Barriers to the adoption of Online Bank in Ireland

Dissertation submitted in part fulfilment of the requirements for the degree of

MBA Finance

At Dublin Business School

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Declaration

I, Rodrigo Scatolin, declare that this research is my original work and that it has never been presented to any institution or university for the award of Degree or Diploma. In addition, I have referenced correctly all literature and sources used in this work and this work is fully compliant with the Dublin Business School’s academic honesty policy.

Signed: ______________________

Rodrigo Scatolin

Date: 21/05/2018
Acknowledgements

This research study could not achieve this magnitude without the help of many people. Firstly, I would like to thank my dissertation supervisor Mr Eddie McConnon. For without his guidance a considerable part of the project could not be accomplished. I also thank my classmates that were with me during all the project enabling the exchange of ideas and accomplishment. I would like to thank too my family for the encouraging and emotional support given on all my decisions, in additional being always open to hear me in difficult times. This research project represents a big step in my live, and words cannot describe how grateful I am to you all. Without your support, the project would not be successfully completed.
Abstract

Banking services are present in the daily life of individuals all around the world. The financial services business model has been changing in last decades, the services are being offered online and more and more firms and individuals are adopting this trading channel. Ireland as other countries is using this, but some barriers still remain in the market that slow down the adoption of such services. This research aims to identify these barriers. This research project is based on surveys ran with the active workforce of financial firms based in Ireland. A range of aspects of the market is studied, such as culture, local banking structure, technology, regulation, data security, fintech and user experience. The final evaluation synthesizes the current barriers present in the Irish market regarding the adoption of digital banking.
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1. Introduction

In the last decade, banks are constantly improving their digital services, this progress has primarily the intention of reducing costs for the banks and make consumers life easier. Besides that, is still difficult to make people use this service, especially when is involved a fully digital bank. Kamra (2014, p2.) explicate that is necessary do a deep research to understand people behaviour, cultural aspects, preferences, and choices. In addition, the institutions need to invest in offering a user-friendly service and working in commercial approach to attract the costumers. Doing small look at the main bank’s app in Ireland is possible to identify that then are still not offering fully digital services, some transactions still has the branch as a main or only way of business.

Ireland is quite developed in terms of internet access and available technology. The Eurostat website (2017) displays that from December 2016, 82% of the population had used the internet at least once in the last three months, from this 82% only 58% used internet banking, 10% less than the average usage in the United Kingdom (68%). This figure shows the high potential of spreading digital services. This research proposal is finding why this isn’t happening yet. In addition, find out why Irish fully digital banks are not running yet in the country, currently operates in Ireland or foreign online banks or national blend strategy banks.

Recently the banks are facing new players in the market, the fintechs boom amplified the competition and is forcing the banks to modify their way of make business. According to Accenture Consulting (2016), these not traditional financial firms are launching the called digital disruption and consequently increasing the competition. The report also highlights the challenge related to culture and skills. A survey ran with 25 senior executives of the industry showed that around 80% of the respondents consider that are not prepared to address digital disruption when considered culture and talent skills. Regarding technological challenges, 52% of the respondents considered that the industry
is minimally or somewhat prepared. Financial resources, that is not part of the hypotheses of this paper, is a challenge for only 36% of the respondents.

Nicoletti (2017, p5-7.) affirm that banks are impacted by the new consumer behaviour of younger generations that now are more connected and claim for new solutions, more personalized. They are less than older generations. These are maybe the now current challenge for banks.

The Information Age magazine (2017) highlight the importance of data security, both to customers and banks. Besides that, currently the market experiences a lack of practicality, online transactions still require loads of procedures and formalities to be concluded. The adoption of modern data management tools can reduce the bureaucracy involved in the processes.

Technological issues also can a barrier to the adoption of internet banking. According to Sironi (2016), the investments in technology are increasing constantly by banks, but changes in the market and services have been happening faster. The adoption of out-dated systems by these institutions stickle the innovation flow. They are deeply working on the improvement, simplification and integration and of systems, but sometimes still stuck on the old system or legal issues.

More detailed information about the barriers and challenges of internet banking will be given in the second section, the literature review. The up-to-date studies suggest the possible general challenges for digital banking, which address the hypotheses and the research question presented below. That aims to find out the specific characteristics of the Irish market.

1.1 Research question

What are the barriers to increase adoption of internet banking in Ireland?

The motivation to research question choose was the need for better understanding the current scenario of Digital Banks in Ireland. In addition, detect the key points under the implementation of the
mentioned model, since there is not yet an entirely digital Irish Bank running, and currently mixed strategy banks still are struggling to improve online banking figures. Both parts, bank, and customers can benefit from this kind of service. An internet banking has clearly lower costs than branch-based ones, the cost of rent, material and human resources are inferior. Since they can choose the strategic locations, optimising the customer service and replace paper for. For the clients, the major benefits are time-saving, practically and freedom to control their accounts anywhere.

The hypotheses linked to the research questions and that will be explored in this paper are the following:

H1: Cultural transformation is a challenge for adoption of Internet banking in Ireland.
H2: Ireland has problems finding skilled professionals for developing digital solutions for banking.
H3: The available technology and systems are not enough to increase internet banking in Ireland.
H4: Legal issues retard the adoption of Internet Banking.
H5: The current apps and Internet banking available in Ireland do not fulfil customers’ needs.

The hypotheses listed intent to identify the barriers to Internet Banking in Ireland. The expected result is to determine the force of each hypothesis evaluating the features and needs for development of this market in the country. The validation of these hypotheses evaluates information about the current status of digital disruption and an insight into future strategy decisions.

The objective main objective of this research is to identify the possible barriers present in the Irish market that can influence the increase of internet banking using. The secondary objective is to find benchmarks in Europe or other similar regions. Questionnaires will be used in the research to collect the view of active workers from financial firms based in Ireland. In the end, the study intent to evaluate an overview of the market that combined with workers opinions enable the elaboration of recommendations for the industry improvement.
The importance of the research is investigating the reasons that may slow down the internet banking in Ireland. The migration of clients from branch-based bank to digital is advantageous for both parts, the bank that reduces costs and consequently increases efficiency and the clients that may found cheaper options and quick solutions anywhere.

Summarizing, this research is divided into 6 chapters. The first in the introduction, that provides an overview of chosen theme and presents the research question. Chapter 2, is the literature review that evaluates the current literature review, connecting it to the question presented in the first chapter. The second chapter is divided into 6 sections, containing relevant topics for the research, these topics are; Banking and Society, Banking in Ireland, Internet Banking and Fintech, Cultural Aspects, Regulation and Data Security. After the literature review is formally presented the methodology adopted, chapter 3 consists of a review of the available methodologies and a discussion about the method that better connects with the objectives. The topics of chapter 3 are; Research Design, Research Philosophy, Research Approach, Research Strategy, Sampling - Selecting Respondents, Data Collection, Data Analysis method, Research Ethics, and Limitations of Methodology. With the overview of the literature and methodology did, the next chapter discusses the Data Collected and Findings analysing the answers received during the research. Chapter 4 cover topics as Participants Profile, Data Structure, Data Analysis, Hypotheses Analysis, and recommendations. The next chapter, Conclusion, look over the research question and connects the literature and data providing the final recommendations. Finally, Chapter 6, provides a self-reflection of the researcher, evaluating the learnings, skill developments, and future applications.
2. Literature Review

2.1 Literature Introduction

This chapter will provide deep reflection dealing with online banking adoption. Covering important topics related to the Research Question presented above. The topics covered here are all somehow linked to the hypotheses and aligned with the data collection intent to answer the question. This chapter is essential for the paper once it provides in-depth analysis of the background knowledge regarding the topic and clarifies the variables needed for the success of the quantitative research.

2.2 Banking and Society

According to Howells and Bain (2007, p11-13), the banks work as an intermediary between lenders and borrowers, which deal with both parts trying to find the best solution regarding money transactions. For sure, this is only the basic function, to attract the customers, the banks offer a range of services and products that involve money transactions, so they can raise money for the borrowings and get the public interested in that money. Basically, the inputs are deposits and the outputs are loans.

Banks are intermediaries is the traditional view, the modern economy expands the ways of the banking business. The offer of services and money management represents nowadays a large share of the banking income.

Traditionally, there are three kinds of banking, retail banking, mortgage banking and wholesale bank. The first one is designed to serve individuals and small or medium companies, they are often known as high street banks. They usually branch based and provides basic daily life products related to cash management, loans, and others. Mortgage banks are strictly offering mortgage lendings. The third a wholesale banks that deals with large-scale transactions, usually a large retail bank also have sections
for wholesale banking, it’s a kind of evolution. (Lipscombe and Pond, 2002, p2). This research focuses on the operations of retail banking, once the research question is looking for barriers found in the society. According to Amadeo (2017), the most important functions of a retail bank are a deposit, cash management and credit, that are provided for families and companies.

Payments represent one of the main ways of interaction between bank and costumers. Reviewing literature of 25 years ago is easy to identify the changes that happened in the last decades. In 1992, the book Business of banking and Financial Services, wrote by Wright and Valentine, list the main methods of payment at that time. They highlight the Cheque as the most important method of payment, followed by cash, credit card and standing orders. A recent report by Capgemini (2016) consulting showed that in 2014, checks represents only 6% of the global non-cash payments and enhance the growing of online payments methods.

This lead the research for the next topic, internet banks and fintech that will discuss the current methods embraced in banking and new players in the market.

2.3 Banking in Ireland

Currently, according to the Corporate Finance Institute (2018), there are 64 banks operating in Ireland. The responsible for the regulation and traditional central bank functions is the Central Bank of Ireland (CBI). There are two groups of institutions working in the country. First, the retail banks that provide general banking services, such as, checking accounts, personal loans, debit/credit cards among others. And secondly, the Banks that operate in the IFSC, International Financial Services Centre. In 2016, the Moody’s Investor Services Agency, attributed positive outlook on Ireland’s banking system, same as in 2015. In 2017, the outlook changed to stable, influenced by the positive but slower GDP growth and continuous clean-up of problem loans. The agency highlights that the balance in the country is in improving the assets risks and funding are steady and, the conditions against are related to efficiency
and profitability. Besides the high recovery of the problem loans since the financial crisis, the Irish one still remains higher compared to European peers.

As previously mentioned an important part of the financial/Banking services in Ireland are located in the IFSC. According to the information provided on the centre website, this in an important special economic zone, founded in 1987. I have become one of the leading hedge funds service centre in Europe and have a considerable importance worldwide. Many of the largest financial institutions are present there. (About the IFSC, 2017). This importance can be shown in figures, the IFSC, nowadays employs over 38,000 people, and pay over 1 Billion euro in tax each year, and further 1 Billion Euro in exchequer payrolls, which represents around 38% of revenue coming from corporation tax. The centre contributes to 7.4% of the Irish GDP. And quarters more than 500 firms. The main sectors of economic activity in the IFSC are Funds administration and domiciling, securitisation, Banking and Insurance, aircraft leasing, corporate treasury, payments processing and Fintechs.

The International Financial services centre is regulated by the Central Bank of Ireland, same as the other financial institutions. The Irish Times (2017) mentions that Irish banks regulation are constantly related to phases such as “light touch” and principle based”. After the Brexit announcement, the CBI reinforce that this culture does not exist anymore, and the international institutions are welcome to relocate in the country but following regulatory rules. These issues will be discussed in depth in the Regulation section of these paper.

According to The Central Banking of Ireland (2018), the institution mission is “Safeguarding Stability, protecting consumers” and the organizational vision is being “Trusted by the Public, respected by our Peers, Fulfilling Workplace for our People”, these two are central to the organizational strategic plan. The Central Bank of Ireland was created in 1943. The central bank has two main activities, regulation of the Irish financial services industry and safeguarding of Irish economic constancy. The CBI lists its Strategic Responsibilities as outlined below:
The Central Bank of Ireland has a range of duties in the banking industry in Ireland, similar to what occurs in other countries.

Table 1 displays the top 5 retail banks in Ireland by Assets, and also, the profit of each one. The biggest bank in assets is Bank of Ireland with approximately 123 billion Euros, followed by AIB with 90.1 billion Euros. Besides that, AIB is a large advantage in profit figures its profit is about 52% higher than Bank of Ireland, almost half billion euros more. Together, AIB and Bank of Ireland represent about 75% of the assets and 89% of the profit, considering the top 5 in the country. The total assets of the top 5, are 285 billion Euro and profit of 2.3 billion.

<table>
<thead>
<tr>
<th>Company</th>
<th>Assets (Billion)</th>
<th>Profit (Million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bank of Ireland</td>
<td>€ 123.0</td>
<td>€ 852.0</td>
</tr>
<tr>
<td>AIB</td>
<td>€ 90.1</td>
<td>€ 1,300.0</td>
</tr>
<tr>
<td>Ulster Bank</td>
<td>€ 35.9</td>
<td>-€ 151.0</td>
</tr>
<tr>
<td>Permanent TSB</td>
<td>€ 22.8</td>
<td>€ 62.0</td>
</tr>
<tr>
<td>KBC Bank Ireland</td>
<td>€ 13.3</td>
<td>€ 210.9</td>
</tr>
<tr>
<td></td>
<td>€ 285.1</td>
<td>€ 2,273.9</td>
</tr>
</tbody>
</table>
The banking competition structure is the remaining firms after the 2008’s financial crisis. The market changed drastically during the crisis and the following paragraph will explore, the reasons, actions and effects of the crisis in the Irish market

In 2008, the failure of the Lehman Brothers bank, one of the most traditional investments of the USA triggered the worst world economic disaster since the 1929 great depression. (Hilsenrath and Palleta, 2008). The causes of the 2008’s crises are varied and divisive and generate a range of theories to explain its reason. Somehow all the world was affected by the depression, Ireland was specially impacted, the banking system collapsed, and the government had to act to minimize the effects.

