure 2:** Conceptual Framework

The conceptual framework can be explained starting from climate change as the starting point, which according to the literature, is caused mainly by carbon emissions. In relation to the pledge signed by Irish companies in which they engaged to reduce their carbon emissions, primary data was collected using a survey to establish the level of awareness of the participants focusing on the results for different groups of age and nationality. Then, also from the survey, data in relation to the awareness of people of different nationality and age groups about the sustainable practices adopted by Irish Banks to reduce carbon emissions was collected; indeed, to gather data about their awareness about the signed pledge by the Banks from which the participants are clients of. Then, it is expected by the author that both awareness and perception have a positive impact on reputation and loyalty which consequently leads to an improvement in the financial position of the companies.

Dates of news releases published on the official websites of those Banks were gathered. Also, secondary data was collected from the London Stock Exchange such as volume and price of the shares for the years 2018 and 2019 for AIB Bank and Bank of Ireland since signing the pledge to reduce their carbon emissions. Thus, an examination of the variation of such financial data was done to determine if the releases of sustainable data

by the institutions lead to changes on volume and share prices traded, which after the literature is reviewed, it is expected that this is what will be found.

The above diagram leads to the questions of this research:

*Question 1-* How much do customers of banks believe they are informed in relation to the actions that Irish Banks are taking to tackle climate change by nationality/ age group?

*Question 2-* How much do customers of banks believe that Irish Companies are taking real actions to fight climate change by nationality/ age group?

*Question 3-* Which reason to commit to carbon emissions reductions do customers of banks believes is the most important by nationality/ age group?

*Question 4-* What do customers of banks believe is the most important reason for changing their banking service provider by nationality/ age group?

*Question 5-* How do customers of banks believe that reputation of banks is affected by their level of engagement with sustainability by nationality/ age group?

Following the research questions, the hypotheses for this research were developed:

*Hypothesis 1 (H<sub>1o</sub>):* There will be no difference in a bank's customers awareness about actions taken by Irish Banks in order to reduce carbon emissions based on the participants' nationality and age group.

*Alternative hypothesis 1 (H<sub>1A</sub>):* There will be difference in a bank's customers awareness about actions taken by Irish Banks in order to reduce carbon emissions based on the participants' nationality and age group.

*Hypothesis 2 (H<sub>2o</sub>):* There will be no difference in a bank's customers perceptions that Irish Companies are taking real actions to fight climate change based on the participants' nationality and age group.

*Alternative hypothesis 2 (H<sub>2A</sub>):* There will be difference in a bank's customers perceptions that Irish Companies are taking real actions to fight climate change based on the participants' nationality and age group.

*Hypothesis 3 (H<sub>3o</sub>):* There will be no difference in a bank's customers perceptions of the main reason for a bank to commit with carbon emission reductions based on the participants' nationality and age group.

*Alternative hypothesis 3 (H<sub>3A</sub>):* There will be difference in a bank's customers perceptions of the main reason for a bank to commit with carbon emission reductions based on the participants' nationality and age group.

*Hypothesis 4 (H<sub>4o</sub>):* There will be no difference in a bank's customers perceptions of the main reason for changing the banking service provider based on the participants' nationality and age group.

*Alternative hypothesis 4 (H<sub>4A</sub>):* There will be difference in a bank's customers perceptions of the main reason for changing the banking service provider based on the participants' nationality and age group.

*Hypothesis 5 (H<sub>5o</sub>):* There will be no difference in a bank's customers perceptions that the reputation of banks is affected by their level of engagement with sustainability based on the participants' nationality and age group.

*Alternative hypothesis 5 (H<sub>5A</sub>):* There will be difference in a bank's customers perceptions that the reputation of banks is affected by their level of engagement with sustainability based on the participants' nationality and age group.

## **2.7 Conclusion**

Climate change and carbon emissions are broadly covered by the literature which has had assessed their impact on businesses from both social and financial points of views. Assessing stakeholders' needs and values is a crucial challenge that worldwide companies must face.

Financial Institutions are taking part on sustainable practices to reduce their carbon emissions and there is a consensus among different authors that incorporating sustainable practices in to the core of their business models reduce their exposure to physical damage but also that this will also lead to an improvement of their financial performance.

Overall, the researches reviewed in this chapter covered the relationships between implementing sustainability strategies by companies and its effect on awareness and perceptions of stakeholder.

### **3. Methodology and Research Design**

#### **3.1 Overview**

This chapter will describe the research methodology and the methods adopted in this research. It will also explain the reason why these methods were chosen to conduct the research.

The nature of this research relies on the foundations of a mixture of research methods, and throughout this chapter it will be explain the philosophical approach and processes that were conducted for this research to analyse the data collected.

The author executed a study of four Irish Banks that have pledged to cut their carbon emissions significantly by 2030 and the financial impact of such a decision. In this regard, this research has its foundation in the positive philosophy. The author considers that this is the most appropriate paradigm since a quantitative approach, namely descriptive and inferential statistics, was employed to analyse the data, test the hypotheses and to determine the relationship between the variables that were defined in this research.

The aim of the surveys was to gather information about the customers' perception in relation to the pledge signed by sample banks and to the actions that such banks have already taken in relation to reducing carbon emissions.

The primary data was collected using surveys of Irish Banks' customers with the aim of gathering data on their trends and behaviours. Secondary data was gathered from Public Information of the Irish Banks under consideration. The primary data collected from the surveys is qualitative in nature and it was then coded to be quantitatively analysed in SPSS.

In terms of secondary data, share prices examination of the banks for the years 2018 and 2019 was conducted to enhance findings derived from analysis of the primary data.

#### **3.2 Research Philosophy and Approach**

The point of the research is to gain an understanding of the awareness that consumers who participated in the survey have in relation to the actions taken by Irish Banks to reduce their carbon emissions by 2030. Descriptive statistics were used to arrive at

general results. To test the hypotheses established by the author, T-Test and ANOVA were the selected (inferential statistics).

The first part of the data collection was carried out using electronic surveys to people that use services provided by the Banks that were included as subjects of this research. Eleven questions with multiple choice answers were included for the purpose of determining the level of awareness in relation to the Banks' efforts to reduce the levels of carbon emissions and to meet the goals of 'The 2030 Agenda for Sustainable Development' which was established by the United Nations (United Nations, 2015).

Using these surveys, primary data was collected. This data enabled the author to determine on which level people are aware of the commitment and practices adopted by Irish Banks to tackle climate change and how this awareness is affected by demographic aspects of the participants.

The analytical procedure used by the author was deductive since the author will look at particular cases that can be categorized as sustainable initiatives but that have not been studied before with respect to how it is affecting the social perception and the financial performance. This is performed by analysing variations in consumer perceptions and prices of shares. Thus, the author established a number of hypotheses and then used quantitative methods to test them and, thereby aiming to establish relationships between involvement in environmentally sustainable initiatives and variables measuring consumer perceptions and financial performance as shown in the conceptual framework developed in this research.

The research, takes an exploratory approach because it seeks to examine relationships between variables; such links have yet to be examined in the academic literature. Simultaneously, the approach is also descriptive because it seeks to gain an understanding of people' perceptions of companies' behaviour in relation to activities toward carbon emissions reduction, therefore it seeks to describe the behaviour of the population

### **3.3 Research Strategy**

An online survey was used as the data collection instrument and a quantitative analytical approach taken. Eleven questions with multiple choice answers were included in the survey for the purpose of determining the level of awareness and perception mentioned above. The primary data collected from the surveys is qualitative in nature and it was

then coded to be quantitatively analysed in SPSS. The author obtained responses from 175 people that accessed to the survey. However, the rate response could not be calculated as the author did not have access to the number of people that was actually invited to participate in the survey.

Background research was conducted on the Commercial Irish Banks that have pledged to reduce carbon emissions by the year 2030. Furthermore, in order to understand the financial impact, if any, that signing the BITCI's Low Carbon Pledge by Irish Banks has had over the time, this research relies on published information such as news on sustainability released by the banks on their official sites.

There was secondary data collected from the London Stock Exchange such as volume and price of the shares for the years 2018 and 2019 to build up the primary data.

### **3.4 Collection Primary and Secondary Data**

#### *3.4.1 Sources*

Both primary and secondary data were collected by the author.

