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Impact Investing

Financial returns of impact private equity funds

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Abstract

The aim of this study was to investigate impact investing within the realm of private equity (PE), an area that has not been thoroughly explored despite its emerging prominence. Specifically, the study sought to shed light on the financial returns and the potential trade-off with social outcomes of impact investing and the factors driving financial returns of impact funds. To achieve this, the research focused on two main objectives: first, to compare the Internal Rate of Return (IRR) of impact funds and non-impact funds, and second, to analyse how variables such as vintage year, fund size, strategy, and geographic focus influence the financial performance of impact funds.

Analysing data from a total of 3727 funds, the study reveals that while the average IRR of impact funds slightly surpasses that of non-impact funds (0.2375%), there is no statistically significant difference between the IRR of the two categories. In terms of factors influencing impact fund financial returns, the research indicates a notably positive correlation between vintage year and IRR. Additionally, funds focusing on buyout strategy demonstrate higher returns compared to those targeting early stage, growth, and other strategies. Furthermore, funds directed capital towards Europe exhibit higher returns compared to those allocating capital to Asia and Emerging markets.

Keywords Impact investing, financial returns, private equity, fund characteristics

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1 Introduction

1.1 Background

Today's world is facing substantial social and environmental challenges, from education, healthcare, poverty to climate change. Due to the multitude and magnitude of these challenges, however, government resources and charitable donations are insufficient to address them at a large scale and in a sustainable manner. To effectively tackle these issues, it is crucial to unlock funding for social entrepreneurs in a manner similar to how venture capital unlocked it for high-tech entrepreneurs. This necessitates innovative financial approach called impact investing with new investment model designed to direct funds exclusively towards these social innovators.

Investment with social and environmental considerations has been popular for a long time. Initially, this took the form of socially responsible investing (SRI), with estimates suggesting that nearly a quarter of professional managed wealth is allocated to various SRI strategies (Singh, 2018). However, SRI primarily involves avoiding investment in companies operating in industries deemed unethical, such as tobacco, alcohol, or weapons – a practice known as "negative screening". Impact investing, on the other hand, goes beyond this by actively seeking out entrepreneurs and organizations aiming to generate positive social and environmental outcomes, which often struggle to secure financing from traditional financial market due to their perceived lower financial attractiveness. It does so, for example, by directing funds to initiatives such as affordable housing, clean energy projects, or businesses addressing community needs for sustainable employment and development (Addis et al., 2013). With its distinct focus, impact investing has a positive effect internationally in catalysing new markets, fostering entrepreneurship, and driving innovation, thus contributing to sustainable solutions for pressing challenges.

Another key distinguishing feature of impact investing is its departure from the traditional notion that investors must choose between "doing good" and "doing well". Instead of sacrificing financial returns like philanthropy, impact investing aims to achieve competitive financial returns while creating positive change in society. This deviation from other types of responsible investing has facilitated the increasing popularity of impact investing. According to the Global Impact Investing Network (GIIN), the sector experienced remarkable growth, $502 billion with a compound annual growth rate (CAGR) of 61% from 2013 to 2018. Furthermore, projections suggest that impact investing assets under management in the US alone could exceed $2 trillion by 2025 (Roundy, et al., 2017).

However, this ambitious notion of achieving dual objectives—financial profitability and social impact—presents both unique challenge and opportunity. On one hand, critics question whether impact investments can deliver competitive financial returns. They argue that prioritizing social or environmental objectives may limit the number of viable projects, thus coming at the expense of financial performance and leading to suboptimal returns for investors (Cheng, 2011; Evans, 2013; Brest et al., 2018; Barber et al., 2021; Jeffers et al., 2023). On the other hand, proponents of impact investing assert that positive social outcomes are inherent to the business model. Consequently, when a company has a good performance, it naturally produces beneficial social impact (Grabenwarter & Liechtenstein, 2011).

1.2 Research objectives and questions

Despite the increasing interest in impact investing among both practitioners and scholars, empirical data on the financial performance of impact investments remains scarce and inconclusive. There exist conflicting perspectives on the inherent trade-off between financial profitability and social impact. Furthermore, the specific factors influencing the financial returns of impact funds, particularly pertaining to fund characteristics, have not yet been thoroughly explored or addressed in existing literature. This highlights a crucial gap in our understanding of impact investing and underscores the need for further research to examine the drivers behind impact fund financial returns.

Given that gap in literature, the primary objective of this study is to investigate the potential trade-off between financial returns and social outcomes by comparing the financial performance of impact funds and non-impact funds. Additionally, an analysis of various fund characteristics such as vintage year, fund size, strategy, and geographic focus is conducted to assess their respective impacts on fund financial returns. Specifically, this research seeks to address the following questions:

- Is there evidence of a trade-off between financial returns and positive social outcomes?
- What is the influence of fund vintage year on fund returns?
- How does fund size impact fund returns?
- What are the effects of different strategies on fund returns?
- How does geographic focus influence fund returns?

1.3 Thesis structure

The research comprises six chapters. The first chapter gives an introduction of the study's background and research objectives and questions. The second chapter focuses on clarifying the definition of impact investing. It also offers an overview of existing research concerning the trade-off between financial

and non-financial performance and the effects of fund characteristics such as vintage year, fund size, strategy, and geographic focus on impact fund financial returns. Chapter three elaborate on data collection method and provides detailed description of the statistical analyses, including student's t-test and regression analysis, employed in the research. The findings are then presented in chapter four, following by detailed discussions of the analysis results in chapter five. The final chapter includes a summary of the research, as well as its limitations and suggestions for future studies. The references and appendix are available in the concluding part of the thesis.

2 Literature review

2.1 Impact investing

2.1.1 Historical background

The practice of investing in businesses with an intention to address social challenges has existed for a long period of time (Nicholls, 2010; O'Donohoe et al., 2010). Notable historic examples include the Commonwealth Development Corporation in the UK, or the International Finance Corporation established in 1948 and 1956, respectively (O'Donohoe et al., 2010). Their mission was to "do good" by allocating capital to emerging markets with the intention of addressing social and environmental issues, while maintaining financial returns. However, it was until 2007 that the term was officially coined at a Rockefeller Foundation meeting, where the necessity of creating a global industry for investments with positive social and environmental outcomes had been raised, given the insufficient charitable and government funds to address the growing challenges (Bugg-Levine & Goldstein, 2009; Harji & Jackson, 2012). Since then, the term has evolved significantly and become prominence among investors with several mainstream financial institutions entering the field (Höchstädter & Scheck, 2015). Moreover, the development of an ecosystem is underway, encompassing investor networks such as the GIIN, reporting standards such as the Impact Reporting and Investment Standards (IRIS), rating agencies such as the Global Investing Ratings System (GIIRS), and searchable online databases of investment products such as ImpactBase. These elements have collectively facilitated an unprecedented growth in the impact investing field.

2.1.2 Definition of impact investing

Since the first official introduction of the term "impact investing" in 2007, many attempts have been made to define it. While consensus on defining impact investing at a high general level has been made, there remains some uncertainties about the detailed operational definition of the term.

In their groundbreaking report, O'Donohoe et al. (2010) state that impact investing involves intentionally seeking both financial returns and positive social impact. In this definition, social impact embraces both social and environmental outcome. The report emphasizes the fusion of traditional investments strategies with philanthropic aims, thereby emerging as a new asset class. Furthermore, it is crucial to highlight that impact investments are characterized by their intentional pursuit of targeted social outcomes. This distinction is vital as it distinguishes them from traditional investments that may incidentally yield positive social effects as externalities. Another

noteworthy aspect highlighted is the ability to quantify the positive impact on society, which is essential for safeguarding against the misleading of investors through impact washing. Expanding on this definition, Hockerts et al. (2021) introduce the concept of "additionality," which stipulates that impact investments should lead to an increase in the quantity or quality of social or environmental outcomes beyond what would have occurred otherwise. Overall, there is a broad consensus among scholars and practitioners that defining impact investing in terms of simultaneously pursuing profitability and social impact objectives (Arosio, 2011; Bugg-Levine & Emerson, 2011; Grabenwarter & Liechtenstein, 2011; Boerner, 2012; Addis et al., 2013; Höchstädter & Scheck, 2015; Roundy et al., 2017; Hockerts et al., 2021).

