The Impact of the Sunk Cost Fallacy and Other Behavioural Biases on Individual Irish Investors

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I, Stefphane Samantha Percival 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.

**Signature:** Stefphane Percival

**Date:** 28/05/2016
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ABSTRACT

This dissertation aims to prove that individuals make irrational decisions when under such circumstances as uncertainty and risk. The research conducted assesses forty-two Irish professionals and their behaviour while making decisions pertaining specifically to that of investing in stocks and shares. In particular, the dissertation focuses predominantly on one aspect of Behavioural Finance i.e. the sunk-cost fallacy. Other biases such as overconfidence bias, regret aversion, mental accounting and so on are also considered. Behavioural finance or more broadly behavioural economics is a study that combines cognitive psychology, microeconomics and finance. The research finds evidence of the sunk cost fallacy as well as other biases prevailing amongst the Irish investors during the primary data analysis. The reasons for which are consequently explained in detail.

Unlike the Efficient Market Hypothesis (EMH), Behavioural Finance takes into account other aspects and variables of individual behaviour since it holds financial markets and individuals to be irrational. Behavioural Finance began with the theory formulated by two famous people i.e. Amos Tversky and Daniel Kahneman which was the Prospect Theory. The research strongly utilises this theory throughout the dissertation.
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CHAPTER 1 - INTRODUCTION

It is often argued that the global financial crisis was not alone caused by a series of economic factors and shocks at play but by various powerful imperiling psychological forces. From blind-faith in ever-rising housing prices to plummeting confidence in capital markets, ‘animal spirits’ are a driving force in financial anomalies globally with respect to the financial markets (Akerlof and Shiller, 2009).

In the last half decade, academic finance has experienced two major revolutions i.e. neoclassical and behavioural. Academic finance before the 1960s was roughly organised around a collection of anecdotes, investment philosophies and puzzles (Shefrin, 2015).

Behavioural Finance is a relatively new concept that integrates conventional economic theories, cognitive psychology and traditional finance. In 1979, Daniel Kahneman and Amos Tversky wrote a significant paper in the field of economics and cognitive psychology called ‘Prospect Theory: An Analysis of Decision Under Risk’. This paper brought to light various human biases and errors that are made under uncertainty. Prospects or gambles are viewed as choices of decision-making under risk (Kahneman and Tversky, 1979). More broadly, behavioural economics is a study that focuses on the unanticipated irrational behaviour and financial decision-making process that various investors make while purchasing or selling certain financial products or services.

‘Sunk-cost fallacy’ is an aspect of behavioural finance. This aspect is the primary focus of the study conducted on Irish investors in common stocks and shares. A sunk cost is a basic concept of economics and business. Its understanding is significant in order to act as a rational decision-maker especially while considering investments in securities. Common phrases or expressions such as “don’t cry over spilt milk” are used in-line with the aforementioned fallacy. Sunk-cost is understood to be that loss which cannot be recovered and in terms of rationality (Hastie and Dawes, 2009). It is the investors irrational decision to hold on to a bad investment for too long. Psychologists often refer to this judgemental bias by ‘cognitive dissonance’, it is that judgemental bias that people tend to make when they fail to believe it is wrong. According to Kahneman and Tversky, this can be explained by the value function of which loss aversion plays a significant role in the prospect theory.

Other significant themes of behavioural finance considered in the research study are over-confidence bias, regret aversion and hindsight bias. The research determines to explore the possibility and impact the previously mentioned human errors and biases have on the individual
Irish investor as well as to provide for a more rational decision-making process while investing in equity shares.

1.1 Research Aims and Objectives
The main aim of the research study is to investigate the impact of the sunk-cost fallacy and other behavioural biases on the individual Irish investor.

The research further aims to investigate and test the existence of various behavioural patterns, errors, biases and decision-making under uncertainty against that of the individual Irish investor while making investment choices in shares and stocks.

Therefore, the study will also provide a platform for debate for the ‘irrational exuberance’ of the Irish credit bubble.

Humans inarguably make irrational choices under risk according to Kahneman and Tversky. The significance of the research conducted identifies these choices and human failings to make rational decisions at the time of investing in the securities market. This can help individual investors identify such behavioural patterns or anomalies while investing in shares allowing for “value investing”. The research also enables individuals to make better choices in daily activities i.e. sunk-costs do not only apply to financial decisions, it identifies better utilisation of opportunity cost in that of daily activities such as going for a walk in the park instead of watching the rest of a bad movie flick allowing the individual to optimally utilise his/her time i.e. to make the most of an individual’s marginal utility.

With respect to consumerism, this research would inform individuals of marketing ploys and manipulation that exist within the market. Therefore, making the consumer informed of their inherent judgemental errors and biases which this research sets out to test if present or not.

1.2 Research Questions and Hypotheses
Does the “sunk-cost fallacy” apply to the individual Irish investor while making investment decisions with respect to common stock?

Investors can be sometimes attached to past investment for too long despite the investment being an irrational bad investment which positions the investor in a sunk-cost trap predominantly due to his/her aversion to loss (Snopek, 2012).
This question examines the extent to which the sunk-cost fallacy has an impact on investors if applicable in the secondary capital securities market. The research will enable recipients to have rational expectations and make optimal decisions based on constrained budget. This will allow for unbiased choices to be made without allowing for an individuals’ overconfidence to seep in. It further provides in-depth analysis for the same with a descripto-explanatory purpose to serve as a precursor for the explanation of the sunk-cost fallacy in behavioural finance.

1.2.1 Research Sub-questions:
What are the implications (if any) of the other aspects of behavioural finance that play a role in the individual Irish investor’s decision-making process while investing in capital market securities?

The research will also try to determine other aspects of behavioural finance (hindsight bias, overconfidence, regret aversion and so on) affecting the individual Irish investor from being rational. Behavioural finance has increased its significance over the years especially after the financial crisis of 2007/08 in which critics started to doubt the efficient market hypothesis. Investors need to understand the possibility of their irrational behaviour, judgemental errors and animal spirits which is even argued by Shiller (2009) to be a major driving force in the preceding events leading up to the global financial crisis. These human failings and perception of risk differs highly and can be manipulated under the right circumstances as decisions are made in relation to certain reference points i.e. perceived price to be paid for an object during uncertainty. This can also be referred to as “transaction utility”. Thaler (2015, p.59) defines transaction utility as “the difference between the price actually paid for the object and the price one would normally expect to pay [i.e. the reference point]”.

Is the individual Irish investor averse to loss and its relationship to their individual risk-taking ability on prospective investments?

This research also examines the aversion to loss which could prolong the investors hold on a bad investment or prevent the investor from making a good investment judgement. This sheds light on the “endowment effect” element of behavioural finance. Individuals value things that are already in their possession more than the things that will be part of their endowment (Thaler, 2015, p. 18). The study also investigates the relationship between the individual Irish investor’s aversion to loss and the level of risk that they are willing to take on investments.
1.2.2 Hypotheses
The research adopts a quantitative research design with a deductive research approach and as such will form the following research hypotheses to test from the primary data that is collected and analysed in line with the previously formed research questions:

Hypothesis 1 → (H1) The sunk-cost fallacy does apply to the individual Irish investor while making investments in the stock market securities.

Hypothesis 2 → (H2) Individual Irish investors are more risk seeking for losses and risk averse for gains.

Hypothesis 3 → (H3) The more optimistic and confident an Irish investor is, the higher will be their risk taking abilities.

1.3 Dissertation Roadmap
This dissertation has been divided and compiled into 7 different chapters which is classified and illustrated as follows:

- Chapter 1 - Introduction
This chapter includes an in-depth explanation of the background of Behavioural Finance as well as the main discipline that is tested along with other behavioural biases i.e. the sunk-cost effect/fallacy. Furthermore, it lists the main research question together with the sub-research questions and hypotheses to be tested. Additionally, this chapter briefly explains the objectives, aims, scope, contributions and roadmap of the dissertation.

- Chapter 2 - Literature Review
The next chapter that follows the introduction is the Literature Review. This chapter will include six main literature themes i.e. prospect theory, behavioural finance, sunk-cost fallacy, overconfidence bias, regret aversion and hindsight bias. Literature from different sources are listed, reviewed and cases are built and made for each argument in the literature themes.

- Chapter 3 - Research Methods and Methodology
The Research Methods and Methodology chapter discusses the various research activities undertaken, assumptions and the research design in great detail. It justifies the rationale, clarifies weaknesses and strengths of the research methods and methodology of this dissertation.
Furthermore, this chapter also illustrates and discusses the research philosophy, approach, strategy, time horizon, data collection techniques, sampling methods and size, research ethics and limitations of the research study undertaken.

- **Chapter 4 - Data Analysis and Findings**

  This chapter aims at presenting the findings of the primary research conducted i.e. information gathered on questionnaires. It illustrates and describes the findings of the data collected in line with the research aim and objectives.

- **Chapter 5 – Discussion and Conclusions**

  Chapter five is the ‘Discussion’ section of the dissertation, as the previous chapter describes the findings of the primary research, this chapter will interpret the results of the findings as well as answer the research questions. Additionally, this chapter will also discuss whether the hypotheses mentioned earlier have been found to be true or false, it then further explains the implication the conclusions that would be drawn.

- **Chapter 6 – Conclusions and Recommendations**

  This chapter will summarise all the findings and draw general conclusions that will illuminate and clarify the issues that are prevailing in the present which were presented in the literature review chapter.

  It will aim to integrate all the concepts and theories that were previously mentioned in the literature review, data analysis and discussion which then provides recommendations for the same.

- **Chapter 7 – Reflection**

  This chapter will aim to critically assess the researcher’s learning during the whole dissertation process as well as during the MBA program. This is an informal account of the aspirations, goals, objectives, experiences and so on of the researcher.

