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Alternative Asset Investment Criteria, with a focus on Private Equity

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Abstract

The complexity of alternative assets and their importance in the economy has resulted in a number of academics striving to better understand their nature. Falling in this asset class the Private Equity market is less understood than others due to the limited information available. Despite this, the importance of understanding how Private Equity investments are evaluated is recognised by many (Zinecker and Rajchlova, 2014) and numerous academics have attempted to investigate the criteria influencing these decisions. Consequently, research has led to a broad list of investment criteria with no common agreement on which are the most influential.

This paper contributes towards a more comprehensive understanding of the importance of Private Equity investment criteria, and their interrelatedness, in order to determine which are of highest value when reviewing an investment proposal. Criteria examined were compiled from the body of existing research in order to conclude which of these variables are the most and least important, tested by use of a survey and quantitative analysis.

Findings from this research have helped realise the importance of the quality of the management team, the attractiveness of the characteristics of a firm's market, the potential internal rate of return, the growth potential, the attractiveness of the product or service in question, and the quality of information available as being the most influential criteria in determining the funding of an investment proposal. Further investigation showed an absence of correlation between these criteria. As a result, this paper helps contribute towards the field by guiding private equity firms, and those wishing to obtain funding, towards making better informed decisions regarding the evaluation and development of important private equity investment criteria.

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Table of Contents

List of Figures

List of Tables

List of Abbreviations

ANOVA	Analysis of Variance
H	Hypothesis
HF	Hedge Funds
IRR	Internal Rate of Return
NPV	Net Present Value
PE	Private Equity
Q	Question
RQ	Research Question
VC	Venture Capital

1 Introduction

The concept of alternative assets as a desirable investment class has grown tremendously over the past few decades, with characteristics that are distinctive from other more common forms of investment (Kitces, 2012). Their tendency to be complex has led to a wide range of academics making attempts to greater understand their nature, with a focus on Hedge Funds [‘HF’] and Venture Capital [‘VC’].

Private Equity [‘PE’], however, has not been investigated as thoroughly as other forms of alternative assets. The concept of PE has changed over time since its initial development in the 1940s, with the emergence of intermediaries whose purpose was to invest on the behalf of less experienced firms and wealthy individuals (Fenn et al., 1997). PE intermediaries help firms who cannot get funding through more regular investment streams, providing investors with exclusive access to a wider range of investments (Fenn et al., 1997).

The recognised importance of understanding how PE firms evaluate investment opportunities is contested by the private nature of the asset class, evident even in its name (Zinecker and Rajchlova, 2014). The limited information on PE firms available to academics has made it increasingly challenging to investigate this aspect of PE at a more complex level (Portmann and Mlambo, 2013). It is understood that there are many obstacles faced by PE firms due to the vast number of investment proposals they receive, and issues arising from information asymmetries or incomplete information that make it hard to process these proposals effectively (Fenn et al., 1997). Due to this it is argued that having set investment criteria can greatly benefit a PE firm (Zinecker and Rajchlova, 2014), even though determining and understanding these criteria has proved complex in the past.

Work experience undertook at a PE firm allowed observation of many important decisions the firm needed to make regarding investments. It became clear that this area of PE needed further investigation after a conversation with an experienced investor within the firm, who spoke about the need for clarification on PE criteria to help make better informed investment decisions.

It should be noted that a greater understanding of these investment criteria does not only act as a benefit to PE firms in the form of a decision aid. Zinecker and Rajchlová (2014) argue that it would help entrepreneurs develop their business proposals targeted towards what PE investors look for. It has also been debated that a

better understanding in investment criteria would provide benefits to regulators wanting to better understand the industry (Bernoth and Colavecchio, 2014), as well as helping firms overcome governance issues within the PE industry (Millson and Ward, 2005).

There has been a development of a wide range of research papers aimed at solving the issues surrounding investment criteria, but each paper discusses their own version of which should be considered the most important. Moreover, there is noticeably a lack of investigation into the relationship between these criteria. Consequently, there is a need for a paper that brings about a greater understanding of the criteria influencing PE investment decisions, taking into account the wide range of criteria that research papers have mentioned. This paper therefore aims to bring about a greater understanding of the criteria influencing PE investment decisions by determining the importance of the most frequently mentioned criteria, determining if any criteria infrequently mentioned are of any importance, and examining the interrelatedness of these criteria.

The paper begins by looking at existing literature on alternative assets, touching on VC and HF before narrowing down on PE and the evaluation of investment opportunities. A survey will be designed to collect data from individuals with PE experience focused on the importance of a range of investment criteria that were determined from literature. Quantitative analysis will then be applied, using both descriptive and inferential statistics to answer the research questions and hypotheses developed. These results will then be discussed in detail in terms of how they relate and contribute to existing research, and what implications these have for future research.

2 Literature Review

2.1 Alternative Asset Investments

An investment is a present and certain sacrifice for a future and uncertain benefit, where risk plays an important role due to the uncertainty that the future holds (Hirshleifer, 1965). Consequently, it can be argued that the investment process itself must be rigorous and well-structured to ensure that the risk of any investment is properly understood before decisions are made. It is a mix of both qualitative and quantitative information that forms the basis of these investment decisions (Chan et al., 2002), spanning beyond basic accounting information and including aspects such as the market and risk profiles (Jagongo and Mutswenje, 2014). This range of influencing factors will have differing effects on a decision depending on the type of investment in question, of which there are many (Mason and Stark, 2004). This paper will focus on one of these investment classes, known as alternative assets.

According to Kitces (2012, p.22), an asset class is characterised as "a group of securities that have similar risk/return characteristics and behave very differently in response to various economic and market events". An alternative asset class therefore encases assets whose characteristics are distinctive from those in other classes (Kitces, 2012). Due to their complexity in terms of how they react differently in a range of economic environments, they are not accessible publicly like stocks and bonds are (Kitces, 2012), meaning it is a greater challenge to understand all aspects of them. There are many different types of alternative asset investments that have been widely studied, such as HFs (Capocci and Hübner, 2004; Billio et al., 2010), VC (Gompers and Lerner, 2001; Fried and Hisrich, 1994) and PE (Fenn et al., 1997; Kaplan and Strömberg, 2009).

2.2 Hedge Funds

In existence since 1949, HFs aim to increase gains and offset losses by using a wide range of complex methods (BarclayHedge Ltd, 2017). Each HF is characterised by different levels of risk and return (Magnum Global Investments Ltd, 2011). There is no legal definition for them because the use of numerous different investment strategies, complimented by a wide range of instruments for various markets, means that every fund is distinctly different (Capocci and Hubner, 2004). Access to this class

of alternative asset is made challenging as they require high minimum levels of investment, such that the majority of its investors are institutions or wealthy individuals (Capocci and Hubner, 2004). HFs already have a wide range of predetermined and complex investment strategies that have been well defined (Capocci and Hubner, 2004; Billio et al., 2010), and consequently this asset class has not been studied further in this paper.

2.3 Venture Capital

VC is a class of alternative assets that have become a key intermediary over recent years to a wide variety of enterprises (Gompers and Lerner, 2001; Fried and Hisrich, 1994). In existence since the late 1940s, VC aims to raise funds for early-stage businesses and start-ups (Gompers and Lerner, 2001). This type of investment is characterised as "long-term, equity-based risk finance" (Lorenz 1989, cited in Boocock and Woods, 1997, p.5), focused on supporting young companies with potential for high growth that are not able to find finance from regular investment streams (Boocock and Woods, 1997). Its importance as an asset class is valued by many researchers, arguing it is vital as part of the entrepreneurial process in helping stimulate growth (Boocock and Woods, 1997). Due to the importance of VC, there has been a wide base of research surrounding it and the subsequent investment criteria that should be taken into consideration in the decision-making process (Gompers and Lerner, 2001; Fried and Hisrich, 1994). Subsequently, VC has not been considered further as an alternative asset in this paper.

2.4 Private Equity

PE has been in existence since the late 1940s, with investments typically made directly into a company by wealthy families and financial institutions (Fenn et al., 1997). Around 1980, the need for financial intermediaries within PE became apparent due to a lack of skill and knowledge possessed by these investors (Fenn et al., 1997). As a result, specialist PE firms emerged to manage funds for deployment into companies and to add value to those investments. These firms are now typically, but not exclusively, characterised as a partnership or limited liability corporation, involved in more than just investing in a business (Kaplan and Strömberg, 2009).

According to Portmann and Mlambo (2013, p.258), PE firms "bring a wealth of experience, knowledge, expertise, networks, alliances and new customers to businesses they fund". Unlike VC, which is focussed on very early stage investments, this form of investment is available to a wide range of established companies that are unable to get funding through regular investment streams (Portmann and Mlambo, 2013; Millson and Ward, 2005). This funding is included, but not limited, to private middle-market firms and firms in financial distress (Fenn et al., 1997). These companies are usually non-publicly traded and therefore cannot be accessed on the stock exchange (Millson and Ward, 2005). PE gives exclusive access to a wider range of investments, allowing for diversification, which is attractive to a pool of wealthy investors who can withstand the illiquidity of their assets (Franzoni et al., 2012).

The majority of literature on PE is focused on the benefits it has both in terms of financial returns, and on the Economy as a whole (Sinyard, 2013). Whilst its importance has been recognised by many (Bernoth and Colavecchio, 2014; Kelly, 2012; Portmann and Mlambo, 2013), it is hard to fully understand the dynamics and impacts of PE due to the limited information that is made available publicly (Fenn et al., 1997). Wright et al, (2009) describes PE's importance in a way that highlights the necessity to understand the industry to a greater extent. Therefore, this research paper aims to gain a greater insight into the world of PE, focusing on areas that have not been widely examined.

2.5 The Basics of Private Equity

PE fund investments generally have a life span of around 10 years, making the investments illiquid (Kaplan and Schoar, 2005; Phalippou and Gottschalg, 2008). The fund is made up of capital commitments from investors that stipulate the amount they are willing to contribute over the lifespan of the investment (Ljunggyist and Richardson, 2003). These funds are invested in stages known as drawdowns throughout the 10 years as the PE firm deems appropriate, and the proceeds from the underlying investments are distributed back to the investors on a quarterly or otherwise specified basis (Phalippou and Gottschalg, 2008; Ljunggyist and Richardson, 2003). Once an investment period has reached its end, the PE firm will exit the investment as they believe suitable (Chandrasekhar, 2007).