#### *Primary data*

An electronic survey was conducted with the purpose of gathering primary data. The objective of the survey is to investigate the perception and awareness of customers of the banks studied in this research. It is a cross-sectional study because the data was collected from different participants at a single point in time (Saunders and Lewis, 2012). The online survey was created using Google Docs.

The target population in this research is the clients of four of the main banks in Ireland: AIB Bank, Bank of Ireland, Permanent TBS and Ulster Bank.

One of the limitations of this research is the sample size which was 175 people in comparison with the number of the total population. Even though the number of clients of each Bank was unknown by the author, it is expected that a sample of 175 people is not significant.

The Google Docs questionnaire was distributed by mail and LinkedIn and the participants filled it out themselves. The 'snowball' technique (Saunders et al. 2012) was used to deliver the survey among the participants. The survey took place in Ireland and from 15th to the 25th of November.

Items included in the survey were closed-ended. Specifically, they took the form of 'binary' and 'list of options' with a single answer possible were given as potential answers.

The first part of the survey aims to collect demographic information: gender, age, education, employment status, nationality and regional location (i.e. rural or urban).

The second part includes eleven questions to gather data about participants' perception and awareness in relation to practices carried out by their banking service provider and in relation to sustainability in general.

The survey submitted can be seen in the Appendix A of this research.

### *Secondary data*

Dates of news releases published on official web sites by AIB Bank and Bank of Ireland were used to gather secondary data. Yahoo Finance was used to obtain their volumes and prices of shares on the dates that sustainable announcements were published and in the second following date to see the repercussion on those values if any. Thus, the above mentioned secondary data for the years 2018 and 2019 were collected. The rationale for the years studied in this regard arises from the fact that the public pledge was signed in the year 2018. Thus, this year along with the subsequent year were considered. After the review of the literature, the author expects to find a positive variation on the prices and volumes of shares on the day after each of the announcements regarding sustainability since according to the literature, the market value of firms improves when they disclose sustainable practices adopted.

Even though this study focuses on the study of four Irish Banks that are working to cut their carbon emissions from the social point of view, secondary data regarding financial impact of such practices were only collected for AIB Bank and Bank of Ireland, both of them, Public Limited Companies, for which relevant financial data for this research were available. Permanent TSB Bank was left out of the financial analysis since there was not data released related to sustainability by this institution on its official web site. As Ulster Bank is a subsidiary of a UK financial institution, was not included either.

#### *3.4.2 Sample refinement and cleaning of data*

Even though the author obtained 175 responses from participants that accessed to the survey, two outliers were eliminated due to their not significance: one answer from the gender "prefer not to say" as it was the only one that picked up that option; and one

answer from the question 'Have you ever heard of Climate Change?' as there was only one participant that chose the option "maybe". After eliminating those answers, a total of 173 responses build this research.

From the Google Docs used to formulate the survey, the answers were then exported to a Google Sheets spreadsheet to make them easier to understand and to start running the analysis process.

Dropdown multiple choices were the types of questions included in the survey where the participants were only allowed to select one of them and not able to add their own choice of answer there but to choose the option 'Other' in some of the questions.

#### 3.4.3 *Access and Ethical Issues*

The author provided an 'informed consent form' together with the survey. People that took part of the survey were asked to agree with the simple clauses to proceed with the survey by ticking a box.

The author has had to consider ethical issues that might arise as the questions included in the survey were related to the compliance with a public pledge to cut carbon emissions and in the event of noncompliance may affect the Bank's reputation and as a light consequence, it could also affect business continuity.

#### 3.4.4 *Nature of data*

The primary data collected using the survey was mainly qualitative and then coded so that it could be analysed quantitatively. The results from the google docs used as a tool to gather the data, was then downloaded to Excel spreadsheets. From here, the columns were moved to SPSS where each column in Excel has its related column in SPSS.

Numerical codes were used to signify each value. For instance, the author has coded "Non- Irish/International" as "1", and "Irish" as "2".

#### 3.4.5 *Measures and variables*

##### *Demographic variables*

The first part of the survey contains six demographic questions. This element of the survey focuses on the age group (generation), gender, nationality, education, employment status and regional location of the participants. Even though the participants were asked about the previously mentioned demographic aspects, only

Nationality and Age Group were the variables studied in this research. Even though the literature covers this area to an extent, the objectives of this research were built due to a lack of previous specific research on environmental practices in financial services which directly evaluates both, their customers' perceptions and awareness and the effects that such practices cause in their financial performance.

#### *Main variables*

Based on the analysis of the existing literature, the main variable selected was the awareness of the carbon emissions pledge signed by Irish Banks and perception of such companies.

Awareness of the carbon emissions pledge signed by Irish Banks and perception of such companies ('y')

#### *Influential variables*

As illustrated in the conceptual framework after reviewing the literature, two influential variables were established in this research.

Awareness and perception by nationality ('x1').

Awareness and perception by age group (generation) ('x2').

Even though the literature covers somehow the topic and agrees that the social element impact on businesses decisions towards sustainability, there is a gap in the literature on the other way around of the story. Therefore, the independent variables 'Awareness' and 'Loyalty' were selected based on the gaps on the literature review and they were illustrated in the conceptual framework developed and explained in chapter 1. The literature reviewed shows that when consumers are aware of sustainable practices adopted by companies, their level of reputation and thus loyalty is affected.

### **3.5 Approach to data analysis**

Descriptive statistics were used to show and summarize the main results originated by the survey.

Inferential statistics were used to test the hypotheses established from the review of the literature and to answer the research questions of this study. The primary data collected was analysed using the IBM SPSS statistical program. Independent T-tests were applied to analyse the awareness of bank's customers from their nationality point of view. An

ANOVA test was used to determine this awareness from the age group or generation point of view.

The aim of using independent T-tests in this research was to establish the relationship between the nationality of the participants and their awareness of the actions taken by Irish banks in order to reduce their carbon emissions by 2030, and to assess their loyalty to these banks Hypothesis Number 1 to 5 from the Nationality point of view.

The purpose of using an ANOVA in this research was to establish the relationship between the age group of the participants and their awareness of the actions taken by Irish banks in order to reduce their carbon emissions by 2030, and to assess their loyalty to these banks Hypothesis Number 1-5 from the Age/Generations of the participants point of view.

The conceptual framework developed in this research aims to explain the above relationships between the main and influential variables using both statistic methods, T-test and ANOVA.

### **3.6 Conclusion**

As explained before, this research relies on the foundations of a mixture of research methods. The reason is that the primary data collected was qualitative in nature but it was analysed using quantitative methods.

After reviewing the existing literature on this topic, the conceptual framework, hypotheses and research questions were defined.

The carried out research uses both, descriptive and inferential statistics methods and procedures with the aim of analysing the data, test the hypotheses and answer the research questions and as a result outline the relationship between the dependant and independent variables illustrated in the conceptual framework.

## 4. Presentation and Discussion of the Findings

### 4.1 Overview

From the purpose point of view, this research conducted an exploratory approach to study the awareness of bank's customers about actions taken by Irish Banks in order to reduce carbon emissions according to their nationality and age group.

The primary data collected in this research was gathered from online surveys distributed to customers of Irish Banks. In the first part, the online survey contains 6 general questions to gather demographic data and in the second part, 11 specific questions about awareness of climate change, carbon emissions and actions taken by Irish Banks.

The next sections will present the themes that were identified from the surveys, following the hypotheses established and the relationship between the variables illustrated in the conceptual framework developed and explained in chapter 1.

### 4.2 Findings

#### 4.2.1 Descriptive statistics

The author obtained responses from a final sample of 173 people that accessed to the electronic survey. The participants are users of one of the four main Banks providing services in the Republic of Ireland: AIB Bank, Bank of Ireland, Permanent TBS and Ulster Bank. After eliminating the two responses as explained in the Methodology chapter, a total of 173 responses build this research.

#### *Gender*

The majority of the participants who answer the survey were females (112 participants, 65%). The number of males who participated in this research was 61 (35%).

	Gender			
	Frequency	Percent	Valid Percent	Cumulative Percent
Male	61.00	35.26	35.26	35.26
Female	112.00	64.74	64.74	100.00
Total	173.00	100.00	100.00	

**Table 1:** Gender of the respondents

*Age Group/ Generation*

From the 173 responses; 128 were millennials with an age between 24 to 39 years old (74%), 26 were from the generation X with an age between 40 to 55 years old (15%), 10 participants were from the baby boomer generation with an age of over 55 (6%), and only 9 responses came from the Generation Z (5%).