### 1.4 Major Contributions of Research

The research will contribute to its recipients by providing a platform for debate as the subject matter is one that is of a controversial nature since critics still argue that the securities market functions rationally in addition to individuals behaving according to the axioms of the Efficient Market Hypothesis.
There has also been limited research if any in terms of the sunk-cost fallacy in relation to the individual Irish investor. A selected few behavioural biases and judgemental errors are sought and their application to the Irish securities market. Its implications will be described and explained so as to draw conclusions and provide recommendations to raise awareness and improve the individual’s decision-making process at times of uncertainty and risk. Furthermore, the research aims to contribute to the field of behavioural finance by testing the aforementioned hypothesis of regret theory specifically with that of the individual Irish investor.
CHAPTER 2 - LITERATURE REVIEW

2.1 Introduction
According to a predominant principle of classical economic theory, investment decisions are affected by rationally formed expectations by making use of all available information in an efficient manner (Scharfstein and Stein, 1990) but contrary to common assumption, economist John Maynard Keynes argues in *The General Theory of Employment, Interest and Money* that the “long-term investor” is concerned with the average opinion and the criticism of others in order to make a sound judgement. The individual also behaves in the manner of following the general belief of the crowd (Keynes, 1936).

In this chapter, various literature themes will be examined all having relevance to the research study and these themes all revolve around behavioural finance or more broadly behavioural economics. A literature review will consist of reviewing earlier and recent work of the listed themes so as to identify areas wherein further research will be beneficial to help the research study conclude with various propositions and methodologies (Rowley and Slack, 2004).

The different literature themes illustrated are that of prospect theory, behavioural finance, sunk-cost fallacy, overconfidence bias, regret aversion and hindsight bias. The literature themes and research are grounded in the concept of the prospect theory that was postulated in 1979 by Kahneman and Tversky.

Prospect theory has changed the way economists think about decision making under uncertainty but there have been very few applications of the theory and those appearing mostly in finance (Heiman et al., 2015). This literature theme addresses the aforementioned gap with regards to applicability in relation to the sunk-cost fallacy and the prospect theory as well as their possible existence within the Irish investor decision-making process while investing in shares.

2.2 Prospect Theory
Prospect Theory paved the way and was the basis for the development of Behavioural Finance. The concept of Prospect Theory was first postulated by psychologists Daniel Kahneman and Amos Tversky in 1979. They presented a paper that was called “Prospect Theory: An Analysis of Decision Under Risk”. In this paper, Kahneman and Tversky presented an alternative critical argument to an existing economic theory i.e. “expected utility theory”. In traditional expected
utility theory, the utility of a gain is assessed by the comparison of the utilities of two states of wealth. This dominant theory at the time was the normative model of rational choice and it did not factor in the difference in attitude for gains and losses (Kahneman, 2011, p.279). The expected utility theory was first published in 1944 by mathematician John von Neumann and economist Oskar Morgenstern in one of their most famous work called “Theory of Games and Economic Behaviour” which served as the cornerstone for modern day game theory.

The theory of expected utility primarily lists axioms to which a rational individual in a rational world would make a decision from a series of available choices. Shefrin and Statman (1985, p.777) argue that the postulates of expected utility theory do not define a decision-maker's behaviour when confronted with choice under uncertainty.

Alternatively, the prospect theory factors in the possibility of the irrational and the actual behaviour of an individual decision-maker. Prospect theory offers an alternative to expected utility theory which unlike the latter does not serve as a guide to rational choice but simply endeavours to encapsulate the actual choices that real people make (Thaler, p. 29).

An essential feature of this theory is the “value function”. This feature highlights the difference in the changes in wealth or welfare rather than final states i.e. the emphasis being on the changes as the carriers of value (Kahneman and Tversky, 1979). The value function determines the gains as being concave and loss as being convex. This is also significant in the research study that is conducted as it examines a key concept pertaining to the sunk-cost fallacy which is “loss aversion”. This is further illustrated with the following figure:
From the above figure, it is observed that the value of wealth diminishes after a certain point for every marginal utility gained. This concept is commonly known as diminishing marginal utility of wealth. An example of an individual’s incremental wealth can be considered in order to further understand this concept in simple terms. This hypothetical individual’s wealth is at €400. It increases to €600. The utils (unit used to measure utility) gained is €100. The increment in the individual’s wealth continues periodically but after a certain point the value of the wealth starts to diminish and drops to 60 utils for the said individual.

Another significant aspect of the figure is the “reference point”. It is that subjective point which individuals measure their gains and losses. In the above figure, the reference point has a value of zero. The reference point is used and manipulated in the research conducted to offer participants in the study the same prospect i.e. gamble but with different points of reference.

Furthermore, the figure also establishes that individuals are risk seeking for losses. This risk-aversion is examined practically in this research study conducted on Irish investors while making decisions relating to investing in shares under risk and uncertainty.
2.3 Behavioural Finance

In the last decade or so, there have been two revolutions in the experience of academic finance i.e., neoclassical and the other behavioural. Ideas were imported from behavioural psychology into finance which replaced the rationality postulate with that of a realistic alternative. The main contributors and Nobel prize winners to this field were psychologist Daniel Kahneman and experimental economist Vernon Smith (Shefrin, 2015). Behavioural finance helps apprehend anomalies financial markets that are driven by human emotions and cognitive errors especially under uncertain circumstances and risks, making the markets irrational as a whole. Theories that were based on the Efficient Market Hypothesis (EMH) and Capital Asset Pricing Model (CAPM) place emphasis on the assumption that individuals act rationally and predictably but in reality, they often behave irrationally (Snopek, 2012).

Eugene Fama, the founder of the Efficient Market Hypothesis remains an important critic to the discipline of behavioural finance. Fama (1998, p. 284) argues that as the market prices over-react to information with certain events, there will be about as frequent under-reaction as that of over-reaction that is consistent with the market being efficient. Nassim Nicholas Taleb in The Black Swan (2007) addresses this issue by pointing out that our reaction to information is not based on its logical merit but on the framework that surrounds it and its relation to registering with our social-emotional system.

Investors strive to find new ways to evaluate the risks and potential reward of economic ventures by assessing the significance of human reaction in terms of human failings that can be exploited during the economic planning process (Copur, 2015). By a proper assessment of these elements of behavioural finance, the research study undertaken is able to fully comprehend the measure of sunk-cost fallacy and its impact on the individual Irish investor while making investment decisions on stocks and shares if any.

2.4 Sunk-Cost Effect/Fallacy

In order to understand the sunk-cost fallacy or trap, we must first understand the meaning of sunk-costs. These are primarily costs which have no chance of being recovered. However, these costs are still taken into consideration while making decisions for various other investments i.e. present or future decisions involving investments. These are common cognitive errors that individuals make.
From a psychological point of view, it can be explained as a habit of paying too much attention to past costs and losses while making decisions about the future (Hastie and Dawes, 2009). Investors also hold on to bad investment for much too long which can be related to the **disposition effect** that could be explained by a possible aversion to loss. By doing so, investors lose the opportunity of selling the losing security in order to acquire a potential gain by investing in another security (Snopek, 2012).

Thus, causing the disposition effect or for that matter provides for the sunk-cost fallacy. This is also related to the **endowment effect** which causes the investor to assume that their choice of investment is worth more than it is actually worth in reality. According to Kahneman et al. (1991, p. 203), individuals treat costs that are incurred directly i.e. financial outlays very differently than that of opportunity costs. Moreover, perceived losses are more painful than that of foregone gains which is manifested in judgements made about behaviour that is fair.

### 2.4.1 Factors Affecting Sunk-Cost

- One of the factors affecting the sunk-cost is that of initial investment. The greater the initial investment, the stronger the effect of the sunk cost presents itself (Bornstein and Chapman, 1995).

- The effect of personal involvement in on behaviour still proves to be unclear (Bornstein and Chapman, 1995). For instance, the effect of a sunk cost in the case of an individual’s involvement in an investment made solely by the person and investments made for the person by a fund manager might or might not differ in comparison to each of the previous situations. In contrast, Thaler (2015, p. 60) notes that in a hypothetical situation, students when given an opportunity to have someone else purchase a bottle of beer on a hot sunny day with their own money while given a choice of purchasing the beer from a convenience store or that of a fancy resort for amounts of their choosing (if the cost of the beer is lower or for the same price as requested by the student), almost always are willing to pay a higher price for the beer from the resort. This is because of expectations as well as the student not having to deal with the negotiation of the price with the bartender. Economists refer to this as **“transaction utility”** i.e. the price paid for the object minus the expected price to be paid. From this, it is clear that the aforementioned ‘reference point’ plays an immense role in the sunk-cost effect as well as an individual’s aversion to loss.

- Time influences the impact of a suck cost investment. A phenomenon known as **“payment depreciation”** which in simple terms, means that the sunk cost effects wear off over time (Thaler, 2015, p. 67).
Furthermore, the sunk-cost fallacy can be argued by some to be rational with the argument that the decision-maker might decide to hold on to a loss in order to “learn a lesson” but this would involve that the individual will have two selves i.e. one a teacher and the other a learner which is illustrated by “the theory of self-control” consisting of both a “myopic doer”, the individual executes decisions but if influenced by short-term consequences and the other being a “far-sighted planner”, of which lifetime utility being the concern. Self-control can be achieved according to the given theory but the planner needs to persuade the doer to act in accordance with long-term goals (Thaler and Shefrin, 1981).

2.4.2 Tax Motives

Taxes are another significant element that calculatedly affect poor investment choices or biases which help understand reasons for which investors decide against realising their losses even if they are aware of their investments in stocks to be an irrecoverable loss. Selling for taxable investments are at odds with optimal tax-loss. Investors capture tax losses by selling their loss making investments and they are likely to receive taxable gains by holding on their winning investments (Odean, 1998, p. 1778). In contrast, Lakonishok and Smidt (1986, p. 972) highlight that non-tax related incentives would encourage investors to avoid realising losses and to realise gains.

Another paper by Shefrin and Statman (1985, p. 783) suggests that investors are prone to concentrate their tax-loss selling in the month of December which in itself reflects a self-control strategy. This would help explain one of the anomalies that Thaler (2015, p. 174) enumerates which is that investors tend to hold on to their shares in the month of January as it is seen as an advisable and a sound investment decision especially in those shares of small companies.