Seen in Figure 1, there are three components required for a PE Investment: issuers, intermediaries and investors (Fenn et al., 1997). The term issuer refers to the companies looking to raise money, often requiring higher levels of due diligence resulting from the risk associated with the investment (Fenn et al., 1997). Whilst for some companies PE may be a last resort due to the high costs associated with it, others may choose this investment stream due to a need for guidance and expertise (Fenn et al., 1997). Intermediaries (e.g. PE firms) act as a body that matches up investors with the companies looking for funds, often taking the form of limited partnerships (Fenn et al., 1997). Intermediaries act as a guide to the issuer and are often heavily involved in the company to ensure the investment does well (Fenn et al., 1997). Investors are those that provide the finance in a PE investment, attracted to this alternative asset due to its high-expected returns and diversification benefits provided, despite high risks and illiquidity (Fenn et al., 1997). Investors have the option of investing directly or through services provided by intermediaries (Fenn et al., 1997). However, direct investments are less common as they involve high levels of money as well as knowledge on how to structure, monitor and exit deals successfully (Fenn et

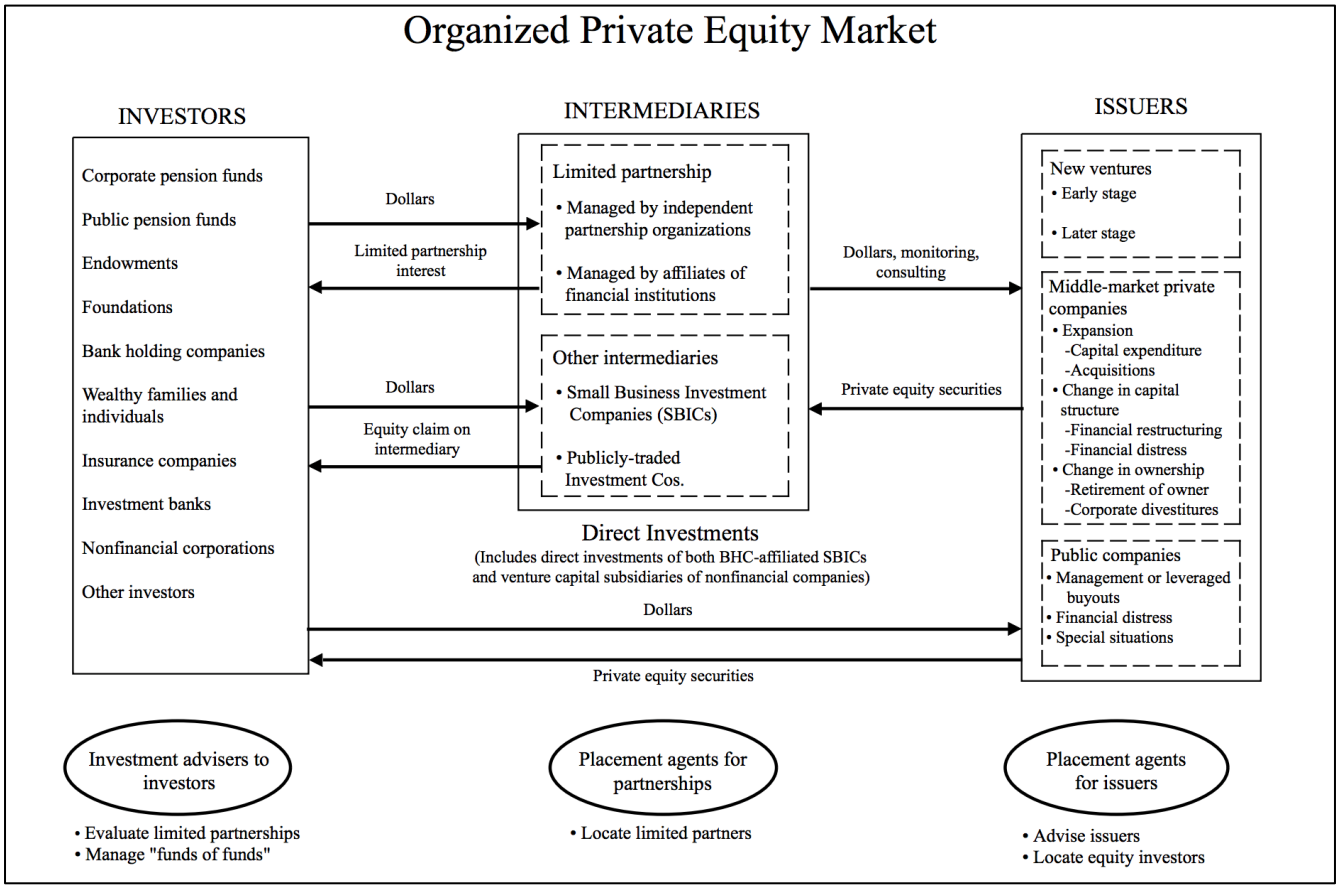

Figure 1: Organised Private Equity Market (Fenn et al., 1997, p.6)

al., 1997). There are a wide range of Investors in the PE market, including corporate and public pension funds, individuals and banks (Fenn et al., 1997).

2.6 The Intermediary Investment Process

According to Fenn et al. (1997), intermediaries go through four stages during the investment process. The first stage is concerned with evaluating different investment opportunities to work out which the firm wants to fund (Fenn et al., 1997). This requires obtaining high levels of information about the issuers and their track record (Fenn et al., 1997). Stage two, structuring investments, refers to the technicalities of the investment in terms of the type of funding that needs to be raised, and provisions associated with the agreement such as the intermediaries level of involvement with the company (Fenn et al., 1997). The third stage lasts for the duration of the actual investment period, where the intermediary is allowed to exercise the provisions agreed in stage two (Fenn et al., 1997). This is where firms seeking expertise would benefit from the intermediaries' experience. The final stage in the process occurs when the investment period is over, and an exit occurs (Fenn et al., 1997).

Whilst each step in this process is crucial to ensure the attainment of an intermediary's investment objectives, it is argued that the first stage is the most important because the success or failure of the investment is linked directly to how well the business does (Mason and Stark, 2004). It is therefore key to ensure that the correct investment proposals are carried forward. Due to this importance, stage one will be investigated further in this research paper.

2.7 Stage 1: Evaluating Investment Opportunities

Whilst the reputation of a firm is deemed important in any market, it holds particular dominance in the PE industry for intermediaries. In order to continue running as a business PE firms must continually attract new investors, who look at a firm's past performance to judge how reliable they are to invest through (Fenn et al., 1997). Firms therefore need to make sure that the proposals they fund are a success to maintain a track record and continually attract customers (Fenn et al., 1997). This stage is made even harder due to the vast numbers of investment proposals that PE firms receive and have to sort through (Arora and Chakraborty, 2012). Fenn et al.

(1997, p.48) argues that in order to be successful, PE firms "must be able to select efficiently the approximately 1% of these proposals that they invest in each year".

Whilst conventional financial theory assumes investors are rational wealth maximisers, this may not always be the case as many factors affect the success of a decision made in PE (Jagongo and Mutswenje, 2014). For example, PE investors can be affected by a wide range of less rational biases that are hardwired into how an individual makes decisions (Sordoni, 2017), leading to poor evaluation of investment proposals. Moreover, information asymmetry exists because issuers will know more than the intermediary about their own firm (Fenn et al., 1997; Zinecker and Rajchlova, 2014). This is a problem because PE firms may make decisions based on incomplete information that lead to poor returns. Intermediaries therefore rely on due diligence, the process of examining the validity and completeness of information and assumptions, to produce information about these issuers themselves, to try and overcome adverse selection problems (Fenn et al., 1997).

Many argue that having set investment criteria is crucial to help overcome these factors and ensure successful investment decision-making (Sordoni, 2017; Zinecker and Rajchlova, 2014). Due to limited publicly available information available in the PE industry, it is hard to determine what these criteria are (Zinecker and Rajchlova, 2014). Whilst information exists on these criteria for many other investment types, there is little on PE itself. This paper therefore aims to identify these criteria.

2.8 Investment Criteria in Existing Literature

Due to the importance of the PE investment decision, there are many existing papers that discuss the most appropriate investment criteria that should be considered to aid this decision (Fenn et al., 1997; Kaplan and Schoar, 2005). However, each research paper related to PE discusses a different range of criteria that should be considered important. Some papers touch on the macroeconomic criteria (Kaplan and Schoar, 2005; Bernoth and Colavecchio, 2014), whereas others focus on PE criteria in countries outside the UK (Portmann and Mlambo, 2013; Zinecker and Rajchlova, 2014; Millson and Ward, 2005). Alongside this are multiple criteria that are outliers, only mentioned in a handful of research papers (Arora and Chakraborty, 2012; Millson and Ward, 2005), with their relative importance requiring further

investigation. Whilst all these papers raise valid arguments and have sound theoretical reasoning behind their criteria, there is no common agreement on which are the most important, as each paper takes into account different variables to analyse. Moreover, these papers lack investigation into the relationships between these criteria, with Jagongo and Mutswenje (2014) suggesting future research be focused on clusters of variables. Resulting from this, the following Research Questions [RQ] have been developed:

RQ1: What are the most important criteria that influence PE investment decisions?

RQ2: Are there positive correlations between the most important criteria?

RQ3: What are the least important criteria that influence PE investment decisions?

2.9 Frequently Mentioned Investment Criteria

Across literature, one of the most commonly mentioned criteria is the market that firms operate in, and its characteristics (Jagongo and Mutswenje, 2014; Zinecker and Rajchlova, 2014; Sinyard, 2013). Generally, literature specifies that this criterion comprises of markets growth, size and extent of competition (Mason and Stark, 2004; Arora and Chakraborty, 2012). However, it should be noted that not all literature mentioning the market stresses the importance of all three facets discussed above, choosing to focus on one or two aspects. These facets would highlight the attractiveness of the market to a PE firm; if an issuer is looking for PE funds in a market that is highly competitive and does not have growth potential, it would emphasize that the investment proposal does not have a lot of promise. Building on this, market characteristics can outline the PE firm's compatibility with the investment under review (Arora and Chakraborty, 2012). PE firms may prefer to invest in certain markets that suit their company and clients more. In order to compare a greater number of criteria, this paper will include the characteristics of a firm's market as a more general criterion to be tested. Mentioned in 33% of the literature

studied, this criterion is the most frequently discussed amongst researchers. Therefore, the following hypothesis has been developed:

> **H1:** "Attractiveness of Characteristics of Firm's Market" will be considered one of the three most important criteria that impact the PE Investment Decision.