	<b>Age Group/ Generation</b>			
	Frequency	Percent	Valid Percent	Cumulative Percent
18 to 23/ Generation Z	9.00	5.20	5.20	5.20
24 to 39/ Millennials	128.00	73.99	73.99	79.19
40 to 55/ Generation X	26.00	15.03	15.03	94.22
56 or older/ Baby boomer	10.00	5.78	5.78	100.00
Total	173.00	100.00	100.00	

**Table 2:** Age group of the respondents

*Education achieved*

Seventy-three of the responses were from people that achieved a bachelor’s degree (42%). Fifty of them from people who finished a Master’s degree (29%) and 26 responses from people who were high school graduated (15%). Fourteen participants obtained a professional degree (8%). The minority of the responses were from people who finished a doctorate degree (2 participants, 1%) and 8 responses were from people under the ‘Other’ category (5%).

	<b>Education</b>			
	Frequency	Percent	Valid Percent	Cumulative Percent
High_School_graduated	26.00	15.03	15.03	15.03
Bachelors_degree	73.00	42.20	42.20	57.23
Masters_degree	50.00	28.90	28.90	86.13
Professional_degree	14.00	8.09	8.09	94.22
Doctorate_degree	2.00	1.16	1.16	95.38
Other	8.00	4.62	4.62	100.00
Total	173.00	100.00	100.00	

**Table 3:** Education of the respondents

### *Employment status*

In relation to the employment status, the majority of the participants were employed (112 participants, 65%). Twenty-nine of the participants were students (17%), 18 participants were self-employed (10%). The minority of the answers were from people out of work (8 participants, 4%), 3 answers came from retired participants (2%) and the last 3 responses from the 'Others' category (2%).

	<b>Employment</b>			
	Frequency	Percent	Valid Percent	Cumulative Percent
Employed	112.00	64.74	64.74	64.74
Self_employed	18.00	10.40	10.40	75.14
Out_of_work	8.00	4.62	4.62	79.77
Student	29.00	16.76	16.76	96.53
Retired	3.00	1.73	1.73	98.27
Other	3.00	1.73	1.73	100.00
Total	173.00	100.00	100.00	

**Table 4:** Employment status of the respondents

### *Nationality (Irish or Non-Irish/International)*

The results show that from 173 participants, 63 were born in Ireland (36%) and 110 were not (64%).

	<b>Irish Nationality</b>			
	Frequency	Percent	Valid Percent	Cumulative Percent
No	110.00	63.58	63.58	63.58
Yes	63.00	36.42	36.42	100.00
Total	173.00	100.00	100.00	

**Table 5:** Nationality of the respondents

### *Regional location (Urban/Rural)*

Finally, most people that participated in this research live in urban areas (144 participants, 83%) and only 29 of them live in rural areas (17%).

	Area			
	Frequency	Percent	Valid Percent	Cumulative Percent
Urban	144.00	83.24	83.24	83.24
Rural	29.00	16.76	16.76	100.00
Total	173.00	100.00	100.00	

**Table 6:** Regional location of the respondents

Overall, the majority of the participants were female, with an age between 24 to 39 years old, who achieved a bachelor's degree, employed, not born in Ireland and living in the urban area of Ireland.

#### 4.2.2 *Nationality of the participants and their awareness and perception of Irish Banks fighting carbon emissions reduction*

##### Research question & hypothesis 1

In examining Research Question One 'How much do customers of banks believe they are informed in relation to the actions that Irish Banks are taking to tackle climate change by nationality?' and testing the Hypothesis 1 an independent T-test was run.

Independent t-test was the appropriated test as this research seeks to find the relationship between the independent (Nationality) and dependent variables (awareness in relation to actions taken by Irish Banks to tackle climate change).

		Group Statistics			
Irish Nationality		N	Mean	Std. Deviation	Std. Error Mean
Do you believe you are informed in relation to the actions that Irish Banks are taken to tackle climate change?	No	110.00	1.45	0.80	0.08
	Yes	63.00	1.21	0.60	0.08

**Table 7:** T-test for research question & hypothesis 1

What stands out from Table 7 is that the mean for condition 1 (non-Irish/International) is 1.45. The mean for condition 2 (Irish) is 1.21. The standard deviation for condition 1 (non-Irish/International) is 0.80 and for condition 2 (Irish) 0.60. The number of participants is 110 in condition 1 (non-Irish/International) and 63 in condition 2 (Irish). Since the Mean for non-Irish/International people was greater than the Mean for Irish people condition, it can be concluded that participants in the non-Irish/International

people condition are more aware of actions taken by Irish banks to tackle climate change.

		Independent Samples Test									
		Levene's Test for Equality of Variances		t-test for Equality of Means							
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
										Lower	Upper
Do you believe you are informed in relation to the actions that Irish Banks are taken to tackle climate change?	Equal variances assumed	17.551	0.000	2.069	171	0.040	0.23911	0.11557	0.01098	0.46723	
	Equal variances not assumed			2.231	158.500	0.027	0.23911	0.10716	0.02746	0.45075	

**Table 8:** Independent samples T-test for research question & hypothesis 1

An independent-samples t-test was conducted to compare awareness of actions taken by Irish Banks in Irish and non-Irish/International people conditions.

As  $p = 0.01$  is smaller than  $0.05$  the results are then given in the second row. This means that the variability in the two conditions is not the same, that the scores in one condition vary much more than the scores in the second condition.

There is a statistically significant difference in the scores for ‘non-Irish/International people’ ( $M=1.45$ ,  $SD=0.80$  and ‘Irish people’ ( $M=1.21$ ,  $SD=0.60$ ) conditions;  $t(159) = 2.23$ ,  $p = 0.027$

As  $0.027$  is smaller than  $0.05$  we can assume that there was a significant difference in the mean for each group. There is enough evidence to reject my null hypothesis.

These results suggest that nationality really does have an effect on awareness of actions taken by Irish Banks. Specifically, these results suggest that when the participants are not from Ireland, they are more aware of actions taken by Irish Banks to tackle climate change.

### Research question & hypothesis 2

In exploring Question Two, ‘How much do customers of banks believe that Irish Companies are taking real actions to fight climate change by nationality?’ and testing the Hypothesis 2 an independent T-test was run.

	Irish Nationality	Group Statistics			
		N	Mean	Std. Deviation	Std. Error Mean
Do you believe that Irish Companies are taking real actions to fight Climate Change?	No	110	1.95	0.87	0.08
	Yes	63	1.37	0.70	0.09

**Table 9:** T-test for research question & hypothesis 2

From Table 9, it can be seen that the mean for condition 1 (non-Irish/International) is 1.95. The mean for condition 2 (Irish) is 1.37. The standard deviation for condition 1 (non-Irish/International) is 0.87 and for condition 2 (Irish) 0.70. The number of participants is 110 in condition 1 (non-Irish/International) and 63 in condition 2 (Irish). Since the Mean for non-Irish/International people was greater than the Mean for Irish people condition,

it can be concluded that participants in the non-Irish/International people condition are more aware of actions taken by Irish banks to tackle climate change.

		Independent Samples Test								
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Do you believe that Irish Companies are taking real actions to fight Climate Change?	Equal variances assumed	9.184	0.003	4.533	171	0.000	0.58038	0.12803	0.32766	0.83309
	Equal variances not assumed			4.796	151.524	0.000	0.58038	0.12102	0.34126	0.81949

**Table 10:** Independent samples T-test for research question & hypothesis 2

An independent-samples t-test was conducted to compare if Irish and non-Irish/International people see Irish banks taking real actions to fight climate change.

As  $p = 0.003$  is smaller than  $0.05$  the results are then given in the second row. This means that the variability in the two conditions is not the same, that the scores in one condition vary much more than the scores in the second condition.

There is a statistically significant difference in the scores for ‘non-Irish/International’ ( $M=1.95$ ,  $SD=0.87$  and ‘Irish people’ ( $M=1.37$ ,  $SD=0.70$ ) conditions;  $t(152) = 4.796$ ,  $p = 0.01$

As  $0.001$  is smaller than  $0.05$  we can assume that there was a significant difference in the mean for each group. There is enough evidence to reject my null hypothesis.

These results suggest that nationality really does have an effect on how people believe that Irish companies are taking real actions to fight climate change. Specifically, these results suggest that when the participants are not from Ireland, they are more likely to believe that Irish companies are taking real actions to fight climate change.