Although the effect of monetary sunk costs on decision-making is widely discussed, results are sometimes controversial and research is still fragmented (Roth et al., 2014).

2.5 Overconfidence Bias

According to Kahneman and Tversky (1979), the decision making process involves individuals using heuristics to help them make decisions during uncertain predicaments. The overconfidence bias refers to individuals or investors predicting the future and making their own judgements of it and by doing so inadvertently become overconfident. Psychologists refer
to the mean over confidence as in the correctness of an individual’s answers exceeds that of
the percentage that is only correct (Pohl, 2004).

The overconfidence bias often leads individual investors to the “miscalibration bias” i.e.
individuals take on more risks than that of their limit and the risk of being wrong is heightened
and underestimated due to overconfidence which can also result in the investors lack of reaction
to market news (Snopek, 2012).

Several instances of detrimental decision-making can be explained by an individual’s hubris.
Fellner and Krügel (2012) explain that the result of overweighting private information is mainly
caused by misperceiving the reliability of signals.

In a report by Burks et al (2010), it is found that measures of personality traits have a strong
impact on a person’s stated level of confidence and stress reaction has a negative effect on
confidence resulting in under-confidence. Studies also depict that individuals with higher
confidence levels or overconfident individuals usually tend to behave in a much more daring
manner. This would mean that overconfident investors would be more inclined to take on
riskier investments and greater losses.

2.6 Regret Aversion
Individual investor’s or decision makers are more often than not in fear of making a bad
decision. The view proposed by Bell (1983, p. 1156) which explains a “wrong decision” as a
comparison between the choice selected or decided upon by the individual as opposed to the
alternative choices available and the final outcome of which is worse than that which could
have been achieved with another alternative. Bell propounds that these individuals
inadvertently will seek to avoid the consequence of their decision by willingly paying a
premium.

In simple terms, regret aversion is that established psychological theory which highlights the
behaviour of individuals regrets are formed due to decisions that were previously made and in
some sense turned out to be “wrong” even if they appeared to be right with the information
available ex-ante (Yahyazadehfar, Ghyekhloo and Sadeghi, 2014, p. 2). Yahyazadehfar
further explains that this aversion encourages investors to hold on to poorly performing stocks
because avoiding the sale of which would in turn help the investor to ignore the possible loss
and poor investment decision. This overture proposed by Yahyazadehfar is in-line with the
previously mentioned sunk-cost fallacy or effect where investors hold on to poor investments for too long.

The cognitive emotional impact of regret is seen to be only fully felt when the outcomes of the decisions are made clear but Zeelenberg (1999, p. 95) further suggests that these emotions are hitherto anticipated and taken into account while the individual evaluates the different options available.

The axioms of the expected utility theory are so impelling that when decision makers violate these axioms consistently they are known as “paradoxes” (Bell, 1982, p. 961). However, the prospect theory does not dictate such heuristic method to decision-making and human behaviour, it simply elucidates the manner in which individuals act as opposed to serving as modus operandi to an individual’s conduct.

2.7 Mental Accounting Heuristic
Mental accounting was earlier known as “psychological accounting” founded by Richard Thaler and later changed to what we now know as mental accounting in a paper by Amos Tversky and Daniel Kahneman the founders of the Prospect Theory. According to Musura and Petrovecki (2015, p. 34), mental accounting is a method in which individuals categorise money in different contexts with different situations which then serves as frames that direct economic decisions. Furthermore, Musura and Petrovecki suggest that some predicaments lead individuals to activate different mental accounts and, therefore enabling them to make different judgements which is not accounted for in the previously mentioned traditional economic theory (i.e. in terms of rational decision-making) and Efficient Market Hypothesis. Mental accounting can be said to be a cognitive rule that consumers are argued to use so as to evaluate, organise and record financial activities (Liu and Chiu, 2015, p. 202).

Shafir and Thaler (2006) suggest in a paper that individuals evaluate a transaction in differentiating ways when the consumption of a good or service is disparate to that of the time of purchase. In this context, Musura and Petrovecki explain that individuals with the ability to reason, will take into consideration all available information while processing a rational decision but the theory of self-regulation suggests that individuals close themselves up to available information selectively processing information that is suitable with their own predefined goal and objective. Furthermore, to assess such a bias a method of hypothetical choices referred to as the “thought experiment” is often used to test decision-making choices
in the form of “imagine” questions that would help analyse individual human behaviour (Musura and Petrovecki, 2015, p. 35).

2.8 Hindsight Bias

The hindsight bias also referred to as the “knew-it-all-along” effect occurs when outcomes are seen to be more plausible in hindsight that in foresight (Louie, 1999). There are a lot of factors that influence the individual decision-making process and in the case of the research study, the decision-making process involved in investment within the Irish securities market.

According to a paper by Hawkins and Hastie (1990), hindsight bias refers to “the tendency for people with outcome knowledge to believe falsely that they would have predicted the reported outcome of an event”. Hindsight bias pre-exists in economic expectations. In accordance with Hawkins and Hastie, another paper suggests a hypothesis of that when investors or the general public are provided with information about economic developments, they will retrospectively report having assigned higher probabilities for those developments as compared to the actuals in foresight, lower probabilities will be reported to contrary developments and there will be no change in probability ratings when there is no information provided (Hölzl, Kirchler and Rodle, 2002).
2.9 Conclusion

Other aspects and elements of behavioural finance are also taken into consideration while focusing on the sunk-cost fallacy within Ireland as these behavioural aspects particularly “animal spirits” was seen to play a major role in the 2007/08 financial crash following the boom period.

In the context of uncertainty, when information is askew, investors tend to believe that their counterparts are better informed and hence are able to make better decisions. This causes mimicry (Snopek, 2012). This is clearly when prospective investors find themselves in a predicament where information is scarce and lack the information of fundamental values for the same.

Thomas Lux sets forth a model wherein the “contagion” of opinions and behaviour in the market is made explicit formulating a cyclical mechanism around fundamental values. According to this model, fierce self-amplifying reactions of “speculators” (this also brings to light the prospect theory) on small deviations from the equilibrium causing overvaluation or undervaluation, alternatively, the bubbles decelerates when an endogenous breakdown of bubbles is brought about because of excess profits (Lux, 1995, pp.893-894). For the purpose of the research study, this herd behaviour effect is also assessed along with the aforementioned behavioural biases, heuristics and judgemental errors in an attempt to work out the dynamics of the secondary securities market in Ireland with respect to the Irish investors and contagions of ‘opinion’ and ‘behaviour’ is to be emphatic. From this literature review, it is clear that gaps exist in relation to nonlinear dependence in the preliminary information with respect to the financial market operations so as to develop stochastic nonlinearities in the data that addresses the Irish investors in Ireland. The effective assessment of the former would help this research study to open up platforms for future research and debate.

Given the recent effects and the aftermath of the financial crisis particularly with that of Ireland, the hindsight bias proves beneficial while undertaking this study as some respondents of the survey can show possible signs of not keeping up-to-date situational models, which according to Hastie and Dawes requires an individual to constantly refresh his/her beliefs and thereby, adopting the “up-to-date situational model” instead of focusing on sunk-costs which is a fundamental element of decision theory i.e. theory of choice.
Another identified gap in the literature is that to allow for ‘regret’ which is examined during this research study. Both prospect theory and utility theory fail to take this aspect of human behaviour into account. The two theories share the assumption that the evaluation of available options in a choice are separate and independent and therefore the option with the highest value is then selected (Kahneman, 2011, p.287). For the purpose of this research study, the investment choice analysed and assessed is that of common stocks and shares that is restricted to the individual Irish investor. This helps the researcher understand whether events such as the 2007/08 crisis adversely affects investors by allowing them to feel more averse to loss.

Therefore, the researcher can draw conclusions that would serve as a precursor for further study and bridge the gaps within consumer psychology and decision-making. The research also provides for enabling the heuristic process while avoiding common cognitive errors and mistakes that Irish investors find themselves making which will enable them to make better rational decisions by recognising a sunk-cost trap. Furthermore, the primary research of this subject matter should serve as a platform for debate in terms of future research in the area.
CHAPTER 3 - RESEARCH METHODOLOGY AND METHODS

3.1 Introduction
Research Methods refer to those activities which are undertaken to generate data like that of questionnaires, interviews, focus groups and so on but in contrast, the concept of Research Methodology is differentiated as the researcher’s attitude towards the understanding of the research to be undertaken and the strategy to be utilised by the researcher to provide answers to the predefined research questions (Greener, 2008, p. 10).

This research study uses ‘the research onion’ illustrated in Figure 3.1 by Saunders et al (2012, p. 160) in order to carry out a step-by-step procedure towards a quantitative research design. This design should help the researcher to conduct the primary research required, which would therefore, help to test various previously defined hypotheses so as to form conclusions and recommendations by using statistical analyses. This is done by implementing and manoeuvring copious aspects of the research onion i.e. the research philosophy, approach, strategy, methodological choice, time horizon, sampling method, data collection techniques and procedures. By defining and discussing these different aspects, the strengths and weaknesses of the methodology used can be thoroughly comprehended together with its justification followed up with appropriate literature.
3.2 Research Design

As mentioned earlier, in order for the research to be conducted in an effective sequential manner, the research onion will be used to help the researcher. The research onion is further depicted in the following figure:

Source: Saunders et al. 2009, p.52

![Research Onion Diagram](image)

**Figure 3.1 Research Onion**

The first methodological choice is to choose the type of research design that would most favour and suit the nature of the research study. This involves quantitative, qualitative and mixed research design. Qualitative research and quantitative research can be distinguished by the nature of information studied or analysed i.e. numeric data and non-numeric data (Saund er et al., 2016). For the purpose of this research study, a quantitative research design is preferred. In a quantitative research design, researchers manipulate certain aspects of a situation and can then effectively measure the presumed effects of those manipulations, the researcher would simply use measurements in the absence of manipulation to question individual behaviour, beliefs and attitudes (Clark-Carter, 2009, p. 5). The research uses a quantitative research design as it succours the researcher in questioning respondents by manipulating various situational variables and measuring the relationship of these variables of the responses from the representative sample of the population. A quantitative research design also allows the research study to test several hypotheses out to form a conclusive conclusion that would serve as a
means to an end rather than an end in itself. The nature of the research conducted will therefore use a descripto-explanatory design so as to be used as a precursor to explanation (Saunder et al., 2012, p. 171).