According to O’Flynn (2015, p1-5), the first warning came with the high debt of the Anglo/INBS bank, in 2009 the government did the first payment to avoid the collapse of the institution. The central bank of Ireland and the European Central bank was involved in the act. In the sequence, the same situation started to appear in other banks such as AIB and Bank of Ireland. The government had to obtain external funds to save the banks, the legal reasons for the state intervention are related to consumer protection and regulation and will be detailed in section 2.5.

The amount of money used to save the banks was around 30 billion euros (Conroy, 2015), mostly to AIB, Bank of Ireland and Permanent TSB. With this action, the government acquired part of the control of the three of the larger commercial banks. Using AIB as an example, the bank only has started to pay the bailout to the government in 2015, and the first dividend of 280 million euro in 2017, almost nine years after the payout (Brennan, 2017). In the same way, The bank of Ireland had started to show signals of recovery, in 2016, the bank announced a plan of investments in digital banking of 500 million Euro. The investment according to the Business insider (2017) is a movement to be in line with the market trend, implementing new customer facing channels, in addition to advanced intern solutions as data analytics and compliance.
The most intensive investments in digital transformation are in North America, according to the Business Inside review, 40% of the banks in north America invest more than 25% of the budget in digital transformation, while in the EMEA are only 6% are reached this level of investment.


Regarding the Irish market, the investments are increasing, after the drastic drop after the crisis. The IDC consultancy measures the growth year by year. The chart two displays the scenario from 2007 to 2016.

![Chart 2: Growth of IT, expenditure in Ireland. (source: http://uk.idc.com/research/irish-IT-market)](chart2)
It is clear that after 2014, the investments in IT have a great increase, indicating the recovery from the crisis. The dates coincide with the AIB recovery announcement and Bank of Ireland investments in digital banking. The question that remains is, “How long will take to the banks here to meet the international levels of development?” and if the investments that have been done is enough.

Banking is an important industry in Ireland, but retail banking still is very concentrated in two big companies. For all these reasons is necessary to investigate the opportunities for new players and diversification of the market share. The recovery from the financial crisis seems to be real, and the time to define new strategies is now. The following section relates the present internet banking and fintechs relation, and the importance of the development of these areas and the future strategies for banks.

2.4 Internet Banking and Fintechs

Moving from traditional to digital, the banks started to offer more services online. In the early 2000’s the banks started to offer more and more services online. At that moment, Schotema (2001, p37.) already mentioned the rising in the internet banking services, the banks started to process customers service inquires, transactions between accounts, open accounts, and enable a few trade services. This represents the start of Internet banking. Gradually the access to internet increased around the world and consequently the number of people able to use internet banking. The table 1 from EuroStat (2017), displays the number of the user of internet banking in selected countries of Europe.
As shown in the table Ireland, is growing faster than the average of Europe, but is still far from countries like Denmark, Netherlands and UK. The main reason for the low growth of Europe average is the slow movement of internet banking in Eastern Europe countries in additional Italy and Portugal. Besides the good position in Europe, is clear that still have a huge potential in Ireland for internet banking, considering the gap between internet users and online banking users.

Seeking efficiency goals and competitive positioning, traditional banks have been working on the incentive for internet banking. Bank of Ireland (2017), for example, highlights the benefits of internet banking, and provide a guidebook in its website. Among these benefits are, customized services, posting quick services and reduce writing, time reduce and reduce paper in the office. Besides that, they emphasise they do a good customer service (support) and focus on the security of the transactions. Accentuating the befits of online banking. The other retail banks in Ireland provides similar guides, but with few less information than Bank of Ireland.

Among all online services offered by banks stands out payments, Capgemini (2017) highlight in its report“ Top 10 trends for payments in 2017” the importance of these transactions in the financial markets. Digital payments such as, online, contactless and mobile increased by 60% from 2015 to 2017, the forecast is that the figure will reach 3.6 trillion UDS this year. The Financial market is
highly impacted in this context, once they are facing new players. Some are big companies, for example, device manufacturers (Samsung, Nokia, Apple), Tech companies (PayPal, Google, Alibaba, eBay), telecom companies, and start-ups (Transfer wise, Qudian, Square).

Regarding payments, Ireland is already in a process of change from manual to digital sources. The Payments monitor release by the Banking and Payments Federation Ireland (2017) displays the growth of electronic methods in the country. Table 3 presents the figures for 2016 and 2017.


As shown in table 3, the volume in payments transactions with credit and debit cards raised 20.4% in 2017, of which the transactions made using contract less raised 109.2%. And the credit transfers grew 4.8%, of which digital banking transfer grew 27.2%. Besides the great number, these transactions still have limitations, for example, maximum value. That’s why in the case of card transaction it represents 27% of the volume, but only 6.5% of the value. These figures are important to understand the dimension of the market and also the opportunities related to it. Thus, increasing the competitiveness and complexity related to the way companies are doing business.

The renovation in the market gave opportunities to the boom of the Fintechs, Startups that are offering financial services. According to Barberis and Chishit (2016, p13.) now the direct pressure
regarding competition is not coming from other banks but also from small companies. These are highly innovative and low cost. This lead to the strategy building of banks that now should consider the market changes. The industry focus changed to digital banking and improvement of online transactions operations. According to Olanrewaju (2014), the lack of investment in digital banking can put around 30% of the bank’s revenue in play. On the other hand, the move from traditional to digital can represent a 25% cost reduction to the institutions.

A research conducted by the BCG (Boston Consultancy Group, 2017) set the main point to a bank to achieve cost excellence. According to the research, the first step in this process is evaluate the company structure and the level of digitalization. The cost benefits are all related to services that can be implemented in internet banking or improving banking infrastructure. Some examples are:

- The expansion of online services reduces the number of calls to the bank to solve simple problems.
- Increase the process automation, this reduces the working time and provide better solutions for consumers.
- A good internet banking reduces the number of employees, for example: when operating models are a redesign for support functions.

The research also found out that the cost reducing is not the only benefit, the decision-making capability of the companies increases, and customer satisfaction also rise. The literature shows that digital banking does not represent only transactions available to the clients but the whole new infrastructure inside the company. The fintech models presented in this section are companies that are completely digital from the beginning. This model is benchmarking for the future of financial
institutions. The services provided by internet banking should not be limited a huge engagement is a need to achieving the disruption level. All these aspects reinforce the need for investigation of the barriers related to the adoption of new technologies.

2.5 Cultural Aspects

A concern about the expansion of digital services is the cultural barriers of the society. Katre et al. (2009, p4.) explain that people from different cultural backgrounds have unlike perceptions of new online services. A case study demonstrates that the main concerns are about simplicity, security, and service. Considering this, to break the barrier on the diffusion of a digital bank its needed a range of studies about usability, providing easy and intuitive access to all banking services in a security way. Thus, the expansion of digital bank can cross one aspect of the cultural barrier.

The disruption caused by the digital era increase the needs for studies regarding cultural behaviour. According to Delany, Carolan and Murphy (2008, p26.), privacy and freedom of expression are of seemed as opposite interests, this conflict may sound too much philosophical, but can be related with the avoid of transactions online. Money involving questions are very weak in the confidence context. Others cultural aspects should be investigated, such as age, gender, social class, location.

Understand the cultural aspects and social behaviour is essential for the success in business. According to Aazim (2016) banks tend to rely more on marketing skills and focus less on market research. This wrong focus affects how they project the use of services on a medium-term basis. He adds that the growth rate of digital banking can be improved by collecting effectively the feedback from customers. The marketing skills mentioned are focused on promotion (advertising). The problem mentioned my Azim can be minimized if the institutions follow the classic marketing model, the 4 Ps. The model
heads are Product, price, Place and Promotion, that are usually developed in this sequence. (Perreault and McCarthy, 2002, p 48). The first one “Product”, is closely related to the topics discussed here.

Internet banking is a product in the view of the bank. General speaking is developing the right product for the right target area. To achieve success marketers should study deeply the product lifecycle, in this case, the use of the internet for banking purpose. Consequently, they may accomplish the right consumer needs at the right time. According to Kotler and Armstrong (2016, p257-258), there are three stages of thinking about products and services, that is a sequence of value addition, the first level is “core customer value”, that studies what the customers are looking for (basic needs). The second level involves turning the core benefit into an actual product, by developing features as quality, design, packing and brand. The third level is based on building an “augmented product” extending the benefits based on core customer value. The cultural aspects are present in the first step of this development, highlighting its importance.

Regarding the Irish market, The Journal (2017), points out that vulnerable and elderly people represent a large amount of the Irish bank market according to the Bank of Ireland. The bank mentioned that the migration of channels should be carried carefully and protect these customers. In the same news is cite a non-well succeeded attempt to modernize the services done in 2015 when the bank tried to restrict the amount of cash handled in branches.

According to the Director of Customer, Brand and Marketing from KBC Bank Aidan Power, focus on customer experience future of banking. The director points out that the core proposed in KBC to create a centric brand positioning, focusing more on customer needs. The proposition is based on a “digital first” strategy, with a full service online retail bank, considering a different type of culture and mindset. During the implementation of this strategy, Aidan noted that customers demand physical presence from banks, so they created “hubs” in fifteen points of Ireland in order to accelerate the process and change the way people look for banks (The marketing institute of Ireland, 2017). In this
case, and hybrid structure had to be adopted to gradually change the consumer’s mindset. In the UK, where there are some online banks operating, the target audience is the millennials, and the strategy to attract them is based on strong customers experience, one successful example is Monzo bank. According to The Economist, Monzo is as close to a cult bank can be. The article also mentions that the coral-pink card turned into a status thing. People are proud showing their pink card (The Irish times, 2016). Since 2015, when the bank started operating, more than 500,000 accounts have been opened (Monzo, 2015).

The Economist magazine (2018), shows that the panorama in Britain is in a developed stage the digital banks are investing in merges, acquisitions and partnerships to grow in market share. The starling banking announced in February 2018, a group of new partners, the digital pension provider PensionBee, mortgage broker Habito, robo-advisor Wealthsimple, and travel insurance partnership with AXA (FinExtra, 2018). The growth of the British digital banks represents that the cultural barriers are being taken over. The expansion of types of service offered can be read both, future of digital banking and customers demand new players.

According to Taylor (2018), the Irish consumer behaviour is in a changing process for specific kinds of transactions. The general secretary of the Financial services Union Larry Broderick affirmed recently that besides the mind changing some financial products still do not are well accepted online for the Irish market. For services as saving plans, pensions, and mortgages the clients prefer to have an experienced professional advising them. O’Toole (2018) complementing this idea affirming that after the 2008 crash the people become more cautious about services like the mentioned. One of the reasons for that the debt-to-income ratio in Ireland still are 50 percent higher than the European average.

Cultural barriers for internet bank, as seem in this chapter are very broad. It can come from personal reasons, education, life experience and historical facts. Identify these reasons is a complex job and
requires, multitask studies to answer it. This research has some relation to the topics and somehow culture influence the most of the barriers studied here.

2.5 Regulation

In Ireland, the Central Bank is responsible for practical regulation and conduct of the business of financial institutions. The Central Bank was established under the Central Bank Act 1942. Over the years this legislation has been subject to several amendments since its presentation. The Central Bank is demanded to ensure the stability of the financial system and regulate financial, always seeking the population interests. In the context of the regulation of financial institutions and markets, the Central Bank, similar to another central bank, is responsible for the authorization of new financial services provides and supervision of the current institutions based in the Country. The main objective is organizing the industry, and avoid possible systematic failures or insolvency, financial crisis by safeguarding compliance with prudential and guarantee that basic requirements are being pursued. (Putnis, 2012, p399.).

It is important to remind that as a country member of the European Union, Ireland is also under the rules of the European Central bank. The ECB (Euro Central Bank), is responsible for controlling the monetary policy for the Euro zone, since 1999. Also, the ECB works for improving and keep the European integration. The Euro central bank has legal rights under the public international law.

The legal framework of the Eurosystem and European System of central banks (2014), highlights the legal acts and instruments ruled by the ECB. The following themes are some of the fields ruled by the ECB:

- ECB institutional provisions.
- Monetary policy and operations.
- Payment and settlement systems.
- Banknotes and coins, means of payments and currency matters.
• Foreign reserves, foreign exchange and Eurosystem reserve management services.
• Fraud prevention, transparency and data protection.

The EBC rules are the base for the national central banks to put into practice their own regulation. The main duties of central banking of Ireland were already mentioned in section 2.3. The following paragraphs will focus on the way these duties are being employed and the views of specialists and the industry about this, including a history of modifications and adaption over the time.

The primary banking legislation of Ireland is dated from 1942. In 2010, it was modified in many parts by the Central bank reform act, that unified the function of the central bank and the Financial services of Ireland. In 2012, the central bank introduced the probability and impact risk, in order to regulate entity on financial stability and consumer protection. In 2013, the Act of supervision and enforcement increased the sanctions and penalties for individuals and firms.