Another criterion discussed in literature surrounds the management team and their competencies (Zinecker and Rajchlova, 2014; Arora and Chakraborty, 2012; Millson and Ward, 2005). The management of the issuers are important because they will be the ones ultimately in control of the portfolio company and the success of the PE investment (Arora and Chakraborty, 2012). Similar to market characteristics, there are many different facets that make up the management team. According to Arora and Chakraborty (2012), experience, track record and past success are "among the most important attributes that reflect on the investment potential" (no pagination). These factors combined highlight the managements overall capability of successfully carrying through an investment to the end. A strong track record with evidence of previous success would indicate the level of risk that the PE firm would be taking. Management would be more likely to handle the company and the investment well, leading to a greater chance of higher returns for the PE company and their rallied group of investors.

The product or service that the investment supports is another criterion to be considered (Zinecker and Rajchlova, 2014; Arora and Chakraborty, 2012). The products uniqueness, and the superior benefits it offers in comparison to its direct competitors will highlight whether an investment is viable (Zinecker and Rajchlova, 2014; Arora and Chakraborty, 2012). If the product is a new entrant to the market, the intermediary needs to ensure that extensive research has been done in support of its predicted success, to help ensure that the investment will not turn sour (Arora and Chakraborty, 2012). Whilst the importance of this criterion has not been as widely deliberated as some others, Zinecker and Rajchlova (2014) bring to light an on-going discussion evident in other literature between the two criteria groups Management Team and Product/Service. It summarises how, in literature, there is a continuous conflict as to which criteria holds more importance in the investment decision, with some papers regarding one as relatively unimportant (Zinecker and Rajchlova, 2014).

It is unusual, however, to learn of this discussion between the two, whilst simultaneously finding little on the importance of the product/service criteria.

Therefore, the following hypotheses have been developed to gain a greater understanding into the relative importance of the product/service and the management team, contributing to this on-going discussion in literature:

> **H2:** The "Quality of Management Team" will be more highly valued than the "Attractiveness of Firm's Product/Service" as a criterion to be considered in PE investment decisions.

> **H3:** There will be a negative correlation between the "Quality of Management Team" and the "Attractiveness of Firm's Product/Service".

2.10 Infrequently Mentioned Investment Criteria

The transparency of a business is a criterion that has been debated only briefly in literature. Millson and Ward (2005) argue that this criterion is of high importance to PE managers, giving an insight into the quality of an issuers systems and processes. In section 2.7 of this literature review, information asymmetry and adverse selection problems are regarded as key barriers to making a good PE investment decision (Fenn et al., 1997; Zinecker and Rajchlova, 2014). An issuer will know more about their own firm than the intermediary will, and there is the risk of the intermediary making a decision based on incomplete information that could harm their returns. It should therefore follow that an investment proposal would be more appealing to an intermediary if they have greater access to the firm's accounts and can better assess the viability and risk of the project. This paper therefore questions why, if overcoming these barriers is relatively critical to making a good investment decision, research papers have not highlighted transparency as an imperative criterion. As a result, the following hypothesis has been developed:

> **H4:** The "Transparency (Quality of Information)" will be of greater importance than current literature suggests.

The business stage of an issuer is another criterion mentioned infrequently in literature. Arora and Chakraborty (2012) argue that an intermediary would take the stage of an issuer's business into consideration before an investment decision is made. VC firms invest exclusively in early-stage and start-up firms (Gompers and Lerner, 2001), implying that the business stage of an issuer would be an important criterion in this investment field. However, a distinct difference between PE and VC is that PE is known for providing funding to a much wider range of companies at different stages (Fenn et al., 1997). This paper therefore feels that it would be interesting to see whether PE firms regard the business stage as an important criterion to consider, or whether it does not impact the decision due to their diversified investment strategy. In agreement with Arora and Chakraborty (2012), the following hypothesis has been developed:

> **H5:** The "Business Stage of an Issuer" will be of greater importance than current literature suggests.

3 Methodology

3.1 Aims, Objectives and Hypotheses

Research Aim: To bring about a greater understanding of the criteria influencing PE Investment decisions.

Research Objectives:

1. To determine the importance of the most frequently mentioned criteria in the PE investment decision, through statistical analysis.
2. To determine if any criteria infrequently mentioned are of any importance in the PE investment decision, through statistical analysis.
3. To examine the interrelatedness of the criteria used in PE investment decisions, through statistical analysis.

Research Questions:

1. What are the most important criteria that influence PE investment decisions?
2. Are there positive correlations between the most important criteria?
3. What are the least important criteria that influence PE investment decisions?

Hypotheses:

1. "Attractiveness of Characteristics of Firm's Market" will be considered one of the three most important criteria that impact the PE Investment Decision.
2. The "Quality of Management Team" will be more highly valued than the "Attractiveness of Firm's Product/Service" as a criterion to be considered in PE investment decisions.
3. There will be a negative correlation between the "Quality of Management Team" and the "Attractiveness of Firm's Product/Service".
4. The "Transparency (Quality of Information)" will be of greater importance than current literature suggests.
5. The "Business Stage of an Issuer" will be of greater importance than current literature suggests.

3.2 Research Design and Measures

The researcher decided quantitative analysis would be the most appropriate method for addressing the hypotheses and research questions. According to Bryman and Bell (2011, p.154), this is research "entailing the collection of numerical data and as exhibiting a view of the relationship between theory and research as deductive". This research would be cross-sectional, examining the variables at a single point in time (Wright and London, 2009). It was the most suited approach for collecting and analysing information on the value of criteria in PE decisions. The researcher wanted to verify what PE investors do when they make investment decisions - what criteria they use. Moreover, due to the black box nature of the PE industry (Shobe, 2016), access for qualitative analysis through interviews was considered more challenging, with constraints on how much depth the researcher could go into.

A questionnaire research design was used to address the hypotheses and research questions, and quantitative analysis was applied to the results. According to Trochim (2006), this research design is considered one of the most important areas of measurement in applied social research. The compatibility in this particular area of research has been determined through analysis of research design methods used in the research reviewed in the literature study. There was a range of different approaches that this paper could have undergone to collect data. Examples of this were evident in papers written by Millison and Ward (2005) and Sinyard (2013), who used a combination of case studies on hypothetical companies and interviews to determine investment criteria. However, this method is very complex and required a lot of time to draw up the different Investment Proposals and code them in accordance with criteria.

The questionnaire was designed to compromise three sections [Appendix 2]. The first section was aimed at capturing a small amount of demographic data on the respondents, similar to Capon et al., (1996) and Jagongo and Mutswenje (2014). This included their gender, age bands, and experience bands. It was decided to use bands for age and experience to maintain anonymity for respondents.

Section two was for the purpose of deciphering the importance that respondents attached to a range of investment criteria, designed as a 5-point Likert scale. This scale was used as it yields continuous data (Foster and Parker, 1995), meaning that there were lots of options in terms of analysis. Zinecker and Rajchlová

(2014) used a 4-point ordinal scale in their survey, but this often makes it harder to distinguish the gap between categories. The use of five points prevents a random choice between agreeing or disagreeing when the respondent has no opinion (Johns, 2010). Moreover, the use of a summated scale was deemed appropriate because no item measured has a correct response (Spector, 1992). The researcher wanted to gain opinion and insight based on respondents' experience in the PE field. In align with Foster and Parker's (1995) rules, the question was designed to be specific to avoid confusion amongst participants: "Please rate the importance of the following investment criteria when evaluating a PE Investment Proposal". The rating scale consisted of five points:

1	Unimportant
2	Of Little Importance
3	Somewhat Important
4	Important
5	Very Important

The criteria used in the questionnaire were compiled from 20 research papers on PE. All criteria mentioned were noted on a spreadsheet, alongside how many papers mentioned them [Appendix 3]. To address the research objectives and hypotheses developed, the 11 most frequently mentioned and 5 most infrequently mentioned criteria were used in the questionnaire. The researcher did not think it appropriate to use all criteria mentioned in literature as this would make the survey too long and risked losing respondents interest.

In addition to the Likert Scale, a further question was included to determine the five most important criteria by asking respondents to pick the top five criteria from question 4 ['Q']. MacMillan et al., (1985) highlights that this is a good way to check the consistency of results in Q4, as there should be strong correlations between the top five criteria and the highest ranked criteria from Q4.

Due to having to limit the number of criteria that were used in the questionnaire, an additional open-ended section was added; asking respondents to list any additional criteria that had been missed out that they believed was of importance.

3.3 Data Analysis

Analysis of the data was completed using IBM SPSS, which allowed for a wide range of statistical testing to be undertaken. Analysis of the data included descriptive statistics, which were used as a baseline, mainly focused on the mean and standard deviation of the results (Wright and London, 2009). These statistics allowed for analysis of variance ['ANOVA'] to be conducted looking at the statistically significant differences and importance of the criteria that were used in the survey (Wright and London, 2009). The researcher used a between-participants one-way ANOVA which allowed the comparison of multiple criteria across the same condition (Field, 2017). Correlations were also used to look at the relationships between certain criteria, reported in a correlation matrix (Wright and London, 2009). Because the data obtained was continuous, the researcher used Pearson's correlation (Wright and London, 2009).

3.4 Participants

For the purpose of this study, the population was determined as those individuals that have worked in PE in the UK. As it was not possible to test the whole population, a sample of at least 50 PE investors was taken as a representation.

Ensuring representation required the use of a quota sample, where the sample is selected by the researcher tailored to the representative requirements (Wright and London, 2009). The researcher wanted the sample to account for gender differences in the industry, where there is a larger proportion of males than females (Whitmarsh et al., 2016). The researcher also wanted to account for age and experience differences across the industry, with a spread that was more concentrated in the higher age bands and years of PE experience. Respondents were asked to give this information at the start of the survey to ensure that the representation of the population could be clearly seen in the outcomes of the survey.

3.5 Ethics

Prior to sending out the survey, it was important to make sure the research complied with the University of Leeds Management Internal Research ethics form [Appendix 1]. According to Grand Canyon University (No date) "the integrity,

reliability and validity of the research findings rely heavily on adherence to ethical principles". This highlights the importance of considering ethical implications in any research.

Upon review of the form, an ethical issue was discovered regarding a relationship existing between the researcher and participants other than that required by the activities associated with the project. It was disclosed within the form that some, but not all, of the participants would be connected to the researcher via an extended personal network. As part of the survey all those taking part were to remain anonymous, resolving this particular ethical issue. As an essential part of the survey design, the demographic questions asked would be general enough so as to prevent identification of participants by their responses.