3.2.1 Research Philosophy

The research philosophy is the first layer of the research onion. A research philosophy in simple terms can be referred to as that which leads to a system of beliefs and assumptions. There are predominantly three types of research assumptions that are used to distinguish the research philosophies (Saunders et al., 2016):

- **Ontology:** Ontology are those assumptions which relate to the nature of reality. There are two major aspects of ontology for applying especially to that of business management researchers. The first aspect is that of objectivism which portrays the existence of social entities external to reality and consequently is independent of social actor. The second aspect of ontology is subjectivism. The research study will adopt a subjectivist view since the subject matter of the study would entail perceptions and consequent actions belonging to that of social actors.

- **Epistemology:** This type of research assumption that deals with the acceptability and that which entails legitimacy of knowledge in the subject matter. The research will assume a role of a critical realist. This is because the underlying structures of reality play a significant role in the research. Sensations and mental processing are prerequisites in the aforementioned terms.

- **Axiology:** Axiology basically is the assumption dealing with values and ethics in the research as a whole. This assumption takes into account the researchers values as well as those of the participants in the research study.

According to Saunders et al (2012), there are four major philosophies in business and management which are positivism, realism, interpretivism and pragmatism. They are further explained as follows:

- **Positivism:** The positivism philosophy adopts the natural scientist philosophical stance. Data to be collected would be analysed for its causal relationship and regularities with the
preference for the theme of observable reality. This approach attempts to understand humans or societies using methods from natural sciences which appears to maintain a strict value-neutrality (Giddens 1974, cited in Pearce, 2015 p. 441).

- **Realism:** The philosophy of realism is presently intensely debated and it is usually related to a varied number of research fields like ethics, aesthetics, semantics, mathematics and the like (Ghenea, 2014, p. 13). Realism is that which relates to scientific enquiry and it explains the fact that objects exist independent of the human mind. There are two forms of realism i.e. direct realism and critical realism. Direct realism views the experience acquired through an individual’s awareness and senses suggesting the world’s accuracy. In contrast, the view of the critical realist philosophy argues that the senses that the individual experiences of the images of things in the real world and that these senses deceive the individual (Saunders et al, 2012, p. 136).

- **Interpretivism:** The interpretivist view suggests that it is imperative that the researcher comprehends the distinguishing elements or features between that of humans in their role of social actors. Also, vital to the researcher’s interpretivist view is to embrace and take on an empathetic stance (Saunders et al, 2012, p. 137).

- **Pragmatism:** Pragmatism is that philosophical view which advocates that concepts or ideas are only significant when they support action (Kelemen and Rumens, 2008). Pragmatists understand that there are several ways of undertaking a research study and interpreting the world as there is no one single method (Saunders et al, 2012, p. 130).

The researcher understands the role of a critical realist would be most suitable as it would help in the explanation of what an individual sees and experiences in terms of events like that of the financial crisis of 2007/08 and their underlying structures of reality. The critical realist view of the world would help the researcher to understand the irrationalities and errors that exist in the human decision-making behaviour.

### 3.2.3 Research Approach

The next layer of the research onion is kind of research approach the researcher should use whilst conducting the research. The research approach critically depends on the researcher’s information, research design and strategy. The three types of research approaches available to a researcher are inductive, deductive and an abduction approach to a research study. The following illustrates the different types of approach available to the researcher in further detail:
• **Inductive Approach:** In an inductive approach the theory would be propounded after the data is collected for the required research needed to be analysed and studied. Greener (2008, p. 16) highlights that an inductive approach commences by firstly looking at the focus of research which could be an organisation, business problem, economic issue etc. and then investigates various research methods with the goal of generating theory from the research. Saunders et al. (2012, p. 146) suggests that followers of an inductive approach usually criticise a deductive approach as being too rigid and strict. Furthermore, an inductive approach can be used for information that is more qualitative in nature as opposed to quantitative in nature and researchers tend to use a much smaller sample as that of a deductive approach.

• **Deductive Approach:** On the other hand, a deductive approach is seen to be more of a scientific approach to the collection of data. It commences by looking at theory, followed with the formation of hypotheses from the theory, which in turn relates to the focus of the research area or field and finally proceeds to testing the theory or hypothesis (Greener, 2008, p. 16). The deduction approach helps to explain the causal relationship of various variables and, is therefore the approach of choice for the researcher. This research uses a deductive approach. Saunders, Lewis and Thornhill (2012) suggest that a deductive approach is not only a dominant approach in the natural sciences but can predict the occurrence of phenomena and its anticipation, therefore enabling it to be controlled. The research conducted in this study is to understand the relationship of various human errors and biases in the field of behavioural finance and their relationship with that of the Irish Investors. Hence, it is seen as the most appropriate use for this research. As mentioned earlier, the only limitation seen is that of the nature of its rigidity in its framework. Although rigid, the deductive approach can guarantee reliability as one of its merits.

The following are the six sequential steps involved in a deductive approach proposed by Blaikie (2010):

**Step 1:** A hypothesis or set of hypotheses is put forward so as to form a theory.

**Step 2:** Testable propositions are deduced by using literature or by specifying conditions for which the theory might hold up.
Step 3: The logic and the premises of the argument that produced them are examined. This argument is then compared with existing theories to find out if it offers a better understanding.

Step 4: If the argument offers a better understanding, then the next step is to collect data, analyse and measure the various concepts and variables so as to test the premises.

Step 5: The theory will test false if the results are not consistent with the hypotheses or predetermined premises. The theory is then rejected, modified or the researcher can even restart the entire process.

Step 6: On the other hand, if the results are consistent and tests positive with the already formed hypotheses then the theory is validated.

These are the steps that are followed in this research study as the research uses a deductive research approach.

- Abduction Approach: The third type of approach available to a researcher is that of abduction approach. Deduction approach primarily works out by moving from theory to data, the induction approach moves from data to theory and the abduction approach has the merit of moving back and forth from the two approaches (Saunders et al., 2012, p. 147). The abduction approach allows the research to use the best of both world of the two different research approaches. Abduction approach can be seen as time consuming although it is devised in a way to let the induction approach compliment the process involved in the deduction approach and vice versa.

3.2.4 Research Strategy

The next layer of the onion is that of the research strategy. In broad terms, a strategy refers to a plan that is a means to an end. The research strategy is a methodological link between a research philosophy and methods used for data collection and analysis (Denzin and Lincoln, 2011).

The different types of research strategies according to Saunders et al (2012) are depicted in the following chart:
The first two strategies in Figure 3.2 are heavily linked with a quantitative research design. The researcher will use surveys as a method of research strategies for primary research to collect data. This is primarily because of the chosen research design i.e. quantitative research design and the research approach used which is that of a deductive approach. Therefore, the researcher finds that surveys would be the most appropriate strategy for the collection of primary research data. Saunders et al. (2012, pp. 176 – 177) explains that are a common and popular strategy in business and management research, the survey strategy allows the researcher to collect quantitative data which can then be analysed quantitatively using inferential and descriptive statistics. Furthermore, this choice of research strategy also allows the researcher to suggest possible reasons to suggest plausible reasons for the relationships found with various variables. The possible drawback from using a survey is that the data collected from this research is restricted to be as wide-ranging as that of other research strategies (Saunders, Lewis and Lewis, 2012, p. 178).

3.2.5 Time Horizon

Another layer of the research onion is the choice of time horizon. There are two types of time horizons. The first is the cross-sectional time horizon. This type of time horizon is mostly used for academic studies because of their time constraint. For the purpose of this research study, a cross-sectional time horizon will be used. This is mainly due to the time constraints that this study faces. Also, cross-sectional studies often employ the survey strategy which is
used in this research. Therefore, a drawback of this time horizon is that the researcher will not
be able to study change and development over time (Saunders et al., 2012, p. 190).

The second type of research time horizon is *longitudinal* in nature. The perspective followed
with this type of time horizon is referred to as the ‘diary’ perspective. The strength of
longitudinal research is the prospective of studying the change and development, and also
having better control over variables over time (Saunders, Lewis and Thornhill, 2007).

### 3.2.6 Data Collection and Analysis

This research study uses both primary data and secondary data for analyses of this research
study. Mitchell (2015) explains that secondary data analysis is observed as a method of
maximising the utility of the existing research non-intrusively and thereby, providing an
effective and efficient research strategy.

Therefore, this research will use a combination of secondary and primary data to test the
predefined hypothesis and research questions.

The primary data is collected by using questionnaires as a method of surveys for a quantitative
research design strategy. According to Saunders et al. (2012, p. 417), the most widely applied
data collection method is that of questionnaires while using a survey strategy since it provides
an efficient method of collecting responses from respondents. Critics argue that it is difficult
to design a questionnaire in such a manner that it precisely asks and answers the previously
formed hypothesis or set of hypotheses by the researcher. The questions used in the
questionnaires are designed in such a way to form investigative questions that takes into
account variables of opinions, behaviour and attributes and, are answered in response to a
predicament of uncertainty. This helps the researcher analyse the relationship between these
variables and understand the judgemental errors made in the decision-making process and the
impact of such behavioural biases as that of the sunk-cost fallacy restricted primarily to the
individual Irish investor in ordinary shares residing in Ireland.

The research will employ self-administered questionnaires for the survey conducted. Marcano
Belisario et al. (2015) highlights that these self-administered questionnaires are ideal for
achieving a wide coverage of the target population.
3.3 Sampling Size and Selecting Respondents
The study will adopt a mono method research choice based on quantitative data. The two types of sampling techniques available to a researcher are probability and non-probability sampling. The sample is based on a non-probability sampling selection of the target population i.e. various investors in stocks and shares that are from and residing within Ireland. A non-probability sampling technique is more feasible for the nature of this research study as bias is negligible and the sample size is small.