Although this definition appears clear and widely accepted on a surface level, numerous skeptics have expressed reservations regarding its specific intricacies, particularly concerning the feasibility of achieving social impact without compromising financial returns. The debate has endured since the inception of the concept.

Some argue that there is an inevitable trade-off between non-financial impact and financial returns, rendering the simultaneous achievement of both unrealistic (Cheng, 2011; Evans, 2013; Brest et al., 2018; Barber et al., 2021; Jeffers et al., 2023). Brest et al. (2021) believe that in order to enhance the value generated by investee companies, impact investors should lower the cost of capital compared to traditional commercial markets, potentially resulting in diminished returns. Jeffers et al. (2023) further elaborate on this notion, emphasizing that constrained strategies like impact investing, which face limited investment opportunities, are likely to yield lower risk-adjusted returns compared to unconstrained strategies. A study by Barber et al. (2021) supports this assertion, indicating that impact funds generally yield lower ex-post financial returns compared to traditional venture capital funds. However, Born (2013) argues that in imperfect markets, particularly new and emerging ones, there are opportunities overlooked by traditional investors. Impact investors can capitalize on these opportunities to foster market growth and generate positive impact while achieving competitive financial returns. Cole et al. (2020) contribute to this debate by examining the financial returns of investments in emerging markets, revealing superior performance of impact investments over the market average.

In contrast to these conflicting perspectives, Grabenwarter & Liechtenstein (2011) suggest that positive social outcomes are positively correlated with financial profits. They argue that impact investors allocate capital to firms explicitly committed to generating social impact, making impact an integral part of the business model of these investee companies. Consequently, when these companies perform well, they generate both impact and profits simultaneously. This perspective implies that social impact is inherently linked

with company performance, which in turn influences profitability, resulting in a correlation between social impact and profit.

2.1.3 Overlapping terms

Another contentious area revolves around the blur boundaries between impact investing and other related terms. One of the sources of confusion arises from venture philanthropy. Venture philanthropy is a hybrid approach that merges philanthropy with venture capital investment to amplify social impacts. Similar to traditional donations, venture philanthropy investments are willing to accept lower returns, often targeting early-stage ventures and organizations. Their primary goal is to financially support entities aiming to generate positive social and environmental impacts, which may not be financially appealing to traditional investors. However, unlike charitable donations, venture philanthropy investments prioritize sustainable social impacts over mere alignment with donation objectives. The heyday of venture philanthropy was in the mid to late 1990s, with both donors and private sectors actively participating. The subsequent emergence of impact investing is widely believed to have stemmed from these philanthropic ventures. Interestingly, some philanthropic ventures are now transitioning from pure philanthropy to for-profit impact investing. This shift is driven by the belief that the inclusion of financial returns can help scale impact to a broader level compared to traditional philanthropic endeavors and other forms of philanthropy.

Besides, with the increasing incorporation of social and environmental factors into investment decisions to tackle pressing challenges, several terms have been overlapped. Among the most prominent are social investment, socially responsible investing (SRI), and ESG (environmental, social, and governance) investing. This terminological ambiguity has been explored by Höchstädter & Scheck (2015) in their analysis of academic and practitioner literature. According to them, While SRI funds primarily target large corporations, impact investment directs its focus toward small enterprises, particularly those in the growth or venture stages. Additionally, SRI is commonly associated with investments in publicly traded securities, utilizing negative screening and emphasizing robust ESG policies (Höchstädter & Scheck, 2015; Agrawal & Hockerts, 2021). On the other hand, impact investing is often associated with private debt or equity, involving active engagement with investees, and providing additional support beyond financial aid.

2.2 Impact fund characteristics

In impact investing, investments can span across various asset classes and financial instruments, from private debt and equity to public traded debt (e.g. green bonds) and equity. However, due to the early stage of development, most investments are made in private markets, with significant emphasis on PE. According to Global Impact Investor Network (GIIN), although private debt accounts for the greatest share of AUM allocated to it, private equity is the most commonly used instrument – 71% of respondents have allocated some of their asset under management (AUM) to PE at least to some degree. Consequently, private equity plays a crucial role in analyzing the impact investing landscape.

Within the private equity industry for impact investing, various types of investors are involved, with venture capital (VC) investors and buyout (BO) investors being the most prominent. VC investors typically focus on funding early-stage companies with scalable potential, often lacking significant revenue streams. On the other hand, BO investors make relatively larger investments in more mature companies with the capacity for significant growth and expansion. Other types of investors are growth PE, timber, mezzanine, and fund of funds. Collectively, these investors contribute to shaping the landscape of impact investing and driving positive social and environmental change.

Academia has been taking the initial steps to establishing the relationship between financial performance and non-financial impact in impact investing, especially in the field of private equity. A study conducted by Barbel et al. (2021) indicates that impact funds perform below traditional venture capital funds. Additionally, utilizing willingness-to-pay models, the study suggests that impact investors are willing to accept lower internal rates of return (IRRs) ranging from 2.5% to 3.7% for impact funds, confirming the theoretical assumption that investors knowingly trade financial returns for non-financial benefits. In contrast, Cole et al. (2020) discovered that investments made by the International Finance Corporation (IFC), a prominent institution in impact investing, across more than 130 countries, outperformed the market by 15% over nearly seven decades. This divergence in findings highlights conflicting perspectives on financial performance sacrifices.

Contributing to this debate, Jeffers et al. (2023) conducted a study that dissects the underlying risks behind this performance discrepancy. They reveal that impact investments exhibit lower exposure to market risks compared to other private market strategies. Once market risk is factored in, the residual performance becomes more comparable across various fund types.

Furthermore, the study indicates that impact funds display positive exposure to emerging markets, aligning with the findings of Cole et al. (2020).

Impact investments are not confined to specific geographical regions. These investments mobilize private capital to tackle society's most pressing challenges, including education, healthcare, and poverty alleviation. While they are commonly associated with developing and emerging markets due to the severity of social and environmental issues and the lack of basic infrastructure and access to capital (Harji & Jackson, 2012; Höchstädter & Scheck, 2015), it's essential not to exclusively focus on these regions. In fact, nearly half of impact investment assets are directed toward developed countries, particularly the U.S. & Canada and Western & Northern Southern Europe, while the remainder is distributed across Latin America, South Asia, East Asia, Sub-Saharan Africa, and Southeast Asia (GIIN Annual Report, 2020). This allocation pattern can be attributed to the maturity of financial markets and less political risk arising from underdeveloped institutions and volatile political systems (Henisz & Zelner, 2010).

Impact investments in the private equity market have a broad reach, spanning industries such as energy, financial services, clean tech, healthcare, and infrastructure. Among these sectors, clean tech and microfinance emerge as particularly appealing to impact investors, with a robust body of literature and a notable advancement in development compared to other fields within impact investing.

2.3 Conceptual Framework

2.3.1 Financial return of impact funds and non-impact funds

The ongoing debate of impact investing revolves around the trade-off between risk-adjusted market-rate returns and social impact. Grabenwarter & Liechtenstein (2011) argue that these objectives are positively correlated, suggesting that companies committed to generating social impact inherently perform well both financially and socially because impact is an integral part of the business model of these investee companies.

