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Valuation methods used by portfolio managers of unlisted equities for reporting versus exit purposes

A research report submitted by

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Glossary of terms

Terms	Definition / Brief Description
Assets Under Management (AUM)	The market value of the investments managed by a person or entity on behalf of clients
Back-testing	The process of using the observed value of an investment as implied by a sale, liquidity event (e.g., an IPO) or other material change in facts with respect to the investment, related investments, or the enterprise, to assess the Fair Value estimated at an earlier Measurement Date (IPEV, 2022)
CAPM	Capital Asset Pricing Model
CGT	Capital Gains Tax
CIPC	Companies and Intellectual Property Commission: registering office for companies and regulator of company affairs in South Africa.
DCF	Discounted Cashflow Method of valuing an investment
EBITDA	Earnings before interest, tax, depreciation, and amortisation (IPEV, 2022)
EV	Enterprise Value: total value of the enterprise before considering providers of capital. It is the sum of equity value and debt.
EV/EBITDA	Compares the value of a company — debt included — to the company's cash earnings less non-cash expenses
FASB	The Financial Accounting Standards Board
IASB	International Accounting Standards Board
IPO	Initial Public Offering: making available for the first time shares of a previously private (unlisted) company to the public on an official stock exchange
IRR	Internal Rate of Return
Exit Multiple	Exit price as a proportion of the last reported value (If exit was through a sale)
Investment Holding Company (IHC)	A company which can control, or materially influence, the management of one or more other companies by virtue of its ownership of securities in the other company or companies
JSE	Johannesburg Stock Exchange Limited
Market participants	Buyers and sellers in the principal market for the asset that are independent of each other, knowledgeable and are able and willing to transact
Net Asset Value (NAV)	The residual assets of an entity, after considering all its debt and other liabilities
MOIC	Multiples of invested capital
Private Equity Fund (PE)	A Private Capital fund that invests principally in the equity of private companies, or engages in buyouts of public companies, in order to achieve the delisting of public equity.
ROIC	Return on invested capital
SARB	South African Reserve Bank

Valuation Revision	Any fluctuation in value of an investment between any two points in time because of fundamental changes in its cashflows and discount rates, as well as the inherent uncertainty of valuing privately held firms
Venture Capital Fund	A Private Capital Fund that invests in start-up and small-to-medium-sized enterprises with strong growth potential.
WACC	Weighted average cost of capital

Abstract

This report investigates valuation practices among portfolio managers of unlisted equities in Southern Africa, an under-researched area. Employing an explanatory sequential mixed methods approach—beginning with quantitative analysis of valuation data supplied through a survey and followed by qualitative interviews—the study explores the reasons behind valuation choices. The research addresses three questions: (1) Do portfolio managers employ valuation methods at reporting—per IFRS 13—that align with those expected at exit? (2) Are the valuation methods used for reporting and exit diverging, and are certain approaches associated with larger valuation revisions? (3) What motivates the selection of specific valuation techniques when different methods are employed? Unlisted companies constitute a significant portion of global enterprises and contribute substantially to GDP. Many listed entities hold large stakes in private firms, often reflecting these valuations in financial statements. Valuations serve multiple purposes, including regulatory compliance, taxation, dispute resolution, reporting, and transactions such as exits. The study finds that portfolio managers often use divergent valuation methods at reporting and exit, influenced by factors such as purpose, the valuator's training, and data availability. Most managers tend to fairly report or slightly under-report investments before exit. Although no single valuation method was conclusively associated with inaccuracies, inconsistent approaches led to higher valuation revisions over time. Employing the same valuation method at both stages could improve accuracy, despite justifications for differing approaches. The study also explores exit multiples as proxies for valuation revisions, making it one of the first assessments of valuation accuracy for unlisted entities in southern Africa. Overall, maintaining consistent valuation practices is crucial for reliable investment measurement.

Chapter 1 - Introduction

Private unlisted companies constitute a substantial share of economic activity in modern market-oriented economies (Petersen *et al*. 2006). It is common for listed firms to hold significant equity stakes in these unlisted entities, with such investments reflected in their financial reports (Lopes and Lourenço 2000; Barwe 2022). Over recent decades, investment in unlisted companies has grown considerably, driven by the rise of private equity (Døskeland and Strömberg 2018). This growth has been supported by institutional investors—including sovereign wealth funds, pension funds, community investment vehicles, and large asset managers—who invest in private companies indirectly, often through intermediaries, on behalf of diverse constituencies such as trade unions, women, and people with disabilities. Capital allocation decisions are increasingly based on economic information pertaining to unlisted entities (Beuselinck *et al.*, 2008).