Some of the different types of non-probability sampling are quota, purposive, volunteer and haphazard sampling. This research study will use a purposive sampling technique as the sample is restricted to Irish investors living in Ireland and investing in common stock. Saunders at al. (2012, p. 287) emphasises that one of the limitations of using a purposive sampling technique is that it cannot be considered as a statistical representative of the total population. The research will depend on the researcher’s judgement for choosing participants with sufficiently diverse characteristics.

This non-probability sampling technique will use a sample size that is between 40 to 50 to get maximum respondents so that data can be collected and analysed to provide an ample descripto-explanatory analysis to serve as a precursor for further studies.

Furthermore, the researcher has also conducted a pilot survey. This helped to better the forming of the questions in the questionnaire in addition to adding and editing the questions wherever needed. The pilot survey was tested on ten individuals to clarify and understand the weaknesses in the design of the questionnaire.

3.4 Research Ethics
According to Saunders, Lewis and Thornhill (2012), ethics refers to “the standards of behaviour that guide your conduct in relation to the rights of those who become the subject of your work, or are affected by it”.

The possible ethical issues that might develop while conducting this study are:

- The objectivity of the researcher is imperative as the research uses a purposive sampling technique. Although the research bias is negligible, the researcher should still be aware of this issue and maintain research objectivity.
- The information or data that is to be collected can be seen as market sensitive information and therefore can prove to be an ethical issue for the research conducted and researcher.
• Another possible ethical issue is that of the personal information provided by the respondents. Since this personal information is seen as a possible ethical issue, respondents of the questionnaire shall remain anonymous. This will enable the participants of the survey to be more open and honest with their responses. Therefore, the data collected will be more reliable as opposed to primary data collected without anonymity.

3.5 Possible Research Limitations and Scope
The research study will have a few limitations in terms of its methodology. Some of the possible limitations to the research are listed as follows:

• Behavioural finance is a relatively new field and is criticised by many.
• The research study conducted is highly dependent on the reliability of information from the respondents.
• The researcher should be cautious in terms of the likelihood of research bias although negligible.
• Another significant limitation of this research study is that of time constraints which will not allow the researcher to examine variables and their relationship over time since the research is of a cross-sectional time horizon.
• Since the research study will use purposive sampling, the sample size selected cannot be a statistical representative of the population. The research is restricted to the purposive sample only.
• The research employs questionnaires for the survey strategy selected and this could restrict the research to some level of rigidity and inflexibility but this will increase efficacy of data collection.
• Another limitation of this research study is that there is the possibility of respondents answering the questions presented to them in a manner in which they presume the questions should be answered rather than the original response they would have given.
CHAPTER 4 - DATA ANALYSIS AND FINDINGS

4.1 Introduction
This chapter will present and explain the findings of the results which in turn helps the researcher analyse the data collected from the survey. The research study uses a quantitative research design, hence the need for utilising charts and various other graphical representation tools to illustrate the results of the primary research in an effective and efficient manner.

The primary objective of the research study undertaken was to investigate as well as to test the aforementioned hypotheses related to the impact of the sunk-cost fallacy and other behavioural biases prevailing or affecting the individual Irish investor. The research will analyse and shed light on the forty-two individual (professionals) responses to the online survey that was compiled by the researcher. The questionnaires include twenty-one questions that involve variables like attributes, behaviour and opinions. The questions are framed in such a manner so as to help the researcher to understand the decision-making process of Irish individuals during such predicaments as of risk and uncertainty. Therefore, allowing for the researcher to draw conclusions and form recommendations for the observed judgemental errors and heuristics if any which is one of the predetermined goals of this dissertation and the research study undertaken.

4.2 Quantitative Analysis and Research Findings
This section of the dissertation focuses on the findings of the primary research conducted explicitly describing and explaining the overall results of each of the twenty-one questions for all the forty-two responses of professional individual Irish investors.

The survey was conducted online with a purposive sampling method through Google Forms. The list of questions in the questionnaire are listed in Appendix I and the overall forty-two responses are presented in Appendix II.

Each candidate and respondent was individually analysed before the researcher could collectively assess the results of the sample as a whole. A brief summary of the characteristics and attributes of each of the forty-two candidates in the following Table 4.1 enables the researcher as well as the reader to facilitate for better understanding of the decision-making process while taking into account such inherent factors and the possibility of their contribution to the formation of heuristics and judgemental errors.
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<td>Self-employed</td>
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<tr>
<td>---</td>
<td>------</td>
<td>----------</td>
<td>----------------------------</td>
<td>---------</td>
<td>---------------</td>
</tr>
<tr>
<td>41</td>
<td>Male</td>
<td>35 to 44</td>
<td>Postgraduate Diploma/Degree</td>
<td>Ireland</td>
<td>Self-employed</td>
</tr>
<tr>
<td>42</td>
<td>Female</td>
<td>25 to 34</td>
<td>Bachelor Degree</td>
<td>Ireland</td>
<td>Finance &amp; Insurance</td>
</tr>
</tbody>
</table>

Table 4.1 Background of Individual Respondents

As listed out in table 4.1, each of the forty-two respondents were asked to specify their gender, age group, highest level of educational qualification, country of origin and industry in which the respondent is employed in before the individuals could answer the situational and other hypothetical questions that would test the respondent’s ability to make rational decisions under situations of uncertainty and risk.

Out of the total forty-two responses, a little over 19% of the sample size of the Irish investor population were women and 80% of which were men. The researcher will not be able to make statistical inferences from the demographic data, to represent that of the entire population but can only suggest possible recurring themes as the research has adopted a heterogeneous purposive sampling technique. Since themes (behavioural biases and judgemental errors) are a part of the research study, these statistics will be looked into so as to gather information to develop the aforementioned themes in the research study.

The research also found that the majority of the investors in the survey were in the age bracket of 35 to 44 years of age followed by individuals in the age groups of 25 to 34 and 55 plus. This is depicted in the following figure:

![Figure 4.1 Age Group of Irish Investor Participants](image-url)
4.2.1 Optimism and Overconfidence Bias

Question six in the questionnaire which is available in Appendix I discusses the investor’s optimism levels. The significance of this question helps the researcher test one of the previously formed premise or hypothesis i.e. (H3) - The more optimistic and confident an Irish investor is, the higher will be their risk taking abilities.

The following figure illustrates the answers that were given when the forty-two respondents were asked to consider if they thought of themselves as optimistic people:

![I consider myself to be an optimistic person.](image)

*Figure 4.2 Optimism Magnitude of Irish Investors*

The above findings in figure 4.2 suggests that majority of the participants in the undertaken survey agree to some extent with being optimistic. Another significant finding pertaining to this question is that none of the Irish investors that participated in the survey disagree with the statement or show signs of pessimism.

When investors were asked about their thoughts on the profitability of the portfolio of investments made thus far, a maximum of 21 investors answered that their investment portfolios thus far have been good. This is illustrated in the following figure:
In figure 4.3, the findings suggest that 57% (this includes those investors that have chosen ‘good’ and ‘outstanding’ as their response to the previously mentioned survey question) of the Irish investors that participated in the survey are confident in the profitability of their portfolio of investments thus far. The survey also finds that less than 8% approximately (7.14%) of the Irish respondents find their investments to have been bad choices and 28.57% of investors consider their profitability of investment portfolio to be average.

When investors were asked to describe their feelings and confidence on their investments on a scale from 1 to 10 where poor investment decisions were on the lowest value of the scale i.e. 1 and the highest was 10 which suggested that the respondents investment decision were outstanding, a little over 71% of investors indicated that their confidence level in their investment decisions are above average (i.e. 6 to 10 on the suggested scale). An approximate
of 7.14% of the respondents rated their investments ‘9’ on the scale displaying very high confidence in the success of their previous investments. These investors also show very low signs of regret aversion and incidentally are all short term investors with respect to the type of investor they consider themselves to be (one to three months).

4.2.2 Long-term Investors, Fixed Assets and Other Variables

Although the research does not consider assets which are not liquid and a part of the secondary securities market i.e. stocks and shares, it is however important to take into account a finding that the research study has stumbled upon.

In the survey, respondents were asked to list other investments that they invest in and the research suggests that almost all respondents that invest in fixed assets such as property, land and the like depict a higher level of confidence and optimism in their decision-making process.

This is further illustrated in detail by the following table:

<table>
<thead>
<tr>
<th>Respondent No.</th>
<th>Type of Investor</th>
<th>Other Investments</th>
<th>Optimism</th>
<th>Confidence in Portfolio</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>Long term (2 to 20 years)</td>
<td>Angel Investor, Property</td>
<td>I agree a lot</td>
<td>Good</td>
</tr>
<tr>
<td>17</td>
<td>Short term (1 to 3 months)</td>
<td>Land</td>
<td>I neither agree nor disagree</td>
<td>Good</td>
</tr>
<tr>
<td>18</td>
<td>Long term (2 to 20 years)</td>
<td>Property</td>
<td>I agree a lot</td>
<td>Good</td>
</tr>
<tr>
<td>19</td>
<td>Long term (2 to 20 years)</td>
<td>Property, equity funds, property funds</td>
<td>I agree a lot</td>
<td>Average</td>
</tr>
<tr>
<td>39</td>
<td>Short term (1 to 3 months)</td>
<td>Property</td>
<td>I agree a little</td>
<td>Good</td>
</tr>
<tr>
<td>40</td>
<td>Long term (2 to 20 years)</td>
<td>Property</td>
<td>I agree a lot</td>
<td>Good</td>
</tr>
</tbody>
</table>

Table 4.2 Relationship among Long-term Irish Investors, Fixed Assets and Other Variables

Table 4.2 portrays a relationship among fixed assets such as property, land and so on with that of a long-term investor. The findings suggest that more long-term investors from the sample depict higher levels of confidence in their investment while they share common grounds to that of fixed asset investments.