### Research question & hypothesis 3

In examining Research Question Three, ‘Which reason to commit to carbon emissions reductions do customers of banks believes is the most important by nationality?’ and testing the Hypothesis 3 an independent T-test was run.

	Irish Nationality	Group Statistics			
		N	Mean	Std. Deviation	Std. Error Mean
Four of the main Banks operating in Ireland have committed to reducing their direct carbon intensity by 50% by 2030. Which of the following factors do you believe that was the main reason for this commitment?	No	110	2.04	0.92	0.09
	Yes	63	2.46	0.78	0.10

**Table 11:** T-test for research question & hypothesis 3

What stands out in the table is that the mean for condition 1 (non-Irish/International) is 2.04. The mean for condition 2 (Irish) is 2.46. The standard deviation for condition 1 (non-Irish/International) is 0.92 and for condition 2 (Irish) 0.78. The number of participants is 110 in condition 1 (non-Irish/International) and 63 in condition 2 (Irish).

		Independent Samples Test									
		Levene's Test for Equality of Variances		t-test for Equality of Means							
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
										Lower	Upper
Four of the main Banks operating in Ireland have committed to reducing their direct carbon intensity by 50% by 2030. Which of the following factors do you believe that was the main reason for this commitment?	Equal variances assumed	0.000	0.997	-3.083	171	0.002	-0.42395	0.13750	-0.69537	-0.15254	
	Equal variances not assumed			-3.223	146.925	0.002	-0.42395	0.13153	-0.68389	-0.16402	

**Table 12:** Independent samples T-test for research question & hypothesis 3

An independent-samples t-test was conducted to compare what Irish and non-Irish/International people believe that is the main reason to commit with carbon emissions reduction by 2030.

As  $p = 0.997$  is bigger than  $0.05$  the results are then given in the first row. The t- statistic is  $-3.08$  and the likelihood to get this t- statistic under the assumption that there is no significance is  $0.002$ . Because  $p = 0.002$  is smaller than  $0.05$  there is enough evidence to reject the null hypothesis.

There is not a statistically significant difference in the scores for ‘no-Irish/ International people’ ( $M=2.04$ ,  $SD=0.92$  and ‘Irish people’ ( $M=2.46$ ,  $SD=0.78$ ) conditions;  $t(171) = -3.08$ ,  $p = 0.002$ .

As  $.002$  is smaller than  $0.05$  we can assume that there was a significant difference in the mean for each group. There is enough evidence to reject my null hypothesis.

These results suggest that nationality really does have an effect on what Irish and non-Irish/International people believe that is the main reason to commit with carbon emissions reduction by 2030.

Research question & hypothesis 4

A further T-test was conducted in order to explore the Fourth Research Question ‘What do customers of banks believe is the most important reason for changing their banking service provider by nationality?’ and to test Hypothesis 4.

		Group Statistics			
Irish Nationality		N	Mean	Std. Deviation	Std. Error Mean
What would be the primary reason for changing your Banking Service provider?	No	110	2.25	1.06	0.10
	Yes	63	2.56	0.91	0.11

**Table 13:** T-test for research question & hypothesis 4

The mean for condition 1 (non-Irish/International) is  $2.25$ . The mean for condition 2 (Irish) is  $2.56$ . The standard deviation for condition 1 (non-Irish/International) is  $1.06$  and for condition 2 (Irish)  $0.91$ . The number of participants is  $110$  in condition 1 (non-Irish/International) and  $63$  in condition 2 (Irish).

		Independent Samples Test									
		Levene's Test for Equality of Variances		t-test for Equality of Means							
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
										Lower	Upper
What would be the primary reason for changing your Banking Service provider?	Equal variances assumed	6.157	0.014	-1.946	171	0.053	-0.31010	0.15935	-0.62464	0.00444	
	Equal variances not assumed			-2.027	145.477	0.044	-0.31010	0.15299	-0.61247	-0.00773	

**Table 14:** Independent samples T-test for research question & hypothesis 4

An independent-samples t-test was conducted to compare what Irish and non-Irish/International people believe that it would be the primary reason for changing their banking service provider.

As  $p = 0.014$  is smaller than  $0.05$  the results are then given in the second row. This means that the variability in the two conditions is not the same, that the scores in one condition vary much more than the scores in the second condition.

There is a statistically significant difference in the scores for 'non-Irish/International people' ( $M=2.25$ ,  $SD=1.06$  and 'Irish people' ( $M=2.56$ ,  $SD=.91$ ) conditions;  $t(145) = -2.027$ ,  $p = 0.044$

As  $0.044$  is smaller than  $0.05$  we can assume that there was a significant difference in the mean for each group. There is enough evidence to reject my null hypothesis.

These results suggest that nationality really does have an effect on what it would be the main reason for which Irish or non-Irish/International people would change their banking service provider.

<b>What would be the primary reason for changing your Banking Service provider?</b>		
	<b>Irish</b>	<b>%</b>
Unethical behaviour	13	21%
Reputation	7	11%
Cost	38	60%
Other	5	8%
	<b>63</b>	<b>100%</b>
	<b>Non-Irish</b>	<b>%</b>
Unethical behaviour	38	35%
Reputation	20	18%
Cost	39	35%
Other	13	12%
	<b>110</b>	<b>100%</b>
	<b>173</b>	

**Table 15:** What would be the primary reason for changing your Banking Service provider?

As shown in Table 15 the main reason for which ‘non-Irish/International people’ would change their banking service provider would be either ‘Cost’ or ‘Unethical behaviour’ and the second reason it would be ‘Reputation’ while within ‘Irish people’ the main reason would be ‘Cost’ and the second one it would be ‘Unethical behaviour’.

Research question & hypothesis 5

A further T-test was conducted in order to explore the Fifth Research Question ‘How do customers of banks believe that reputation of banks is affected by their level of engagement with sustainability by nationality?’ and to test Hypothesis 5.

	Irish Nationality	Group Statistics			
		N	Mean	Std. Deviation	Std. Error Mean
Would your knowledge about the steps towards sustainability that your current Bank is taken change your mind about their reputation?	No	110	2.09	0.76	0.07
	Yes	63	2.13	0.75	0.09

**Table 16:** T-test for research question & hypothesis 5

The mean for condition 1 (non-Irish/International) is 2.09. The mean for condition 2 (Irish) is 2.13. The standard deviation for condition 1 (non-Irish/International) is 0.76 and for condition 2 (Irish) 0.75. The number of participants is 110 in condition 1 (non-Irish/International) and 63 in condition 2 (Irish). Since the Mean for Irish people was greater than the Mean for non-Irish/International people condition, it can be concluded that participants in the Irish people condition are more likely to change their mind about reputation of banks when they know that banks are engaged with sustainability.

		Independent Samples Test									
		Levene's Test for Equality of Variances		t-test for Equality of Means							
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
										Lower	Upper
Would your knowledge about the steps towards sustainability that your current Bank is taken change your mind about their reputation?	Equal variances assumed	0.001	0.979	-0.301	171	0.763	-0.03608	0.11966	-0.27227	0.20012	
	Equal variances not assumed			-0.303	130.608	0.763	-0.03608	0.11924	-0.27197	0.19982	

**Table 17:** Independent samples T-test for research question & hypothesis 5

An independent-samples t-test was conducted to compare if Irish and non-Irish/International people would change their mind about reputation of banks when they know that banks are engaged with sustainability.

As  $p = 0.979$  is bigger than  $0.05$  the results are then provided in the first row. This means that there is no statistically significant difference between what Irish and non-Irish/International people would believe about banks' reputation. It can be concluded that the differences between condition means are likely due to chance and not likely due to the independent variables manipulation.

There is not a statistically significant difference in the scores for 'non-Irish/International people' ( $M=2.09$ ,  $SD=0.76$  and 'Irish people' ( $M=2.13$ ,  $SD=0.75$ ) conditions;  $t(171) = -3.01$ ,  $p = 0.76$ .

As  $p = 0.76$  is bigger than  $0.05$  there is enough evidence to accept the null hypothesis number 5.

These results suggest that nationality really does not have an effect on wheatear Irish and non-Irish people would change their mind about reputation of the banks when they are aware that banks are engaged with sustainability.