Before the 2008 financial Crisis, the retail banks in Ireland were predominantly commercially owned, with shares traded in the Irish Stock exchange, with a mix of personal and institutional shareholders. During the financial crisis, the banking system had to be restructured and the government began to Partially control some private banks. (Homburger, 2014, p197.).

In 2015, the state part of Irish banks was valued at 16.4 billion euro, and the total bailouts funds due the crisis were around 29.5 billion euros, injected in AIB, Permanent TSB & Irish life and Bank of Ireland. The regulation and consumer protection laws took all this money from taxpayers in order to stabilize the banking system. The high concentration of market share in Irish Retail banks and the financial crisis, could be one important issue regarding the new technologies development (Hancock, 2015, p1.). According to (O’Toole, 2018) the chances of a crisis happens in the same way are low, once the basic regulation to the banks is now much stronger. But some underlying weaknesses are can reappear, such as the current high householding debt and poor ethical standards of the firm.
The regulation of banks in Ireland suffered changes after the late 80’s and mid 90’s. Until the mid 1980’s, Ireland was reputedly one of the most regulated banking systems in the western. After the pressure caused by UK and US, in line with banking deregulation and financial liberalisation, the rules and the way of making business in the financial sector changed. By 1992, credit-growth restrictions and interest rates rules were drastically changed (MacLaran and Kelly, 2014, p42.). The dates coincide with the creation of the IFSC, where financial firms operate with special tax conditions. The era of Light-touch regulation lasts until 2010, when influenced by the 2008 crisis, the Central Bank stated on its strategic plan of 2010-2012 that banking regulation would become more intrusive and defiant then what was being until the date, risks staffs were increased and the big act changing the legislation was presented (Putnis, 2012, p399.).

The current scenario more focused on the consumer agenda, what can improve the confidence doing online transactions by guaranteeing the security of the customers. According to The Irish Times (2017), the Brexit can attract some international institutions to Ireland, but the Central bank already announced that regulatory flexibilities will not be given as to improve Ireland competitiveness to allocate these businesses. The recent news demonstrates that regulatory issues are being improved year by year. The consumer protection initiatives have some influence on digital banking expansion but are still minor when compared to loans and risk tasks. The regulation for online banking is mostly based on the general EU rule. The next chapter will explore the data security features related to digital banking in Ireland.

### 2.6 Data Security

Regarding data security, Panko and Panko (2015, p121) explain that e-mail scams are one of the most typical illegal data invasions. In these cases, the thieves collect enough data to pretend to be the victim. And can use this data to make credit card transition or another bank transaction. Once the internet is linked to this kind of privacy invasion this could be a purpose of avoiding digital banks. Even
this is the situation that does not regard to the institution directly it damages the public image of the institution involved. Guarantee enough information to avoid data invasion is one of the steps to improve reliability. Lambert (2016, p11.) highlight the importance of data protection and regulation. The rise of internet 2.0 and social media is a threat to data protection, once the individuals are more exposed.

The banks and other online based firms should guarantee the protection of the personal data, enhancing the possible attacks and informing the clients about possible risks. Fairness, transparency, security, accuracy and consent are basic rules for a good “online” customer relationship. (Lambert, 2016, p12.)

In Ireland, rules regarding the data security are under the responsibility of the ‘Data Protection Commissioner’. The office is responsible for safeguarding the rights of the consumers and update Acts concerning data protection, policing possible irregularities coming from data providers. (Data protection commissioner, 2018). Recently some changes were made to the rules for online transactions specially payments. According to Beashel, O’Hanlon and Dawson (2017, p1-5.) the changes in the payments landscape (new services and the emergence of new providers), increased the need of new data protection instruments. The “Payments Services Directive II” cover the market innovations, including the new payments providers and services, based on the original rule (“Payments and Services Directive I”). The directive proposal is creating a safe environment for payments, and incentive sustainable innovation.

The directive is a reinforcement for the consumers concerning the safety of data. Keep up to date rules is important to promote innovation and reassure the rights of the consumers.
2.7 Workforce and Education

The final topic of the literature review aims to discuss the Irish education system and labour force available. These topics are together because they are closely related, a good educational system improves the quality of the workforce and the opposite request that technologies might be imported. Especial attention will be given to third level education.

The State agency QQI (Quality and Qualifications Ireland) is the responsible for the educational system in Ireland. The QQI was established in 2012 after the junction of the function of 4 other agencies, with the intention to ensuring a high level of quality in education. (QQI, 2018). The national framework is divered in 10 levels, professional skills from banking industry start at level 6 with certificates provided by institutes of technology, the universities start at level 7, bachelor’s degree, followed by level 8 (honours bachelor’s degree), level 9 (masters), and level 10 (doctoral degree). The structure is like other European countries.

The quality management and offer of courses are in the EU standards, the main barrier here seems to be the price of education in the country. According to MacGuill (2017), Ireland is the second highest country for third-level education Europe. A report from the European commission showed that the country is below only the UK, for level 8 education. The price for undergraduate students is around 3000 euros per year for public universities. The report also mentions that for 11 countries in EEA there is no fee for first undergraduate students and further 14 countries charge on average less than 1000 Euros/Year. Reach the level 9 is the actual barriers, the average fees jump up to 30000 Euro/year. Besides that, the options of student loans or family allowances are very remote. (Fitzgerald, 2017).

The high price of education especially for level 9, may be a barrier to the development of new technologies. The difficult to access higher level considered knowledge producers may affect the internal development. This is one of the hypothesis to be tested in this research.
Connected with the people skills is how is divided the workforce for financial services firms. Data from the census available at CSO website (Central Statistics Office of Ireland) shows that a considerable part of the labour force of financial related areas come from other countries. The table 4, displays the data about Industrial Group, Nationality and year.

<table>
<thead>
<tr>
<th>Industrial Group, Nationality and Census Year</th>
<th>2011</th>
<th>2016</th>
<th>Δ 2011-2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information and communication</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Irish</td>
<td>52,983</td>
<td>66,637</td>
<td>13,654</td>
</tr>
<tr>
<td>Other</td>
<td>13,871</td>
<td>21,279</td>
<td>7,408</td>
</tr>
<tr>
<td>Financial and insurance activities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Irish</td>
<td>82,194</td>
<td>79,783</td>
<td>-2,411</td>
</tr>
<tr>
<td>Other</td>
<td>9195</td>
<td>9543</td>
<td>348</td>
</tr>
<tr>
<td>Total</td>
<td>135,177</td>
<td>146,420</td>
<td>11,243</td>
</tr>
<tr>
<td>Irish</td>
<td>135,177</td>
<td>146,420</td>
<td>11,243</td>
</tr>
<tr>
<td>Other</td>
<td>23,066</td>
<td>30,822</td>
<td>7,756</td>
</tr>
</tbody>
</table>

Both the groups analysed ‘Information and communication’ and ‘Financial and Insurance activities’ had increased the number of employees from 2011 to 2016. The interesting fact here is how this growth happened. A total of 18999 positions was created, and 40.8%, of the growth, correspond to overseas professionals. In 2011, the two groups had 158 thousand employees, in 2016 the figure was 177. The financial and insurance activities decreased the number of staffs by 2000. When analysed separately by nationality the number of overseas staff slightly increases and the national staff decreases.

The recruitment consultancy Morgan McKinley (2018), the Ireland demand for top talented personal, they reject the supposition that education can be a barrier in Ireland once it is the second higher figure in EU for undergraduates (%). But the report does not mention the nine-level education or knowledge creation. How the need of foreign professionals is a barrier for the internet banking developments is
still not clear. At one side have the attractive salaries in the country. On the other hand, the reason for the decrease of national professionals in some fields.

2.8 Literature Conclusion

In this chapter, a critical review was done covering extensively the topics related to the research question proposed and Hypotheses. The chapter started with a reflection about banks and their role in the society. Next section evaluates the current scenario of banking in Ireland the further challenges and building of the actual structure. Internet banking and fintechs were presented in the third part of the chapter, reviewing the state of art of digital banking and the innovations in the industry, considering the main features of this kind of business. Combined these part gives an idea of the high potential of Ireland to expand internet banking and some features offered in this selling/business channel.

The main purpose of this research has identified the barriers to internet banking, so in addition topics as cultural aspects, regulation, data security, workforce and education were also included in the research. Therefore, the most pertinent topic was covered trying to pursue the objectives outlined in chapter one, and consequently finding an interesting basis to the questionnaires analysis and design.

3. Methodology

The questionnaires are composed of simple questions, that are related to one hypothesis proposed, each question and answers session should not take more than 5 min to be answered. The surveys are connected to the objectives, research questions and the literature review. And pursues to confirm the initial hypothesis proposed.
3.1 Methodology Introduction

This research uses the quantitative method, in order to evaluate the views of Irish banks employees with the objective of identifying the barriers to the spread of internet banking in Ireland. The importance of this research is to emphasize and identify possible barriers to the adoption of internet banking in Ireland. The questionnaires cover topics such as direct barriers and features need to the improvement in the field, including up to date findings of the Irish Market. Detailed information about the methods adopted to achieve these goals will be given in the subsequent sections.

This chapter analyses the range of option of methodologies, discussing the theory and choosing the best options to answer the proposed research question. The process to build the methodology is based on the research onion prosed by Saunders, Lewis and Thornhill.

3.2 Research Design

According to Saunders, Lewis and Thornhill (2016, p162), the research design is extremely important to guarantee valuable results from a primary research. It defines how the research question will be answered, by clearing the objectives of the research and specifying how data will be collected, analysed and evaluated. It covers the philosophy, approach and ethics as well used in the process. the final step has identified the limitations of the research. The further sections will explain how the objective of identifying barriers to adoption of internet banking in Ireland will be accomplished. Figure 1 displays the research onion, developed by Saunders which exemplifies the stages of research design, each layer of the onion represents a progress in the research methodology.
3.2.1 Research Philosophy

The research philosophy covers the beliefs and assumptions about the development of the knowledge. Saunders, Lewis and Thornhill (2016, p122). Creswell (2014, p6.) highlight that the choice of the philosophy will help explain the data collection method chosen (quantitative, qualitative or mixed). As showed in figure 1 the Research philosophy is in the first layer of the onion, so it influences all the further choices.

Saunders at el (2016, p136.), provides a large list of possible philosophical approaches to a research, the main ones related to business studies are positivism, pragmatism, critical realism, interpretivism and postmodernism. Regarding the assumptions, they can be ontological, epistemological and axiological.
**Positivism** relates to the social reality to produce law-like generalizations, it uses casual explanation and prediction as a contribution. Usually is deductive, highly structured and based on large samples, and typically adopt quantitative methods (Saunders et al. 2016, p137.). According to Sekaran and Bougie (2016, p28.), the positivist view is seen as the approach to get at the truth, positivist believes that there are one answers for out there. Theories tested are based on a fixed, prearranged research design and objective measures.

**Pragmatism** according to According to Sekaran and Bougie (2016, p29.) does not take a specific view on the research. Usually view the results of a research as provisional truths, as is believes that the current truth is changing over the time. Moreover, pragmatism is not committed to any one system of philosophy or reality, this applies mixed research methods, with both qualitative and quantitative assumptions. Pragmatists do not believe in an absolute unity. (Creswell, 2014, p11.).

**Critical Realism** according to (Saunders et al. 2016, p137.) focuses on clarifying the views and experiences, is a way to give shape to observable events. For critical realists, ontology is essential, they are really external and independent. The typical methodology adopted in this philosophy is retro deductive and with historically situated data and fits in a range of methods. to Sekaran and Bougie (2016, p28.) complement that critical realist research does not consider emotions, feelings and attitudes once these are considered subjective in nature and weak for built valuable results.

**Interpretivism** is typically based on small samples with a depth investigation, fits better in qualitative research. According to Saunders et al. (2016, p140.), the nature of interpretivism is to create new, depth and richer understanding of social behaviour and contexts. As it employs small samples, the results are depth knowledge in and specific field, but it is also threatening because data collect can be influenced by personal views and values.

**Postmodernism** highlights the importance of power relations and language in a research and seeks marginalized views. Usually are deconstructive researches comprising in depth investigations of
differences, silences and other marginalized dimensions. Due to its nature typically is used in qualitative research, is an unlikely reach this level of complexity with only quantitative research. (Saunders et al. 2016, p141.)

In this research will be adopted the positivist philosophy. This one fits better once the use of questionnaires enables to collect enough data to produce statistical results. The research test theories some of the theoretical studies, presented in the literature review. And intend to clarify the barriers related to internet banking in Ireland and provide insights about the future of the industry.

Other methods such as pragmatism and interpretivism, requires qualitative research or mixed methods, and this is out of the role of this research. Critical realism was discarded because the researcher considers that emotions and feelings can be connected with the barriers, as discussed in the literature review some cultural issues can influence in the decision-making process about digital banking. The post modernism method involves some abstract investigation that does not fit in the project propose. The objective here is clarifying the barriers, even though some concepts could not be covered (more details in section 3.7 Limitations of methodology).

3.2.2 Research Approach

Following the elements of the research onion, the next layer is defining the research approach. There are two possibilities, inductive approach and deductive approach. The following paragraphs discuss the better options to maximize the quality of the results, according to the approach.