4.2.3 Irish Investors and the Sunk-Cost Fallacy/Effect

One of the predominant and most significant aspect of this research is that of the sunk-cost fallacy. The main research question is to assess if the sunk-cost effect applies to the individual
Irish investor while investing in stocks, this is further examined in question 14 in the survey. This is a situational and hypothetical question that would test the decision-making ability of the investor. This question helps the research study in testing the premise of hypothesis 1 (H1) i.e. The sunk-cost fallacy does apply to the individual Irish investor while making investments in the stock market securities.

The question and the findings are illustrated as follows:

You have purchased stocks worth €500. For the last few months it has fallen and you have made a loss of €200. At the same time, the stocks of other companies in the same industry appear to be performing better. What would you do if this was all the information you had?

(a) Hold on to your investment for a little while longer.
(b) Hold and purchase shares in another company in the same industry.
(c) Sell your investment.
(d) Sell and purchase shares with remaining €300.
(e) Other.

<table>
<thead>
<tr>
<th>Possible Options Given to Respondents</th>
<th>Responses</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Hold on to your investment for a little while longer.</td>
<td>27</td>
<td>64.30%</td>
</tr>
<tr>
<td>(b) Hold and purchase shares in another company in the same industry.</td>
<td>2</td>
<td>4.80%</td>
</tr>
<tr>
<td>(c) Sell your investment.</td>
<td>4</td>
<td>9.50%</td>
</tr>
<tr>
<td>(d) Sell and purchase shares with remaining €300.</td>
<td>6</td>
<td>14.30%</td>
</tr>
<tr>
<td>(e) Other.</td>
<td>3</td>
<td>7.14%</td>
</tr>
</tbody>
</table>

Table 4.3 Responses to Question 14

The findings of this question suggests that a maximum number of respondents from the sample i.e. 64.3% would rather hold on to their investments for a little while longer eventhough the stocks purchased have underperformed leaving the investor with a huge loss. In addition, only a maximum of 23.8% of the respondents from the sample would sell their investments and take their losses according to the survey.

4.2.4 Risk-taking for Gains and Losses

In Appendix 1, the research tries to establish a pattern in question 16 and question 17 that would test the premise surrounding hypothesis 2 (H2) i.e. Individual Irish investors are more risk seeking for losses and risk averse for gains.
These aforementioned questions in the survey study undertaken and the findings of which are listed as follows:

- Assume yourself richer by €400 than you are today. What would you choose if you were offered a choice between:
  
  (a) A sure gain of €200
  (b) A 50% chance to gain €300 and a 50% chance to lose €0

The findings of the responses that were taken from the Irish investors for the above question are illustrated in the figure that follows:

![Risk-taking for Gains](image)

**Figure 4.5** Risk-taking under Uncertainty for Gains

Figure 4.5 depicts the responses of forty-two professional Irish investors and the findings of which suggest that 78.6% of the respondents would rather choose option (a) and the remaining 21.4% would choose option (b) i.e. a 50% chance to gain €300 and a 50% chance to lose €0.

Question 17 is another situational or hypothetical question that helps the research study assess the investor’s risk-seeking ability for losses. This question is listed below followed by figure 4.6 which represents the findings and responses from the investors:

- Assume yourself richer by €600 than you are today. What would you choose if you were offered a choice between:
  
  (a) A sure loss of €200
  (b) A 50% chance to lose €300 and a 50% chance to lose €0
The findings suggest that 85.7% of the forty-two respondents in the survey would rather choose a 50% chance to lose €300 and a 50% chance to lose €0 than that of a sure loss of €200 that 14.3% of the respondents chose.

4.2.5 Investors and Regret Aversion
A relationship between the possibility of regret aversion and safer investments was propounded in the research study and is elucidated in table 4.4 as follows:

<table>
<thead>
<tr>
<th>Respondent No.</th>
<th>Type of Investor</th>
<th>Other Investments</th>
<th>Regret</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Medium term (3 months to 2 years)</td>
<td>Corporate Bonds</td>
<td>Frequently</td>
</tr>
<tr>
<td>2</td>
<td>Long term (2 to 20 years)</td>
<td>Managed investment portfolios</td>
<td>(no response)</td>
</tr>
<tr>
<td>3</td>
<td>Long term (2 to 20 years)</td>
<td>funds</td>
<td>(no response)</td>
</tr>
<tr>
<td>4</td>
<td>Long term (2 to 20 years)</td>
<td>Managed funds</td>
<td>(no response)</td>
</tr>
<tr>
<td>9</td>
<td>Medium term (3 months to 2 years)</td>
<td>Local businesses</td>
<td>(no response)</td>
</tr>
<tr>
<td>12</td>
<td>Short term (1 to 3 months)</td>
<td>wine</td>
<td>(no response)</td>
</tr>
<tr>
<td>13</td>
<td>Long term (2 to 20 years)</td>
<td>Angel Investor. Property.</td>
<td>Frequently</td>
</tr>
<tr>
<td>17</td>
<td>Short term (1 to 3 months)</td>
<td>Land</td>
<td>Sometimes</td>
</tr>
<tr>
<td>18</td>
<td>Long term (2 to 20 years)</td>
<td>Property</td>
<td>Frequently</td>
</tr>
<tr>
<td>19</td>
<td>Long term (2 to 20 years)</td>
<td>Property, equity funds, property funds</td>
<td>Frequently</td>
</tr>
<tr>
<td>22</td>
<td>Long term (2 to 20 years)</td>
<td>Gold</td>
<td>Sometimes</td>
</tr>
<tr>
<td>24</td>
<td>Medium term (3 months to 2 years)</td>
<td>Bonds</td>
<td>Sometimes</td>
</tr>
<tr>
<td>25</td>
<td>Long term (2 to 20 years)</td>
<td>Mutual Funds</td>
<td>Frequently</td>
</tr>
<tr>
<td>26</td>
<td>Long term (2 to 20 years)</td>
<td>Mutual Funds</td>
<td>Rarely</td>
</tr>
</tbody>
</table>
When the respondents were asked if they invest in other assets other than stocks, there were seven respondents that answered that they invest in property and other assets that are considered to be safer than that of stocks.

Another question that was asked in the survey that is related to the investors regret for previous investment decisions is listed below:

Do you regret any of the decisions you have made pertaining to your investments till date?

(a) All the time
(b) Frequently
(c) Sometimes
(d) Rarely
(e) Never

According to table 4.4, it is observed that seven investors from the sample that invest in safer assets compared to shares ‘frequently’ regret their decisions pertaining to their past investments.
According to figure 4.7, approximately 4% of the investors or respondents regret their investments all the time, 35.7% frequently regret their investment choices. The remaining 17.8% and 42.8% rarely and sometimes regret their financial decisions respectfully.

4.2.6 Decision Making and Mental Accounting

Question 18 from Appendix I in the research study undertaken, assesses the implications if any of the mental accounting heuristic in individual Irish investors. This question and choices offered to the respondents are listed below:

Niamh (a wine connoisseur) walked into a store to purchase some apples and much to her delight found an old 1960 Pinot Noir that was usually priced at €200 on sale for €150. Niamh purchased the bottle of wine. Please choose which of the following statements make sense (You can select more than one):

(a) Sure, why not? It was on sale!
(b) Niamh made a rational decision.
(c) The original choice of €200 should be irrelevant.
(d) Niamh made an unsound decision.
(e) Other

The results and findings of the total responses from the Irish investors that participated as a sample in the undertaken survey are depicted in figure 4.7.

![Mental Accounting and Irish Investors](Image)

Figure 4.8 Decision Making and Mental Accounting in Irish Investors

The above figure suggests that a maximum of 16 (36% approximately) respondents think that Niamh made a rational decision. 10 Irish investors chose “sure, why not? It was on sale” and around 9% of the respondents thought that the original choice of €200 should be irrelevant.
Only 7% of investors thought that Niamh made an unsound decision and the remaining of the responses were for that of the choice “other”.

4.3 Conclusion
In conclusion, the research findings of this chapter of which forty-two reliable Irish investors participated in are approximately 20% of the investors were women and the remaining were men. In addition, majority of the sample were highly qualified educated individuals with a minimum postgraduate education qualification (73.8% approximately).

Maximum number of respondents (34%) are in the age bracket of 35 to 44. Another finding with regards to the investor’s optimism level was that none of the respondents displayed any sign of pessimism.

In terms of confidence or overconfidence, the findings convey that around 57% of the investors in the survey are confident in the profitability of their investments thus far. Another finding that the research found in the process of analysing the primary data collected was that long-term investors that also invest in fixed assets such as land, property and so on, display higher levels of confidence.

In another one of the situational question in the survey, 64.3% of the respondents would rather hold on to a stock that is falling in value than sell it. The findings also suggest that majority of the investors are risk seeking for losses than that of gains i.e. risk averse.

Another noticeable finding in the data collected is that 7 investors that also invest in other assets predominantly safer assets i.e. less risky investments display high signs of regret and possibly regret aversion.

This was a short summary of some of the findings of the research study undertaken, the implications of which will then be explained, reviewed and discussed in the next chapter in detail.
CHAPTER 5 – DISCUSSION

This chapter will elaborate and explain in detail the interpretation of the results of the primary research conducted while reviewing the literature discussing the implications of the findings and its relation to the research questions and hypotheses.

Furthermore, this chapter will highlight the significance of the research and its contribution to the controversial area of Behavioural Finance or more broadly Behavioural Economics. This chapter critically reviews the research and it even assesses the limitations of the research study.

5.1 Research Question and Interpretation

The main research question of this dissertation was to find out if the “sunk-cost fallacy” applies to the individual Irish investor in the decision-making process specifically relating to those investment decisions for purchasing or selling of stocks and shares.

In order to fully comprehend this research question and make understandable the meaning of the sunk-cost fallacy, the researcher will first explain the meaning of a ‘sunk cost’. Sunk costs are those cost which are irrecoverable and cannot be retrieved. Steinman and Jacobs (2015, p. 25) in a research study view sunk costs as “opportunity outlays that have already been incurred and cannot be recovered. Since these costs cannot be reactivated it is posited that they should not have any impact when attempting to make decisions about future consumer behaviours.”