However, Evans (2013) contends that a trade-off between financial and social objectives is inevitable. Subsequent studies, such as the one by Barbel et al. (2021), support this view, demonstrating that impact funds underperform traditional venture capital funds. Moreover, employing willingness-to-pay models, Barbel et al. suggest that impact investors are willing to accept lower IRRs for impact funds, confirming the notion that investors consciously sacrifice financial returns for non-financial benefits. Jeffers et al. (2023) further elaborate on this perspective, highlighting those constrained strategies like impact investing, which encounter limited investment opportunities, are

likely to yield lower risk-adjusted returns compared to unconstrained strategies.

H1: Impact funds are likely to generate lower returns compared to non-impact funds.

2.3.2 The effect of fund vintage year on financial return

Previous research on PE has underscored the significant impact of vintage year on fund performance. For instance, a study conducted by BVCA in 2015 revealed that UK VC funds established during the dot-com bubble period experienced negative returns, contrasting with the positive returns of 11.9% before the bubble and 7.7% after it. BVCA's analysis stressed that during the dot-com bubble era inflated valuations were prevalent, driven by an influx of capital into the industry. This flood of capital resulted in inflated asset prices, ultimately diminishing the actual returns received by investors. This observation underscores the dynamic nature of market valuations over time, thereby suggesting the potential impact of vintage year on the financial performance of PE funds.

While there hasn't been prior research specifically investigating the impact of vintage year on the financial performance of impact funds, drawing from previous studies in PE, it is reasonable to infer that vintage year could affect the financial performance of impact PE funds due to the similar nature of PE. However, given the additional filter of impact elements, the underlying driving factors might deviate from those typical in traditional PE.

H2: Vintage year can affect the financial returns of impact funds.

2.3.3 The effect of fund size on financial return

Extensive research in the realm of PE has demonstrated a noteworthy relationship between fund size and financial performance. Chen et al. (2002) highlighted a negative correlation between fund size and performance, aligning with organizational theories predicting performance challenges in larger entities due to diseconomies of scale. As funds expand, their ability to control spending and coordinate activities may weaken.

On the other hand, Ljungqvist & Richardson (2003) discovered an inverse U-shaped relationship between a fund's excess IRR and its size. This suggests that performance initially improves with increasing fund size up to an optimal point, beyond which further growth leads to performance decline. This finding resonates with Kaplan & Schoar's (2005) study, which suggested that excessively large funds experience diminishing returns. They identified the optimal fund size to maximize returns at $90 million.

While research in PE has explored this domain, no prior study has specifically investigated the impact of fund size on impact fund returns. Nonetheless, considered the effect of fund size on financial returns of PE funds, it can be inferred that returns can affect impact PE funds financial returns, although the nature of this impact may differ from that observed in the traditional PE funds.

H3: Fund size can affect the financial returns of impact funds.

2.3.4 The effect of fund strategy on financial return

In the realm of PE, VC and BO are the two predominant strategies, distinguished by their focus on different business stages. VC investments are often associated with substantial risk, as they target companies in early stages of development where growth potential is perceived rather than proven. VC can further be categorized into early stage, growth, and diversified. In contrast, BO investments tend to be safer, targeting mature firms with established track records.

While there hasn't been specific research examining the impact of different investment strategies on fund financial returns, numerous studies in PE have shed light on the returns and risks associated with these strategies. For instance, a study by Diller & Kaserer (2009) revealed that VC funds generally yield higher returns compared to BO funds. It was noted that PE returns are positively influenced by the risk exposure of the investment strategy, which is determined by the stages of business targeted; typically, the later the stage, the lower the investment risk. This finding aligns with the results presented by Cochrane (2005), indicating that the higher risk associated with early financing rounds in venture capital is correlated with higher returns. Based on these observations in PE funds, it can be deduced that various investment strategies may influence the financial returns of impact PE funds. However, it should be noted that the risk exposure levels for impact funds employing varying strategies may diverge from those observed in traditional PE due to the nature of impact investing.

H4: Investment strategies can affect the financial returns of impact funds.

2.3.5 The effect of geographic focus on funds financial return

Impact investments are spread across various regions, and due to their unique characteristics, it is believed that returns may vary among countries. Although the specific ways in which returns could differ across regions are not explicitly stated, early research conducted by Rajan et al. (2014), Glänzel & Scheuerle (2016), Zhou (2017), and Castellas et al. (2018) with a focus on India, Germany, China, and Australia respectively suggests that institutional

factors and geographical location play a moderating role in impact investing outcomes.

H5.a: The financial returns of impact funds vary depending on their geographic focus.

Later research by Cole et al. (2020) introduces a thesis in impact investing suggesting that barriers hinder capital flows between certain markets, resulting in viable projects with explicit social objectives failing to secure financing. This situation creates opportunities for impact investors to earn competitive financial returns while advancing social goals. This thesis was supported by the superior performance of impact investments in developing and emerging markets compared to the market average. Although there is no direct evidence proving the inferior performance of developed countries compared to emerging and developing countries, it can be inferred that developed countries might yield lower risk-adjusted returns due to the increasing integration of markets.

H5.b: Impact funds focusing on developing countries exhibit higher returns in comparison to those targeting developed countries.

2.3.6 Summary of hypotheses

The hypotheses investigated in this study draw from findings in both impact investing and PE domains. These hypotheses seek to address five key questions: the trade-off between financial and non-financial returns, the influence of vintage year, fund size, fund strategy, and geographic focus on impact fund performance. All hypotheses are outlined in Table 1.

Table 1: Hypotheses

No.	Hypothesis
H1	Impact funds are likely to generate lower returns compared to non-impact funds.
H2	Vintage year can affect the financial returns of impact funds.
H3	Fund size can affect the financial returns of impact funds.
H4	Investment strategies can affect the financial returns of impact funds.
H5.a	The financial returns of impact funds vary depending on their geographic focus.
H5.b	Impact funds focusing on developing countries exhibit higher returns in comparison to those targeting developed countries.

3 Methodology

3.1 Data

The primary challenge in analyzing impact funds stems from the absence of a universally agreed-upon, detailed definition of what qualifies as an "impact fund." This lack of standardization complicates the screening process and may result in analysis that is misleading. To address this issue, a broadly accepted definition of impact investing was employed. To be classified as impact funds, they must explicitly state on their websites or relevant documents an intention to generate positive social outcomes alongside financial returns. This criterion was consistently applied throughout the screening process. In addition to that, third-party validation was utilized to enhance the comprehensiveness of the screening process.

First, following the approach outlined by Barber, Morse, and Yasuda (2019) by screening funds with "funds ethos" or ESG labels on Preqin's latest version, a list of 513 impact funds was complied. The labels encompassed seven categories: climate, ESG integration, impact, SFDR Article 8, SFDR 9, Sharia Compliant, and SDGs. In this latest version, Preqin has discriminated impact funds from other types of socially responsible investment funds. Their evaluation process primarily relies on the use of natural language processing (NLP) to search for the explicit statements of dual objectives pursuit from fund websites and other relevant sources.

Second, in accordance with Kovner & Lerner (2015), the names of all impact funds and firms listed on the Community Development Venture Capital Alliance (CDVCA) website was collected. CDVCA functions as a network of community development venture capital (CDVc) funds that direct investments toward businesses that may not be commercially viable, aiming to foster job creation, wealth generation, and entrepreneurial capacity while seeking market-rate financial returns. From this source, a total of 76 funds were gathered, which were subsequently incorporated into the initial list of impact funds sourced from Preqin.