The deductive approach comprises the development of a theory and then subjected to extensive tests in order to validate or invalidate it. It permits that assumption are taken in the begging of the process and these can be controlled while executing the research. Saunders et al. (2016, p145.) define 6 steps which a deductive approach will progress. The first one is set the premises and hypotheses. Next, based on the existing literature set how the hypothesis will be tested. Third, examine the premises and logic to check if it offers some advance in the understanding of the existing theory (in case of “no”,
its necessary start again). The fourth step is collect the appropriate data and analyse it based on the premises set. Step five is confronted the results with the premises used if not the process should be restarted. And the final step is to check if the results are aligned with the theory and so this is corroborated.

A deductive approach can result in a generalization if the sample has a considerable size. The major issue related to this approach is the right definition of the hypotheses and premises.

On the other hand, the inductive approach does not seek the test of a theory but the built of theories based on the data collected. According to Saunders et al. (2016, p145.) here the generalization flow from the specific to the general, it is a theory generation method. Usually is suggested to use small samples and explore them intensely, using qualitative data. For business, studies are appropriate to select highly skilled individuals to run the research. Compared with the deductive method, induction is far away more flexible because it allows alternative explanations. This method was discarded in this research the focus here is not generated new theories but, confirm facts and produce recommendations for improvement to the industry.

This research will adopt the deductive methodology. The hypotheses will be based on recent studies associated with hypotheses and consequently the research question. The deductive approach seems more appropriate here due to the nature of the question. A sequence of factors can influence slow adoption of internet banking, the validation of these premises can generate a specific and exclusive view of the Irish market features. The main evaluation here is the strength of each premise, seeking for a unique result by the combination of general believes to specific results.
3.2.3 Research Strategy

Following the Research onion, the next step is determining the research strategy, basically, it can be a qualitative, quantitative or mixed strategy.

According to Creswell (2014, p12.), the qualitative strategy is based on a narrative research, includes phenomenology and ethnographies. In general, is used to improve the understanding, motivations and opinion in each theme. The insights provided by the research develop ideas and identify possible improvement points. Qualitative research may use a single data collection technique or multi-method data collection. It is often related to interpretative philosophy. Inductive approach is closely related to qualitative strategy, the theoretical contribution should be provided by it. The valuable evaluation here is the words and interpretation, not the quantification of data collected. Saunders et al. (2016, p165.).

On the other hand, quantitative strategy, evaluate the results based on statistical analysis. According to Saunders et al. (2016, p166.), quantitative methods are frequently associated with positivism philosophy and deductive approach. First, because of the high amount of data collected in a structured way. Second, because this data is used to test a theory. The characteristics of quantitative research include an examination of relationships between variables, which are analysed by statistical and graphical techniques. The most common ways to collect quantitative data are through questionnaires or observation (experimental) a research.

This paper adopts quantitative research. Given the nature and limitations of the study, this strategy seems reasonable. In addition, the quantitative research is more appropriate to the analysis considering the already chosen philosophy and approach. Since the hypotheses will be used to verifies and explain the barriers attached to the use of digital banks in Ireland. The study applies statistical procedures to evaluate the results. The process adopted here is to expand the research question to hypotheses and these for questions, after that do the opposite way analysing the answers, hypostasis
and finally the research question. More details regarding the primary data collection are detailed in the following sections.

### 3.3 Sampling - Selecting Respondents

Sampling is used to simplify and refine the population from who a research is gathering data. In most part of the researches reaches the entire population demands high cost and time, the choice of appropriate sample improves the feasibility and consequently the quality of a study. (Greenfield and Greener, 2016, p244.). There are two main techniques of sampling, probability sampling and non-probability sampling.

According to Saunders et al. (216, p276-280) **probability sample** are commonly associated with survey researches and is usually adopted in large samples with enough information about size, while **non-probability** is used when is hard to identify the total population or for a small population.

As this research is based on questionnaires and the approximate population is known, will be employed a probability method of sampling. The sampling frame is all the employees of financial firms operating in Ireland. The table number 1 displays the number of employees per bank for the top 10 companies operating in the country.


<table>
<thead>
<tr>
<th>Company</th>
<th>Employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bank of Ireland</td>
<td>11,228</td>
</tr>
<tr>
<td>AIB</td>
<td>10,550</td>
</tr>
<tr>
<td>Citibank</td>
<td>3,941</td>
</tr>
<tr>
<td>Ulster Bank</td>
<td>2,556</td>
</tr>
<tr>
<td>State Street International</td>
<td>2,500</td>
</tr>
<tr>
<td>Permanent TSB</td>
<td>2,400</td>
</tr>
<tr>
<td>First Derivatives</td>
<td>1,750</td>
</tr>
<tr>
<td>Central Bank</td>
<td>1,600</td>
</tr>
<tr>
<td>Elavon</td>
<td>1,539</td>
</tr>
<tr>
<td>Arvato</td>
<td>1,341</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>39,405</strong></td>
</tr>
</tbody>
</table>
Another important characteristic is the level of the occupational group of the population. The CSO (Central Statistics office of Ireland) provide information for the whole economic sector of *Financial, insurance and real estate activities*. This % will be used to select the sample. Table 2 displays the data from CSO.


<table>
<thead>
<tr>
<th>Financial, insurance and real estate activities (K, L)</th>
<th>2016Q4</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Managers, directors and senior officials</td>
<td>13,500</td>
<td>13.9%</td>
</tr>
<tr>
<td>Professional</td>
<td>19,500</td>
<td>20.1%</td>
</tr>
<tr>
<td>Associate professional and technical</td>
<td>27,600</td>
<td>28.5%</td>
</tr>
<tr>
<td>Administrative and secretarial</td>
<td>27,100</td>
<td>28.0%</td>
</tr>
<tr>
<td>Sales and customer service</td>
<td>9,200</td>
<td>9.5%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>96,900</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>

**Population size**, Saunders et al (2016, p281) define the target population for a 95% confidence level, as the population is around 40 thousand people in order to achieve this confidence will be analysed at least 383 questionnaires. Table number 3 displays the target population by a margin of error.
The technique adopted in this study will be the **stratified random sampling**, the survey will be sent to the target population. After that for analysis, will be divided by occupational group, and then analysed. The success of the analysis depends on the number of respondents from each group. The research recognizes that reach higher levels may be difficult either by the time availability or the engagement to answers strategic related questions.

### 3.4 Data Collection

As already mentioned the data will be collected through **questionnaires**. This technique was chosen because it is possible to collect a large number of answers in an efficient way, making possible the quantitative analysis proposed. The questionnaires will consist of close end questions divided by blocks matching with the secondary data presented in the literature review. According to Saunders et al. (2016), et al. questionnaires are useful for descriptive or explanatory researches. The first can be used to investigate the organizational practice and enable the identification and description of

<table>
<thead>
<tr>
<th>Target population</th>
<th>Margin of error</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5%</td>
</tr>
<tr>
<td>50</td>
<td>44</td>
</tr>
<tr>
<td>100</td>
<td>79</td>
</tr>
<tr>
<td>150</td>
<td>108</td>
</tr>
<tr>
<td>200</td>
<td>132</td>
</tr>
<tr>
<td>250</td>
<td>151</td>
</tr>
<tr>
<td>300</td>
<td>168</td>
</tr>
<tr>
<td>400</td>
<td>196</td>
</tr>
<tr>
<td>500</td>
<td>217</td>
</tr>
<tr>
<td>750</td>
<td>254</td>
</tr>
<tr>
<td>1 000</td>
<td>278</td>
</tr>
<tr>
<td>2 000</td>
<td>322</td>
</tr>
<tr>
<td>5 000</td>
<td>357</td>
</tr>
<tr>
<td>10 000</td>
<td>370</td>
</tr>
<tr>
<td>100 000</td>
<td>383</td>
</tr>
<tr>
<td>1 000 000</td>
<td>384</td>
</tr>
<tr>
<td>10 000 000</td>
<td>384</td>
</tr>
</tbody>
</table>
variability in different phenomena. Besides that, explanatory or analytical research make possible the examination of the relationship between variables.

Thereby, the questionnaires fit this research. Besides that, other methods could be employed as interviews or observation. The choice of questionnaires was based on the range of advantages attached to this method. According to Dudovskiy (2017) questionnaires speed up the data collection process, are usually low or no-cost and have a superior level of objectivity when compared with other methods.

The collection of data will be done through google forms. The choice considered user friendly layout, it is an open tool (free) and has not a limitation that can affect the amount of data collected. The distribution and selection of the samples will be done through internet selecting the target population using social networks or another open source of information (LinkedIn, Facebook, email). The sampling methods will be applied to the distribution of the surveys.

Regarding the format of the question will be based on close end questions, using rating format (strongly agree to strongly disagree, in five levels). This technique was chosen to focus on the barriers presented in the literature review and respecting the methodology adopted. Open end question does not fit into this research because it can generate other insights reduce the assertively of the analysis. The researcher is aware that if the objectives of the research were different this method could work.

3.5 Data Analysis

Once the data have been collected, is time to move to the last layer of the Research onion the data analysis. This analysis will be based on some steps first is collect a code the data, after analysing the quality of the data collected by adjusting nonresponse to the survey, weighting to adjust for diverse probabilities of selection, analyse the effects of the sample design (Fowler, 2009, p155.). In order to
reduce data and make simpler and reduce errors in the analysis, the data will be code. Coding the data possible to keep the data record, create categories, and work with the segments in data category.

As mentioned in the previous section, the data will be collected using measures scales for each possible barrier to adoption of digital banking. In the first moment, each category will be analysed individually to comprehend the results clearly. After that will be analysed the correlation among variables. The analysis will include frequency, trends, dispersion, proportions and percentages regarding the data collected.

Two different kinds of analysis will be adopted. The first convert the results in a binary form classifying them in positive or negative, and so defining if according to the respondents the question is related to a barrier or not. The second one is a score the answers and produces one single number that measures the strength of each question. In both cases, the analysis will be done individually and them by the group, where each group of questions represents one hypothesis. The synthesis of the individual answers, hypotheses testing, and literature review heads to the answer of the research question, recommendation and conclusion.

3.6 Research Ethics

According to Fowler (2009, p155.), like other researches, ethical issues should be present in survey research. The research should be designed in a way that avoids risks to respondents, participants and interviewers. Regarding the respondents, the essential steps are informing and protecting them. Regarding the researcher, the main responsibilities are presenting the research to the respondents and deal with the interviewer safety and fear of crime. Following these basic rules and with continuing, attention to details avoid risks, additional costs and maximize benefits. Below two of the ethics initiatives taken in this research:
Participant consent: All participants will be clearly informed about the objectives of the research. And informed about the information confidentiality and anonymity.

Reporting data: The data report will be conducted in a way that the respondents cannot be identified. The data will be stored in the personal student directory provided by the university (OneDrive) and any personal information that could be identified in the database will be deleted after the analysis.

**3.7 Limitations of Methodology**

The methodology uses only questionnaires as primary data collection, so the depth of the data information can be a threat to testing the hypothesis. To minimize the effect of this the questions should be clear and cover the hypothesis in a proper way. An excellent questionnaire design is needed to reduce the risks. Furthermore, was included in the literature review researches related to the main topic and specialists opinion, seeking out complement the quantitative results and enabling the recommendations development.

The researcher will not collect data from the final customer. That means that the hypotheses design has some limitations. The results will be based only on the workforce perception.

The participants may not have the full perception of the barriers once is a new theme or some of them can avoid sharing strategic information. These threats can be reduced by a combination of good and clear questions and proper explanation of the ethical issues related to the research.

The hypotheses used in the questionnaires can be not enough to reach the final result accurately. It not likely to happen, but as questionnaires limit the contact with the respondents some points may be uncovered. Topics uncovered by the questionnaires (by time or design limitations) are explored in the literature review, by collecting specialist’s opinion through news and articles publications. Enabling a wide discussion and insights for further studies.
Another risk is the rejection of hypotheses, if this happens in mostly of them it is a signal that the methodology failed, and the results will be highly affected. The rate of answers also represents a risk and can limit the quality of the sample, the ethics adopted here demands friendly approach and the motivation to answer the questionnaires are personal related. No direct benefit is offered to the respondents, that can reduce the number of surveys returned. Besides, it this is listed as a limitation, it also guarantees that the answers come from engaged and spontaneous sources.

4. Data Analysis and Findings

This chapter aims to analyse the data collected thought questionnaires. For this, the data will break up into parts related to the hypothesis and then analysed. The chapter will point out the possible barriers related to the expansion of online banking in Ireland and connect these findings with the hypothesis. And as a final point evaluate relate the hypotheses and findings with the research question and objectives. Always supported by the research methodology and literature review. Limitations of the analysis will be clarified, providing recommendations for further studies. The data presented is based on the answers of the questionnaires and to simplify the process of interpreting and comparing tables and diagrams are used.

4.1 Initial Considerations

The method employed to sample and contact the respondents, initially the intention was to contact all respondents online, sampling then based on the position, industry, country and company. The initial idea was to contact the professionals using LinkedIn. Although operational issues, did not possibility these contact, a limited number of questionnaires could be sent and then reached the monthly limit of messages. The solution for this was cross data with another social network, or use information provided in the person profile and so proceed with the research. Beside the setback, the number of questionnaires sent reached the initially planned 386 professionals from finance firms
working in Ireland. The percentage of respondents stayed below expected, increasing the error margins related to the research. But some interesting and inspiring insights could be achieved with the answers. The figures about the respondent profile are shown in the next section.