Would your knowledge about the steps towards sustainability that your current Bank is taken change your mind about their reputation?		
	Irish	%
Yes	27	43%
No	14	22%
Maybe	22	35%
	63	100%
	Non-Irish	%
Yes	46	42%
No	27	25%
Maybe	37	34%
	110	100%
	173	

**Table 18:** Would your knowledge about the steps towards sustainability that your current Bank is taken change your mind about their reputation?

The above table shows that Nationality does not impact on the perception of reputation of Banks since for both ‘Irish people’ and ‘non-Irish/International people’ their perception of reputation when Banks are acting towards sustainability do not change.

4.2.3 *Age group of the participants and their awareness and perception of Irish Banks fighting carbon emissions reduction*

Research question & hypothesis 1

ANOVA					
Do you believe you are informed in relation to the actions that Irish Banks are taken to tackle climate change?					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.021	3	0.674	1.241	0.297
Within Groups	91.759	169	0.543		
Total	93.780	172			

**Table 19-** ANOVA Table: How much do customers of banks believe they are informed in relation to the actions that Irish Banks are taking to tackle climate change by age group?

An ANOVA was conducted to compare if there is a relationship between the age group of the participants and awareness of actions taken by Irish Banks in Irish and non-Irish/International people conditions.

ANOVA (F (3,169) = 1.24, p = 0.30).

The p-value = 0.30 is bigger than 0.05. Therefore, there was not a statistically significant difference between the levels of independent variables (between groups) as determined by one-way ANOVA (F (3,169) = 1.24, p = 0.30). There was enough evidence to accept the null hypothesis 1.

Research question & hypothesis 2

ANOVA					
Do you believe that Irish Companies are taking real actions to fight Climate Change?					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	6.377	3	2.126	3.009	0.032
Within Groups	119.392	169	0.706		
Total	125.769	172			

**Table 20-** ANOVA Table: How much do customers of banks believe that Irish Companies are taking real actions to fight climate change by age group?

ANOVA (F (3,169) = 3, p = 0.03).

The p-value = 0.03 is below 0.05. Therefore, there was a statistically significant difference between the levels of independent variables (between groups) as determined by one-way ANOVA ( $F(3,169) = 3, p = 0.03$ ). There was a statistically significant difference between the groups, and there is a chance that such a significant difference is due to the inequality in the number of participants in each of the four groups and because one of them has less than 30 participants (REFERENCES). Thus, to validate these results, the four age groups were split in two conditions (18 to 39 years old and 40 or older) and an independent T-test was then run.

		Group Statistics			
Age_two_groups		N	Mean	Std. Deviation	Std. Error Mean
Do you believe that Irish Companies are taking real actions to fight Climate Change?	18 to 39 'Gen Z & Millennials'	137	1.80	0.87	0.07
	40 or older 'Gen X & Boomer'	36	1.47	0.74	0.12

**Table 21:** T-test for research question & hypothesis 2 (by age group)

The mean for condition 1 (18 to 39 years old) is 1.80. The mean for condition 2 (40 years or older) is 1.47. The standard deviation for condition 1 (18 to 39 years old) is 0.87 and for condition 2 (40 years or older) 0.74. The number of participants is 137 in condition 1 (18 to 39 years old) and 36 in condition 2 (40 years or older). Since the Mean for the age group '18 to 39' was greater than the Mean for the age group '40 or older', it can be concluded that participants in the age group '18 to 39' are more aware of actions taken by Irish banks to tackle climate change.

		Independent Samples Test								
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Do you believe that Irish Companies are taking real actions to fight Climate Change?	Equal variances assumed	6.403	0.012	2.085	171	0.039	0.33070	0.15862	0.01760	0.64380
	Equal variances not assumed			2.303	63.420	0.025	0.33070	0.14360	0.04377	0.61763

**Table 22:** Independent samples T-test for research question & hypothesis 2 (by age group)

An independent-samples t-test was conducted to compare awareness of actions taken by Irish Banks in the cases of participants from '18 to 39' years old and from '40 or older'

As  $p = 0.01$  is smaller than  $0.05$  the results are then given in the second row. This means that the variability in the two conditions is not the same, that the scores in one condition vary much more than the scores in the second condition.

There is a statistically significant difference in the scores for '18 to 39' years old ( $M=1.80$ ,  $SD=0.87$  and '40 or older' ( $M=1.47$ ,  $SD=0.64$ ) conditions;  $t(63) = 2.30$ ,  $p = 0.03$ .

As  $0.03$  is smaller than  $0.05$  we can assume that there was a significant difference in the mean for each group. There is enough evidence to reject my null hypothesis.

These results suggest that the age group really does have an effect on awareness of actions taken by Irish Banks. Specifically, this result suggests that when the participants are from 18 to 39 years old, they are more aware of actions taken by Irish Banks to tackle climate change than if they are over 40 years old.

### Research question & hypothesis 3

	ANOVA				
	Which of the following factors do you believe that was the main reason for this commitment?				
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3.460	3	1.153	1.463	0.226
Within Groups	133.245	169	0.788		
Total	136.705	172			

**Table 23-** ANOVA Table: Which reason to commit to carbon emissions reductions do customers of banks believes is the most important by age group?

ANOVA ( $F(3,169) = 1.46$ ,  $p = 0.23$ ).

The  $p$ -value =  $0.23$  is bigger than  $0.05$ . Therefore, there was not a statistically significant difference between the levels of independent variables (between groups) as determined by one-way ANOVA ( $F(3,169) = 1.46$ ,  $p = 0.23$ ).

#### Research question & hypothesis 4

ANOVA					
What would be the primary reason for changing your Banking Service provider?					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4.236	3	1.412	1.375	0.252
Within Groups	173.544	169	1.027		
Total	177.780	172			

**Table 24-** ANOVA Table: What do customers of banks believe is the most important reason for changing their banking service provider by age group?

ANOVA ( $F(3,169) = 1.38, p = 0.25$ ).

The p-value = 0.25 is bigger than 0.05. Therefore, there was not a statistically significant difference between the levels of independent variables (between groups) as determined by one-way ANOVA ( $F(3,169) = 1.38, p = 0.25$ ).

#### Research question & hypothesis 5

ANOVA					
Would your knowledge about the steps towards sustainability that your current Bank is taken change your mind about their reputation?					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.725	3	0.908	1.609	0.189
Within Groups	95.402	169	0.565		
Total	98.127	172			

**Table 25-** ANOVA Table: How do customers of banks believe that reputation of banks is affected by their level of engagement with sustainability by age group?

An ANOVA was conducted to compare if there is a relationship between the age group of the participants their likelihood to change their mind about reputation of banks when they know that banks are engaged with sustainability.

ANOVA ( $F(3,169) = 1.61, p = 0.19$ ).

The p-value = 0.19 is bigger than 0.05. Therefore, there was not a statistically significant difference between the levels of independent variables (between groups) as determined by one-way ANOVA ( $F(3,169) = 1.61, p = 0.19$ ).

#### 4.2.4 *AIB Bank and Bank of Ireland: Impact on the volumes and prices of shares traded*

As explained in the Methodology chapter, the author analysed the impact that releasing sustainable information to the press had on the prices and volumes of the shares. Both, released information about sustainability practices and prices and volumes of shares can be seen in the tables that appear in the Appendix B (secondary data for AIB Bank) and Appendix C (Bank of Ireland).

##### ***AIB Bank***

01/03/2018: AIB Group plc announced Annual Financial Results 2017

The adjusted closed price decreased the day after by 2% while the volume of traded shares rose from 406.677 units on the 1st of March 2018 to 624.379 on the 2nd of March (82%).

02/07/2018: Housing, digitalisation and supporting business identified as key areas in AIB 2017 Sustainability Report

The adjusted closed price grew up the day after by 1% while the volume of traded shares increased significantly between the 2nd and the 3th of July by 4559%.

14/11/2018: BICI released, have made a dedicated pledge to significantly reduce their carbon emissions.

The adjusted closed price grew up the day after by 1% the following day. However, the traded volume decreased on the 15th of March by 7%.

22/05/2019: AIB publishes its third Sustainability Report.

On the 23th of May both, the adjusted closed price and the traded volume fell by 4% and 16 % respectively.

07/06/2019: Five billion euro made available by AIB to support climate action

After this day, data was available only for the 10th of June. For this day, the figures showed that the adjusted closed price increased by 1% while the traded volume fell by 20%.