Despite these developments, there remains limited knowledge about the value ascribed to equity holdings in privately owned firms in South Africa (or globally) by portfolio managers with significant equity interests in unlisted companies. Internationally, most literature examining valuations focuses on listed entities (Vayas-Ortega *et al*., 2020). In South Africa for example, only two scientific studies into private equity are conducted annually (Sharma *et al.,* 2023). Furthermore, there is no evaluation of whether such reported values are best estimates of fair value expected from the exits of these instruments. Portfolio managers of unlisted investments in this context include private equity firms, venture capitalists and general investment holding companies.

Financial instruments are typically valued during reporting as part of the portfolio management phase of a private equity life cycle and at the exit or realisation of the investment. Valuations for reporting purposes (including the preparation of financial statements in terms of International Financial Reporting Standards (IFRS) in South Africa, in line with accounting standards such as IFRS 9, IFRS 13 and IAS 27 are recurrent if the investment is retained by the fund.

Most private equity firms realise the value of their investment in equity through exits, either with a listing in an initial public offering (IPO) or a private disposal. Private disposals can be made to a strategic partner, to another private equity (PE) firm or a management buy-out (MBO). At this point, a mutually agreed-upon price is negotiated, often based on a pre-determined metric such as a PE multiple. This metric represents the best estimate of fair value for an unlisted asset (Cooney *et al.,* 2009; IPEV, 2022). At the exit point, the difference between the previously established value and the exit price is recorded as either a gain or loss on disposal or the reversal of an impairment (IFRS 13). This paper refers to this fluctuation in value as a Valuation Revision.

The fair value of a listed instrument is verifiable and typically determined in essentially the same approach (by reference to the quoted price) at reporting or exit date; however, there are up to seven

methods outlined in BPM6 that can be used to establish the fair value of unlisted equity (Chakraborty & Hansson, 2013). The BPM6 is the Sixth edition of International Monetary Fund (IMF) balance of payment and international investment position manual. Portfolio managers of unlisted investments can also employ differentiated methods of valuation depending on the purpose to which they wish to apply such determined value. As example, 70% of valuators prefer using discounted earnings methods for financial reporting purposes, yet there is no evidence that most exit transactions are priced using similar methodology (Vayas-Ortega *et al*., 2020; Taylor, 2001).

The adoption of a valuation method at the reporting date that is inconsistent with the method employed at exit date can contribute to valuation revisions. For reporting date valuations, studies such as the PWC survey of 2017, van Eden (2010) and Taylor (2005) all demonstrated a preference for the discounted cash flow (DCF) method for valuation of investments in South Africa, a developing economy. However, for exit purposes, Mouboussin (2018) indicate a leaning towards earnings multiples in the United States of America.

Several factors, such as availability of information and the absence of publicly available comparable entities have been cited for choice of method at reporting (PWC, 2017). In addition, portfolio managers of unlisted equities may face pressures that lead to overvaluation of assets during reporting. For example, private equity managers often begin new rounds of fund-raising before the previous cycle has been fully exited, which may incentivise them to over-value existing investments in order to attract capital for the new round (Cumming *et al*., 2009).

1.1. Statement of problem

Between any two points in time, an investment may fluctuate in value because of fundamental changes in its cashflows and discount rates as well as the inherent uncertainty of valuing privately held firms (Cooney *et al*., 2009).

If a common valuation method is employed, as is the case for listed assets, the Valuation Revision would normally be ascribed solely to fundamental factors. However, if inconsistent valuation bases are employed, changes in methodology could add to valuation uncertainty and variation.

Cumming *et al*. (2009) demonstrated that unrealised investments were significantly overvalued compared to exited investments, as measured by internal rate of return (IRR). However, the study did not evaluate how such over-reporting could be achieved. Similarly, Gompers *et al*. (1999) established that fund inflows had a positive correlation with valuations, but they did not provide an explanation of how these superior valuations are achieved during periods of increasing inflows.

Whilst various studies, including a survey by PWC in 2017 and van Eden (2005), indicate a preference for using DCF as a valuation methodology for reporting purposes, no such preference has been

established for exit purposes. In contrast, Mouboussin (2018) states that in more than half of private equity deals done at an EV/EBITDA, a multiple of more than 10 made losses. This observation suggests the use of earnings multiples as a predominant method for entry into investments, and conversely for exits. Additionally, IFRS 13 considers the exit price to be the best measure of fair value.