The findings of the primary research conducted suggest that around 69% (table 4.3) of the Irish investors in the survey are more inclined to making investment decisions that are influenced by the ‘sunk-cost effect’. Investors would rather hold on to an obviously failing investment than sell decide to actually sell it.

5.1.2 Possible Reasons and Implications for the Sunk Cost Effect

The research shows that most of the Irish investors that participated in the survey are affected by the sunk cost fallacy. The reasons for this are controversial and arguable by many critics. This research has found a few reasons to be more suitable than most in comparison for the sample.

Individual investors are seen to be too invested in their past. According to Hastie and Dawes (2009), people are habituated to paying attention to past costs while in the process of making decisions about the future. A concept that will be explained later discussed, is that of regret
aversion. The research finds all the biases that are considered in this dissertation to be interlinked with one another drawing up the question of ‘which came first?’.

Another reason for individuals to hold on to their loss making investments is because they are averse to loss. According to the Prospect Theory, individuals would rather avoid making losses. This sounds reasonable, as everyone would prefer not to make losses. This does not simply mean that people would prefer not to make losses, it also means that individuals would rather make irrational decisions and judgemental errors just to avoid the possibility of a loss. The research finds this to be evidently in-line with the sunk cost fallacy. This relationship is found to be clear and explain why people would prefer to hold on to a loss making investment even though this is clearly irrational. The loss has been incurred, the cost is sunk and irrecoverable but people are still unaccepting of this loss that we will inadvertently choose to be irrational.

A concept in behavioural economics and psychology that can also help explain this bias that people are inclined to make is that of the “endowment effect”. The typical assumption of this effect is that consumers or investors evaluate potential transactions in terms of their current holdings and that the owners of a product or service tend to regard a potential loss to be more significant than the non-owners (Weaver and Frederick, 2012, p. 696). This reason would explain the behaviour of the Irish investors in the survey i.e. the lack of inclination to trade or the “pain of losing”.

The “disposition effect” suggests that investors are prone to that judgemental error or bias of selling winning investments or gains too early and as Shefrin and Statman (1985) in a study highlight “ride losers too long”.

Hitherto in the literature review mentioned was that of the individual’s personal involvement in the investment decision and that of the initial investment made can play a significant role on the effect that the sunk-cost fallacy might have on the person.

5.2 Research Sub-questions and Interpretation

The research has two sub-questions. The first question is as follows:
What are the implications (if any) of the other aspects of behavioural finance that play a role in the individual Irish investor’s decision-making process while investing in capital market securities?

According to the primary research data collected, the findings suggest that the sample of Irish investors that participated in the survey do possess other biases and various aspects of behavioural finance other than the sunk cost fallacy which play a role in the secondary capital market investment decision-making process.

The following are various aspects of behavioural finance that were considered for the selected sample and the implications of these biases that are existent in the irrational decision-making process as well as judgemental errors and heuristics have also been included below:

- **Mental Accounting Heuristic**

  The findings of the dissertation research study undertaken, suggests that from the sample of investors that participated in the survey about 58% of the sample display signs of the mental accounting heuristic. This is found when the respondents were asked a situational question i.e. question 18 in Appendix I and the findings are represented in figure 4.7.

  The question that was asked was “Niamh (a wine connoisseur) walked into a store to purchase some apples and much to her delight found an old 1960 Pinot Noir that was usually priced at €200 on sale for €150. Niamh purchased the bottle of wine. Please choose which of the following statements make sense…”.

  Before analysing the question, the concept of mental accounting should be discussed. For instance, if a couple bought a holiday package and could sell the same for €800. The cost or the package should be irrelevant in this decision-making process for the couple. The only aspect that should be relevant are the other options or opportunities that are available for the same price for the couple. This means that the question the two individuals will have to ask themselves is whether this is the best decision out of the other options available to best utilise their €800. Richard Thaler (2015) the father of Behavioural finance explains that “All economic decisions are made through the lens of opportunity cost.”

  In context to the question asked in the survey, Niamh made an impulsive and irrational decision. The €200 should technically be irrelevant to the now price of the wine. The only thing relevant would be the other possibilities or prospects available to Niamh for €150. Therefore,
58% of the sample in the survey study that responded to this question agreed with Niamh’s irrational behaviour displaying signs of mental accounting bias.

- Overconfidence and Optimism Bias

Several instances of irrational decision-making or detrimental choices can be explained by an individual’s hubris. Boussaidi (2013) highlights the fact that overconfident investors overreact to private signals resulting in their need to trade excessively which will in turn cause deviation in prices from the rational threshold to an excessive return volatility level.

In the survey conducted, the respondents were asked two questions to determine an approximate level of their confidence in their investments. The first question was one that was used to understand the confidence in the profitability of the investment portfolio and the second question asked was to determine the investor’s feelings about their investment decisions and choices made thus far. For the purpose of the research study, around 57% of the respondents showed a high level of confidence for the first question and 71% for the second question showed the same. Therefore, the Irish investors that participated in the survey did depict signs of the overconfidence bias. From the literature review, the research findings suggest that these investors are prone to the “miscalibration bias”. This is a situation where the individuals will take on more risk as compared to their actual limit because of their overconfidence. However, this area of the research study could have been better analysed with in-depth interviews and is therefore seen as a limitation in this research. As previously discussed in the literature review, another reason for this bias could be that of the person’s personality traits as they have a strong bearing on an individual’s confidence levels.

Furthermore, an approximate of 42% of the investors that participated in the research study considered themselves to be very optimistic on the optimism spectrum. For that matter none of the participants in the survey showed any signs of pessimism. This is known as the “positivity illusion”. This is where individuals basically increase their odds to be higher than average for a supposed good outcome and conversely estimate their odds to be lower than other people for a bad outcome (Ariely, 2009).

In this context, the investors in the sample that do show optimism bias are more than likely inclined to underestimate risk while making decisions and vice versa.
Regret Aversion Bias

In regret theory, people are thought to “remember their previous experiences and form expectations about the rejoicing and regret that the present alternatives might entail.” (Loomes and Sugden, 1983, p. 428). In simple words, regret aversion refers to anticipating regret while making decisions and therefore, refraining from making that decision or choosing the given prospect available to them. This could be another reason for which investors hold on to poorly performing assets in the context of the aforementioned sunk cost fallacy.

This is a significant aspect of the research study undertaken as it contributes to the Prospect Theory and broadly that of behavioural economics. In the Prospect Theory, regret is not taken into consideration but only that of loss aversion and other such aspects.

In the context of the primary data collected for the research, the findings suggest that 35.7% of the respondent’s frequently regret their investment decisions and an approximate of 4% of the investors in the survey regret their decisions all the time. Therefore, allowing for the regret aversion bias among the Irish investors. This means that the investors or prospective investors will anticipate the regret while considering a few prospects of possible investments before actually making the choice of which decision to choose. This is an irrational judgemental error as only factual evidence of the choices should be taken into account instead of the individual’s perception of events to follow their decision specifically that emotional feeling of regret.

The second research sub-question was to assess if the individual Irish investor is averse to loss and its relationship to their individual risk-taking ability on prospective investments. The research study shows that the investors that participated in the survey are loss averse. According to figure 4.5 and 4.6, there is a relationship between an individual’s aversion to loss and their risk-taking abilities.

An approximate number of 85.7% investors are risk seeking for losses and 78.6% of the investors are risk averse for gains. The reason for this can be explained by the Prospect Theory. The pain of losing for the investors is such that they are willing to take a risk to lose more than they could initially lose in order to not have a loss to begin with because such is the pain of a loss for an investor which is observed in question 17 Appendix I. Thus, proving the investors be loss averse. Figure 2.1 in the literature review chapter explains this phenomenon. The pain of a loss is much more than a gain of the same amount. Therefore, investors will go out of their way to eliminate a loss making them risk seeking for losses. Additionally, investors do not do
the same for gains as they do not possess the same value as that of a loss which would hence make them risk averse for gains.

5.3 Research Hypotheses
The predefined hypotheses for the research and the results of which are as follows:

Hypothesis 1  →  (H1) The sunk-cost fallacy does apply to the individual Irish investor while making investments in the stock market securities.

Hypothesis 1 has tested true i.e. the sunk cost fallacy does apply to the individual Irish investor while making investments in the stock market securities as was explained previously in this chapter under the section of Research Question and Interpretation.

Hypothesis 2  →  (H2) Individual Irish investors are more risk seeking for losses and risk averse for gains.

Hypothesis 2 has also tested true as was previously explained that the Irish investors are more risk seeking for losses and risk averse for gains. This is because of the investors aversion to loss and can further be explained by the Prospect Theory.

Hypothesis 3  →  (H3) The more optimistic and confident an Irish investor is, the higher will be their risk taking abilities.

Hypothesis 3 has tested false. The optimism and confidence of an Irish investor do not solely define their risk taking abilities. The optimism and confidence of the investor does play a role in his/her risk taking but does not simply imply that the investor would take a higher risk because they are significantly more optimistic than the other investor. However, the optimism and overconfidence bias is factored in the decision-making process of the investor during circumstances of uncertainty and risk. It is that irrational judgemental error that the individual in inclined to make because of reasons pertaining to personality traits, perception, processing of information available, other biases and the like.
CHAPTER 6 – CONCLUSIONS AND RECOMMENDATIONS

This chapter will summarise all the findings and draw general conclusions that will illuminate and clarify the issues that are prevailing in the present which were presented in the literature review chapter.

It will aim to integrate all the concepts and theories that were previously mentioned in the literature review, data analysis and discussion which then provides recommendations for the same.

6.1 Conclusions

In conclusion, the aim of the research study conducted was to find out if the Irish investors possess judgemental errors, biases and heuristics. It is evident from the research study that the investors do make irrational decisions and that the financial markets are irrational. The research concurs with the prospect theory and concepts within behavioural finance and economics.

Additionally, according to the research study conducted, the Irish Investors were affected by the sunk-cost fallacy. Possible reasons for the same are other behavioural heuristics and biases such as regret aversion, the endowment effect, loss aversion, disposition effect and so on.