4.2 Participants Profile

The rate of return of the questionnaires was about 10%, 37 of 383 possible respondents returned the questionnaires. The figures stayed below the expected, the analysis will cover features to minimize the effect of the low population. The first treatment to the data was taken off the questionnaires with high similarity in the answers, questionnaires with more than 80% of the options selected with the same option (strongly agree-strongly disagree) were excluded. After the initial filters, the number of answers considered for analysis was 32, the approval rate was of 86.5%.

The stratification of the target public considered age, the field of specialization and work experience. The analysis considers these characteristics for possible deviations in the result. The first observation is that the age of the respondents stayed concentrated in the two first ranges, with XXX% of the participants aged under 30 years. Mostly of them are between 25 and 30 years (47%). Consequently, the years of experience also clustered in the first ranges, 62.5% (20 individuals) of the public have less than 5 years of experience, and only two of them have more than 15 years in the industry. The less experienced professional concentration implies that the findings will give by the younger generations, and as mentioned in the literature review they tend to be more connected and optimistic in the relation of the use of online services. Besides the questionnaires clearly ask for the market perception, individual experience can influence the results.

The field of specialization was satisfactorily divided, with answers from professional/students from diversified fields. Banking and finance, Account and management present 56% of the respondents,
the remaining respondents are in diversified fields such as Psychology (15.6%), Engineering (6.3%), IT (6.3%), and others (15.6%).

4.3 Data Structure

In order to enable the analysis, some treatments were necessary to adapt the data. The first step was coding the questionnaires in categories related to the hypotheses. The questions were separated into 5 categories, each one related to one hypothesis and consequently one macro barrier. The five categories and hypotheses are the following:

- Cultural: Cultural transformation is a challenge for adoption of Internet banking in Ireland.
- Market and skills: Ireland has lack of skilled professionals for developing digital solutions for banking.
- Technology: The available technology and systems are not enough to increase internet banking in Ireland.
- Regulation: Legal issues retard the adoption of Internet Banking
- User experience: The current apps and Internet banking available in Ireland do not fulfil customers’ needs.

After that, the individual questions and answers received summative scales and were classified in Typical or Reverse, that means the questions were Strongly agreed do not represent a barrier the questions are considered typical and were strongly disagree results in barriers it was considered the reverse. The table 7, displays the Cluster, Hypothesis, Questions and reverse code relations.
<table>
<thead>
<tr>
<th>Cluster</th>
<th>Hypothesis</th>
<th>Question</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cultural</td>
<td>Cultural transformation is a challenge for adoption of Internet banking in Ireland.</td>
<td>Irish people in your perception, do trust in electronic transactions.</td>
<td>Typical</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Regarding the use of apps and internet to do daily activities, the services available are user-friendly.</td>
<td>Typical</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Online banking is as safe as traditional banking.</td>
<td>Typical</td>
</tr>
<tr>
<td></td>
<td></td>
<td>People rely more on persons rather than machines, to deal with their money.</td>
<td>Reverse</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The use of services offered by Fintechs is a common practice in Ireland.</td>
<td>Typical</td>
</tr>
<tr>
<td>Market and Skills</td>
<td>Ireland has lack of skilled professionals for developing digital solutions for banking.</td>
<td>The state of the art regarding Irish internet banking is below European standard.</td>
<td>Reverse</td>
</tr>
<tr>
<td></td>
<td></td>
<td>There is a lack of professionals in the Irish market, related to developing apps and digital solutions.</td>
<td>Reverse</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The universities and colleges offer enough courses related to developing digital solutions that can be applied in the banking industry</td>
<td>Typical</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The education options available are accessible by the prospectus students.</td>
<td>Typical</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ireland do not need overseas professionals to improve the online bank solutions, the Irish professional can supply this demand.</td>
<td>Typical</td>
</tr>
<tr>
<td>Technology</td>
<td>The available technology and systems are not enough to increase Internet banking in Ireland.</td>
<td>Internet connection in Ireland is easy accessible and available for all individuals.</td>
<td>Typical</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The banking systems are well connected and up to date to receive new developments.</td>
<td>Typical</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mobile and internet bank are easy to understand and operate in.</td>
<td>Typical</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Convert traditional transactions (branch based) to online is an easy process, considering the available technology.</td>
<td>Typical</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Overall, the available technology and systems are not enough to increase Internet banking in Ireland.</td>
<td>Typical</td>
</tr>
<tr>
<td>Regulation</td>
<td>Legal issues retard the adoption of Internet Banking</td>
<td>Regulatory issues represent a barrier to the development of internet banking in Ireland.</td>
<td>Reverse</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Regarding legal issues, the Central bank of Ireland and commercial banks have a good relationship.</td>
<td>Typical</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ireland regulation is stricter when compared with other countries in Europe.</td>
<td>Reverse</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The rules for online operation, limits the number of services that can be offered by banks in this channel.</td>
<td>Reverse</td>
</tr>
<tr>
<td>User experience</td>
<td>The current apps and Internet banking available in Ireland do not fulfil customers’ needs.</td>
<td>Basic transactions such as payments, billing, and loans are available through Internet banking in Ireland.</td>
<td>Typical</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mobile banks app covers all basic services needed by the customers.</td>
<td>Typical</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The online platforms available in Ireland are user friendly and focus on user experience features.</td>
<td>Typical</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Internet banking in Ireland is stable with few interruptions in the service.</td>
<td>Typical</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The mobile and Internet banking in Ireland can replace the branch in most of the services offered.</td>
<td>Typical</td>
</tr>
</tbody>
</table>

Each question, have five options of answer the scale was from Strongly agree, Agree, Neutral, Disagree and Strongly disagree, this scale was transformed in a summative scale with scores from 2 to -2: (2) Strongly agree, (1) Agree, (0) Neutral, (-1) Disagree and (-1) Strongly disagree, for typical questions
and the opposite for reverse questions. The final refine in the data was the classification in positive and negative perception, were positive represents % of questions with a positive score, and negative the % of questions with 0, -1 and -2 scores.

Table 9: Classification of answers

<table>
<thead>
<tr>
<th>Answer</th>
<th>Typical Score</th>
<th>Typical Classification</th>
<th>Reverse Score</th>
<th>Reverse Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>2</td>
<td>Positive</td>
<td>-2</td>
<td>Negative</td>
</tr>
<tr>
<td>Agree</td>
<td>1</td>
<td>Positive</td>
<td>-1</td>
<td>Negative</td>
</tr>
<tr>
<td>Neutral</td>
<td>0</td>
<td>Negative</td>
<td>0</td>
<td>Negative</td>
</tr>
<tr>
<td>Disagree</td>
<td>-1</td>
<td>Negative</td>
<td>1</td>
<td>Positive</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>-2</td>
<td>Negative</td>
<td>2</td>
<td>Positive</td>
</tr>
</tbody>
</table>

The processing of data was performed to fit the analysis to the methodology prosed (deductive, positivist approach) and to simply the evaluation of the results. After these steps are possible to verify the validity of the proposed hypothesis. The next section will display and analyse the variables, connecting them with the topics explored in the literature review.

4.4 Data Analysis

At the first step of data analysis, each cluster of questions will be analysed separately. Afterwards, the correlations of each cluster will be analysed. Initially, the study will focus on the classification of the sentences and the % of acceptance (positive and negative). Positive indicates that the sentence is not related to one barrier and negative indicate a lack of engagement that results in a barrier. Due to a large number of questions the analysis will focus on some questions, that indicates the identified barriers to online banking in Ireland. The full version of results and numerical results are displayed in appendix 1.

a) Cultural aspects
Regarding cultural aspects, two out of five questions showed points of improvement for the expansion of online banking in Ireland. The first is “People rely more on persons rather than machines, to deal with their money” and the second “The use of services offered by Fintechs is a common practice in Ireland”. The first sentence received negative perception from over 62% of the respondents and the second 72%. Connecting to what was shown in the literature review, the adoption of online banking is a challenge and is an area of investment from many banks. The example of KBC (section 4.2), that created a hybrid structure to improve the digital banking rates is clearly related to this once they seek to promote digital banking through a physical unit. Providing an adaption environment.

The second question, about the use of fintechs in Ireland, had 72% of negative perception. The low use of fintech, and not being familiarized with these services is related to the use of online banking once both are similar.

Questions related to the trust in electronic transactions, safety, and user perception do not show as a barrier according to answers collected at the end of the first group of questions. The negative figures for these inquire remained in average below the 30%.

b) Market environment and professional skills
Regarding the market structure, four of the five questions showed that the Irish market environment is somehow slightly below the expected. And the lack of local banking professionals is a problem. The figures show that 87.5% of the respondents consider that Ireland needs overseas professionals to improve the online bank solutions, the Irish professionals available are not enough to supply the banking industry demand. The deficiency of specialists is reaffirmed in the question “There is a lack of professionals in the Irish market, related to developing apps and digital solutions” which was confirmed by 85% of the interviewees.

Educational options and availability also represent an obstacle to the development of digital solutions, 62% of the respondents consider that “The universities and colleges offer enough courses related to
developing digital solutions that can be applied in the banking industry” and 59.4% consider that the options available are not easily accessible for prospectus students.

A wider overview shows that about 87.5% of the respondents consider that the state of art of Irish internet banking is below the European standard. Indicating that the industry still has points of improvement to be explored.

c) Technology

In the technology group of questions, the highlights are on the banking systems available. Half of the respondents consider that the systems are not well connected and overall 72% (23 individuals) consider that the currently installed banking technology is not enough to expand the use of online banking. As presented in the literature review the Irish banks are still recovering from 2008 financial. The consequence is less money available for investments. The last decade was marked by actions for pay debts related to the crisis, in addition for the amount of money invested for adequacy of process for new regulations. The banks have been investing intensely in risk management, and these actions may have deprived digital banking investments in these last years.

Questions related to the applied technology, accessibility and usability did not show a strong barrier to the interviews. The figures showed that the installed technology somehow meets the user’s needs. Besides that, the data displayed in the previous paragraph suggests a difficult to expansion inside the firms.

d) Regulation

The questions related to regulatory issues obtained results in the range of 58 to 68% of perception that it is a barrier. For example, the statement “Regulatory issues represent a barrier to the development of internet banking in Ireland” had 61.3% of the individuals consider that regulation is an obstacle for online banking development. Regarding the relationship between the Central bank of
Ireland and commercial bank, 64.5% consider that it is not good enough. A few fewer people consider Irish regulation stricter compared to other European countries. And 68% agrees that the rules for online banking restrict the services that can be performed online.

An interesting fact in the regulation block of questions is that the neutral positioning was significative. Suggesting that the interviews maybe do not have enough familiarity with the theme or a changing in the mindset is happening. Figure 3 displays the detailed results for two questions about regulations.

![Figure 2: Regulatory Questions](image)

As demonstrated in figure 2, the regulatory issues remain unspecified if it is a barrier or not. Questions regarding the relationship between the commercial bank and the central bank and, how strict is the Irish regulation, achieved 63% and 41% of uncertain answers. The literature review showed that after the Brexit the central bank has been pronounced contrary to flexibilizations in the regulation as a form of competitiveness. The recent news combined with the past “light touch” fame of the Irish banks may be the cause of the indecisive answers. As displayed in the charts the answers are highly concentrated.
in the central answers (agree, neutral and disagree), resulting in low level of strong opinion. The next section will see the data by the score in order to try to evaluate the force of each barrier.

e) UX – User experience
In the questions directly linked to User Experience, the results show that none of the points covered is a strong barrier. The doubt here stayed in the questions related to the availability of services half of the professionals considered that: The online platforms available in Ireland are user friendly and focus on user experience features. Half of the respondents also considered that mobile and internet banking in Ireland can replace the branch in most of the services offered.
The other questions related with the stability of the systems, basic services/transactions available stayed were considered enough in the view of the respondents.