Valuation revisions which are not attributable to fundamental factors mean that the previously reported results were distorted. Understanding the causes of such valuation revisions is necessary. Why do valuation revisions matter? The recent adoption of fair value as the primary measurement basis in accounting, coupled with inaccurate or distorted fair value disclosure in the accounting and other records, makes financial statements unreliable. Financial statements are an important information barometer for investors (creditors, lenders and shareholders) and are the basis for investment decisions. Inaccurate or biased reporting distorts the efficiency of capital markets.

In summary, the research problem lies in the potential for portfolio managers of unlisted equity to employ different valuation methods at reporting and at exit. This choice could contribute to valuation revisions which are not caused by fundamental factors. This phenomenon—the use of divergent methods—is undocumented and the reasons behind it are also unknown.

1.2. Purpose

The purpose of the current study is to investigate whether the choice of valuation methods by portfolio managers of unlisted equity contributes to Valuation Revision, specifically through the use of one method at reporting and a different method at exit. A secondary objective is to understand the reasons behind their preferences for particular valuation techniques. In contrast to studies such as Chakraborty and Hansson (2013) and Das et al. (2003), which compare valuation methods in terms of accuracy, this study focuses on identifying inconsistencies in the application of valuation methods depending on the intended purpose of the valuation outcomes.

1.3. Significance of the current study

What distinguishes the current study from existing literature is that most studies in the past compared exit valuation and returns to entry valuation and promised returns. This study looks at the intervening period, being the reporting period. Few, if any, studies have compared the exit prices to reported valuations for unlisted firms in South Africa or its neighbouring countries.

Other than contributing further knowledge to the understanding of valuation of unlisted equity investments, a relatively obscure area compared to publicly listed assets, the current study aims to address four specific gaps in the literature.

Firstly, whilst a preference for DCF valuation has been established by studies such as PwC (2022) and Vayas-Ortega *et al*. (2020) among others, it is not clear for which purpose those valuations were

performed. The current study aims to shed light on whether DCF is as widely preferred for exit purposes as it is for reporting purposes.

Secondly, the IPEV (2022) stipulates that a valuation method should reflect the market participants' expectations of how value will be determined and IFRS13 elevates the exit price as the best measure of fair value. Both IPEV (2022) and the IFRS13 require consistency of approach. However, no academic studies were found where the consistency of valuation approach was tested. This study investigates whether valuation methods are applied consistently for reporting and exit.

Thirdly, this study aims to explore the motivations for choice of valuation methods, particularly in cases where inconsistent techniques were used.

Lastly, while PWC argues that all properly applied methods yield the same result, this study examines whether valuation methods truly yield the same result by analysing Valuation Revisions at exit in the context of consistency of valuation methods. Sharma *et al.* (2023) identified exit strategy as an area warranting further research within the field of private equity, further underscoring the relevance of this study.

1.4. The object of the current study

The primary subject of the study is portfolio managers of unlisted equities (sometimes referred to as portfolio managers holding significant equity interest in unlisted companies). This group comprises private equity firms, venture capital funds and investment holding companies. Private equity funds pool capital from their limited partners (typically a small group of wealthy individuals, trusts or companies) and invest in highly illiquid assets. In its broad definition, private equity encompasses seed, early stage and expansion financing (venture capital) as well as late-stage investments such as buy-outs (Cumming *et al.,* 2009; Sharma *et al*. 2023). Venture capital is therefore a component of private equity which focuses on investing in early stage and high growth potential entities.

An investment holding company is defined by Echanis (2009) as a company that can control, or materially influence the management of one or more other companies, primarily through its ownership of securities in the other company or companies. The most significant difference that can be drawn between private equity companies and ordinary investment holding companies is their respective sources of funding. Whilst private equity firms source funds on a continuous basis from their limited partners (LPs) to make acquisitions, investment holding companies use their own balance sheet or stable shareholders to fund their equity needs.

Taylor (2001) delineates private equity firms in South Africa into four categories: captive, semi-captive, independent and public sector. These categories may be helpful in interrogating responses and will be employed in analysing the data. Independent private equity firms raise funds for each round from third

party funders, while captive private equity firms disburse funds solely for a parent company such as an insurance firm. Semi-captive firms blend capital from a parent company with raised funds. Public sector private equity funds are managed by state development agencies, wealth funds and pension funds for state employees.

1.5. Research questions

The research questions for the current study are –

1. Do portfolio managers of unlisted equity instruments employ a valuation method at reporting (as required by IFRS 13) similar to the method expected to be used for exit purposes? Research Question 1 (RQ1)
2. If divergent methods are used, are any of the methods associated with larger absolute valuation revisions? Research Question 2 (RQ2)
3. What motivates the choice of one valuation method over another, where different methods are employed? Research Question 3 (RQ3)

RQ1 is broken down into two sub-questions:

a. What valuation method does each portfolio manager of unlisted equities employ for reporting purposes?
b. What valuation method does each portfolio manager of unlisted equities employ for exit purposes?