Finally, following the approach outlined by Burton et al. (2019), Impact Asset 50, an annual compilation of the leading impact investors, was utilized. This database is widely recognized as a prominent free resource for information on the impact of investment fund managers operating within private debt and equity sectors. A list of impact private equity fund managers spanning from 2011 to 2024 was gathered, totaling 70 individuals. However, as the study focuses specifically on the fund level, these impact fund managers were further matched with their corresponding funds using data from Preqin, resulting in a final tally of 56 funds.

Besides, for the comparison purpose, a list of non-impact funds was assembled from Preqin, including funds not captured in the aforementioned list of impact funds. This compilation yielded a total of 34,825 funds.

After compiling a comprehensive list of impact and non-impact funds, those established after 2018 were omitted from the analysis. This selection criterion was informed by research suggesting that PE and VC funds typically need four to five years to fully deploy their investments (Mocci, E., 2018). Consequently, funds established post-2018 might have less reliable data accuracy regarding their IRRs. This refinement resulted in a reduced list of 412 impact funds and 9,594 non-impact funds.

3.2 Variables

3.2.1 Dependent variable

Financial performance

Preqin's dataset for each fund includes various performance measures obtained from general partners (GPs) and limited partners (LPs). These measures are IRR, net multiple, the distribution to paid-in (DPI %) ratio, and the remaining value to paid-in (RVPI %) ratio. Among these, the most relevant metrics for this analysis are IRR and net multiple. IRR represents the money-weighted return as a percentage, factoring in cash contributions, distributions, and the current value of unrealized investments, applying a discount rate. The net multiple indicates how many times investors have received or are likely to receive their invested capital back and make a profit, but it does not account for the time value of money. Given the consideration of the time value of money, IRR appears as the more suitable metric for this analysis.

Due to the private nature of private equity, accessing financial performance is limited, resulting in a shortened list of 107 impact funds and 5319 non-impact funds. Additionally, evaluating fund financial performance requires access to the entire cash flow history, typically available upon fund liquidation. However, given the relatively recent emergence of impact investing, a majority of funds are still operational, making complete liquidation data scarce. To address this, the definition of “mature fund” was introduced, which provides a more reliable IRR measurement without omitting a substantial amount of data. Based on the cash flows distributed to LPs, mature funds are defined as funds with RVPI% < DPI% (Kaplan & Schoar, 2005). This additional filter yielded a refined list of 40 impact funds and 3,687 non-impact funds.

3.2.2 Independent variables

Vintage year

The vintage year, representing the year a fund is established and the first drawdown of capital, is utilized to gauge its potential impact on financial performance. Funds established during economic downturns typically generate considerably lower returns compared to those established during favorable economic conditions. Moreover, as impact investing has become more developed recently with the emergence of more established markets and potential projects, it is conceivable that the financial returns of recent funds could surpass those of older funds. However, as PE funds often have negative IRR during their initial years, which could skew the results, only funds established prior to 2018 are included to ensure the comparability and reliability of the analysis.

Fund size

Fund size is obtained from Preqin to examine the potential effects on impact funds financial performance. Larger funds are often associated with extra resources and greater capital at their disposal. This increase capital allows them to invest in a wider range of opportunities. Moreover, as they often have more extensive networks, the likelihood of negotiating favorable terms with portfolio companies could increase. Collectively, these factors can contribute the higher financial returns of larger funds.

Strategy

The study investigates the impact of various investment strategies on the financial performance of impact funds. Each investment strategy carries its own unique risk exposure levels, leading to different expected returns. Venture capital investments are typically perceived as the riskiest but have the potential to generate the highest returns. On the other hand, buyout investments are considered safer but yield lower returns.

Funds in the sample are classified by Preqin into distinct groups, including buyout, venture (general), early stage, growth, fund of funds, co-investment, and secondaries. To concentrate on assessing how investments across different business stages affect fund performance, strategies not primarily focused on these stages are grouped under the "other" category. These five groups of strategies (buyout, venture, early stage, growth, other) are then represented with four dummy variables, with “buyout” serving as the base category.

Geographic focus

The geographical allocation of capital by impact funds is studied to investigate its effect on fund financial performance. It is proposed that in emerging

and developing markets, there exist viable projects that fail to secure financing, presenting an opportunity for investors to invest and earn competitive returns. On the other hand, in more developed markets where capital markets are more integrated, there may be fewer viable opportunities overlooked by the markets, resulting in lower returns.

The data for this analysis are sourced from Preqin and categorized into six regions: Asia, Europe, North America, Middle East and North Africa (MENA), Southeast Africa, and Emerging markets. Notably, no funds in the sample have allocated capital to Oceania, Africa, and Latin America & the Caribbean.

3.2.3 Summary of variables

There is one dependent variable measuring financial returns which is IRR and twelve independent variables that specify different strategies and fund characteristics. All the variables are presented in Table 2. These variables are utilized to examine the drivers behind impact fund financial returns.

Table 2: Total variables

Variable	Variable type	Metric
IRR	Dependent variable	Continuous
Vintage year	Independent variable	Continuous
Fund size	Independent variable	Continuous
Strategy: Buyout	Independent variable	Binary
Strategy: Venture (general)	Independent variable	Binary
Strategy: Early stage	Independent variable	Binary
Strategy: Growth	Independent variable	Binary
Strategy: Other	Independent variable	Binary
Geographic focus: Asia	Independent variable	Binary
Geographic focus: Europe	Independent variable	Binary
Geographic focus: North America	Independent variable	Binary
Geographic focus: MENA	Independent variable	Binary
Geographic focus: Emerging markets	Independent variable	Binary

3.3 Methods

3.3.1 Independent Student's t-Test

The Independent Student's t-test is a statistical method used to compare the means of two independent groups to determine whether a significant difference exists between them. It is commonly employed when the groups being compared are separate and unrelated, as in this case of comparing the net IRR of impact funds to that of non-impact funds. This test evaluates whether the difference between the means of the two groups exceeds what would be expected by chance alone, considering the variability within each group. A large t-value combined with a sufficiently small p-value (typically below a predetermined significance level, often 0.05) indicates a statistically significant between the two groups.

3.3.2 Multiple linear regression

This study employs multiple linear regression analysis to examine the influence of vintage year, fund size, strategy, and geographic focus on the financial returns of impact funds. The mathematical representation of a multiple linear regression model is expressed in equation (1).

$$Yi' = \beta 0 + \beta 1x1 + \cdots + \beta nxn + \varepsilon, \text{ where} \quad (1)$$

Yi' = prediction of dependent variable

$x1 \ldots xn$ = independent variables

$\beta 0$ = constant term

$\beta 1 \ldots \beta n$ = regression coefficients

ε = error term

The parameters of the independent variables are estimated using the ordinary least squares (OLS) method, aiming to minimize the sum of squared deviations between the predicted values Yi' and the actual values Yi (as illustrated in equation (2)).

$$\sum_{i=1}^{N} (Yi - Yi')^2 \quad (2)$$

The multiple linear regression analysis relies on five key assumptions outlined by Myers (1990). Firstly, weak exogeneity implies that independent variables are considered fixed rather than random, assuming they are devoid of

errors, though this assumption may not fully reflect real-world conditions. Secondly, linearity asserts that the mean of the dependent variable is a linear combination of regression coefficients, without imposing restrictions on independent variables themselves. Thirdly, homoscedasticity suggests that the errors associated with different values of the dependent variable have consistent variance. However, in cases where variables have large scales, this assumption may not hold true, as variance typically depends on predicted values. Fourthly, independence of errors stipulates that errors associated with dependent variables are uncorrelated. This does not mandate independence among the dependent variables themselves, but solely among their errors. Lastly, there should be no perfect linear relationship between the independent variables, which could occur if two variables measure the same aspect.