Other than the resolved issue discussed, the research being conducted complied with the Internal Research Ethics form, exhibiting the soundness and reliability of the behaviours displayed by the researcher.

3.6 Procedures

The researcher decided an electronic questionnaire was the best way to send out the survey. It is much easier to administer and can reach a wider range of people. According to Greenlaw and Brown-Welty (2009), web-based administration yields a 52.46% response rate. Whilst this is lower than a mixed or paper-based response rate, these two methods would be more complex and require more time (Greenlaw and Brown-Welty, 2009). Due to time constraints on this research paper, and the nature of the participants required for the survey, the web-based approach was most appropriate. This research paper required at least 50 responses in order for any quantitative analysis undertaken to be deemed reliable and representative of the PE industry. As a result, over 100 surveys were sent out to cover for the response rate above.

A wide range of survey websites were reviewed in order to identify which would be best suited to the researcher's questionnaire (Survey Monkey, 2017; So Go Survey, 2017). The researcher decided on SmartSurvey (2017) as the most appropriate platform to use for this paper. It allowed for the design of a range of question formats, ability to download data into excel, and anonymity of respondents to stay in line with ethical requirements.

Prior to sending out the questionnaire, a pilot study was conducted in order to obtain feedback. A provisional draft of the survey was sent to a well-experienced investor in the PE industry to be completed. The use of a pilot study enabled the researcher to confirm the soundness of the survey (Thabane at al., 2010). It was important to make sure that the questions made sense to an individual within the industry, so that any mistakes or misunderstandings could be brought to light and corrected. Additionally, the pilot study allowed the researcher to determine how long the survey would take to complete. In doing so, this gave an idea of how likely those receiving the survey would participate. By knowing how long the survey took, the researcher was able to include a rough time estimate in the introduction to further encourage people to partake; around five minutes.

The response to the pilot study was mainly positive, with the only suggestion being to adjust the phrasing of some criteria for clarification. The pilot study confirmed the short time span required to fill out the survey and gave the researcher confidence that the survey contained no major errors before it was sent out to collect real data for analysis.

Once the researcher determined the survey was ready, it was sent out to PE investors via email. The email included a brief introduction to the study, explaining the basis for the survey and how it would help contribute to the existing research. Notifications were provided upon completion, and automatic reminders were set to prompt participants if they had not yet responded.

4 Data Analysis

4.1 Research Question 1 and Hypothesis 1: Analysis

To investigate the importance of each criterion, a one-way repeated measures ANOVA was run. The results from Mauchly's test specified that the assumption of sphericity had been violated, $x^2(119) = 323.1, p = 0.00$. In order to correct the degrees of freedom, the Greenhouse-Geisser estimates of sphericity were used (ε = 0.5). The subsequent results showed that there was a significant effect of the criteria on their importance in the PE investment decision, $F(7.93, 412.12) = 48.04, p = 0.00$. This supports the data in Figure 2, which shows the means, standard deviations (right) and confidence intervals (left) for each criterion respectively.

With five being the highest ranking for any given criteria, equating to "very important" when evaluating a PE Investment Proposal, the uppermost criterion is the 'Quality of management team' (Mean=4.89, S.D.=0.32). Bonferroni post hoc tests following the ANOVA showed that participants ranked this criterion significantly higher than all other criteria being considered. Moreover, in Q5 of the survey, the 'Quality of management team' was ranked in the top five most important criteria by all 53 participants. This shows consistency between both questions pertaining to criteria importance and supports the evidence from other statistical analysis

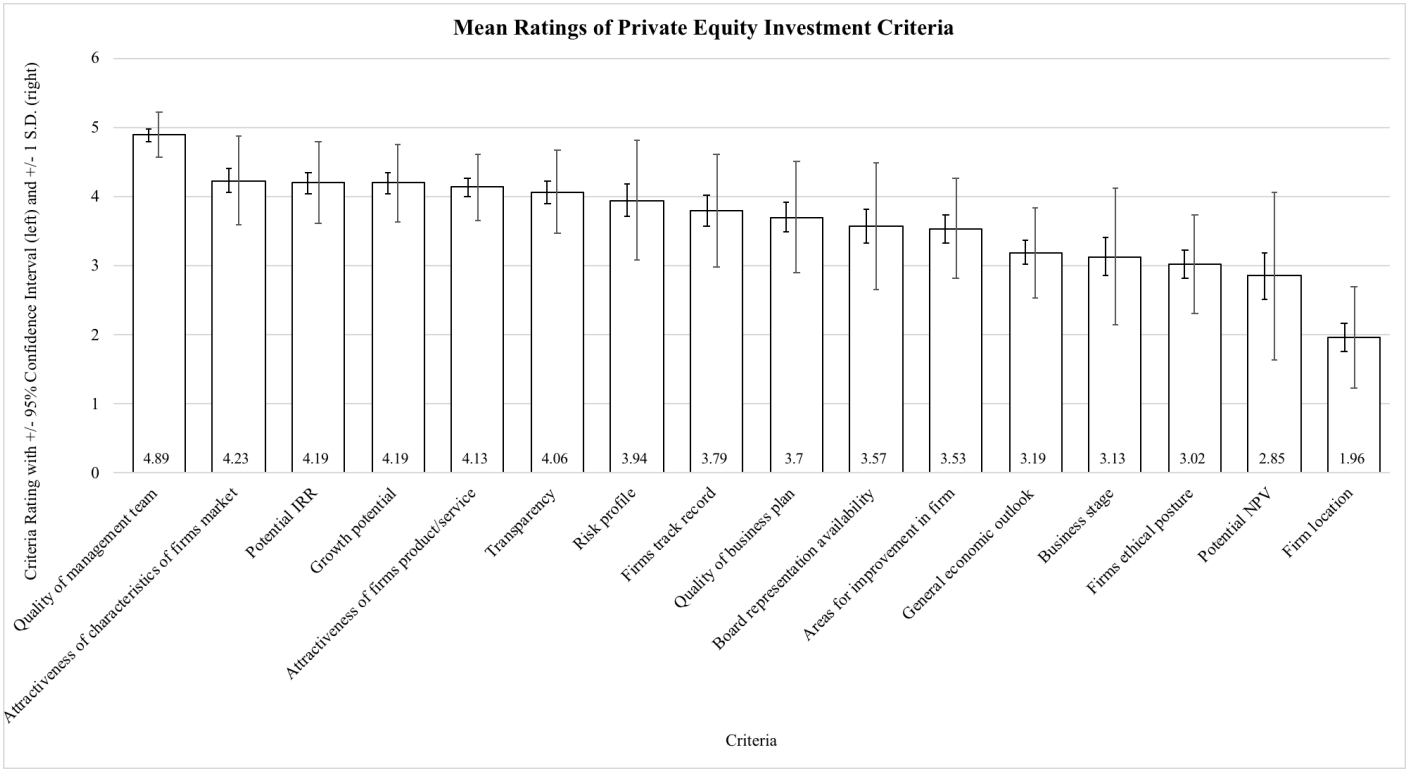

Figure 2: Mean Ratings of Private Equity Investment Criteria

undergone. It can therefore be said with certainty that the 'Quality of management team' is the most important criterion to be considered in the PE investment decision. The second most important criterion as ranked by means was the 'Attractiveness of characteristics of firm's market' (Mean=4.23, S.D.=0.64). The bonferroni post-hoc tests showed that this criterion was significantly higher than six other criteria and significantly lower than one other criterion being considered in the PE investment decision. In Q5, this criterion was ranked in the top five by 55% of participants, showing support for the importance of the criterion. This data therefore supports H1, in that the 'Attractiveness of characteristics of firm's market' is considered one of the three most important criteria.

Following on from this, the most important criteria, in order, were 'Potential Internal Rate of Return' ['IRR'] (Mean=4.19, S.D.=0.59), 'Growth potential' (Mean=4.23, S.D.=0.482), 'Attractiveness of firm's product/service' (Mean=4.13, S.D.=0.48), and 'Transparency (Quality of Information)' (Mean=4.06, S.D.=0.6). These criteria were considered as being in the top five most important from Q5 by 40%, 57%, 62% and 11% respectively. Excluding 'Transparency (Quality of Information)' as an outlier in this instance, results from Q5 support the former evidence showing that these criteria are the most important to be considered in PE investment decisions.

4.2 Research Question 2: Analysis

Table 1 shows the means, standard deviations and correlations for all study variables. It can be seen that there are some significant correlations that exist between the most important criteria identified in RQ1. The 'Quality of management team' has no significant correlations with any other criteria. When focusing on the top six criteria, the 'Attractiveness of firm's product/service' was significantly correlated with the highest number of criteria, particularly 'Attractiveness of characteristics of firm's market' ($r = 0.338$, $p < .05$), and 'Potential IRR' ($r = 0.316$, $p < .05$) in the most important group. Neither 'Growth potential' or 'Transparency' were significantly

Descriptive Statistics and Correlations for Key Study Variables

	Variable	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Attractiveness of characteristics of firms market	4.23	0.64															
2	Quality of management team	4.89	0.32	0.128														
3	Attractiveness of firms product/service	4.13	0.482	.338*	0.224													
4	Potential IRR	4.19	0.59	-0.013	-0.088	.316*												
5	Firms track record	3.79	0.817	0.165	0.203	.364**	.282*											
6	Board representation availability	3.57	0.91	0.073	-0.04	0.221	0.155	0.058										
7	General economic outlook	3.19	0.652	.357**	0.197	.286*	0.056	.544**	0.173									
8	Quality of business plan	3.7	0.799	0.099	0.089	.355**	-0.04	.403**	.372**	0.259								
9	Firm location	1.96	0.733	-0.063	-0.183	-0.04	-0.25	-0.11	0.062	0.096	0.046							
10	Firms ethical posture	3.02	0.72	-0.051	0.009	0.048	0.127	0.105	-0.075	0.197	-0.023	0.22						
11	Growth potential	4.19	0.557	-0.23	0.122	0.12	-0.169	-0.166	0.127	0.006	0.217	0.254	-0.153					
12	Transparency	4.06	0.602	-0.184	0.134	0.04	0.023	0.181	0.151	0.07	.356**	-0.17	-0.047	0.197				
13	Business stage	3.13	0.981	0.166	-0.013	-0.038	-.575**	-0.229	-0.064	-0.16	0.15	.435**	-0.194	.306*	0.085			
14	Risk profile	3.94	0.864	-0.116	0.116	0.111	0.097	0.255	-0.203	.361**	0.142	-0.246	0.156	0.063	0.043	-0.172		
15	Potential NPV	2.85	1.215	-0.128	-0.144	-.327*	-0.12	-0.032	-0.147	-0.012	0.111	.361**	-0.107	-0.042	-0.067	0.259	-0.118	
16	Areas for improvement in firm	3.53	0.723	-0.014	-0.152	0.017	0.122	0.091	0.151	0.192	0.082	0.183	.313*	-.348*	-0.203	-0.019	-0.013	0.202

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

Table 1: Descriptive Statistics and Correlations for Key Study Variables

associated with the other important criteria, though they did have correlations with some further down the list.