1.6. Assumptions

Three key assumptions are made, namely:

1. Portfolio managers of unlisted equity investments are aggregated from three broad categories (private equity firms, venture capitalists and general investment holding companies). Factors such as profit motivation are common across the range of investors, however, some variables such as frequency of exit from investments may differ between classic private equity investors and investment holding companies[1].
2. A significant majority of portfolio managers, report equity investments at fair value as per IFRS 13 and IPEV (2022). Both the reporting standard (IFRS13) and the valuation guideline (IPEV 2022) allow for a variety of techniques to determine fair value. This assumption is fundamental to the current study in that relevant data can only be obtained for both exit and reporting if entities under

[1] Private Equity firms, unlike investment holding companies, generally have a defined exit period for each investment and raise funds for each investment round. An investment holding company may keep an investment indefinitely and fund new acquisitions from its own balance sheet.

examination report at fair value. If investments are kept at historic cost (with impairments), only exit valuation data will be obtainable.

3. In the three previous years, there has been turnover in portfolios of a significant enough proportion of portfolio managers which were exited for value and can thus be compared to the last reported price. A period longer than three years is assumed to be too long, introducing further contributors to the variability of valuations. The 2022 SAVCA VC Survey showed that between 2020 and 2021 there were in excess of 250 transactions in start-up entities alone. The third assumption is thus reasonable to make. On average, a private equity firm holds an investment for a period between seven and 10 years with portfolio sizes of between 10 and 15 investments (Deloitte, 2021).

1.7. Limitations and delimitations of the current study

The current study is exploratory in nature and does not directly answer previously raised questions. Recent research in South Africa, particularly the PWC annual survey, has focused on using listed entities as proxies for unlisted ones, and determining appropriate discounts to make earnings multiples or cost of capital measures, such as Weighted Average Cost of Capital (WACC) relevant for unlisted firms. Van Zijl & Hewlett (2021) and Barwe (2022) examine unlisted equities held by listed firms as examples, while Erasmus *et al.* (2013) typify studies that adjust WACC for what they refer to as *'unsystematic'* risk.

The current study relies on data sourced through a survey questionnaire and interviews. Self-reporting can make such data unreliable (Razavi 2001). However, the use of appropriate data analysis techniques and a sample size equitable to or in line with studies of a similar nature in South Africa helped to mitigate this limitation. In South Africa, services such as Preqin, which can provide data for transactions in the private sector, are not available, a gap noted by Cooney *et al.* (2009) and Jenkinson *et al.* (2013) who rely heavily on such data.

The private equity market in South Africa is relatively small, which inherently constrains the size of the testable sample. For example, surveys conducted by the Southern African Venture Capital and Private Equity Association (SAVCA) have historically elicited responses from only forty (40) private equity firms (SAVCA, 2022; Deloitte, 2021). This limited population reduces the scope for statistical generalisation and increases the potential influence of outliers. Nevertheless, the integration of both qualitative and quantitative data in this study is expected to provide a richer and more balanced understanding of the research problem, thereby mitigating—though not eliminating—the impact of this constraint.

The qualitative portion of the study involves content analysis, including category formulation, data coding and the eventual condensation, which depend substantially on the intervention of the researcher. The researcher's background and technical interpretations play a role in the outcome of the analysis

(Basit, 2003). The use of software to track the coding process enabled a review of the coding process by the research supervisor.

Chapter 2 - Literature Review

2.1. Introduction

The objectives of the literature review in a study of this type are to provide a theoretical framework for the study, compare and evaluate research findings and empirical evidence to support the theory, and, finally, to obtain and review recent research specific to the topic of valuation of investments for reporting and exit purposes by private equity firms, venture capitalists and investment holding companies.

Two phenomena in recent years make the current study necessary. Firstly, private equity has grown as an investment vehicle in the face of dwindling listed companies (discussed further in section 2.2.2). Secondly, fair value as a basis for measurement has been adopted by accounting standard bodies, which necessitate frequent valuation of assets on companies' balance sheets. Drawing from three broad topics, the current study pursues a narrow thread of corporate finance. As illustrated by Figure 2.1, it explores the intersection of private equity and the realisation of investments through exits, valuations and reporting. The sourcing of literature was informed by the topic and was largely electronic. Searches were conducted on Google Scholar and in the Wits Library.