4 Findings

4.1 Financial returns of impact funds and non-impact funds

4.1.1 Descriptive statistics

The analysis is conducted on 3,727 funds, splitting into 40 impact funds and 3687 non-impact funds. For non-impact funds, the mean IRR stands at 15.07%, accompanied by a notable standard deviation of 27.96, indicating considerable variability in returns. The range of outcomes is extensive, with minimum and maximum values of -100% and 1,013.37 %, respectively, illustrating the potential for significant losses or gains within this category. Impact funds, however, exhibit a slightly higher mean IRR of 15.2027%, with a lower standard deviation of 13.5318, suggesting less variability in returns compared to non-impact funds.

Table 3: Descriptive statistics IRR

	Number	Mean	Std Dev	Std Err
Impact	40	15.2027	13.5317	2.1396
Non-impact	3687	15.0652	28.0218	0.4615

4.1.2 Independent two sample t-test

Statement of null and alternative hypotheses

In accordance with Popper's Theory of Falsification, a null hypothesis (H0) is constructed, representing the opposite of the research thesis statement. In this study, the null hypothesis suggests that the population mean return of impact funds equals or exceeds the population mean return of non-impact funds. To support the hypothesis that impact funds yield comparatively lower returns than non-impact funds, this null hypothesis must be rejected.

$$\begin{cases} H_0: \mu_i \geq \mu_n \\ H_1: \mu_i < \mu_n \end{cases}$$

μ_i: the population mean IRR of impact funds

μ_n: the population mean IRR of non-impact funds

The significance level is established at $\alpha = 0.05$, indicating that there is a 5% chance of committing a Type I error, which involves incorrectly rejecting a true null hypothesis.

Test of homoscedasticity

The analysis proceeds with the test of population variance equivalence. Depending on the similarity *(homoscedasticity)* or difference *(heteroscedasticity)* of population's variances, different statistical tests would be employed. In this case, given the significance difference between standard deviation of IRR of impact funds and non-impact funds (Table 3), heteroscedasticity is expected. Therefore, Welch test or a Student's t-test assuming unequal variances will be employed.

Additional assumptions

Besides the potential heteroscedasticity of population variances, three additional assumptions are necessary to conduct a student's t-test assuming unequal variances.

i. Scale of measurement: The dependent variable (IRR) must be measured on a continuous scale. This requirement is met as IRR can take on indefinite values.
ii. Independence of observations: By research design, a fund can only be categorized as either an impact or non-impact fund, satisfying this assumption.
iii. Normality: With sample sizes of 40 for impact funds and 3,687 for non-impact funds, the Central Limit Theorem ensures that the sampling distribution of the mean can be safely assumed to be normal

Student's t-test

The mean return for impact funds (15.20) appears slightly higher than that of non-impact funds (15.07). However, statistical analysis using a student's t-test indicates that this difference is not statistically significant, as evidenced by the t-value of 1.6811 and a p-value of 0.4751.

With a significance level set at 0.05, the obtained p-value of 0.4751 exceeds this threshold. Therefore, we fail to reject the null hypothesis, which suggests that there is not enough evidence to conclude that the population mean return of impact funds is significantly different from or lower than that of non-impact funds. Additionally, the effect size (Cohen's d) is very small (0.00492), indicating a negligible practical significance of the observed difference between the means.

Table 4: Difference between IRR of impact funds and non-impact funds

	Impact		**Non-impact**					
	M	SD	M	SD	df	t	p	Cohen's d
IRR	15.2027	13.5318	15.0652	28.0218	43	1.6811	0.4751	0.00492

4.2 Factors influence impact fund financial returns

4.2.1 Sample characteristics

The sample consists of 40 impact funds, with the majority established in 2007 or later. This distribution partly reflects the increasing popularity of impact investing, especially since the term was officially coined in 2007 and began gaining traction. However, drawing broad conclusions about the entire landscape of impact funds based solely on this distribution could be misleading. This is because the sample primarily includes mature funds with available IRR data on Preqin. Consequently, in 2018, there is only one fund in the sample, as many funds established in that year had not yet reached maturity (see Figure 1).

In overall, there is an increasing trend in the financial returns of impact funds (see Figure 2). The returns especially peaked during 2014, suggesting a favorable economic conditions and factors that drives impact funds returns.

Most of the funds in the sample are relatively small, with fund sizes less than $1 million (see Figure 3). However, it's important to note that impact investing has also attracted participation from middle-market PE firms such as EQT VII, Hg Genesis 8, Affinity Asia Pacific Fund IV, EQT Mid Market Europe, Hermes GPE Horizon I, and Hermes GOE Global Secondary. All of these funds were established after 2013, and four out of six are buyout funds.

Regarding investment strategy, although "other" strategies constitute the majority of funds in the sample, when considering the business stages of investees, buyout emerges as the most prevalent strategy (see Figure 4). This observation reflects the current state of development in impact investing. Given that the field is still evolving, investors have adopted a conservative approach by favoring buyout investments over venture capital strategies such as early stage, growth, or general venture capital. This trend, coupled with the distribution of fund sizes, suggests that impact investing is in its early stages of development, with investors exploring various approaches.

Regarding geographic focus, it's notable that the majority of impact funds in the sample concentrate their investments in Europe and North America (see Figure 5). This observation is intriguing because impact investing, by its definition, is often associated with addressing social issues in developing countries where significant social problems persist. This raises concerns about the actual impact that impact investing can have, given the focus on more developed regions.

4.2.2 Descriptive analysis

Table 5 presents the descriptive statistics for all utilized variables. The majority of impact funds have relatively recent vintage years, with a mean of 2012.6, reflecting the emergence and growing popularity of "impact investing" since its official coinage in 2007.

Regarding fund size, representing the total capital committed, the mean stands at $771.9064 million, with a substantial standard deviation of 1362.00, indicating significant variability. Minimum and maximum fund sizes of $2.9 million and $7436.46 million, respectively, underscore the diverse investment strategies and objectives within the dataset.

Table 5: *Descriptive statistics*

Variable	Mean	SD	Min	Max	N
1. IRR (impact funds)	15.2027	13.5318	-17.4	50	40
2. Vintage year	2012.6	4.1125	2003	2018	40
3. Fund size	771.9064	1362.0033	2.9	7436.46	39
4. Strategy: Buyout	0.325	0.4743	0	1	40
5. Strategy: Venture (general)	0.075	0.2667	0	1	40
6. Strategy: Early stage	0.075	0.2667	0	1	40
7. Strategy: Growth	0.125	0.3349	0	1	40
8. Strategy: Other	0.4	0.4961	0	1	40
9. Geographic focus: Asia	0.1	0.3038	0	1	40
10. Geographic focus: Europe	0.475	0.5057	0	1	40
11. Geographic focus: North America	0.35	0.4830	0	1	40
12. Geographic focus: MENA	0.025	0.1581	0	1	40
13. Geographical focus: Emerging markets	0.05	0.2207	0	1	40

The Pearson correlation matrix is provided in Table 6. It reveals significant correlations between the IRR of impact funds and several factors, including their vintage year, strategy utilization (buyout, growth, other), and geographical focus (Asia, Europe, and Emerging markets). Notably, the vintage year, buyout strategy, and European focus exhibit positive correlations with impact funds' returns (.539**, .609**, .348*, respectively). Conversely, the use of strategies (growth, other) and a focus on Asia and Emerging markets demonstrate negative correlations with impact funds' IRR (-.326*, -.362*, -.324*, -.433** respectively). These correlations provide valuable insights for subsequent analyses aimed at determining the causal relationships between these characteristics and fund financial performance.