04/11/2019: AIB does more for customers with energy efficient homes through green mortgages, sponsors Climate Finance Week

The adjusted closed price decreased the day after by 2% while the volume of traded shares rose by 135% between the 4th and the 5th of November.

### *Bank of Ireland*

18/05/2018: Bank of Ireland and other leading companies addressing key sustainability challenges for Ireland

On the 19th of May 2018, the adjusted closed price unchanged, while the volume of traded shares increased by 18%.

14/11/2018: BICI released, have made a dedicated pledge to significantly reduce their carbon emissions.

The adjusted closed price decreased the day after by 6% while the volume of traded shares rose by 28% between the 11th and the 12th of November.

24/10/2019: Bank of Ireland signs United Nations Principles for Responsible Banking as part of its ongoing responsible and sustainable business strategy

On the 25th of October 2019 both, the adjusted closed price and the traded volume showed an increased by 2% and 397% respectively.

What stands out from the official websites of AIB Bank and Bank of Ireland is that from the year 2018 onwards, the disclosure of information related to sustainability has started. There are not announcements regarding sustainable practices in 2017. The present study raises the possibility that this occurred because 2018 was the year in which both institutions signed the pledge to reduce their carbon emissions. Thus, the activities announced on their official websites may be related to their actions toward sustainability to meet the engagement with the pledge.

### **4.3 Discussion**

The following section presents a discussion of the findings after the analysis of the data collected from the surveys using the IBM SPSS statistical software and Excel spreadsheets. The previous section of this chapter showed the results obtained from the independent T-Test and ANOVA that were run to test each of the hypotheses and to find the relationship between the dependant and independent variables illustrated in the conceptual framework.

The aim of this section is to answer each of the research questions established for this study.

**Question 1-** How much do customers of banks believe they are informed in relation to the actions that Irish Banks are taking to tackle climate change by nationality/ age group?

### *Nationality*

According with the independent T-test run to test the hypothesis 1 and to answer this question, the test was successful as it was able to identify that nationality does have an impact on awareness of the actions that Irish Banks are taking to tackle climate change. Therefore, the null Hypothesis 1 ( $H_{10}$ ) can be rejected according to the evidence. That means that the level of awareness of the actions that Irish Banks are doing at the moment to tackle climate change depends on whether the participants are Irish or not. Thus, the answer to this question has two possible answers, depending on the nationality of the respondent. According to the T-test run to test the hypothesis 1, non-Irish believe more than Irish people that they are informed in relation to actions that Irish Banks are taking to tackle climate change. In accordance with the present results, a previous study carried out by Wagner and Payne (2017) have demonstrated that Irish newspapers do not take the responsibility of having the power to inform on such a matter.

### *Age group*

From the generation or age of the participants point of view, the results of the ANOVA run to test the hypothesis 1 from this demographic angle, point out that there is evidence to accept the null Hypothesis 1 ( $H_{10}$ ) as there was not a statistically significant difference between the age groups and the level of awareness of the actions that Irish Banks are practicing at the moment to tackle climate change. Therefore, the age of the people does not impact on their awareness of such actions. This outcome is contrary to that of Zaczekiewicz (2019) who concluded that Millennials are more likely to aim to produce less environmental damage by their purchases of goods and services which leads to believe that they would be more informed of sustainable practices adopted by companies.

**Question 2-** How much do customers of banks believe that Irish Companies are taking real actions to fight climate change by nationality/ age group?

### *Nationality*

The present results are significant as they provide evidence to reject the null hypothesis number 2 which means that there is a difference in a bank's customers awareness about

the actions that Irish companies are putting in place at the moment to face climate change from the nationality of the customer angle. This suggests that nationality does have an impact on awareness of the actions that Irish Companies are taking to tackle climate change. Thus, the answer to this question depends on whether the customers are Irish or not.

### *Age group*

From the point of view of the age group, the results of the ANOVA run to test the hypothesis 2 from this demographic angle showed that there is enough evidence to reject the null Hypothesis 2 ( $H_{20}$ ) as the p-value = 0.03 is below 0.05. There was a statistically significant difference between the groups. To find out where is this significant difference coming from, the total of participants were split in only two conditions (18 to 39 years old and 40 or older) and an independent T-test was then run. Such an independent T-test gave a p-value of .025 which is smaller than 0.05 so it can be assumed that there was a significant difference in the mean for each group. There is enough evidence to reject the null hypothesis number 2 and to conclude that when the participants are from 18 to 39 years old, they are more aware of actions taken by Irish Banks to tackle climate change than if they are over 40 years old.

Consistent with the literature, this research found that participants who are from 18 to 39 are more aware of the actions that Irish Banks are adopting with the aim of cutting carbon emissions and it can be assumed that these financial institutions are really considering millennials on the core of their businesses as Van Beek, (2015) highlighted on his research.

**Question 3-** Which reason to commit to carbon emissions reductions do customers of banks believes is the most important by nationality/ age group?

### *Nationality*

The results of the independent t-test run for this group of variables show that there was enough evidence to reject the null hypothesis number 3. Thus it can be assumed that there was a significant difference in the mean for each group. Therefore, nationality does have an impact on what people believe is the main reason for banks to engage with carbon emissions reductions. Accordingly, the answer to the research question number 3 depends on whether the customers of Banks are Irish or not.

### *Age group*

The results of the ANOVA run for this group of variables (age group and reasons to commit with carbon emissions reductions) show that as the p-value = 0.23 is above than 0.05 there was not a statistically significant difference between the variables. The evidence points out that the null hypothesis number 3 can be accepted.

These results are aligned with the positive relationship between the adoption of sustainable practices and its financial impact (e.g. Delmas et al., 2015; Ameer and Othman, 2012; Eccles et al., 2014). Even though, this result has not previously been described it can be concluded that people are aware of such a relationship which make them believe that the most important reason for engaging with the environment is purely economic.

**Question 4-** What do customers of banks believe is the most important reason for changing their banking service provider by nationality/ age group?

### *Nationality*

The p -value obtained after running the independent t-test for this group of variables, show that as it is smaller than 0.05, there is enough evidence to reject the null hypothesis number 4. Thus, what people believe is the most important reason to change their banking service provider depends on whether they are Irish or not. Nationality so, does have an effect on what would make people change their banking service provider.

Regarding to 'non-Irish/International people' the most important reason that would make them change their banks are either 'Cost' or 'Unethical behaviour' and the second reason it would be 'Reputation' while when referring to 'Irish people' the main reason would be 'Cost' and the second one it would be 'Unethical behaviour'.

### *Age of group*

The results for the ANOVA run in this case show that the null hypothesis number 4 from the generation point of view can be accepted and therefore there is not a statistically significant difference between what people for the different age groups would consider as the main reason to change their banking provider.

Meeting up to Corporate Social Responsibility expectations, according to the literature, should be undertaken by companies when pursuing loyalty from their customers. Consistent with the literature (e.g. Beneke et al., 2012; Patterson and McEachern, 2018)

which overall found that there is a positive relationship between awareness of CSR activities adopted by companies and customers' loyalty. Thus, this finding is consistent with the idea that bank customers' support institutions that behave ethically.

**Question 5-** How do customers of banks believe that reputation of banks is affected by their level of engagement with sustainability by nationality/ age group?

#### *Nationality*

According to the independent t-test run for this group of variables, as  $p= 0.76$  (p-value) is bigger than 0.05 there is enough evidence to accept the null hypothesis number 5. This suggests that what would affect the perception of the reputation of a bank does not depend on whether the participants are Irish or not. According to table 18, both Irish and non-Irish/International people believe that they would change their mind about reputation if they are aware of the actions towards sustainability taken banks.

#### *Age group*

The ANOVA results show that the null hypothesis number 5 can be accepted from the age group perspective. This means that there is not a statistically significant difference between the group age of the participants and the likelihood of a change in the perception about the banks' reputation when they are aware of their engagement with sustainability.

Regarding reputation, this study supports evidence from a previous study by Lash and Wellington (2007) where it was concluded that if firms do not deal with sustainability, their public reputation is in jeopardy of being affected due to negative perceptions from people against climate change.

#### **Findings on AIB Bank and Bank of Ireland volume and price of shares**

In relation to the volume and price of the shares, there are some of them which are significantly positive. This finding is consistent with that of Shih-Fang Lo and Her-Jiun Sheu (2007) who confirms that companies that incorporate sustainability as a core part of their strategies are compensated with a higher perceived market value by their stakeholders. This also accords with an earlier observation, which showed that firms adopting practices to cut their emissions are financially reward since their market value improves in the long term (Delmas et al., 2015).