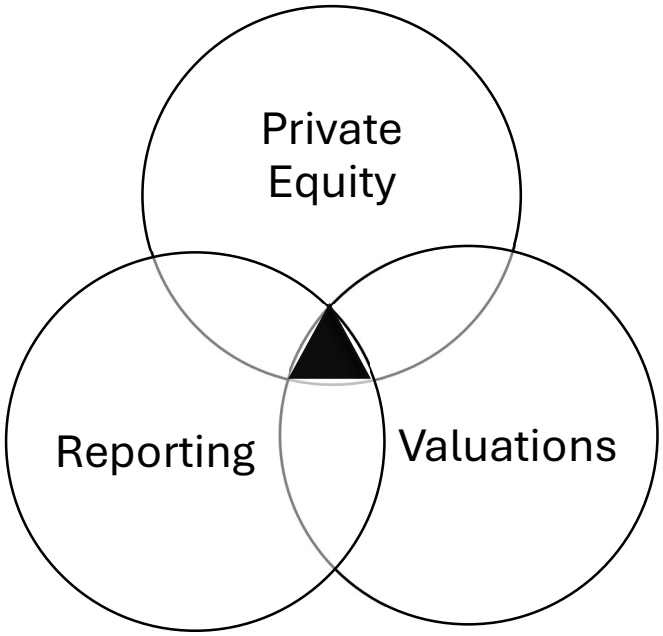


Figure 2.1: Illustration of research focus area - Intersection between Private Equity, Reporting and Valuations

Source: Author's Own

The rest of the literature review proceeds as follows: firstly, the private equity industry is analysed, including the exit of investments; secondly, the reporting standards, guidelines relevant to private equity firms and practices adopted by private equity firms are reviewed; thirdly valuations are reviewed including valuation approaches, methods and practices. The literature review is concluded by analysing three comparable studies conducted in recent years. From these comparable studies the current study obtains cues of gaps in the literature.

2.2. Private Equity and other Concepts related to portfolio managers of unlisted equity

Private unlisted companies make up the vast majority of entities in modern market-driven economies. In the United States for example, 99% of firms are unlisted. In Denmark, only 185 of more than 400,000 companies are listed. Private firms generate in excess of 70% of the GDP of Germany (Petersen *et al*., 2006). In South Africa during the period covering April 2017 to March 2022, more than 1.9 million companies were registered with the CIPC. Of these, only 5% were public companies capable of listing or offering their shares to the public[2]. At the end of December 2022, there were only 266 companies listed on the JSE's equity board.

Døskeland & Strömberg (2018) define the private equity market as a capital market made up of investable but unlisted companies on the demand side and investors (institutional high-net-worth individuals and business angels) working through an intermediary called a private equity fund on the supply side. Typical investment vehicles employed by private equity firms are organised as partnerships with the private equity firm becoming the general partner (who aggregates the funds and executes investments) and the investors the limited partners (Folus & Boutron, 2015).

Investments in private ventures can be made at various stages of an entity's developmental cycle: by seed funding, early-stage equity rounds (start-ups and growth), or late-stage equity rounds (buy-outs such as MBOs as well as distressed / turn-around targets). Initial Public Offering or Financial Sponsor-backed Exits are the ultimate end of a private entity other than failure (Døskeland & Strömberg, 2018).

In their comprehensive literature review, Wright & Robbie (1998) distinguish between private equity as we know it today and venture capital. Historically, all investments made at any stage of a private entity's cycle in the manner described above were referred to as venture capital. As academic attention was given to the sector during the 1990's, the term private equity emerged to refer to investments in later-stage opportunities. Venture capital in modern parlance refers to early-stage financing.

[2] Obtained from the CIPC's 2022 filing to Parliament: https://www.thedtic.gov.za/wp-content/uploads/PCTrade-CIPC-AR2021-22-Q1-2022-23.pdf

Listed companies and their financing (referred to by Wright & Robbie (1998) as Traditional Corporate Finance Theory) differ from Private Equity in many respects. Table 2.1 illustrates some of the key distinguishing factors.