Additional significant correlations were observed between vintage year and both the buyout strategy Asia focus. These correlations suggest that newer funds are more inclined to adopt a buyout strategy and less likely to focus on investments in Asia. Furthermore, there is a positive correlation between fund size and the adoption of a buyout strategy, indicating that larger funds tend to pursue that strategy. Moreover, the correlation matrix reveals that venture (general) strategy is significantly correlated with an Asia focus, while growth strategy shows positive correlations with MENA and Emerging markets. Additionally, North America is positively correlated with other strategies. These correlations add complexity to the regression analysis, potentially complicating the determination of how individual independent variables influence the dependent variable. Therefore, the regression analysis section will include more thorough examinations, including multiple regressions and robust checks for multicollinearity, to ensure the accuracy and reliability of the results.

Table 6: Pearson correlation matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. IRR (impact funds)	1												
2. Vintage year	.539**	1											
3. Fund size	0.233	0.230	1										
4. Strategy: Buyout	.609**	.410**	.411**	1									
5. Strategy: Venture (General)	-0.002	-0.182	-0.114	-0.198	1								
6. Strategy: Early Stage	0.000	0.051	-0.150	-0.198	-0.081	1							
7. Strategy: Growth	-.326*	-0.205	-0.085	-0.262	-0.108	-0.108	1						
8. Strategy: Other	-.362*	-0.183	-0.193	-.567**	-0.232	-0.232	-0.309	1					
9. Geographic focus: Asia	-.324*	-.316*	0.065	-0.053	.538**	-0.095	-0.126	-0.102	1				
10. Geographic focus: Europe	.348*	0.020	0.143	0.302	-0.081	0.109	-0.208	-0.164	-.317*	1			
11. Geographic focus: North America	0.022	0.253	-0.155	-0.173	-0.209	-0.010	-0.119	.364*	-0.245	-.698**	1		
12. Geographic focus: MENA	0.047	-0.103	-0.086	-0.111	-0.046	-0.046	.424**	-0.131	-0.053	-0.152	-0.118	1	
13. Geographic focus: Emerging markets	-.433**	-0.090	-0.017	-0.159	-0.065	-0.065	.607**	-0.187	-0.076	-0.218	-0.168	-0.037	1

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

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

4.2.3 Regression analysis

The main results of the regression analysis are presented in in Table 7. The model is constructed with IRR as dependent variable and several independent variables including vintage year, fund size, strategy, and investment focus.

As indicated in Table 7, there is a statistically significant positive correlation between fund returns and vintage year, with a significance level of $p < 0.1$. This suggests that impact funds with more recent vintage years tend to generate higher financial returns. Besides, there was no significant correlation observed between fund size and IRR, implying that fund size does not serve as a predictor of an impact fund's financial returns.

Different strategies were represented using dummy variables, with buyout as the reference category. Analysis from Table 7 reveals that coefficients for early stage, growth, and other strategies are significantly negative. This indicates that, when compared to buyout strategies, early stage, growth, and other strategies are linked to lower IRR for impact funds.

Similarly, geographical focuses were represented using dummy variables, with Europe as the reference category. Examination of Table 7 shows that coefficients for Asia and Emerging markets are significantly negative. This suggests that relative to investments focused on Europe, allocating capital to Asia and Emerging markets leads to diminished IRR of impact funds.

The multiple regression model, comprising four main predictors, resulted in an R-squared value of 0.74, with a significance level of $p < 0.01$. This indicates that approximately 74% of the variance in IRR can be explained the variation in the predictors.

As the aforementioned Pearson correlation matrix indicates the possibility of multicollinearity within the model, a variance inflation factor (VIF) analysis was conducted. The VIF values for all independent variables utilized in the model ranged from 1.29 to 2.97 (below 3), suggesting that there are no significant multicollinearity issues presenting in the model. This implies that the independent variables in the regression model are not highly correlated with each other, enhancing the reliability of the regression findings.

Table 7: WLS Results with Strategy Dummies and Geographic Focus Dummies

	b/se		VIF
Constant	-1445.239		
	(797.507)	*	
Vintage year	.731		1.617
	(.396)	*	
Fund size	.001		1.292
	(.001)		
Strategy: Venture (General)	4.185		1.678
	(6.219)		
Strategy: Early Stage	-11.187		1.262
	(5.394)	**	
Strategy: Growth	-14.507		2.972
	(6.592)	**	
Strategy: Other	-14.838		1.987
	(3.639)	***	
Geographic focus: Asia	-19.800		1.640
	(5.398)	***	
Geographic focus: North America	-.218		1.452
	(3.195)		
Geographic focus: MENA	9.614		1.508
	(9.946)		
Geographic focus: Emerging markets	-20.592		1.991
	(8.187)	*	
N	40		
R^2	.740		
Adjusted R^2	.651		
Std. Error of the Estimate	7.9978		
Sig.	<.001		

* Significant at the 0.1 level (2-tailed).

** Significant at the 0.05 level (2-tailed).

*** Significant at the 0.01 level (2-tailed).

5 Discussion and Analysis

In terms of financial returns, impact funds in the sample show a slightly higher average IRR compared to non-impact funds (0.2375%). Additionally, impact funds experience lower volatility, ranging from -17.40% to 50%, in contrast to the wider volatility observed in non-impact funds, ranging from -100% to 1,013.37%. This difference in volatility could be attributed to the larger number of non-impact funds in the sample. Another possible explanation for the varying volatility between the two types of funds is the assumption that social considerations are integrated into the business models of investee companies (Grabenwarter & Liechtenstein, 2011). These additional considerations can assist in mitigating the rising risks associated with social concerns. This has become particularly evident in recent years as the level of concern surrounding social issues has escalated at unprecedented rate. Despite this trend, impact funds have still consistently managed to achieve competitive returns, with average IRR stable and even increasing during this period.

Additionally, the result of the independent samples t-test reveals no statistically significant difference between the mean IRR of impact funds and that of non-impact funds. Consequently, H1 is not supported. This finding contradicts prior research, which posited an inevitable trade-off between financial returns and positive social outcomes (Cheng, 2011; Evans, 2013; Brest et al., 2018; Barbel et al., 2021; Jeffers et al., 2023). However, it seems to partially align with the study conducted by Grabenwarter & Liechtenstein (2011), which suggested that social considerations are integrated into the business model and positively correlate with financial returns, thereby indicating no trade-off exists. Nonetheless, to validate this assumption, further research should examine the relationship between financial returns and varying level of social engagement.

Besides the assumption discussed above, this divergence could be attributed to the added constraint of mature funds, drawing from PE literature. Previous research solely collected financial returns of impact funds within a specific timeframe without discussing the impact of PE fund life cycle on IRR fluctuation. This omission leads to less reliable results as the funds included in those samples may still be in their early stages, often exhibiting negative IRR, while actual returns are only recorded as the funds reach maturity and progressively divest their investments. Consequently, there is a potential for bias in the previous studies that propose the inherent trade-off between financial returns and positive social outcomes.

In an attempt to further explore the factors influencing financial returns of impact fund, several variables including vintage year, fund size, strategy, and geographic focus were examined. Regarding vintage year, the regression

analysis revealed a statistically significant positive correlation between vintage year and IRR. Consequently, H2 is supported. As illustrated in Figure 2, the financial returns of impact funds have notably improved with more recent years of inception. However, it's essential to note that the average return of 0% in 2018 lacks meaningful insight due to its reliance on a sample size of only one fund, rendering it unrepresentative of real-world scenarios. With the advancement of impact investing and the increasing amount of rigorous research conducted by both practitioners and academics, there may be an improvement in information symmetry, leading to more informed investment decisions by fund managers. Besides, this improvement in financial returns could also be attributed to the growing financial and non-financial support from both government and society to these social entrepreneurs and organizations, resulting in enhanced performance of these investees and subsequently higher financial returns for impact funds.