4.4 Score Analysis
This section provides another view of the results, employing the analysis based on the score. Recapping the score is based on the answers and goes from -2 to 2. That means for typical questions the score is: Strongly agree (2), Agree (1), Neutral (0), Disagree (2), Strongly disagree (2) for reverse questions scale is the opposite (Typical calculation*-1). According to Balnaves and Caputi (2001, p80), the summative scales allow agreements and disagreements for individual items, as known as Likert scale, this method enables the capture of the intensity of the respondent’s feelings on each item. It is broader than the previous analysis and will be used here to determine the strongest barriers to the online banking in Ireland

Table 8 displays the summative analysis for each question, a colour scale is used to simplify the viewing of the results, the basic interpretation is Green does not represent a barrier and red represents a barrier (alternatively, the lower is the value more that item represents a barrier). The score present in the table is already adjusted for the typical and reverse questions.
Table 10: Score Analysis

<table>
<thead>
<tr>
<th>Category</th>
<th>Question</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cultural</td>
<td>Irish people in your perception, do trust in electronic transactions.</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>Regarding the use of apps and internet to do daily activities, the services available are user-friendly.</td>
<td>26</td>
</tr>
<tr>
<td></td>
<td>Online banking is as safe as traditional banking.</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>People rely more on persons rather than machines, to deal with their money</td>
<td>-8</td>
</tr>
<tr>
<td></td>
<td>The use of services offered by Fintechs is a common practice in Ireland</td>
<td>2</td>
</tr>
<tr>
<td>Market environment and professional skills</td>
<td>The state of the art regarding Irish internet banking is below European standard.</td>
<td>-11</td>
</tr>
<tr>
<td></td>
<td>There is a lack of professionals in the Irish market, related to developing apps and digital solutions</td>
<td>-9</td>
</tr>
<tr>
<td></td>
<td>The universities and colleges offer enough courses related to developing digital solutions that can be applied in the banking industry</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>The education options available are accessible by the prospectus students</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Ireland does not need overseas professionals to improve the online bank solutions, the Irish professional can supply this demand.</td>
<td>-6</td>
</tr>
<tr>
<td>Technology</td>
<td>Internet connection in Ireland is easily accessible and available for all individuals</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>The banking systems are well connected and up to date to receive new developments</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Mobile and internet bank are easy to understand and operate in</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>Convert traditional transactions (branch based) to online is an easy process, considering the available technology.</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>Overall, the available technology and systems are not enough to increase internet banking in Ireland.</td>
<td>-1</td>
</tr>
<tr>
<td>Regulation</td>
<td>Regulatory issues represent a barrier to the development of internet banking in Ireland.</td>
<td>-4</td>
</tr>
<tr>
<td></td>
<td>Regarding legal issues, the Central bank of Ireland and commercial banks have a good relationship.</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Ireland regulation is stricter when compared with other countries in Europe.</td>
<td>-2</td>
</tr>
<tr>
<td></td>
<td>The rules for online operation limits the number of services that can be offered by banks in this channel.</td>
<td>-17</td>
</tr>
<tr>
<td>User experience</td>
<td>Basic transactions such as payments, billing, and loans are available through internet banking in Ireland.</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>Mobile banks app covers all basic services needed by the customers</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>The online platforms available in Ireland are user friendly and focus on user experience features.</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>Internet banking in Ireland is stable with few interruptions in the service.</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>The mobile and internet banking in Ireland can replace the branch in most of the services offered.</td>
<td>12</td>
</tr>
</tbody>
</table>

The first attention point is User Experience questions, this block of questions does not appear to be an issue in the opinion of the professionals interviewed. Availability of services and basic needs coverage reached on of the highest scores (24 and 19 respectively). The other questions directly related to the topic also showed good levels of acceptance. As for the stability of the services, features, and possibility of channel migration.

Cultural issues tend to be a barrier when is related to the lack of confidence doing machine-based transactions and regarding the low familiarity of the user with the use of fintech services. The
perception of safety in online transactions and usability of the services achieve a high level of acceptance, indicating that these points do not characterises a barrier for expansion in digital solutions use. The high level of confidence on safety may relate to recent data security act, described in section 2.6. Professionals probably had an extensive exposure to the new act increasing so the positive perception of safety.

Market environment and professional skills scored results below the average in all items. The state of art of Irish companies scored the second lowest grade, -11, indicating that besides the acceptable user experience present in the current solutions. The overall development is not satisfactory, the affirmation sounds controversial when compared with the first block of questions but as the research collect the opinion of people inside the industry, the deficiency of investments mentioned in section 2.3 may have influenced the low score. In other words, the installed applications cover the customer’s needs but when compared with the global technology availability still does not meets the ideal. The deficiency of professionals also has a negative perception here, questions related to the qualified workmanship. In addition, the low grade for the need of overseas workforce strengthens this point, indicating a barrier.

Technologically, the accessibility of technologies showed up enough to the customers related questions. Questions where the dependency for development depends on external factors as internet access has received a high score. Questions with cross relations with technology and customers experience also have a positive perception. The possible barrier found here is internal, related to the system's connections and the capacity of implementing digital solutions. Here is clear that the method adopted enabled this perception, by collection the professionals’ opinion and so reaching depth issues. Besides that, the specific deficiency is uncertain and require further studies to identify it.
4.6 Hypotheses Analysis and recommendations

After the analysis of the primary data is possible to do a Hypothesis test, checking if they are acceptable and finally move to the answer to the research question. The combination of the previous analysis and literature review will be used in this section to accept or reject the proposed hypotheses and measure the objectives achievement level.

To recap, the motivation of the research is to identify the possible barriers to the development of digital banking in Ireland. The objectives identify the forces of each hypothesis evaluating the features and needs for development of this market in the country. The validation of the hypotheses evaluates information about the current status of digital disruption and combined with literature available, leads to the answer to the research question.

**H1: Cultural transformation is a challenge for adoption of Internet banking in Ireland.**
Hypothesis accepted. The questionnaires showed that some cultural aspects still represent challenges for digital disruption in the Irish banking market. The term disruption fits perfectly to this hypothesis, once the barriers identified are not present in superficial issues, like “would you use this kind of service?” or quality of the solutions available. Work on the improvement of issues linked to opinion formation as the lack of confidence in machine-based service showed up crucial for evolution in the market. The literature shows that banking is already working to facilitate the use of tools, but the research suggests that a more aggressive campaign should be adopted. Maybe clarify the benefits of AI solution, or clear explanation about the high level of confidence of these technologies may change the negative perception installed.

The second item that also is a disruption process is the familiarity with fintech services. This point does not depend only on the banks but also the market evolution. As the fintechs use increases, successful cases as the Monzo, Starling and N26 banks may appear in the Irish market. The commercial banks
should not see these companies as a threat but as an opportunity. The expansion in the use of fintechs represents a culture change and enable the migration of clients from the branches to digital channels.

H2: Ireland has problems finding skilled professionals for developing digital solutions for banking.

Hypothesis accepted. This hypothesis had the highest level of adequacy as a barrier. The Irish market has a lack of developers according to the professionals interviewed. Resulting in a high number of overseas professionals hired to work in IT related fields. The literature review confirms the hypothesis with statistics about the number of workers in this condition. Review of the rules concerning skilled workers visa is already being discussed by the government. This action may bring important knowledge to the market developing. The combination of these factor leads to the low perception of the state of art of technology application in Ireland.

Here again, the questions are related to the macro economic environment and require gradual improvements to achieve a higher level.

H3: The available technology and systems are not enough to increase internet banking in Ireland.

Hypothesis accepted. The technological group of questions also showed a high level of acceptance in already implemented solution. The questions involving individual behaviour do not represent a barrier. The same happens with questions that involve applications in use. Besides most of the questions tending to reject the hypothesis, the final question points out a problem. The workers interviewed considered that the current banking systems are not enough to expand online banking use. The prioritization of risk management projects and the intensification of the legal requirements for banking stability may have influenced the result. Overall, the higher influences here, as a mentioned in the literature review are the drop of money available for investments after the financial crisis.

H4: Legal issues retard the adoption of Internet Banking
Uncertain. Besides the reasons verified in the previous hypothesis. The direct influence of legislation and expansion of the online banking in Ireland, could not be totally confirmed by the research. Questions related to the regulation influence received a considerable number of neutral opinions, evaluate a result from the collected figures sounds peculiar. The literature review showed that Ireland is trying to escape from the fame of light touch regulation country, acquired from the final 80’s. Nonetheless, the acts are not directly associated with internet banking or direct barrier to its development. The acts are consumer focused, aims the financial stability and consumer protection. It is not clear how regulation affects the online banking evolution.

H5: The current apps and Internet banking available in Ireland do not fulfil customers’ needs.

Hypothesis rejected. Unanimously, the questions related to the last hypothesis have not obtained higher levels of rejection. The questions that have cross relations with user experience also indicated that according to the respondents, who are using the internet banking services receive a satisfactory service. In further studies, maybe gathering data from direct consumers may polish the results related to this hypothesis. The literature review call attention to some points of improvement for internet banking in Ireland, but these could not be confirmed by the worker’s answers collected in this project.

4.6 Conclusion Data Analysis

The hypothesis checking confirmed three out of five affirmations, one of them remained uncertain and the last one was rejected. Ideally according to the methodology adopted all hypotheses should be confirmed. As a form of compensation, the points related to the rejected was revised in the literature review, exposing some specialists’ opinion, thus open up the discussion with some market insights.

As mentioned in the initial considerations, the research sample size did not reach the expected number of respondents, that way the margin of error present in the sample increases. Using the
Raosoft® (2018) to calculate the error margin and considering the population size of 40000 workers of financial institutions, the error margin stayed at 15.8%. The initial intention was to keep the confidence level at 95%, which would require 383 respondents. To calculate the margin, the following premises were considered: Sample size, 40000 (the number of workers in the top ten financial firms in Ireland), response distribution of 60% (due the assertively of the population sampling). Expose the margin of error is an important step in the research process, it protects the results from different interpretations once the confidence level is explained.

Summarizing, the research found out that cultural aspects, market environment, professional availability, and Technology represent the most significant barriers regarding the adoption of online banking in Ireland. The results presented here connects with the current literature the combination of both results in a satisfactory sequence of recommendation and findings. The next chapter will the discuss the whole findings, recommendations, and weakness of this research.

5. Conclusion

5.1 Introduction

The final chapter of this research will join the topics discussed in the literature review, methodology, primary research and data analysis. The chapter seeks to do a reflection about everything that was studied during the project. And finally, evaluate the answer to the research question and provide recommendations for the market and for further studies. Repeating here the research question:

What are the barriers to increase adoption of internet banking in Ireland?

At first, the research produced interesting results confirming mostly of the hypotheses. Including, the cultural aspects that slow down the adoption of digital banking, technological barriers, economical
influence and skilled professional questions. The research showed up that the motivation for the study was correct and some aspects of the Irish market should be studied to understand the digital solutions acceptance in Ireland.

The researcher became more involved in the subject what facilitate the process for the definition of hypotheses, questionnaires, and analysis. The research covered a variety of topics related to the banking industry, that includes the role of banking in the society, fintechs, customer behaviour, economic indicator and more specific field as regulation and data security. The following sections will discuss the main points developed here that heads to the research question proposed.

5.2 Conclusion and recommendations

Firstly, the literature review revealed the main advantages of internet banking and how these operations can benefit individuals and the banking industry. The initial sections discussed the good infrastructure of Ireland in terms of internet connection availability and high level of people with a banking account. In the questionnaires, this affirmation was confirmed with the high level of acceptance regarding the quality of internet services in the country and usability of the installed banking technologies. With these premises confirmed, that the people have the structure to increase the use internet banking made a possible move on and analyse further aspects.

The hypothesis testing showed that workers for banks think that people are still reluctant to rely on a transaction made by machines, and the personal contact is required for some specific transactions. Some transactions are especially fragile for the migration for a digital solution, most of them related to long term decisions, the section 2.5, showed that when individuals seek these services they require specialized advice (for example pension funds, mortgage, saving plans). One of the reasons for this, is the fear caused by the 2008 financial crisis, when Ireland was highly affected. The reflects of the crisis still remain in the Irish market. Social aspects as the high level of elderly people also contribute
negatively to the expansion of digital banking. Examples as the KBC bank the adopted hybrid structure to insensitivity the channel changing and Bank of Ireland that creates a special solution for the mentioned public are examples of action that already been taken. The action seems very reasonable, and the research confirmed their need.

Another cultural barrier in the Irish market is the low familiarity with similar services. The research displayed that the over 70% of the respondents think that the Irish customers are not familiar with services offered by fintechs. The fintechs is part of the digital disruption happening in the financial services, the low familiarity with these firms connects with the low use of interne banking. Example like the Monzo bank and starling bank operating in the UK, proving that is possible to attract many clients when offered the right solution for the right consumer. The Monzo brand image is an amazing example, the clients are usually proud to show others that they are part of the bank. The researcher considers that this is a perfect combination of good services offer and focused marketing campaigns.

Moving to the second hypothesis, ‘Ireland has problems finding skilled professionals for developing digital solutions for banking’. The research identified barriers regarding the national workforce available and educational high prices. The statistics provided by the Irish census show that share of international workers is increasing in the financial market, while the total number of workers keeps constant over the years. Almost 85% of the respondents considered that the number of skilled professionals in digital solutions related fields is not enough to cover the market needs. The theory reinforces that these are essential for the digital disruption. Besides the high-level o development of Ireland in this specific topic, the results showed that Ireland remains under the European average. The recommendation here is the incentive of public policies in the sector in combination with the engagement of the industry.

The third hypothesis investigated the technological barriers. All the topics discussed in the literature review are somehow related to technology development. It is part of all steps regarding the internet
banking adoption process. Specifically speaking the available technologies are well accepted by the user, besides that looking the whole thing the expansion of a number of the user is stuck by the installed services. Technology is the topic that most remit to digital disruption. Successful cases presented showed that innovative solutions have to be part of the business. The low level of satisfaction with the capacity of innovating of the Irish banks is related to the outdated and badly connected systems used. The section 2.3 showed that over 40% of financial firms in North America are investing more than 25% of their budget in IT. Recent researches indicate that Ireland started to invest more in IT in last two years, as it is a huge development that is being discussed here will take some time to reach the north America level unless the focus on digital solution became the top on the list of banks. The announcement of the half billion plan of Bank of Ireland (section 2.3) shows that the industry is taking the way to the future.

The literature also displayed that in the last decade (especially in the post crisis years) the investments were focused on risk management and regulation adaption. Since the effects of the crisis are stabilized now is the time to innovate and renovate the solutions available. The first step is the internal adequacy to support the new technologies and attend the new generations demand.