Table 2.1: Traditional Corporate Finance Theory versus Private Equity

Attribute	*Traditional Corporate Finance Theory*	*Private Equity*[3]
1. Tradability of Shares	*Liquid*	*Illiquid*
2. Monitoring of Management by Shareholders	*Passive / Indirect*	*Active / Direct*
3. Role of Market for Corporate Control	*High*	*Low*
4. Access to Capital	*Competitive 'anonymous' Capital Market*	*1. Early stage: access limited to `anonymous' set of financiers with highly specialised capital market skills* *2. Later stage/buy-outs: closer to competitive market but active monitoring skills required*
5. Asset Specificity	*Generally, relatively low*	*Firms with non-redeployable/ highly specialised assets*
6. Project Valuation	*Application of a wide range of techniques*	*Restricted range of techniques (e.g. where early-stage investments do not pay dividends) and/or need for greater range of sensitivity analysis because of greater uncertainty of cash flows*
7. Investment Decision	*Single-stage*	*Multi-stage*
8. Information Availability	*Private information is rare; provision public information is requirement for close Mandatory*	*Private information widespread and difficult to reveal, hence close monitoring of managers*

Source: Wright & Robbie (1998)

[3] Referred to in Wright & Robbie (1998) as Venture Capital

These distinguishing factors are important in assessing portfolio management choices such as valuation approach and form of exiting an investment. The opaqueness made possible by lack of reporting regulations and standards in the sector, allows a private equity firm which holds several investments to choose to maintain its investments at cost less impairments instead of fair value. The fair value methodology choice will also be markedly different for a portfolio manager of unlisted equities (Johan & Zhang, 2021).

The current study assesses Investment Holding Companies alongside private equity and venture capital funds. Echanis (2009) defines an investment holding company as an entity that can control or materially influence the management of another entity due to share ownership. This closely aligns with key distinguishing factors of private equity as identified by Wright & Robbie (1998). The agency theory challenges associated with private equity funds (refer to 2.3.1) are equally prevalent in investment holding companies.

2.2.1. Operations of Private Equity Funds

Private equity firms form a 'fund' to pursue a grouping of investment opportunities. The fund has a definite lifespan, generally ten years, with extension of at most three years. The typical cycle of a fund starts with fund-raising or marketing. Once the predetermined funds are received from interested investors, referred to as limited partners, the investment stage commences. During the investment stage investable opportunities in the market are sourced through networks, and viable opportunities are further evaluated (Folus & Boutron, 2015). The investment stage for each opportunity includes making a non-binding offer to the equity holder of the target company, performing a due diligence review including valuations, a term sheet with principal elements of the transaction, and eventually concluding the transaction through the signing of legal agreements (Gompers *et al*., 2016). Private equity fund managers consider deal sourcing an important contributor to value creation. (Gompers *et al*., 2016). Investments are then made, and active investment management commences (Jenkinson *et al.,* 2013).

Figure 2.2 illustrates a typical private equity fund cycle. Jenkinson *et al.* (2013) identify three distinct phases: marketing, investment, and divestment with the possibility of extension. After investing in an entity, private equity managers take a keen and active interest in the decision-making process of the investee company. This paper refers to this as the Portfolio Management phase of a private equity fund life cycle. In general, a fund will have several investee companies in which the general partner will be actively involved. Unlike traditional corporate finance, general partners in private equity funds do not rely solely on governance measures such as electing directors, setting compensation for management and fiduciary duties (Wright & Robbie, 1998). This activist role endows private equity general partners with a distinctive skill which enables them to extract value.

Because of investor pressure and activism, private equity funds in developed markets are required to report regularly to their investors. In doing so, general partners calculate the net asset value (NAV) of each fund by estimating fair value of the entities that make up the portfolio (Cumming *et al*., 2009). In South Africa and other developing countries which have adopted IFRS, modern accounting standards require fair value as a principle of reporting (Whittington, 2008). Valuation of unlisted equity assets is therefore required to comply with IFRS 13, as an example. Valuations are conducted regularly during the portfolio management process.

At the end of the investment stage or at opportunistic times during the investment period, investments are exited, and funds referred to as realisation proceeds returned to investors. When a fund approaches its end-of-life, the general partner will create a new fund and go through the same cycle. It is common that fund-raising for a new fund commences whilst investments in the first fund have not yet been fully exited. (Cumming & Walz, 2010; Jenkinson *et al*., 2013). The exit of investments and exit strategies are discussed in 2.2.2.