Overall it can be said that, though some significant correlations do exist between the most important criteria, there are not many, and they seem to be very random. This suggests that the determination of each criteria's importance is independent from the other factors being considered in a PE investment proposal.

4.3 Research Question 3: Analysis

From looking at Figure 2 it is possible to determine which criteria tested for hold the least importance in the PE investment decision. 'Firm location' was considered the lowest out of all criteria (Mean=1.96, SD.=0.73). Bonferroni post hoc testing showed that participants ranked this criterion significantly lower than all other criteria being considered. Moreover, is it the only criterion that is not considered by any participant as being in the top five most important for Q5. It can therefore be said with certainty that this criterion is the least important in the PE investment decision. Following on from this, the least important criteria, from lowest ranking, were 'Potential Net Present Value' ['NPV'] (Mean=2.85, S.D.=1.22), 'Firms ethical posture' (Mean=3.02, S.D.=0.72), 'Business stage' (Mean=3.13, S.D.=0.98), and 'General economic outlook' (Mean=3.19, S.D.=0.65). Bonferroni post hoc tests showed that all these criteria were significantly lower than 10, 10, 7 and 9 other criteria respectively. These results complement each other and show that these five criteria are the least important when considering a PE investment decision.

4.4 Hypothesis 2 and Hypothesis 3: Analysis

Results from a paired samples T-test show that the 'Quality of management team' had a significantly higher ranking (M=4.89, S.D.=0.32) than the 'Attractiveness of firm's product/service' (M=4.13, S.D.=0.48) in the PE investment decision, $t(52) = 10.67, p < .05)$, with a positive mean difference, M=0.76. Whilst results show that both criteria are considered important in the investment decision, ranked 1st and 5th respectively as seen in Figure 2, it is clear that H2 has been proven. The results from Q5 provide further evidence in support of H2. The 'Quality of management team' was mentioned by 100% of participants in this question, whereas the 'Attractiveness of firm's product/service' was only considered by 62%. There is

therefore consistency between the two questions showing that, whilst both criteria are of importance in the PE investment decision, the 'Quality of management team' is more highly valued than the 'Attractiveness of firm's product/service'.

From data presented in Table 1, it can be seen that there is no significant correlation between the 'Quality of management team' and the 'Attractiveness of firm's product/service' $(r = 0.224, p > .05)$. Resulting from this, H3 must be rejected as the correlation that exists between the two criteria is both insignificant and positive.

4.5 Hypothesis 4: Analysis

The 'Transparency (quality of information)' was considered the 6th most important criterion out of the 16 tested for (M=4.06, S.D.=0.602), which can be seen in Figure 2. Whilst there was reasonable variation from the mean, all 53 participants ranked this criterion as 3 or higher, with the mean suggesting that the criterion is 'important' compared to literature's suggestion of having little or no importance. Moreover, bonferroni post hoc testing showed that participants ranked the 'Transparency (quality of information)' significantly more important than five other criteria being tested out of the nine ranked below it. Therefore, it can be concluded that H4 is correct. Additional support is provided by results from Q5, where the 'Transparency (quality of information)' was considered as being in the top five most important criteria by 6 participants. Whilst lacking overwhelming support, this question was looking at the most important criteria overall, so its consideration by even a few suggests importance to some extent.

4.6 Hypothesis 5: Analysis

The 'Business stage' was considered the 13th most important criterion out of the 16 tested for (M=3.13, S.D.=0.98), which can be seen in Figure 2. There was reasonable variation from the mean for this criterion, with rankings ranging from having 'no importance' to being 'very important'. However, overall this criterion's mean suggests that it is considered 'somewhat important' in the PE investment decision, differing to literature's suggestion that this criterion should have little or no importance. Moreover, the 'Business stage of an issuer' was ranked in the top five most important criteria, for Q5, by five participants. Similar to 'Transparency (quality

of information)', the mention of this criterion by even a few participants suggests its importance. These results combined support H5 in that the 'Business stage' holds greater importance than current literature suggests.

4.7 Additional Insights

Q5 of the survey asked participants what they determine to be the five most important criteria from those ranked in the previous section. This question was added in order to determine if the results from Q4 were consistent. The data from these two questions were compared by looking at the mean ranking of the criteria independently from Q4 and the number of times a criterion was put in the top five in Q5. The number of mentions for Q5 was used as a basis for comparison because relying on their mean ranking overall did not take into account how frequently the criterion was brought up. For example, the 'Business stage' was ranked as 6th most important by mean from 1 to 5, but it was only included in the top five by less than 10% of participants, so the mean statistic is not representative of the whole sample. Excluding transparency as an outlier, the general trend follows that the higher the criteria ranking from Q4, the more it was considered as being one of the top five criteria in Q5. The results of this can be seen in Figure 3, showing that participants were generally consistent with their answers between both questions. This makes the data from Q4 more reliable in answering the hypotheses and research questions developed.

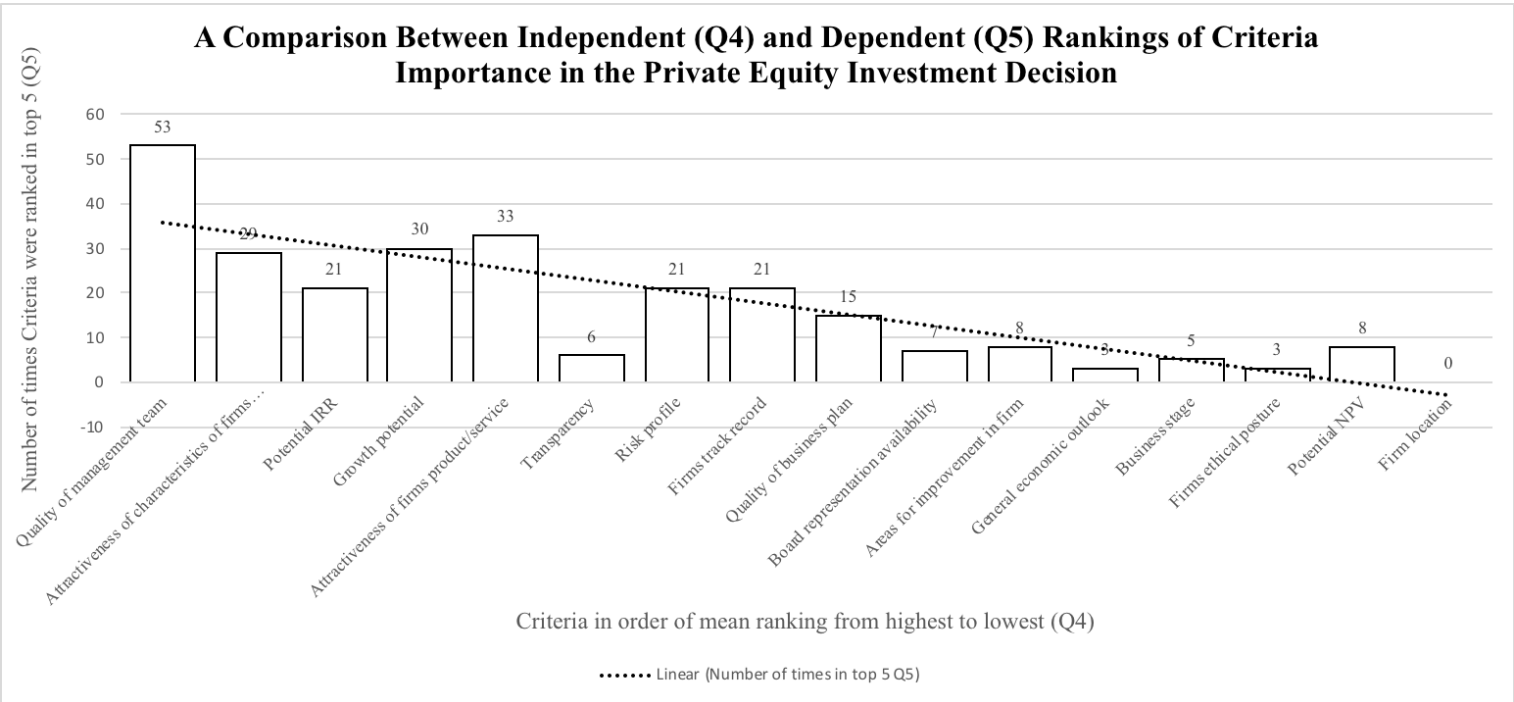

Figure 3: A Comparison between Independent and Dependent Rankings

Q6 of the survey was an open-ended question asking respondents to list any additional criteria that had been missed out that they believed was of importance. Eleven additional criteria were mentioned [Appendix 4], with the majority of these only mentioned a handful of times. Therefore, for the purpose of this paper, these criteria will be considered as outliers. However, two of the criteria discussed were included by multiple participants and so their importance here must be noted. Price, or some variation of this term, was mentioned by 11 out of 53 participants. This was the most commonly brought up additional criterion that was not included in the survey. The second most mentioned criterion was the need for a clear exit route, being mentioned by 7 out of 53 participants.

5 Discussion

5.1 Overview of Findings

This paper conducted a survey to bring about a greater understanding of 16 criteria that have been said to influence PE investment decisions. A wide range of statistical analysis methods were used on results obtained from 53 participants to satisfy all three research questions devised. This analysis was also useful in supporting H1, H2, H4 and H5, with H3 being the only hypothesis that was not supported.

5.2 Research Questions 1 and 2; Hypothesis 1

RQ1 was answered through a combination of statistical tests, including a one-way ANOVA, confirming the significance of each criteria's importance, and descriptive statistics seen in Figure 2. Alongside supporting evidence from Q5 of the survey, the most important criteria were 'Quality of management team', 'Attractiveness of characteristics of firm's market'. 'Potential IRR', 'Growth potential', 'Attractiveness of firm's product/service' and 'Transparency (quality of information'. Some of these criteria will be discussed further where is has been deemed appropriate.