The forth barrier studied is the legal barriers. In the surveys, this topic remained in doubt about the barrier’s strength. Some facts must be visible here before the analysis. The history shows that Ireland has a “light-touch” regulation fame, the crisis impacted hugely the country, the country recent change data protection protocols, news is showing that there will be no flexibilization for companies “after Brexit”. All these facts may have influenced the answers and shows that is a topic difficult to discuss. Besides that, there no evidence that legal procedures direct affect the development of online banking. Only the transactions limits have a small influence. The major influence of regulatory issues is that sudden changes in the law demand high engagement from financial firms. This can indirect affect another project, including cutting-edge technology developments.
The final hypothesis was rejected but play an important role in the conclusion of the research. The purpose of the last hypothesis was evaluating if “The current apps and Internet banking available in Ireland do not fulfil customers’ needs”. The rejection of the sentence reinforces that the barriers are deeper than only user-friendly solutions development. It is necessary to create new needs, that the clients wish to have new things.

The research question was answered through the primary research and literature review. The major barriers to increase the adoption of internet banking in Ireland are cultural, technological, skilled professionals and level of accessibility of education. Other characteristics were discussed during the research and provide additional information about the barriers, even they have not been confirmed by primary research they are part of the findings. The additional barriers are the impact of the crisis in the Irish market that frozen the investments in technology for a while, and the low competitiveness in the market (most of the market share is concentrated in two big institutions).

Overall, the advantages of internet banking became clear with the literature review that also provided the description of the main possible barriers. The internet banking model brings to the firms the future. Implementing a digital business should not consider only what the clients are seeing but also the internal structure. The adoption of automated process and AI technologies are highly recommended, that way the internal development reflects on what the consumers are seeing. The media gives high visibility to huge investments, and these works as marketing for the banks, influencing then and weakening cultural barriers. A good internal infrastructure also incentive the process of innovation. Transparency, low bureaucracy, flexibility, usability, and synergy should be on top of the business strategy for banks.
5.4 Final considerations

The research came out with valuable results besides the setbacks. The focus of the research is digital banking a topic with constant innovations involving complex themes. Due the nature of the theme find information about it is challenging once they became outdated so fast.

It important to reinforce that the margin of error of the results presented here is of around 16%. The number of volunteers to the research stayed below the expected but is still closely connected with what was discussed in the literature review. A special attention was given to topics related to the hypotheses to make sure that specialists opinion and recent researches have the perfect combination of the survey. These reviews intent to cover the gap left by the margin of error and seeks to precisely answer the research question.

After the investigation, some points were clarified. The traditional banking model has changed over the past years, the barriers for new players entry have been constantly reduced. Traditional institutions have to adapt to compete. This research showed current barriers present in the Irish market. However, as mentioned the banking market is in the middle of big changes and the there is no permanent solution or recommendation for it. The results presented here are valuable for the current scenario, but the changes may happen any time and new barriers will appear.

For further studies, the researcher recommends the exploration of points that were not covered in this paper. Also, due to the nature of the theme, the literature review is always changing and should be constantly renewed. A direct contact with clients may bring new insights for the research and accurate the results. On the same way, a depth interview with specialists or successful cases exposure may add interesting results.
The digital disruption is a topic that will be highly discussed in the future, studies about the how technology is transforming the business and how clients, leaders, and organizations respond for it are essential fields of study.

6. Reflection on Learning

One of the most famous studies about learning theory is proposed by Kolb (1984) and defines that learning can be applied in a cycle (McLeod, 2013, p1.). The Kolb theory is called, experimental learning styles and is based on four stages as follows:

- **Concrete Experience** – A person is exposed to a new experience of the situation, and also happens when is done a reinterpretation of some situation.

- **Reflective Observation** – At this stage is done reflection of the new experience. Considering the importance and inconsistencies it. At this stage is contrasted the experience and understanding.

- **Abstract Conceptualization** – At this stage, reflection provides the development to a new idea or modification of existing concepts.

- **Active Experimentation** – the last stage consists of the application of it in the learner environment. Is were skills and knowledge developed gain form and concretize the learning process.

As the leaning process works as a cycle, at the end skills and knowledge are constantly improving. Mcleod (2013, p2.) presents the matrix of learning styles, based on the Kolb theory.
Table 11: Learning Styles

<table>
<thead>
<tr>
<th>Feeling (Concrete Experience - CE)</th>
<th>Accommodating (CE/AE)</th>
<th>Diverging (CE/RO)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thinking (Abstract Conceptualization - AC)</td>
<td>Converging (AC/AE)</td>
<td>Assimilating (AC/RO)</td>
</tr>
</tbody>
</table>

The combination of two styles presents in the matrix, define the personal learning style. I consider that I’m converging style learner. According to Kolb theory, the converging style is present in individuals that seek practical solutions. The preferences are in Tech related fields and seek to find solutions to questions and problems. The following paragraphs will discuss my personal development, skills and learning process in the last year.

In this section, I will describe the learning and reflections during my MBA program. I decided not just to talk about the dissertation, but the whole program. In my perception, build a timeline of the events from my decision to start the MBA program until the dissertation learning is important.

I have two bachelor’s degrees one in Science and Technology and one in Engineering (Management), both from the same university based in Sao Paulo (Brazil). My professional experience is mostly acquired in financial services field. I worked for 5 years, in the biggest private banking in Brazil, in the Cash management division. My last position there as Senior Pricing Analyst. This two information, shows that my skills and competences developed until the beginning of the program are concentrated more on logical abilities, than in business. Despite the blend of activities in my former job and degrees. The first was about 70% of my time used for programming and 30% thinking about business strategy or analysing/presenting data. At University, just about the same proportion of subjects were logic directed.

The first point of improvement when I started the college was the understanding of the educational system and assessment methods. In my previous degree, the assessment was concentrated on exams
or practical experiments. That’s lead to a different way of studying planning. For exams, the routine was studied the theory and then practice, as the majority subjects were physics, maths, and chemistry related (logic related subjects). When it involves practical experiments, the most valuable part was the results and a standard guide was provided to show it, with minimal theoretical exploration in most situations. In my second degree, some assignments related to business were introduced, but the remaining predominance of logical procedures, additionally with some project management skills.

In the initial semester, I quickly perceived that the assessment here will be far from my comfort zone. The first assignment in DBS was an academic essay about to Ethics. The topic was relatively new for me (in an academic view) and so do the format. At this point, I realise how new was my environment and challenges. Along the semester other assignments emerged and I saw my writing ability improve. Furthermore, the cultural exchange and experiences with my classmates were very important for the adaption process.

During the MBA program, I saw my writing skill increase gradually, and so my ability to produce content in a language different from my first language. At the same time, the interests for the subjects increased a lot. The themes discussed during the program catch my interest, especially on topics that I have never studied in depth. Subjects such as International Management was particularly interesting, once it approaches multidisciplinary themes, providing me a great macro overview of the political, economic and social situation of European zone. In business strategy, the classes were very practical, and increase my perception of microeconomic issues, with plenty of case studies.

Another important step in the program was the portfolio study. Although it was a college project, it makes me think about my present choices and think about my next steps. It was a pretty good self-reflection time that increased my motivation for further studies. Besides that, during the depth self-reflection, I could conclude that I was on the right path.
Regarding the dissertation, the subjects related to my stream (Finance) have played a very important role. Corporate Financial management and Operation and governance of financial markets expanded my horizon to provocative thinking about fintechs and financial markets in Ireland. I consider that the topics explored during these two subjects were essential to my dissertation theme decision. In addition, the Performance Driven Marketing, emerged me in studies related to modern marketing techniques increasing so my interest in digital business issues. Besides that, I was the very first time that I have studied something related to marketing in my study/professional life.

I saw this 1.5 year a huge improvement in my presentation skill, although I think that is still not the ideal. Participate in seminars, group presentation, focus groups, and debates were essential to increase my self-confidence and time management skills. I consider that presentation skills are highly required in the professional life, and the college is one “judge-free” place where is possible training and prepare yourself for further challenges. All the timeline described above were the pillars of my dissertation, that is the final challenge in my journey.

Regarding the dissertation, first I will explain my personal motivation for the chosen topic and how I reached the research question. As already mentioned my professional life was almost all built in the banking sector. In my last position, I was in a transition, with less IT and more strategy focused projects. This gave me the opportunity to be closer to the high board of the bank that I used to work. And the main topics discussed in the meetings and conventions was digital banking, presenting loads of KPI and improvements implemented in the Brazilian market. So, I consider that I was up to date on this topic for South American business. As soon as I opened my bank account in Ireland I felt some missing features in digital banking (app and internet banking). I talked with other people and I felt that they have the same perception that there were some missing features regarding online banking in Ireland.
At that point, I have decided the macro theme of my dissertation, and another sequence of leanings started. In the first semester, I saw my Professor of Corporate Financial Management and I have some common study interests and I presented my initial idea for him. He was extremely kind but showed me that I was going in the wrong way. Then after some changes, I finally refined my intentions and reached a more specific point of the study. The initial process to define the dissertation improved my skills to focus on a problem and how to find tools to solve it. In research methods II, I had more contact with the topic and start to participate of online discussion groups to keep me up-to-date with the topic.

In February, the results were released, and I progressed to the final step. During a couple months being in constant contact with the topic of my interest was nice. But I felt that I was missing at some point my time management and I started to feel a bit lost, at the same time my progress slowed down. My supervisor played an essential role during this period and helped me to connect missing points. And so, my progress increased again.

The data collection part of the dissertation was specially challenging because the percentage of questionnaires answered stayed under my primary plan. I have tried an action plan to increase the number of respondents, sending them a reinforcement about the importance of that data for me, but at the end, it remained below the expected. The solution was work with that I have collected with the risk of high deviation in the sample, less assertiveness. I took this as a learning and I consider that should have previously considered this possibility. For further jobs, I sure that I will be ready for optimistic, realistic and pessimistic scenarios.

Besides the problems, do a research on a topic of my interest was pleasant, useful, inspiring and enhance my interests. The constant research on the area made possible achieve a good level of academic knowledge, academic research, and human behaviour. During the research, I learned how
to find information in official sites (government, regulators, unions, consulting firms) and discovered a lot of new technologies and companies.

The background acquired during the program and dissertation will be present in my life for a long time. Get out from the personal comfort zone was crucial to achieve long term knowledge and improve personal skills. I fell that I am prepared now for greater challenges and opportunities. I am very grateful to everyone that participate in this journey.
References


Appendix 1 – Primary Research Material

a. Research Plan and Hypotheses

The hypotheses linked to the research questions and that will be explored in this paper are the following:

H1: Cultural transformation is a challenge for adoption of Internet banking in Ireland.

H2: Ireland has problems finding skilled professionals for developing digital solutions for banking.

H3: The available technology and systems are not enough to increase internet banking in Ireland.

H4: Legal issues retard the adoption of Internet Banking.

H5: The current apps and Internet banking available in Ireland do not fulfil customers’ needs.

The questionnaires are still not finalized but will consist of 6 sets of questions.

The first questionnaire is regarding the professional information, that will be used to verify the quality of the sample and categorize the answers. Basic information that should be useful will be included such as position, years of experience, level of education and age.

The other set of questions will be related to the hypothesis and will have 5 questions each, with close end questions with 5 possible answers:

1) Strongly agree

2) Strongly agree

3) Neutral
4) disagree

5) Strongly disagree

b. Questionnaires

Section 1:

Personal Information

1) Age:
   a) less than 25       B) 25-30       C) 30-35       D) 35+

2) Qualification:
   A) Diploma       B) Bachelor       C) Post Graduate

3) Field of Specialization:
   A) Accounting       C) Banking and Finance       C) Management       D) Economy
   E) Engineering       F) IT       G) Other: __________

4) Gender:
   A) Female       B) Male       c) Prefer do not answer

5) Experience:
   A) less than 5 years
   B) 5-10 years
   C) 10-20 years
   D) 20+ years
6) Which category suits better to your current position in the industry:

A) Director

B) Manager or senior official

C) Associate professional and technical

D) Administrative and secretarial

E) Sales and customer service

Section 2:

Questionnaires

H1: Cultural transformation is a challenge for adoption of Internet banking in Ireland.

Q1: Irish people in your perception, do trust in electronic transactions.

1) Strongly agree 2) Agree 3) Neutral 4) Disagree 5) Strongly disagree

Q2: Regarding the use of apps and internet to do daily activities, the services available are user-friendly.

1) Strongly agree 2) Agree 3) Neutral 4) Disagree 5) Strongly disagree

Q3: Online banking is as safe as traditional banking.

1) Strongly agree 2) Agree 3) Neutral 4) Disagree 5) Strongly disagree

Q4: People rely more on persons rather than machines, to deal with their money.

1) Strongly agree 2) Agree 3) Neutral 4) Disagree 5) Strongly disagree

Q5: The use of services offered by FinTech is a common practice in Ireland.
H2: Ireland has lack of skilled professionals for developing digital solutions for banking.

Q1: The state of the art regarding Irish internet banking is below European standard.

1) Strongly agree 2) Agree 3) Neutral 4) Disagree 5) Strongly disagree

Q2: There is a lack of professionals in the Irish market, related to developing apps and digital solutions.

1) Strongly agree 2) Strongly agree 3) Neutral 4) Disagree 5) Strongly disagree

Q3: The universities and colleges offer enough courses related to developing digital solutions that can be applied in the banking industry.

1) Strongly agree 2) Strongly agree 3) Neutral 4) Disagree 5) Strongly disagree

Q4: The education options available are accessible by the prospectus students.