Concerning fund size, the analysis did not identify any statistically significant correlation between fund size and IRR. Consequently, the H3, which proposed a relationship between fund size and financial returns, is not supported. This finding contrasts with previous studies in PE, which have suggested a relationship between fund size and financial returns. This disparity may stem from the distinctive characteristics of impact investing, wherein fund size may not significantly influence the generation of tangible outcomes. In traditional PE, larger fund sizes are often associated with greater resources and investment opportunities, facilitating access to a greater array of viable projects, and consequently leading to higher returns. However, in impact investing, impact funds not only provide financial support to investee companies but also offer non-financial assistance. Therefore, if funds invest in too many projects, control over investee companies could be compromised, potentially leading to inferior performance of portfolio companies. Additionally, impact funds prioritize other factors such as the effectiveness of social initiatives and alignment with the funds' mission-driven goals, resulting in less pronounced effect of fund size on their financial returns.

In terms of strategies, the regression analysis revealed statistically significant correlations between early stage, growth, and other strategies with IRR, using buyout as the reference category. The negative coefficients associated with these variables indicate that, compared to the buyout strategy, early stage, growth, and other strategies are linked to lower IRR for impact funds. Thus, hypothesis H4, which proposed the impact of strategy on fund financial returns, could be partially supported. However, this result from the regression analysis suggests a deviation from the literature in PE in which higher-risk investments such as venture capital often led to higher returns,

influenced by the stages of business targeted. Typically, greater investment risk and higher returns are associated with earlier stages.

However, in the context of impact investing, this relationship appears to be reversed. This implies that factors other than risk exposure may play a more significant role in determining the financial performance of impact funds. One such factor could be the success rate of investments in earlier stages of business. For a company to be acquired in a buyout by a fund, it usually requires a well-balanced management team, a strong cash-generating business, and must be commercially successful. Consequently, funds engaging in buyout transactions often achieve favourable financial returns. However, earlier stage entrepreneurs or organizations aiming to create positive social impacts may encounter challenges in attaining commercial success, leading to lower financial returns for impact funds investing in such ventures.

In the analysis of geographic focus, the regression analysis unveiled significantly negative coefficients for Asia and Emerging markets. This suggests that, in comparison to investments concentrated in Europe, allocating capital to Asia and Emerging markets leads to reduced IRR for impact funds. As a result, hypothesis H5.a is partially supported, highlighting the substantial influence of institutional factors and geographical location on impact investing outcomes.

However, H5.b, which proposed the superior financial returns of investments in developing countries compared to developed countries, is not supported. This finding contradicts previous studies that suggest impact investments in developing and emerging markets yield superior financial performance (Born, 2013; Cole et al., 2020). This inconsistency may stem from several factors. Firstly, it is possible that Europe benefits from well-established regulations, substantial government support, and increased societal awareness, all of which have likely contributed to the stronger performance of portfolio companies. European nations have been leading the way in implementing initiatives to foster sustainable businesses, such as offering tax incentives, providing government subsidies, and developing robust infrastructure. Secondly, the market may be more integrated, reducing the likelihood of identifying viable projects that fail to secure financing in Emerging markets. Thirdly, the limited sample size from Asia and Emerging markets compared to Europe could have influenced the results.

6 Conclusions

6.1 Main Findings

The objective of this study was to explore the impact investing landscape, with a specific focus on PE. Given its status as a relatively novel phenomenon, impact investing has not yet received extensive examination, particularly concerning its financial returns and the underlying determinants. Consequently, this research endeavours to address key aspects of impact investing: 1) the possible trade-off between financial returns and social outcomes, and 2) the influence of factors such as vintage year, fund size, strategy, and geographic focus on the financial returns of impact funds.

The results suggest that there is no discernible trade-off between financial returns and positive social outcomes, as evidenced by the lack of statistically significant difference in mean IRR between impact funds and non-impact funds. This implies the inherent integration of positive social outcomes into the business model, indicating that as businesses perform well, they naturally generate positive social impacts.

Regarding the factors influencing financial returns, several characteristics have been identified. Firstly, there is a notable improvement in the financial returns of impact funds with more recent vintage years, suggesting that newer funds tend to perform better. This improvement could be attributed to either increasing information asymmetry facilitating informed investment decisions or enhancements in portfolio companies' performance resulting from growing support from government and society.

Furthermore, funds utilizing a buyout strategy yield superior returns in contrast to those concentrating on early-stage, growth, and alternative strategies like secondaries, fund of funds, and co-investment. This highlights the most lucrative approach that funds can adopt. Additionally, this discovery prompts inquiries into the success rates of entrepreneurs and organizations that secure funding during their early stages of business.

Finally, funds allocating capital to Europe tend to generate higher returns than those targeting Asia and emerging markets. This superior performance can be attributed to the supportive regulatory environment and favourable policies in Europe, which contribute to the growth and success of portfolio companies. These findings collectively underscore potential opportunities for optimizing investment strategies in impact investing.

6.2 Implications for International Business

The findings from this study have several implications for international business. Firstly, it indicates the feasibility of funds achieving both competitive financial returns and positive social impact simultaneously. However, to make that happen, it is important for investee companies to deeply integrate social considerations into their core business models. Through this integration, portfolio companies cannot only enhance their financial performance but also contribute positively to societal well-being. Moreover, investors seeking to make impactful investments need not face the traditional notion of having to compromise financial gains for social good. This fosters a shift towards a more sustainable global landscape, where capitals are actively allocated to projects that enhance societal welfare.

Secondly, the research underscores the potential factors influencing funds' capacity to maximize financial returns. Recent impact funds' financial returns have been improved significantly, suggesting an opportunity for investors to engage in this emerging asset class, given the escalating social challenges. As impact investing continues to evolve, it becomes imperative for funds to carefully assess their investment strategies based on available resources and objectives. The study's findings highlight the advantageous performance of the buyout strategy, offering a pathway for funds to attain competitive returns. Additionally, the research indicates that investments in Europe typically yield higher returns compared to those in Asia and emerging markets, signalling the significance of regional regulatory environments and policies in capital allocation decisions. As a result, investors and funds may opt to prioritize regions with supportive regulatory frameworks and conducive policies to foster business growth to maximize financial returns.

Finally, with the increasing significance of impact investing, there emerges a heightened need and opportunity for public involvement. By harnessing impact investing as a strategic instrument for attaining financial prosperity, we can make positive contributions to society and the environment, effectively addressing global issues on a collective scale.

6.3 Limitations & Suggestions for Further Research

While this study has meticulously considered a range of factors to enhance the reliability of its findings, it is important to acknowledge inherent limitations. The primary constraint lies in the reliance on financial data sourced from Preqin, which may introduce subjectivity and biases due to its voluntary collection process from funds. Consequently, there is a risk that funds with poorer performance may opt not to disclose information, potentially skewing the final results. This underscores the need for future research to explore the extent of bias stemming from sample selection due to voluntary reporting.

This could offer valuable insights into the reliability of impact fund data and its respective analysis.

Additionally, the relatively small number of impact funds included in the sample may limit the generalizability of the findings. To validate the results obtained from this study, similar analyses should be conducted using larger datasets of impact funds. However, while larger datasets are necessary, future research focusing on the financial aspects of impact funds, particularly PE funds, should not overlook the inclusion of "mature funds" conditions.

Furthermore, given the significant correlation observed between vintage year and financial returns, further research could examine the underlying drivers behind this relationship. Moreover, the observed deviation from traditional PE regarding the relationship between business stages and financial returns suggests that factors beyond risk exposure may significantly influence impact fund performance. Therefore, further exploration into the specific drivers behind this phenomenon could offer valuable insights into deepening the understanding of impact investing dynamics.

Finally, while the study has identified several factors influencing the financial returns of impact PE funds, it has not examined how these factors differ in their influence on impact PE funds compared to non-impact PE funds. This presents an avenue for future research to investigate. By comparing the impact of these factors on both types of funds, researchers could gain valuable insights into the unique dynamics of impact investing.