Information seen in Table 1 addressed RQ2, showing only a few correlations within the top six criteria mentioned above. This suggests that an individual emphasising the importance of one criterion is not predictive of them picking another. Perhaps this is because most of the criteria are reasonably different in terms of what they are measuring. These findings help address future research avenues suggested by Jagongo and Mutswenje (2014), wanting researchers to look into clusters of variables. In Figure 4, the researcher has highlighted the clusters of variables that exist in the results from this survey, with the first grouping from the left being a cluster of most important variables. It can be seen that, whilst clusters of variables do exist, there do not seem to be many relationships between the criteria in the highest band.

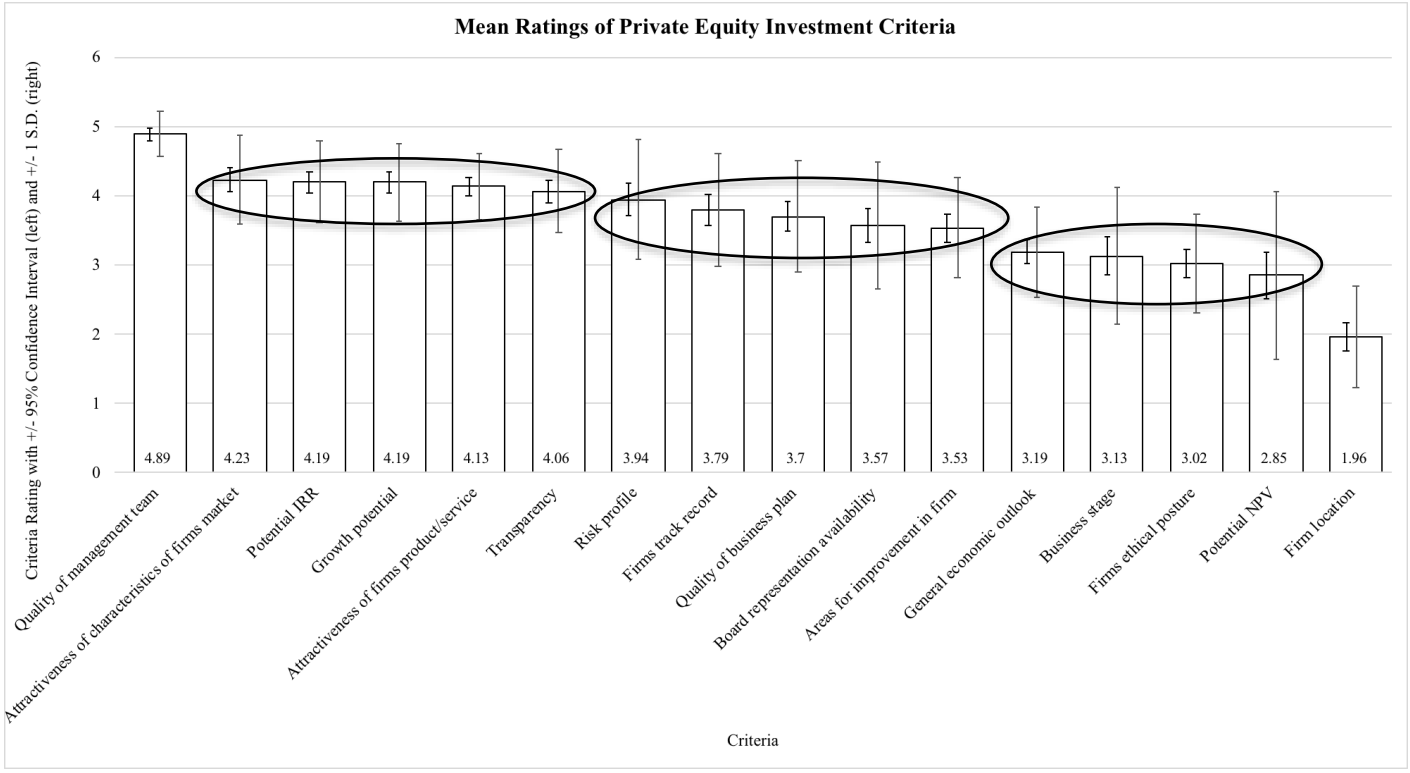

Figure 4: Mean Ratings of Private Equity Investment Criteria, Question 5

It was found that the 'Quality of management team' was the most important criterion in the PE investment decision, seen in a cluster of its own in Figure 4. Arguments by Zinecker and Rajchlova (2014), Arora and Chakraborty (2012) and Millson and Ward (2005) outlining the importance of this criterion have been supported and strengthened by these findings. Considered significantly higher than all other criteria being tested for, the 'Quality of management team' also lacks significant correlations with any other criteria. This suggests that, whilst opinions on other criteria may vary from investor to investor, the quality of the team being invested in is of upmost importance. It is therefore stressed to both PE firms and entrepreneurs looking for funding that time should be spent on developing a strong, trustworthy team so that relationships can be built throughout the course of the investment.

'Characteristics of firm's market' was considered the second most important criterion, highest in the upper cluster of variables, supporting H1. This result builds upon literature by Zinecker and Rajchlova (2014), Jagongo and Mutswenje (2014) and Sinyard (2013), who were in agreement on this criterion's importance. Arora and Chakraborty (2012) outline how market characteristics can be a good indicator of compatibility between a PE firm and the investment under review. It is unlikely for an investment to be made in a market with stagnating growth and powerful competitors. Following on from this, 'Characteristics of firm's market' was significantly correlated

with the ‘Attractiveness of firm’s product/service’, in the same cluster. This correlation is not surprising, highlighting how a PE firm would be unable to consider the attractiveness of a market without comparing it to the strength of the product/service being offered. PE firms should therefore look for investments with both strong markets and products/services as one cannot be fully effective without the other.

The ‘Attractiveness of firm’s product/service’ was the 5th most important criterion in the PE investment decision. This was an interesting discovery, as its importance was only acknowledged in papers by Zinecker and Rajchlova (2014) and Arora and Chakraborty (2012). The value of this criterion was therefore expected to be much lower than the results showed, and acts as an interesting contribution to existing research challenging the assumptions of other academics. Moreover, this criterion was correlated with the highest number of criteria, including those outside the cluster group, which can be seen in Table 1. This is suggestive of the product or service’s importance as being a rather central consideration in an investment decision, the attractiveness of which is impacted by the external and internal environment. Perhaps the lack of attention on the product/service in past research is due to the need to consider the criterion relative to other factors impacting the PE investment decision, rather than as a stand-alone investment consideration.

5.3 Hypothesis 2 and 3

H2 and 3 looked at the relationship between two criteria debated in literature by Zinecker and Rajchlova (2014). These hypotheses were answered through a combination of statistical analysis techniques. The results from the T-test, combined with data from Figure 2 supported H2 in that the ‘Quality of management team’ is more important than the ‘Attractiveness of firm’s product/service’. This result helps address the disagreement on which criteria holds the most importance. By directly comparing results from both variables, it is made clear which should hold a greater weighting when making a PE investment decision. In addition to this, results from statistical analysis suggest that neither criteria should be regarded as relatively unimportant in the PE investment decision. The debate highlighted by Zinecker and Rajchlova (2014) suggests the extremes where if one criterion is important the other is not, but in reality, it can be seen that both criteria are in the band of highest

importance, and that there should not be a trade-off between the two criteria. Both criteria should be considered in a PE investment decision, with the 'Quality of management team' having a slightly greater sway in the decision.

H3 was not supported by the results from statistical analysis, as there was no significant correlation between the two criteria. It was interesting to learn that, whilst Zinecker and Rajchlova (2014) imply that a relationship exists between the two criteria that should be negative, the insignificant correlation reported in Table 1 is in fact positive. Despite being rejected, findings from this hypothesis still contribute to the ongoing debate in literature by arguing, contrastingly, that no real relationship exists between the 'Quality of management team' and 'Attractiveness of firm's product/service'; they are two different aspects of an investment proposal that do not go hand in hand. Alternatively, it is proposed that an ideal PE investment would consist of a high-quality management team that is presenting an attractive product or service, rather than valuing one as an alternative to the other.

5.4 Research Question 3

RQ3 was answered using the same combination of statistical tests as RQ1. It was determined that the least important criteria were 'Firm location', 'Potential NPV', 'Firms ethical posture', 'Business stage', and 'General economic outlook'. It should be noted here that whilst these criteria are of least importance relative to the other criteria measured, they still hold some importance in terms of their individual rankings. It is interesting that only two of the criteria included in this cluster were regarded as infrequently mentioned criteria in literature; the potential NPV and the business stage of a firm. This suggests that perhaps previous researchers have overexaggerated the importance of firm location, ethical posture and general economic outlook.

'Firm location' was the least important criterion measured in the survey, significantly lower than all other criteria. Moreover, it is the only criterion not placed in the five most important criteria in Q5 of the survey. Interestingly enough, the importance of firm location by Portmann and Mlambo (2013) and others is not supported by these findings. Similar to the 'Quality of management team', 'Firm location' stands alone in Figure 4, forming its own cluster of variables distinct from other categories. It can be seen that there is overwhelming support for this criterion

being the least important. This is suggestive of the ability for PE firm investments to span a wide distance, with them being able to successfully manage transactions from afar regardless of location.

The 'Potential NPV' of an investment proposal was the second least important criterion to be considered. What is interesting here is to look at the difference between the importance of financial measures NPV and IRR. Whilst NPV is ranked in the bottom five, IRR is considered as the third most important criteria. This paper therefore contends the suggestion in Gould (1972) that NPV is the recommended criterion according to other academics. This large difference highlights to both PE firms and entrepreneurs that a stronger IRR figure is of higher value than that of NPV, suggesting that firms should emphasise the profitability of their investment over their cashflows. Moreover, a negative correlation between the two variables can be seen in Table 1. Whilst this value is not significant, it still indicates a slight lean towards investors valuing one criteria over the other.

5.5 Hypothesis 4

Despite the 'Transparency (quality of information)' only being mentioned in one literature piece studied, it was ranked as the 6th most important criterion in a PE investment decision, belonging to the first cluster of variables seen in Figure 4. This criterion was considered 'important' by participants, unlike literature's suggestion of having little or no importance. These results agree with Millson and Ward's (2014) argument that this criterion is of high importance, supporting H4. The findings further add to literature with the provision of additional evidence that this criterion is more important than thought and should be valued to a greater extent by researchers and investors alike. A PE firm needs to be able to overcome adverse selection and information asymmetry problems to ensure they are making a profitable investment decision and can work well with and trust the management team backing the proposal (Fenn et al., 1997; Zinecker and Rajchlova, 2014). An additional benefit to this discovery is that it suggests that firms wanting to obtain funding from PE firms should make sure they have high quality information readily available, allowing a transparent and more accurate opinion of the firm to be formed.