1) Strongly agree 2) Strongly agree 3) Neutral 4) Disagree 5) Strongly disagree

Q5: Ireland do not need overseas professionals to improve the online bank solutions, the Irish professional can supply this demand.

1) Strongly agree 2) Strongly agree 3) Neutral 4) Disagree 5) Strongly disagree

H3: The available technology and systems are not enough to increase internet banking in Ireland.

Q1: Internet connection in Ireland is easy accessible and available for all individuals.

1) Strongly agree 2) Strongly agree 3) Neutral 4) Disagree 5) Strongly disagree

Q2: The banking systems are well connected and up to date to receive new developments.

1) Strongly agree 2) Strongly agree 3) Neutral 4) Disagree 5) Strongly disagree
Q3: Mobile and internet bank are easy to understand and operate in.

1) Strongly agree  2) Strongly agree  3) Neutral  4) Disagree  5) Strongly disagree

Q4: Convert traditional transactions (branch based) to online is an easy process, considering the available technology.

1) Strongly agree  2) Strongly agree  3) Neutral  4) Disagree  5) Strongly disagree

Q5: Overall, the available technology and systems are not enough to increase internet banking in Ireland.

1) Strongly agree  2) Strongly agree  3) Neutral  4) Disagree  5) Strongly disagree

H4: Legal issues retard the adoption of Internet Banking.

Q1: Regulatory issues represent a barrier to the development of internet banking in Ireland.

1) Strongly agree  2) Strongly agree  3) Neutral  4) Disagree  5) Strongly disagree

Q2: Regarding legal issues, the Central bank of Ireland and commercial banks have a good relationship.

1) Strongly agree  2) Strongly agree  3) Neutral  4) Disagree  5) Strongly disagree

Q3: Ireland regulation is stricter when compared with other countries in Europe.

1) Strongly agree  2) Strongly agree  3) Neutral  4) Disagree  5) Strongly disagree

Q4: The rules for online operation, limits the number of services that can be offered by banks in this channel.

1) Strongly agree  2) Strongly agree  3) Neutral  4) Disagree  5) Strongly disagree

H5: The current apps and Internet banking available in Ireland do not fulfil customers’ needs.
Q1: Basic transactions such as payments, billing, and loans are available through internet banking in Ireland.

1) Strongly agree  2) Strongly agree  3) Neutral  4) Disagree  5) Strongly disagree

Q2: Mobile banks app, cover all basic services needed by the customers

1) Strongly agree  2) Strongly agree  3) Neutral  4) Disagree  5) Strongly disagree

Q3: The online platforms available in Ireland are user friendly and focus on user experience features.

1) Strongly agree  2) Strongly agree  3) Neutral  4) Disagree  5) Strongly disagree

Q4: Internet banking in Ireland is stable with few interruptions in the service.

1) Strongly agree  2) Strongly agree  3) Neutral  4) Disagree  5) Strongly disagree

Q5: The mobile and internet banking in Ireland can replace the branch in most of the services offered.

1) Strongly agree  2) Strongly agree  3) Neutral  4) Disagree  5) Strongly disagree
c. Questionnaires – Format sent

Section 1 – Agreement form
Barriers to the adoption of Online Bank in Ireland

PROJECT TITLE
Barriers to the adoption of Online Bank in Ireland
I am Rodrigo Scatolin, an MBA student, this is part of my dissertation. My supervisor in Dublin Business School is Eddie McConnon. You are being asked to take part in a research study about the current scenario of Digital Banks in Ireland. The study seeks to find out the current barriers to the adoption of internet banking in the country.

The study typically takes 10 minutes to answer all the questions.

PARTICIPANTS’ RIGHTS
You may decide to stop being a part of the research study at any time without explanation required from you. You have the right to ask that any data you have supplied to that point be withdrawn/destroyed.

You have the right to omit or refuse to answer or respond to any question that is asked of you.

You have the right to have your questions about the procedures answered (unless answering these questions would interfere with the study’s outcome). A full de-briefing will be given after the study. If you have any questions as a result of reading this information sheet, you should ask the researcher before the study begins.

The data I collect does not contain any personal information about you except age

FOR FURTHER INFORMATION
I or/and Eddie McConnon will be glad to answer your questions about this study at any time. You may contact my supervisor at eddie.mcconnon@dba.ie or me at 10356239@mydba.ie

Thank you!

Participant Agreement

☐ Accept

NEXT

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Section 2 – Personal information
# Barriers to the adoption of Online Bank in Ireland

## Personal Information

1) Age:
- [ ] Less than 25
- [ ] 25-30
- [ ] 30-35
- [ ] 35+

2) Qualification
- [ ] Diploma
- [ ] Bachelor
- [ ] Post Graduate

3) Field of Specialization
- [ ] Accounting
- [ ] Banking and Finance
- [ ] Management
- [ ] Economy
- [ ] Engineering
- [ ] IT
- [ ] Other: ___

---

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Gender
- Male
- Female
- Prefer do not answer

Working experience
- Less than 5 years
- 5-10 years
- 10-15 years
- More than 15 years

Which category suits better to your current working position
- Director
- Manager or Senior official
- Associate professional or Technical
- Administrative / Secretarial
- Sales / Customer Service
- Other:   

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Section 3 – Culture

Questionnaire 1: Culture

Irish people in your perception, do trust in electronic transactions.
- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Regarding the use of apps and internet to do daily activities, the services available are user-friendly.
- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Online banking is as safe as traditional banking.
- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree
Strongly disagree

People rely more on persons rather than machines, to deal with their money

Strongly agree
Agree
Neutral
Disagree
Strongly disagree

The use of services offered by Fintechs is a common practice in Ireland

Strongly agree
Agree
Neutral
Disagree
Strongly disagree
### Professionals and Skills available

**The state of the art regarding Irish internet banking is below European standard.**

- [ ] Strongly agree
- [ ] Agree
- [ ] Neutral
- [ ] Disagree
- [ ] Strongly disagree

**There is a lack of professionals in the Irish market, related to developing apps and digital solutions**

- [ ] Strongly agree
- [ ] Agree
- [ ] Neutral
- [ ] Disagree
- [ ] Strongly disagree

**The universities and colleges offer enough courses related to developing digital solutions that can be applied in the banking industry**

- [ ] Strongly agree
- [ ] Agree
- [ ] Neutral
- [ ] Disagree
- [ ] Strongly disagree
The education options available are accessible by the prospectus students

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Ireland do not need overseas professionals to improve the online bank solutions, the Irish professional can supply this demand.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

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Technology and Systems

Internet connection in Ireland is easy accessible and available for all individuals
- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

The banking systems are well connected and up to date to receive new developments
- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Mobile and internet bank are easy to understand and operate in
- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree
Convert traditional transactions (branch based) to online is an easy process, considering the available technology.

- [ ] Strongly agree
- [ ] Agree
- [ ] Neutral
- [ ] Disagree
- [ ] Strongly disagree

Overall, the available technology and systems are not enough to increase internet banking in Ireland.

- [ ] Strongly agree
- [ ] Agree
- [ ] Neutral
- [ ] Disagree
- [ ] Strongly disagree

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Section 6 – Regulation

Regulatory issues represent a barrier to the development of internet banking in Ireland.
- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Regarding legal issues, the Central bank of Ireland and commercial banks have a good relationship.
- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Ireland regulation is stricter when compared with other countries in Europe.
- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

The rules for online operation, limits the number of services that can be offered by banks in this channel.
- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree
Section 7 – User Experience

Technologies available to consumers

Basic transactions such as payments, billing, and loans are available through internet banking in Ireland.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Mobile banks app, cover all basic services needed by the customers

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

The online platforms available in Ireland are user friendly and focus on user experience features.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree
Internet banking in Ireland is stable with few interruptions in the service.

- [ ] Strongly agree
- [ ] Agree
- [ ] Neutral
- [ ] Disagree
- [ ] Strongly disagree

The mobile and internet banking in Ireland can replace the branch in most of the services offered.

- [ ] Strongly agree
- [ ] Agree
- [ ] Neutral
- [ ] Disagree
- [ ] Strongly disagree

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Barriers to the adoption of Online Bank in Ireland

Please click on submit to send your answers

FOR FURTHER INFORMATION
I will be glad to answer your questions about this study at any time. You may contact me at 10358239@mvdbs.ie.

Thank you

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**Appendix 2 – Ethics Information – Business Postgraduate Studies**

This appendix corresponds to the Ethical form submitted for the proposal, it was the base for the final project and data collection procedures.

<table>
<thead>
<tr>
<th><strong>Student Details</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Student Identifier:</strong></td>
<td>Rodrigo Scatolin 10358239</td>
</tr>
<tr>
<td><strong>Submission Date:</strong></td>
<td>15/01/2018</td>
</tr>
<tr>
<td><strong>Proposal Research Title:</strong></td>
<td>Barriers to the adoption of Online Bank in Ireland</td>
</tr>
</tbody>
</table>

**Brief Description of the research:**
The motivation of this is the need for better understanding the current scenario of Digital Banks in Ireland. Finding out the current barriers to the adoption of internet banking in the country. In addition, detect the key points under the implementation of such a model, since there is not yet an entirely digital Irish Bank running, and currently mixed strategy banks still are struggling to improve online banking figures.

<table>
<thead>
<tr>
<th><strong>Sampling</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Population of interest:</strong></td>
<td>Workers actively employed in the banking sector in Ireland. The population is all the baking sector workers.</td>
</tr>
<tr>
<td>(brief description)</td>
<td></td>
</tr>
<tr>
<td><strong>Sample of interest:</strong></td>
<td>The sampling technique used is the stratified random sampling, the population will be divided by occupational group, and then analysed. The selection of the participants will be based on LinkedIn profiles and the contact too.</td>
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<tr>
<td>-----------------------------</td>
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</table>
Primary Research - Data Management

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is the data anonymised – how is this done?</td>
<td>Especial care will be taken for presenting the results, guaranteeing that any of the participants can be identified. As the research does not include interviews the name of the participants is irrelevant, only gathered data will be showed.</td>
</tr>
<tr>
<td>How is data confidentiality maintained?</td>
<td>The data will be stored in the academic student OneDrive where only the research have access.</td>
</tr>
<tr>
<td>Where will the data be stored?</td>
<td>The data will be stored in the student DBS OneDrive.</td>
</tr>
<tr>
<td>When will the data be destroyed?</td>
<td>The day after the time period for appeal-of-grade period has expired. Or, the day after any grade appeals have been finalized and closed.</td>
</tr>
<tr>
<td>Specific Ethical Considerations</td>
<td></td>
</tr>
<tr>
<td>--------------------------------</td>
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<td><strong>Detail any aspects specific to your proposal that will require further ethical approval e.g. interaction with under-18 year-olds, experiments requiring deception, anything that might cause respondents any distress, etc.</strong></td>
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<td><strong>Any further issues are needed.</strong></td>
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<th>Student Signature:</th>
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Appendix 3 – Support Documentation

This is the draft of the information sheet; the information and consent form applied are in appendix one. The consent was obtained online, in an agreement form present in the first section of the survey.

INFORMATION SHEET FOR PARTICIPANTS

PROJECT TITLE
Barriers to the adoption of Online Bank in Ireland

I am Rodrigo Scatolin, an MBA student, this is part of my dissertation. My supervisor in Dublin Business School is Eddie McConnon. You are being asked to take part in a research study about the current scenario of Digital Banks in Ireland. The study seeks to find out the current barriers to the adoption of internet banking in the country.

WHAT WILL HAPPEN
In this study, you will be asked to answer a questionnaire exposing your point of view regarding some tasks related to the Irish Banking services.

TIME COMMITMENT
The study typically takes 10 minutes to answer all the questions.

PARTICIPANTS’ RIGHTS
You may decide to stop being a part of the research study at any time without explanation required from you. You have the right to ask that any data you have supplied to that point be withdrawn/destroyed.

You have the right to omit or refuse to answer or respond to any question that is asked of you.

You have the right to have your questions about the procedures answered (unless answering these questions would interfere with the study’s outcome. A full de-briefing will be given after the study). If you have any questions as a result of reading this information sheet, you should ask the researcher before the study begins.

CONFIDENTIALITY/ANONYMITY
The data I collect does not contain any personal information about you except age

FOR FURTHER INFORMATION
I or/and Eddie McConnon will be glad to answer your questions about this study at any time. You may contact my supervisor at eddie.mcconnon@dbs.ie or me at 10358239@mydbs.ie.

Thank you!
INFORMED CONSENT FORM

PROJECT TITLE: Barriers to the adoption of Online Bank in Ireland

PROJECT SUMMARY:

The motivation of this is the need for better understanding the current scenario of Digital Banks in Ireland. Finding out the current barriers to the adoption of internet banking in the country.

By signing below, you are agreeing that: (1) you have read and understood the Participant Information Sheet, (2) questions about your participation in this study have been answered satisfactorily, (3) you are aware of the potential risks (if any), and (4) you are taking part in this research study voluntarily (without coercion).

_________________________________  ________________________________________________
Participant’s signature                     Participant’s Name (Printed)

_________________________________  ________________________________________________
Student Name (Printed)                      Student Name signature

_________________________________            
Date
Appendix 4 – Primary data (Raw)

Following a model of the raw data collected. The details of data treatment, formulas and charts are on the file Analysis.xlsx available on moodle.