These findings may be somewhat limited by the scope of the analysis, since there might be other factors affecting the media effects of the information reported.

#### **4.4 Conclusion**

This chapter has presented the findings found from the research study, using a survey as a tool to gather the primary data. Descriptive and inferential statistics analyses were considered to be appropriate for the interpretation of the findings due to the descriptive and exploratory nature of the study. It has also describe the results from the examinations of the financial information gathered for AIB Bank and Bank of Ireland based and its variations due to news about sustainability that were released to the public on their official websites.

Data gathered from the survey indicates that people that are not aware of climate change and its consequences are only exceptions. Nationality of the customers was found to be one of the sociodemographic characters that impact the most on customers' awareness and perception of the issue. Ireland is a multicultural and cosmopolitan country, reason to think that assessing customers' needs and values might be a huge challenge for them.

Regarding the financial aspects examined for the mentioned banks, both directions were seen. Even though the literature agrees that the market value of companies that adopt sustainability in the core of their businesses is likely to change, this effect is dependent on the time frame to which we are focusing on. Thus, explaining the reason for the variations of volumes and share prices for AIB Bank and Bank of Ireland when they released information in regards to sustainable actions adopted is being affected by a matter of time.

Nonetheless, COVID-19 has brought unpredictable results, both in human behaviour and values but also in companies of any size that had to re-think their businesses strategies to survive. Consequently, the global pandemic we are all facing might have an undetermined impact on consumers' perceptions about climate change and how companies manage it since such a pandemic must be seen as an irrelevant problem compared with environmental issues.

## **5. Concluding Thoughts on the Contribution of this Research, its Limitations and Suggestions for Further Research**

### **5.1 Implications of Findings for the Research Questions**

The implications of findings for the research questions established in the literature review chapter are as follows:

This research concludes with the proposition that nationality of customers does affect their perception of knowledge about sustainable actions taken by Irish Banks to tackle climate change. The findings show that Irish people consider themselves less knowledgeable about the steps towards sustainability taken by Irish Banks.

This research also reaches the conclusion that nationality of customers of banks impacts their perception of the effectiveness of efforts made by Irish Companies regarding climate change. When customers are Irish, the perceived dimension of reality of the efforts made by Irish companies to tackle climate change is inferior to the perception that non Irish customers have.

Another conclusion may be reached with regard to the banks' reasons for committing to carbon emission reductions and their perception by Irish and non-Irish customers. This study has found that both Irish and non-Irish customers believe that companies are mainly influenced by financial reasons when deciding to reduce their carbon emissions. However, the second reason for Irish customers is social, while non Irish customers consider that the second reason for engaging with carbon emission reductions is purely environmental.

This research also provides an insight into the level of loyalty of customers of Irish Banks. With the aim of answering the research question number four, the participants were asked to choose between different possible options, which institution they select as the main reason for changing their banking service provider. For Irish customers, 'costs' appears as the primary reason for making them to go and trade with a different bank. Indeed, non-Irish customers believe that they will swap their banking service provider either due to 'costs' or 'unethical behaviour'. However, it remains unclear whether this result is due to their levels of education on climate change or their cultural background.

This study examines if the perception of reputation of Irish Banks differs from one group to another when customers are aware of their participation in activities to reduce carbon

emissions. The figures show that both Irish and non-Irish customers would change their opinion about their Banks' reputation. This is one of the more significant findings to emerge from this study since as a result; it can be assumed that the public image of the Banks' would improve when they act on climate change and their customers get to know about it.

The investigation of the age group as a moderator of awareness has shown that there is only a difference on how customers believe that actions made by Irish Companies regarding climate change are real. Accordance with the findings, customers from 18 to 39 years old are more credulous and more willing to believe that Irish Companies are really adopting actions to tackle climate change. The relevance of Millennials researched by the existed literature is clearly supported by the current findings.

## **5.2 Contributions and Limitations of the Research**

### *5.2.1 Contributions*

This research provides a contribution to understanding the effects of businesses acting towards carbon emission reductions on customers' perception and level of engagement with these businesses.

As one of the main findings from this research revealed that both Irish and non-Irish customers would change their perceptions of reputation of their banks, financial institutions should aim to find proper ways of communicating their engagement with carbon emission reductions which could lead to benefit their public image and, consequently their corporate reputation.

In accordance with the examination of the variations on the share prices, this research agrees with the literature since the adoption and disclosure of sustainable practices leads in a positive reception of the shareholders.

### *5.2.2 Limitations*

The focus of this research relies on the different perception and awareness of worldwide issues as they are climate change and carbon emissions.

Several limitations are connected to this study. First, even though people surveyed were asked about their Nationality, customers were not asked their country of origin for the cases that they were not Irish. Thus, conclusions about the geographic origin and the impact on awareness cannot be generalised. Therefore, future research could test the

findings of this research by examining and comparing Irish awareness and perceptions with others countries; or examining the findings for Irish customers focussing on different socio demographic characteristics. Second, the author uses a snowball technique to deliver the survey and even though 175 answers were obtained, it was not possible to know exactly to how many people the survey was delivered. Therefore, the response rate cannot be calculated and a measure of the confidence level of the results could not be assessed.

### **5.3 Recommendations for Practice**

#### *5.3.1 Assessing sociodemographic characteristics of customers*

Globalisation and the cosmopolitan and multicultural aspects of Ireland lead to a wide variety of customers to which Irish Companies need deal with, get to know and, meet their specific requirements. Specially, to stay competitive and considering the large number of banks offering their services in the country. As found in this research social perception of financial institutions differ, local banks will need to pursue an understanding of their customers to encourage people to find the best way to support their green activities in the country but also will have to control periodically if their customers' behaviours remained the same to build and improve the relationship with them.

#### *5.3.2 Disclosing environmental practices adopted*

Even though there are aspects out of the control of firms that are making them to engage with the environment in which they operate, such as policies issued by Governments or consumers opinion, it seems to be crucial for businesses to take initiative and incorporate sustainability in the core of it business models.

The findings from this study also show that there might be a lack of education or knowledge within the people which justifies that 'costs' would be the first reason for them to change their banks. This might be just because people are more concerned about their own pockets than the potential risks associated to carbon emissions. Companies could focus first their efforts on raising stakeholders' awareness of carbon emissions for instance by educating their employees and customers to improve their knowledge on how to reduce their individual and collective carbon footprints.

### 5.3.3 *Assessing consumers' loyalty*

This finding suggests that the identification of consumers' perception of the corporate environmental engagement from their banks is important to build and enhance financial institutions' reputation. Eventually, non-Irish customers' loyalty is in jeopardy since they agreed that their knowledge of an unethical behaviour from their banks would make them swap to another bank. Tracking customers' behaviours and perceptions about Banks is crucial for financial institutions since allows them to maintain or improve the perception that their customers have about them and to build loyalty and potentially improve the reputation.

## 5.4 **Recommendations for Future Research**

Considering that the population for this research are all banks' customers of the four main banks in Ireland, 175 answers means a relatively small sample size which does not allow the author to generalise the results to a larger population. Testing the findings of this research with more participants would be desirable to validate the findings of this research.

As mentioned above as a limitation, the diversity of consumers surveyed makes difficult to make a comparison between the results for Irish people and for the rest of the nationalities, as these were not disclosure. Thus, it would be interesting in future studies to assess awareness and perception outcome focusing only in Irish population and its sociodemographic characteristics such as regional location or, making a comparison between Irish customers and another country located in a different country to see if the findings would be the same.

## 5.5 **Final Conclusion and Reflections**

Considering the global extension of climate change and carbon emissions as one of its main reason to exist and continually keep growing, companies all over the world should start to align their strategies to meet environmental requirements. Taking initiative and not just wait for pressures from stakeholders should be the first consideration to undertake. Then, deciding on the best available options to reduce emissions from a cost point of view sounds as the next step for companies becoming more sustainable. Also, what could help firms to meet their aims in relation to corporate social responsibility is to educate their staff about green practices that can be adopted to cut individual emissions as a way to collaborate to reduce the social footprint. With the aim of improve

customers' satisfaction and other stakeholders it is critical that Irish Banks improve the style on how to report their carbon emissions and their improvements if any. According to the literature reviewed in this research, the impacts of implementing sustainable practices appear to be positive from the financial point of view and to improve their perceived market value.