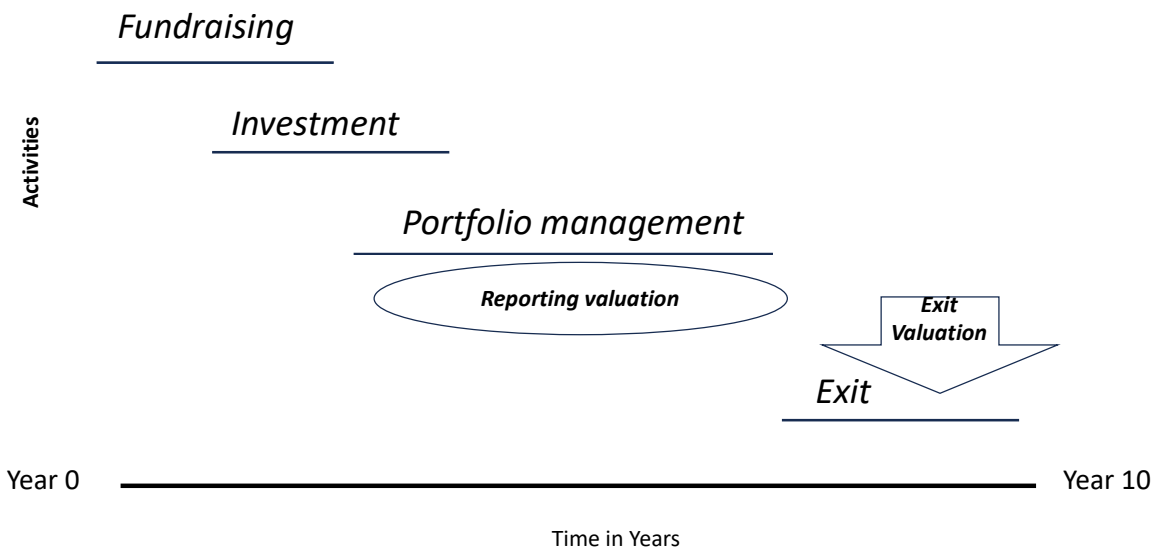


Figure 2.2: Typical 4 Stage Private Equity Fund Life Cycle

Source: Author's Own

2.2.2. Exit of investments - disposals and IPOs

Private equity funds exit investments to harvest value created during the portfolio management phase of an investment and to transfer the harvested value to its limited partners. Traditional exit approaches

are trade sales (or sale to strategic investor), IPO and sale to other private equity fund (also referred to as secondary buyout or Sponsor to Sponsor deal) (Folus & Boutron, 2015). The exit of investments is at the centre of the current study and the test of valuation revisions takes the exit price as the truest measure of fair value. As is illustrated below, the valuation standards and guidelines consider the exit price to be the best indicator of fair value; secondly, as a limited partner in a private equity fund, returns are made only after investments are exited.

Trade sales (sale to strategic investor)

The general motivation of a buyer in a trade sale, wherein a private equity fund sells an investee company to a trading company, is market share growth or vertical integration. Disadvantages of trade sales are that management of the investee company may be resistant to the transaction for fear of being replaced and the divulging of trade secrets to a potential competitor during the due diligence stage. If the transaction eventually fails to close, the potential acquirer could use the information to undermine the investee company and thereby destroy value for the private equity fund.

Trade sales generally command higher sales prices because an acquirer is willing to pay for the potential uplift in cash flows for the combined entities due to synergies (Folus & Boutron, 2015). Sale to strategic investors constituted more than 50% of the exit transactions tested by Gompers *et al*. (2016). The 2023 paper by Biesinger *et al*. found similar patterns. Of the 1 589 deals tested by Biesinger *et al*. (2023), 1230 were exited. Seventy percent of the exited deals were through a disposal, mostly to a strategic buyer; 107 were exited through an IPO, proving that, unlike the South African private equity market, IPOs remained a viable exit route for private equity funds in other emerging market economies, which was the dataset studied. Of interest, but unrelated to the current study, Biesinger *et al*. (2023) established that 19% of exits constituted investments that were either written off completely or lost money. This study tests the assertion by Folus & Boutron (2015) that exits to strategic partners attract higher pricing.

Sale to another private equity fund (Sponsor-to-Sponsor deal)

Secondary buyouts are carried out for tactical reasons. Among these are funds nearing their end of life and ‘banking’ of accrued returns which may have exceeded expectations. Other transactions may be carried out because the seller is unable or unwilling to fund growth that management believe is attainable, and conflicts between the GP and management. Transactions between sponsors are quicker to execute and have flexible terms (Folus & Boutron, 2015). Gompers *et al*. (2016) established that sponsor-to-sponsor sales constituted 30% of the exits tested in their sample.

IPO

This method of exiting an investment by private equity funds has become largely irrelevant in South Africa. Deloitte (2021) found that not one private equity fund expected to exit their investment using

this method. This is unsurprising. The JSE had lost 250 listings by 2020 from its height of 600 in 2002 (Business Insider, Feb 13, 2020)[4]. In the United States stock exchanges have lost more than half their public companies from the 1990s[5] (from more than 8 000 in 1996 to 3 700 in 2023). In Germany and the UK, the number of listed firms has declined by 40% from 2007 up to 2022, and 75% from 1966 to 2022 respectively[6]. Furthermore, the number of listed equity shares on the JSE has been on a downward trend since 1996, as outlined above. As illustrated by Figure 2.3, from 2019, the number of ordinary active shares on 31 December declined from 332 to 266. This is based on proprietary data sourced from the JSE in terms of the ethics protocols granted as part of this research.