The investors also showed signs of the mental accounting bias, overconfidence and optimism bias.

With respect to the research premises and hypotheses that were predefined, Hypothesis 1 and hypothesis 2 tested positive i.e. (H1) the sunk-cost fallacy does apply to the individual Irish investor while making investments in the stock market securities and (H2) individual Irish investors are more risk seeking for losses and risk averse for gains. Although hypothesis 3 tested false which means the statement “the more optimistic and confident an Irish investor is, the higher will be their risk taking abilities” is not true.
6.2 Recommendations

Individuals can be manipulated by the financial system; it is how the big insurance companies make profit with the different insurance schemes they sell to gullible individuals or consumers (for example: ‘flight insurance’ i.e. insurance companies optimise from the phobia of flying and the odds of a plane crashing is simply one in 11 million). Marketers constantly frame products and services so as to lure consumers into purchasing a product or service. It does not end alone with investment decisions but it delves deeper to the basics and elemental concepts of human behaviour and our capacity to understand prospects available to us when situations are not the most suitable of ones. In fact, another new field of economics that deals with human decision-making and errors is in the throes of development. This new concept is that of “Neuroeconomics”. This is clearly the future to understand the workings of the human brain. Consider the possibility of making only rational decisions, taking into account only the relevant possibilities so that we can make optimal and efficient decisions or choices.

Sunk costs are simple terms in the business and economics world and these terms are commonly used. Most individuals are very much aware of the effect but still continue to make such irrational errors because of the way in which we are tuned to behave and react to information. It is only with further research and more theoretical studies that we cannot only be made aware but tune ourselves to act rationally to future predicaments.

The problem lies in the hands of the critics because of their unaccepting and unrelenting predisposition of behavioural economics and finance. If individuals were to accept the fact that our behaviour is irrational and unlike the Efficient Market Hypothesis where financial markets and individuals are considered rational, studies should factor in these variables that explain the full extent of our behaviour. The founder of behavioural economics, Richard Thaler (2015) argues that doing so would be the end of behavioural economics as we know it.
CHAPTER 7 – REFLECTION

This chapter of the dissertation is a critical self-reflection and assessment that presents an informal account of the researcher’s experience during the dissertation and MBA programme.

Human behaviour has always been a fascination of mine. When I first heard the concept of Behavioural Economics, I was only too eager to learn more about this field of economics and since we did not have it as a subject in our MBA program, I took it as a challenge to learn more about the fascinating new field and build my dissertation around it. We are all prone to making judgemental errors but what if there could be a way of never making such blatant mistakes? This was my purpose to study this topic.

Another strange thing that a friend of mine told me when we were watching a game of football with Seville and Liverpool playing. The first half of which Liverpool scored a goal with the ball on their side 90% of the time and after halftime was it that Seville scored not 1 but 3 goals. He turned around and said to me, “Anyone with the right mind would have bet €1000 against Seville at halftime” but that to me was such a strange thing to say. Why would someone want to do that just based on Liverpool playing well in the first half, it does not really guarantee them playing well in the second. But such is our understanding of the world.

A book I read and referenced several times in my dissertation was Richard Thaler’s “misbehaving”. I would recommend this book to anyone curious about decision-making and our programmed wiring to everyday activities. In his book, he refers to rational human beings as “econs”. For every bias or error in the making a regular irrational decision would serve as, he would compare an econs behaviour for the same.

Development of Individual Skills

The module Research Methods and the dissertation broadened my perspective and enabled me to further comprehend various elements and concepts of my study in a much more philosophical understanding and intensified my thought process to that of an ‘out of the box’ approach to life with respect to my specialized area of postgraduate study.

Furthermore, one of the weaknesses addressed which required much improvement was the unrealistic attitude to certain aspects of my life. The research philosophies explained in class helped me in developing my view to various variables with a ‘critical realist’ approach to such anomalies of my professional (educational) and personal life that has been discovered but yet to be pursued.
It further helped me as an individual develop my uniqueness in order to set me a part from the rest with a little direction and guidance, I now am more self-reliant than before with much positivity and real life applicability of various issues that required a change of philosophical approach that needed addressing, I can now confidently without the feeling of surrealism understand the endless possibilities that life offers.

It was initially one of my many objectives at the start of the program to possibly enhance my analytical problem-solving skills which was successfully the end product of the MBA (Finance) program.

I have further developed logical reasoning skills to address certain ongoing business and economic predicaments currently prevailing globally which explained the weaknesses that I tend to contain or areas which require much improvement, as that of paying too much attention to detail. With improved problem-solving and logical reasoning skills, I can better manage my time and thereby, prevent overanalysing issues which do not require much time consuming analysis.

The MBA program will most definitely broaden my career opportunities due to its vast scope and in-depth study in the international business environment, as a part of one of my original learning objectives. It has also further developed various skills such as working in a team and time management. Social networking and new contacts and friends were previously mentioned opportunities and prospective goals for the course which were successfully attained due to the given module. Competition is still seen as a threat but with better contacts and friends, it is easier to stay ahead of the flock and maintain the level of ambition and focus on my personal and professional priorities.

Finally, the postgraduate program has improved my independent research skills and abilities. I can now feel confident in the manner of which I carry out my research for any given study or discipline.

**Personal Background**

I am a twenty something ambitious female in a male dominated career path. Being a woman, especially that of a woman of colour, we have to fight harder to get the things we want in this world. Growing up in the Kingdom of Bahrain and doing my bachelor degree in India allowed me to be dynamic and more accepting of change than most people.

**My Experience in Baile Atha Cliath…**
Extract from ‘the diary of a crazy person’ on the first day of my arrival:

Arrived in Dublin, tired and sweaty... yet cold because of the not so used to extreme Celtic climate. In the Dublin Airport still confused, I decided to buy an Irish Sim Card to use it to call my folks back home. I knew they would definitely be worried sick about me. The fresh air was very welcoming. I was all on my own for the first time in my life. I heard a part of my brain scream, “Finally!” and the other part scream for the life of me, “What the **** are you doing?” …

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Adventure was what I wanted and I suppose the universe had to take that to its ultimate literal sense with of course a hint of dark humour. I have always wanted to travel the world, drown myself in different cultures, meet interesting people and learn new languages. It is definitely granted that I did not have a positive start to my adventures in Dublin, with the moving and the finding of suitable accommodation and then getting kicked out for apparently being too ‘noisy’, which later was informed to me by one of the other flatmates that the person who kicked me out turned out to have developed unrequited feelings for me and since I didn’t return them, he kicked me out!

Well, it’s definitely granted that I did not have the best of starts to my adventurous journey to the other side of the world. But it did me more than good. After I moved out, I met my leprechaun. He is definitely not the charming Mr Darcy that Jane Austen kept going on about but he has been there for me, comforted me and I enjoy his company. Together we walked from Rathmines (my home currently) to the Dublin mountains, we were almost in Wicklow at one point, we ended the long tiring journey, in which I kept whining halfway through, at the ‘Blue Light’ pub (near Stepaside) and it was divine. I love Dublin! It’s amazing especially in spring or winter? If only the sun could come out more. But it’s lovely even with the grey and grim sky. I have walked along the river Dodder, the Docklands, the Guinness Storehouse, Dublin Castle, Smithfield, Trinity College, along the canal and of course the pubs in Temple Bar and elsewhere. I certainly love the local live Irish music at the pubs in Dublin. The Irish are so friendly, cheery and helpful all the time. I have yet to see Bono’s and Enya’s Castle, I can’t wait! It’s my city, the city I finally learn to be independent, learn to survive without my mom constantly seeing over me. This is where I start my life. My life begins…

I had my first pint of Guinness two weeks after my arrival and boy! Was it amazing?! It’s so smooth, creamy and coffee like. Most find that a Guinness is too heavy, but I argue otherwise.
I would definitely not recommend a Guinness every other day but those days where you just need to have a break and life bogs you down… Ah begorrah! have a Guinnessh and life will be Grand again.

As Hellen Keller once said, “Life is either a daring adventure or nothing at all” … it is, so it is.
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APPENDIX I

1. What is your gender?
2. What is your age?
3. What is the highest level of education you have completed?
4. Which country are you from?
5. Which of the following categories best describes your primary area of employment?
6. I consider myself to be an optimistic person.
7. Do you invest in common stocks?
8. What type of investor do you consider yourself to be?
9. How long would you say approximately that you have been an investor?
10. Do you invest in other financial assets other than common stocks?
11. If yes, please specify.
12. How would you normally make a valuation/forecast of a prospective investment in a common stock of a company?
13. Looking back on investment decisions you have made so far, on a scale of 1 to 10 which of the following best describes your confidence and feelings on your investments?
14. You have purchased stocks worth €500. For the last few months it has fallen and you have made a loss of €200. At the same time, the stocks of other companies in the same industry appear to be performing better. What would you do if this was all the information you had?
(a) Hold on to your investment for a little while longer.
(b) Hold and purchase shares in another company in the same industry.
(c) Sell your investment.
(d) Sell and purchase shares with remaining €300.
(e) Other.
15. Guess a number from 0 to 100 with the goal of making your guess as close as possible to two-thirds of the AVERAGE GUESS of all respondents in this survey. Follow up your response with a brief reason explaining your answer.
16. Assume yourself richer by €400 than you are today. What would you choose if you were offered a choice between:
(a) A sure gain of €200
(b) A 50% chance to gain €300 and a 50% chance to lose €0
17. Assume yourself richer by €600 than you are today. What would you choose if you were offered a choice between:

(a) A sure loss of €200

(b) A 50% chance to lose €300 and a 50% chance to lose €0

18. Niamh (a wine connoisseur) walked into a store to purchase some apples and much to her delight found an old 1960 Pinot Noir that was usually priced at €200 on sale for €150. Niamh purchased the bottle of wine. Please choose which of the following statements make sense (You can select more than one):

19. According to you, when would you call a "cost" a loss?

20. How profitable do you consider your portfolio of investments thus far?

21. Do you regret any of the decisions you have made pertaining to your investments till date?