5.6 Hypothesis 5

The ‘Business stage of an issuer’ was a criterion that was regarded as having little or no importance in literature, mentioned in only one paper. However, the argument by Arora and Chakraborty (2012) suggesting that intermediaries take the business stage into account is supported by the statistical analysis carried out, proving that this criterion is considered ‘somewhat important’ in PE investment decisions; supporting H5. In relative terms, comparing the ‘business stage’ to other criteria tested, this criterion is seemingly unimportant; regarded as one of the least important criteria in RQ3 and lying in the 3rd cluster in Figure 4. From looking at that particular data, one might argue that in fact H5 is not proven and is not of any importance. However, this hypothesis is not looking at the business stage relative to other criteria, but as a stand-alone variable. When looking at the criterion in this light, participants still do consider the business stage as having some importance. As discussed by Fenn et al., (1997) PE firms are known for investing in a wide range of companies at different stages of their life cycle. Despite this, the results have shown that there are still some ties with PE to VC in that the stage of the firm is still a criterion that is considered, whether the firm has particular types of investments they prefer, or whether they seek a range of different investments to diversify risks.

5.7 Additional Insights

Q5 of the survey was used as a check on consistency, asking participants what they consider to be the five most important criteria from those ranked in the Q4. This data was measured by looking at the number of times a criterion was placed in the top five by a participant, the results of which can be seen in Figure 3. Despite ‘Transparency’ being considered an outlier in this case, there seems to be reasonable consistency between the two questions, with the number of times mentioned decreasing as the mean ranking decreased. It is interesting to see how the criteria importance differs when being considered independently and relative to others. Moreover, it should be pointed out that all criteria, bar one, are ranked in the top five by at least one participant. This highlights how, despite the general consensus being that those criteria are of lesser value when ranked individually, they still hold some importance overall. Therefore, it seems to be the case that all criteria included in the survey hold importance in their own way, and that it is potentially down to personal

or organisational opinion in the case of some criteria's significance in the PE investment decision. This is particularly relevant to the outlier 'Transparency', mentioned few times in question five relative to its overall importance. It may be the case that this criterion is considered important when valued alone but is regarded as less significant in the investment decision when put into a group of criteria to choose between.

Q6 of the survey was an open-ended question asking for any additional criteria participants thought should have been included [Appendix 4]. In this case, two out of the eleven criteria suggested are worth mentioning. 'Price', or some form of variation on the word, was mentioned by 11 out of 53 participants. It was interesting how this criterion did not come up in any of the past papers studied. The likely reason for this is a result of literature reviewed being focused more on the returns gained from the investment, such as the NPV and IRR, rather than the cost of entering the investment itself. The literature seems to have overlooked one of the most basic criterion that would be considered in investment decisions across any asset class, perhaps because it is such a simple stand-alone criterion that it goes without saying that the price of a deal is important. An alternative approach to this focuses on how only 21% of participants thought to mention price as a criterion at the end of the survey. This suggests that price does not matter as much in the presence of other attractive criteria presented in the investment proposal. It may be that the price acceptable for a particular investment is not measured in absolute monetary terms, but in terms of the value expected to be gained from the investment. PE firms may therefore be willing to pay a higher price to fund an investment with great prospects that excels in the criteria regarded as most important.

The need for a clear exit route was another criterion mentioned frequently in Q6 of the survey, by seven participants. As discussed above, the literature reviewed in this study were more focused on entering the deal, rather than looking how best to exit one. The mentioning of this criterion, however, suggests that the ability to make a clear exit from a deal in the long run is a desirable aspect to take into account when looking at an investment proposal.

6 Conclusion

The nature of the PE industry makes it challenging to learn about how investment opportunities are evaluated, despite there being a recognised importance for having a set of investment criteria. The difficulties faced stemming from a lack of information have not, however, deterred researchers from trying to make sense of this alternative asset class. There is an existing body of research dedicated towards understanding the criteria impacting PE investment decisions, each paper with their own idea of what should be considered important, resulting in a long list of criteria that lack common agreement.

From an extensive study of existing literature combined with work experience at a PE firm, it became apparent that research was needed to better understand the criteria influencing PE investment decisions, looking at those previously studied. This papers aim was therefore to bring about a greater understanding of criteria influencing PE investment decisions by determining the most frequently mentioned criteria, if any criteria infrequently mentioned were of any importance, and examining the interrelatedness of these criteria.

The research aim and objectives of this study were successfully answered through quantitative analysis of a survey that collected data from 53 investors in the PE industry, leading to some interesting findings.

6.1 Practical Implications

This research paper has identified clusters of PE criteria according to the level of impact they would have in determining the value of an investment proposal. The results focused on looking at the importance of criteria, by answering RQ1 and 2 and H1, 2, 4 and 5, have a wide range of practical implications within the field.

There are a number of research papers that discuss different groups of important investment criteria, making it hard for PE firms to know which criteria they should focus on. By combining all these criteria into one paper, and then determining their importance, this process has been made easier for PE firms; highlighting which parts of an investment proposal should hold more importance, and therefore who to invest in. It is stressed that PE firms should look out for investments where there is a high-quality management team, as it was concluded from results that this is the most important criterion by far. Additionally, PE firms should consider the attractiveness of

the firm's market, the potential IRR of the project, the growth potential of the firm, the attractiveness of the firm's product/service and the quality of information available to them.

It is the researchers hope that by having this list of criteria, PE firms will be able to improve the success of their investments to maintain their own track record. In addition, the process of sifting through the vast amount of investment proposals a PE firm is exposed to would become more efficient, with the ability to better rule out investments not meeting criteria standards. Finally, the development and use of these criteria would help overcome irrational biases impacting these decisions, and information asymmetries preventing an investment proposal's true value being realised.

Issuers wishing to obtain funding can also benefit from the findings of this research paper. Any firm turning to the PE market for funding, irrespective of their reasoning for it, has the desire to make sure they look attractive to their potential investors. However, due to the private nature of the industry, it is hard to know what the factors are that make their business proposals stand out. The findings from this research paper can help overcome this, guiding issuers towards developing well-rounded business proposals that highlight areas of strength that are particularly important in securing funding.

Issuers need to make sure they have a strong management team and a good product/service. It is also made apparent that issuers should be more open with their potential investors, being as transparent as possible in order to help overcome information asymmetry issues and look more attractive. Additionally, findings highlight that a stronger IRR is more attractive than NPV, and so this financial indicator should be drawn attention to. An issuer is also made aware of which criteria, although still important to some extent, are less pressing in the investment proposal, helping to avoid overselling the wrong criteria.

6.2 Limitations

Despite the success of this study, and the practical implications of findings in the PE industry, there are some limitations that must be discussed. The first of these was the inability to include all criteria mentioned in the literature reviewed and, building on this, the inability to study all papers on PE. A study such as this would

exceed the time constraints of this paper and require a more extensive survey likely to reduce the response rate. The researcher endeavoured to account for these limitations by including an open-ended question in the survey to include any additional criteria of importance, but these have not been tested.

Due to the time limitations imposed, the researcher was unable to leave the survey open for a prolonged period of time. Additionally, the privacy of the PE industry made it challenging to yield a higher response rate. These factors led to a smaller sample size, though still meeting the requirements for the paper. Whilst confidence intervals, indicating the population mean, were accounted for, it is argued that the results of this paper could have been more reliable with a greater number of participants.

The researcher additionally wants to stress that the criteria termed least important in this paper are still important to some extent. That is, the criteria are not unimportant, but are simply valued less in the investment decision than those in the highest cluster. It is unclear as to whether these criteria are least important in the industry, as there were many other criteria missed out.

6.3 Recommendations for Future Research

This paper was focused on attaching values to each criterion, looking at 'what' the most and least important criteria were. It is suggested that research is conducted looking into 'why' these criteria are important. There should be additional evidence backing up the legitimacy of these criteria, justifying why they mean that an investment proposal is attractive; making it easier for PE firms and issuers to rely on them. Additionally, a study focused purely on the 'Quality of management team' should be conducted. Due to its obvious importance in the investment decision, it is recommended that researchers should look more extensively at the facets making up this criterion, determining which aspects are of higher importance.

Due to time constraints on current findings, it is suggested that this study should be conducted on a larger scale. This would allow for the inclusion of more criteria; those mentioned in the literature studied [Appendix 3] and additional criteria mentioned frequently in the open-ended question [Appendix 4]. It would be interesting to see how results differ with a greater choice of criteria, seeing where additional variables fit in with those already considered.

Discussed in section 5.7, research should be conducted looking at the differences between criteria importance when they are measured individually versus together. In an investment proposal it is unlikely that all criteria are of a high standard, so it leads to question how PE firms judge which criteria to choose between; does the presence of one criteria with high importance outweigh the absence of two lesser criteria.

6.4 Final Remarks

This research was conducted to gain a better understanding of the criteria influencing PE investment decisions. Findings resulting from this have helped clarify which criteria are most and least important in the PE investment decision by combining evidence from a wide range of existing literature on the topic, as well as concluding that the relationships between criteria are seemingly random. This research contributes to the field by providing additional evidence to help make sense of this complex alternative asset class. Despite there being some limitations, these findings have strengthened arguments for existing research whilst opening up new avenues for further investigation. It is the hope that these findings will help a number of different parties involved in PE transactions, such as PE firms and issuers looking for funding, making contributions to the industry aimed at increased efficiency and improved performance.

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8 Appendices

8.1 Appendix 1: Signed Risk Assessment Form

Internal research ethics application form for taught student modules (where University ethical approval is in place for the module)

For modules LUBS3305 and LUBS3345 covered by University of Leeds ethical approval

Student ID	[redacted]
Your name	
Degree Programme	BA Management
Provisional title/ topic area	Alternative Asset Investment Criteria, With a Focus on Private Equity
Name of dissertation supervisor	

Are you planning to conduct fieldwork with (data on) human participants for your dissertation?	Please tick the relevant box
Yes (This includes online research methods and secondary data analysis of social media or internet data).	X
No, I am conducting library based research.	

If you ticked 'no' you do not need to take further action in respect of ethical approval. Please proceed to the declarations on page 8 and 9.

If you ticked 'yes' you need to complete the rest of this form.

You MUST submit discuss your research design and the ethical issues it raises with your dissertation supervisor and receive their signed approval **before you approach any participants or collect any data**.

You MUST attach a copy of your research proposal to this form.