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## **Appendices**

### *Appendix A – Survey Questionnaire*

Sustainability is both a challenging and exciting issue facing us, and I believe there is a need to incorporate this tool in to the core business models of more companies, not only due to its societal benefits, but also due to the potential reputational, operational and financial rewards it offers companies.

Currently as part of the research process I am conducting a survey and I would appreciate it greatly if you would be willing to participate in my research.

In this survey you will be asked to answer 17 questions and the estimated time of completion is about 5 minutes.

As a participant, you will be required first to answer 6 demographic questions and then 11 questions about your perceptions of sustainability in businesses and in relation to your Banking Service provider.

Participant's Rights: You may decide to stop being part of the research at any time without explanation required.

Confidentiality: If you agree to participate, all the information you provide will be completely anonymous and confidential.

Your data will be only used for academic purposes and will not be shared with anyone.

Benefits and risks of your participation: You will contribute to academic research, which aims to expand knowledge and generated new insight into awareness of Irish Banks' customers in relation to their engagement with carbon emission reduction. There will be no risks caused to you as participant.

If you are interested in taking part in this research please review the information provided in the consent form. If you agree to proceed with the survey, please indicate by ticking the appropriate box.

Should you have any queries or concerns about the survey, please do not hesitate to contact me by email [jovannabaezw@gmail.com](mailto:jovannabaezw@gmail.com). Thank you very much for your help.

CONSENT FORM: You read and understood the Participant Information. You are aware of the potential risks (if any), and you are taking part in this research study voluntarily (without coercion).

1) What is your gender?

Female/ Male/ Prefer not to say

2) How old are you?

18 to 23 / 24 to 39 / 40 to 55 / 56 or older / Prefer not to say

3) What is the highest degree or level of school you have completed?

High school graduated / Bachelor's degree / Master's degree / Professional degree / Doctorate degree / Other

4) Which is your employment status?

Employed / Self-employed / Out of work / Student / Retired / Other

5) Were you born in Ireland?

Yes / No

- 6) Where do you live in Ireland?  
Urban area / Rural area
- 7) Have you ever heard of 'Climate Change'?  
Yes / No / Maybe
- 8) Greenhouse gases emission is only a matter of businesses.  
Agree / Disagree / Don't know
- 9) Do you believe that Irish Companies are taking real actions to fight Climate Change?  
Yes / No / Don't know  
If you answered yes to this question, are you aware of any action? Yes / No / Maybe
- 10) Do you believe that the main reason for businesses to get involve in actions to tackle climate change is:  
Economic / Reputational / Compliance with laws and regulations / Other
- 11) Have you ever heard of 'The Low Carbon Pledge' signed by Irish Companies?  
Yes / No / Maybe
- 12) Do you believe you are informed in relation to the actions that Irish Banks are taken to tackle climate change?  
Yes / No / Maybe
- 13) Four of the main Banks operating in Ireland have committed to reducing their direct carbon intensity by 50% by 2030. Which of the following factors do you believe that was the main reason for this commitment?

Financial / Social / Environmental / Other

14) If you could change one thing about your Banking Service provider what would it be?

Cost / Service provided / Engagement with environment / Other

15) What would be the primary reason for changing your Banking Service provider?

Cost / Reputation / Unethical behaviour / Other

16) Would your knowledge about the steps towards sustainability that your current Bank is taken change your mind about their reputation?

Yes / No / Maybe

*Appendix B – AIB historical volumes and share prices traded*

Quotation AIB share prices (Historical data) <sup>(1)</sup>								
Date	Open	High	Low	Close*	Adj Close**	Adj Close** Variation	Volume	Volume Variation
02/07/2018	4.5920	4.6900	4.5800	4.6500	4.1304		255,760	
03/07/2018	4.6500	4.7500	4.6500	4.6900	4.1659	1%	1,859,500	4559%
14/11/2018	3.8800	3.9480	3.7000	3.7000	3.2865		622,849	
15/11/2018	3.8960	3.9040	3.7340	3.7480	3.3292	1%	578,131	-7%
22/05/2019	4.0160	4.0780	3.9600	3.9600	3.6712		396,184	
23/05/2019	3.9640	3.9640	3.7800	3.8100	3.5322	-4%	319,777	-16%
07/06/2019	3.7320	3.7380	3.6180	3.6220	3.3579		165,234	
10/06/2019	3.6500	3.6980	3.6400	3.6800	3.4116	2%	47,476	-20%
04/11/2019	3.0780	3.1160	3.0340	3.0780	2.8535		316,503	
05/11/2019	2.9900	3.0580	2.9540	3.0000	2.7812	-2%	558,439	135%

Date	Data released by AIB Bank
02/07/2018	Housing, digitalisation and supporting business identified as key areas in AIB 2017 Sustainability Report (1)
03/07/2018	First day after release 'Housing, digitalisation and supporting business identified as key areas in AIB 2017 Sustainability Report'
14/11/2018	BICI released:Have made a dedicated pledge to significantly reduce their carbon emissions (3)
15/11/2018	Second day after release 'BICI released:Have made a dedicated pledge to significantly reduce their carbon emissions'
22/05/2019	AIB publishes its third Sustainability Report (4)
23/05/2019	Second day after release 'AIB publishes its third Sustainability Report'
07/06/2019	Five billion euro made available by AIB to support climate action (4)
10/06/2019	Second day after release 'Five billion euro made available by AIB to support climate action'
04/11/2019	AIB does more for customers with energy efficient homes through green mortgages, sponsors Climate Finance Voucher Scheme (2)
05/11/2019	First day after release 'AIB does more for customers with energy efficient homes through green mortgages, sponsors Climate Finance Voucher Scheme'

\*Close price adjusted for splits.

\*\*Adjusted close price adjusted for both dividends and splits.

(1) <https://finance.yahoo.com/quote/AIBG.L/history?p=AIBG.L>

(2) <https://group.aib.ie/press-office/2018-press-releases>

(3) <https://www.bitc.ie/newsroom/news/43-companies-sign-low-carbon-pledge-to-cut-emissions/>

(4) <https://group.aib.ie/press-office/2019-press-releases>

Appendix C – Bank of Ireland historical volumes and share prices traded

Quotation Bank of Ireland share prices (Historical data) <sup>(1)</sup>								
Date	Open	High	Low	Close*	Adj Close**	Adj Close** Variation	Volume	Volume Variation
18/05/2018	7.3250	7.4000	7.2650	7.3200	6.3278		477,824	
21/05/2018	7.4000	7.4000	7.3100	7.3100	6.3192	0%	551,084	18%
14/11/2018	6.1600	6.4850	6.1600	6.4200	5.5498		452,714	
15/11/2018	6.4400	6.4400	5.9750	6.0000	5.1867	-6%	557,330	28%
24/10/2019	4.3640	4.4420	4.1560	4.1780	3.7193		282,523	
25/10/2019	4.2220	4.2500	4.1200	4.2500	3.7834	2%	721,910	397%

Date	Data released by Bank of Ireland
18/05/2018	Bank of Ireland and other leading companies addressing key sustainability challenges for Ireland <sup>(2)</sup>
21/05/2018	Day after release 'Bank of Ireland and other leading companies addressing key sustainability challenges for Ireland'
14/11/2018	BICI released: Have made a dedicated pledge to significantly reduce their carbon emissions <sup>(3)</sup>
15/11/2018	Day after released 'BICI released: Have made a dedicated pledge to significantly reduce their carbon emissions'
24/10/2019	Bank of Ireland signs United Nations Principles for Responsible Banking as part of its ongoing responsible and sustainable banking strategy
25/10/2019	Day after release 'Bank of Ireland signs United Nations Principles for Responsible Banking as part of its ongoing responsible and sustainable banking strategy'

\*Close price adjusted for splits.

\*\*Adjusted close price adjusted for both dividends and splits.

(1) <https://finance.yahoo.com/quote/BIRG.L/history?p=BIRG.L>

(2) <https://www.bankofireland.com/about-bank-of-ireland/press-room/press-releases/>

(3) <https://www.bitc.ie/newsroom/news/43-companies-sign-low-carbon-pledge-to-cut-emissions/>

(4) <https://www.bankofireland.com/about-bank-of-ireland/press-room/press-releases/>