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Appendices

Figure 1: Distribution of impact funds in the sample by vintage year

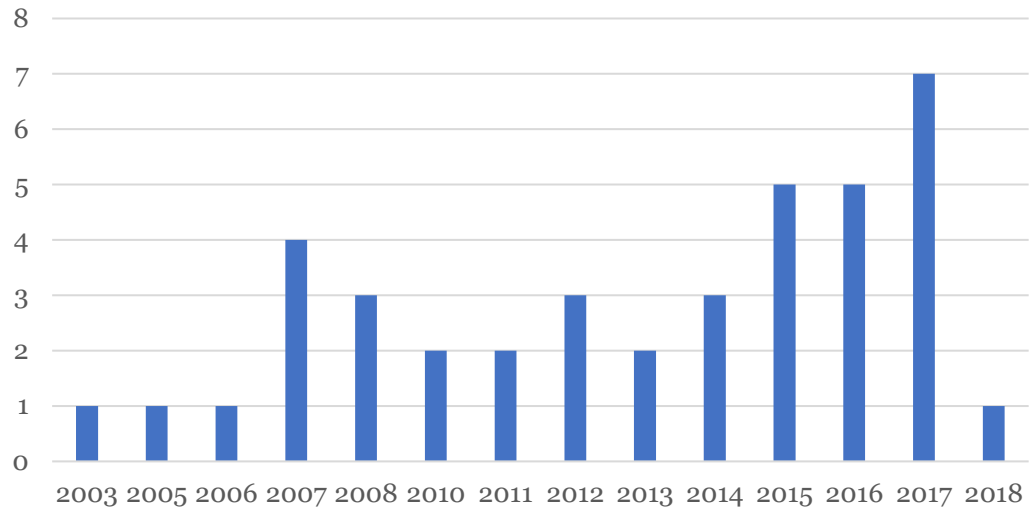

Figure 2: Average IRR of impact funds by vintage year

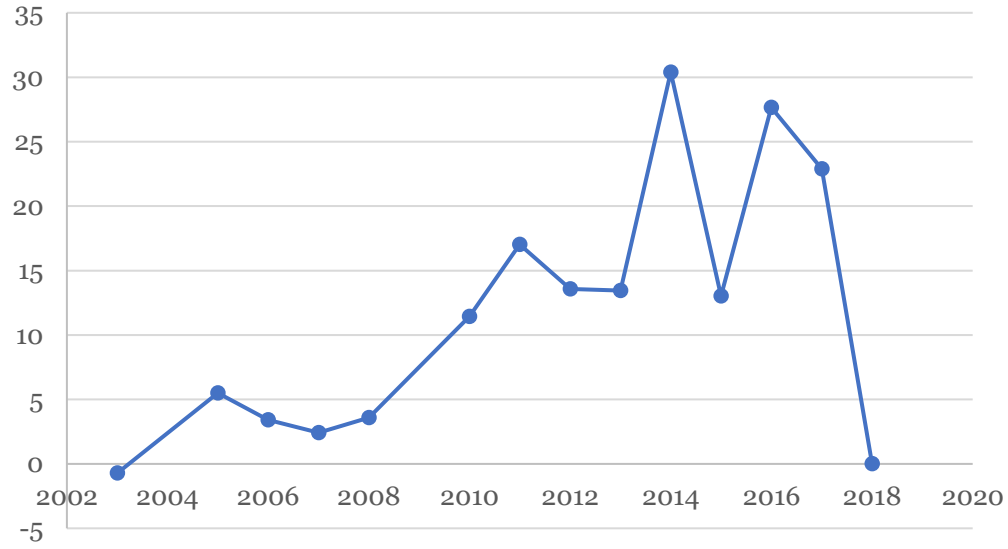

Figure 3: Impact funds by size

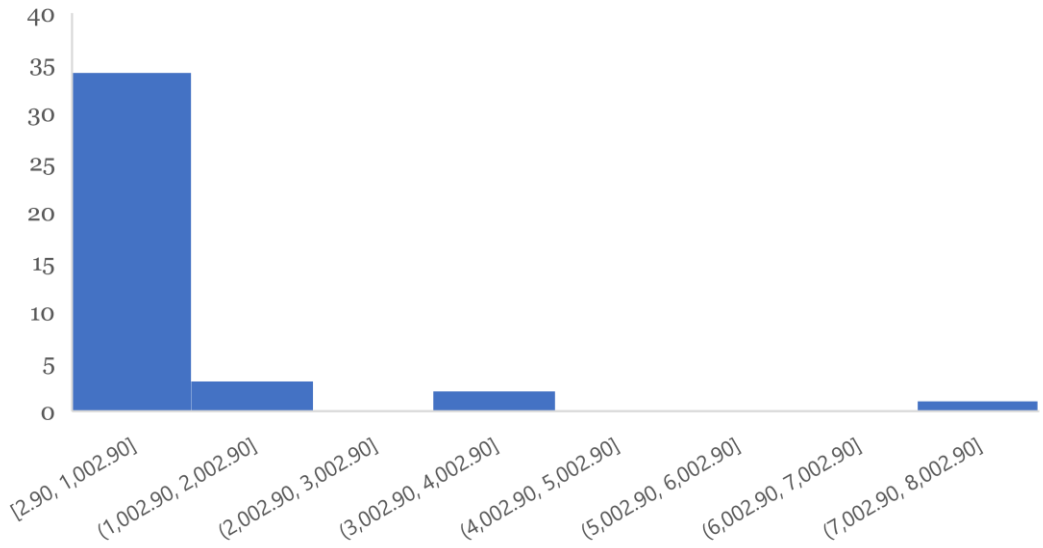

Figure 4: Distribution of impact funds in the sample by strategy

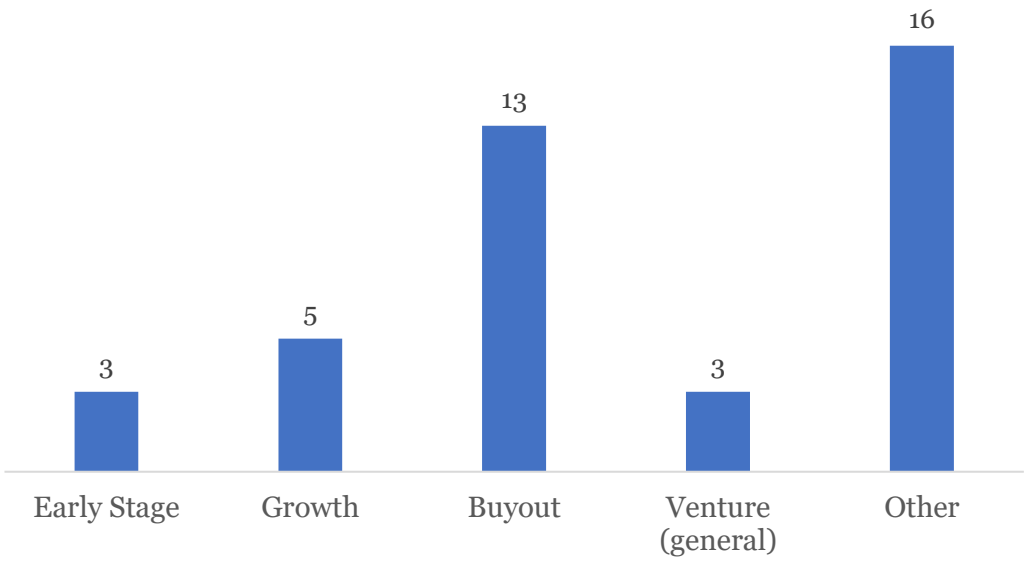

Figure 5: Distribution of impact funds in the sample by geographic focus