You MUST include a copy of your ethics form (signed by your supervisor), together with your research proposal, as an appendix to your final dissertation submission.

INTERNAL RESEARCH ETHICS APPLICATION
Part A: Compliance with the module's block ethical approval

Ethical review is required for all research involving human participants, including research undertaken by students within a taught student module. Further details of the University of Leeds ethical review requirements are provided in the *Research Ethics Policy* available at: http://ris.leeds.ac.uk/ResearchEthicsPolicies and at www.leeds.ac.uk/ethics.

1. Will your dissertation involve any of the following?	**Yes**	**No**
New data collected by administering questionnaires/interviews for quantitative analysis	X	
New data collected by qualitative methods		X
New data collected from observing individuals or populations		X
Working with aggregated or population data		X
Using already published data or data in the public domain	X	
Any other research methodology, please specify:		X

2. Will any of the participants be from any of the following groups? (Tick as appropriate)	**Yes**	**No**
Children under 16		X
Adults with learning disabilities		X
Adults with other forms of mental incapacity or mental illness		X
Adults in emergency situations		X
Prisoners or young offenders		X
Those who could be considered to have a particularly dependent relationship with the investigator, e.g. members of staff, students		X
Other vulnerable groups, please specify:		X

3. **Will the project/dissertation/fieldwork involve any of the following:** (You may select more than one)	**Yes**	**No**
Patients and users of the NHS (including NHS patients treated under contracts with private sector)		X
Individuals identified as potential participants because of their status as relatives or carers of patients and users of the NHS		X
The use of, or potential access to, NHS premises or facilities		X
NHS staff - recruited as potential research participants by virtue of their professional role		X
A prison or a young offender institution in England and Wales (and is health related)		X

If you have answered 'yes' to ANY of the above questions in 2 or 3 then you will need to apply for full ethical review, a faculty committee level process. This can take up to 6-8 weeks, so it is important that you consult further with your supervisor for guidance with this application as soon as possible. Please now complete and sign the final page of this document. The application form for full ethical review and further information about the process are available at http://ris.leeds.ac.uk/uolethicsapplication.

If you answered 'no' to ALL of the questions in sections 2 and 3 please continue to part B.

INTERNAL RESEARCH ETHICS APPLICATION
Part B: Ethical considerations within block ethical approval

4. Will the research touch on sensitive topics or raise other challenges?	**Yes**	**No**
Will the study require the cooperation of a gatekeeper for initial access to groups or individuals who are taking part in the study (eg students at school, members of self-help groups, residents of a nursing home)?		X
Will participants be taking part in the research without their knowledge and consent (eg covert observation of people in non-public places)?		X
Will the study involve discussion of sensitive topics (eg sexual activity, drug use)?		X
Could the study induce psychological stress or anxiety or cause harm or have negative consequences beyond the risks encountered in normal life?		X
Are there any potential conflicts of interest?		X
Does any relationship exist between the researcher(s) and the participant(s), other than that required by the activities associated with the project (e.g., fellow students, staff, etc)?	X	
Does the research involve any risks to the researchers themselves, or individuals not directly involved in the research?		X

If you have answered 'yes' to any of the questions in (4), please describe the ethical issues raised and your plans to resolve them on a separate page. Agree this with your supervisor and submit it with this form. Again, you MAY be referred for light touch or full ethical review.

Resolving Ethical Issues Part B (4): Some, but not all, of the participants will be connected to me via an extended personal network. However, all those taking part in my survey will be anonymous.

5. International Research Does your research involve participants outside of the UK?	**Yes**	**No**
Are any of your research participants located outside of the UK, e.g., will you be gathering data through Skype interviews with participants located overseas?		X
Will any of the fieldwork or research require you to travel outside of the UK to collect data?		X

If you have answered 'yes' to either part of question (5), please describe the ethical issues raised with: gaining consent and gathering data from participants located overseas, securely storing and transferring data from the field back to the UK, any cultural issues that may be relevant. Please outline your plans to resolve this on a separate page and ensure that you have completed a risk assessment form. Agree this with your supervisor and submit it with this form.

You MAY be referred for light touch or full ethical review if you are unable to demonstrate that you have resolved the ethical issues relating to international research.

6. Personal safety Where will any fieldwork/ interviews/ focus groups take place?	**Yes**	**No**
At the university or other public place (please specify below).		X
At my home address		X
At the research subject's home address		X
Some other location (please specify below).		X

If you conduct fieldwork anywhere except at the university or other public place you need to review security issues with your supervisor and have them confirmed by the Module Leader who may refer you for light touch or full ethical review. Write a brief statement indicating any security/personal safety issues arising for you and/or for your participants, explaining how these will be managed. Agree this with your supervisor and submit it with this form.

Please note that conducting fieldwork at the research subject's home address will require strong justification and is generally not encouraged.

A risk assessment is required before any data is gathered for any dissertation project, please view the Health and Safety advice on the module's VLE pages.

7. Anonymity	**Yes**	**No**
Is there any potential for data to be traced back to individuals or		X

organisations, for instance because it has been anonymised in such a way that there remains risk (eg highlighting people's positions within an organisation, which may reveal them).		

If you have answered 'yes' to question 7, please discuss this further with your supervisor. You need to provide a strong justification for this decision on a separate sheet. **This application will need to be reviewed by the dissertation Module Leader and may require a full ethical review.**

8. Data management issues

Will the research involve any of the following activities at any stage (including identification of potential research participants)?	**Yes**	**No**
a. Examination of personal records by those who would not normally have access		X
b. Sharing data with other organisations		X
c. Use of personal addresses, postcodes, faxes, e-mails or telephone numbers	X	
d. Publication of direct quotations from respondents		X
e. Publication of data that might allow identification of individuals to be identified		X
f. Use of audio/visual recording devices		X
g. Storage of personal data on any of the following:		
FLASH memory or other portable storage devices		X
Home or other personal computers		X
Private company computers		X
Laptop computers		X

If you have answered 'yes' to any of the questions under 8, you must ensure that you follow the University of Leeds Information Protection Policy: http://www.leeds.ac.uk/informationsecurity and the Research Data Management Policy: http://library.leeds.ac.uk/research-data-policies#activate-tab1_university_research_data_policy.

You are obliged to provide a copy of your anonymised data to your supervisor for their records and to destroy other copies of your data when your degree has been confirmed.

Dissertation Research Ethical Approval: Declaration

For students	*Please tick as appropriate*
Option 1: I **will NOT** conduct fieldwork with (data on) human participants for my dissertation.	
Option 2: I **will** conduct fieldwork with (data on) human participants for my dissertation.	X

For **options 1 and 2** - I confirm that:

- The research ethics form is accurate to the best of my knowledge.
- I have consulted the University of Leeds Research Ethics Policy available at http://ris.leeds.ac.uk/ResearchEthicsPolicies.
- I understand that ethical approval will only apply to the project I have outlined in this application and that I will need to re-apply, should my plans change substantially.

For **option 2** only:

- I am aware of the University of Leeds protocols for ethical research, in particular in respect to protocols on **informed consent**, **verbal consent**, **reimbursement for participants and low risk observation**. If any are applicable to me, signing this form confirms that I will carry out my work in accordance with them. http://ris.leeds.ac.uk/PlanningResearch

Student's signatu .....

Date: 14/12/17

For supervisors	**Yes**	**No**
No further action required		
I confirm that the dissertation is in line with the module's block ethical approval (Part A & question 8).	X	
I have discussed the ethical issues arising from the research with the student and agree that these have been accurately and fully addressed.	X	
I have reviewed the student's research proposal.	X	
I have reviewed the student's Risk Assessment Form.		
Further actions required		
Refer to dissertation Module Leader for further review / discussion.		X
The dissertation falls outside the module's block ethical approval and the student was advised to apply for full ethical review.		X

Supervisor's signature: ....

Date: 14/12/17

8.2 Appendix 2: Blank Copy of Survey

Private Equity Investment Criteria

1. Please pick the appropriate age band *

- ☐ under 18
- ☐ 18-24
- ☐ 25-34
- ☐ 35-54
- ☐ 55+

2. Please identify your gender. *

- ☐ Male
- ☐ Female
- ☐ Other

3. How many years of Private Equity experience have you had? *

- ☐ Less than 1 Year
- ☐ 1 to 5 Years
- ☐ More than 5 Years

4. Please rate the importance of the following Investment Criteria when evaluating a Private Equity Investment Proposal *

z	Unimportant	Of Little Importance	Somewhat Important	Important	Very Important
Attractiveness of Characteristics of Firm's Market	☐	☐	☐	☐	☐
Quality of Management Team	☐	☐	☐	☐	☐
Attractiveness of Firm's Product/Service	☐	☐	☐	☐	☐
Potential Internal Rate of Return	☐	☐	☐	☐	☐

z	Unimportant	Of Little Importance	Somewhat Important	Important	Very Important
Firm's Track Record					
Board Representation Availability					
General Economic Outlook					
Quality of Business Plan					
Firm Location					
Firm's Ethical Posture					
Growth Potential					
Transparency (Quality of Information)					
Business Stage					
Risk Profile					
Potential Net Present Value					
Areas for Improvement in Firm					

5. Please choose the five criteria from the dropdown menu that, in your opinion, are the most important to consider in a Private Equity Investment Decision, where 1 is the most important. *

	Investment Criteria
1	
2	
3	
4	
5	

6. If you believe there are any additional Private Equity Investment Criteria of importance that have been missed, please list them below.

8.3 Appendix 3: List of Criteria Mentioned in Literature

Criteria Mentioned	Number of Papers Mentioned in
internal rate of return	5
net present value	1
management/individuals	6
market Characteristics	7
finance	2
business plan	3
potential profit/expected returns	6
potential areas for improvement	1
product/service	2
operations	1
compatability of timing/size of liquidity event	1
track record/experience	5
firms ethical posture	4
stock marketability	2
government holidngs	1
location	3
deal size	2
net asset value	1
discounted cash flow	1
assets	1
sales	1
how deal was found	2
board representation	4
capital flows	1
economy	4
growth rate	3
business stage	1
transparency	1
quality of systems/processes	1
risk	1

8.4 Appendix 4: Additional Criteria Mentioned in Question 6 of Survey

Additional Criteria	Frequency
Price	11
Clear exit route	7
Potential multiple of money	2
Cash flow properties of business	2
Fit with investment mandate	1
Legitimate reason for transaction	1
Quality of earnings	1
Scarcity of asset	1
Firm's balance sheet	1
Have the management made money before	1
Ability to realise investment	1