The main factor cited as contributing to the decline in listings is the availability of more fund-raising alternatives for entities seeking capital and investment vehicles for investors looking to grow their savings. Alternatives include private equity, private debt, hedge funds and digital alternatives. Other contributory factors are the high regulatory and compliance burden of listing, unwanted public scrutiny partially fuelled by social media, and a more litigious society[7].

However, Gompers *et al*. (2016) still found appetite for listings among US private equity firms and established that private equity firms expected to exit 17% of their investments through an IPO.

Globally, Uddin & Chowdhury (2021) established that 17% of private equity deals are exited through an IPO, a figure largely unchanged from the findings of Gompers *et al*. (2016). This is despite the pronounced adverse effect of the Covid-19 pandemic on exit strategies and value of private equity firms (Uddin & Chowdhury 2021).

In the current study, IPO was probed as an exit option, but only if specifically mentioned by a participant.

[4] Listings on the JSE are reported to be approximately 400 (as of January 2024)
[5] https://edition.cnn.com/2023/06/09/investing/premarket-stocks-trading/index.html
[6] https://www.weforum.org/stories/2024/04/equities-stock-market-health-investing/
[7] https://www.weforum.org/stories/2024/04/equities-stock-market-health-investing/

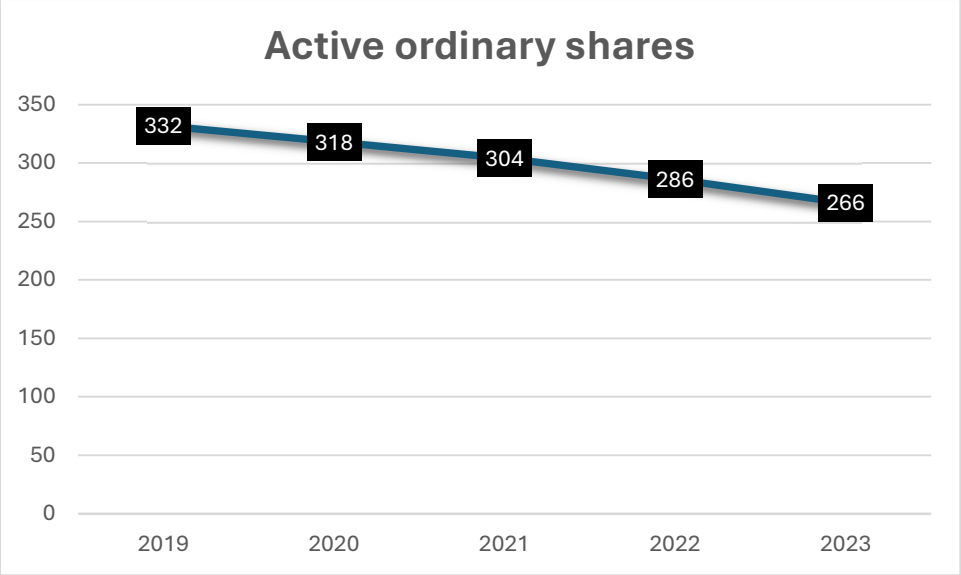


Figure 2.3: Listed Equity Shares on the JSE as of 29 Dec '23

Source: Author's Own based on data from JSE

2.3. Private Equity / Reporting

2.3.1. Information asymmetry

Wright & Robbie (1998) identified information asymmetry (Akerlof, 1970) as the key distinction between traditional corporate finance and private equity. Stock market listing requirements compel all registrants to disclose any and all information that may be price sensitive. In addition, according to JSE (2024) all JSE listed companies must disclose:

a. a trading statement if results are expected to exceed the base period by 15% or more;
b. quarterly results and commentary (not mandatory for all, but those who elect not to do so must publish trading statements);
c. Cautionary announcements if an issuer is aware of information of a price-sensitive nature which cannot be kept confidential;
d. all distributions (dividends and interest);
e. restatement of previously published results; annual results within three months of year end;
f. an annual report with an announcement;
g. interim results (six-monthly) and
h. auditors' reports, (JSE, 2024).

Considered as a whole, a company listed on the JSE could be in contact with its shareholders on a regular basis throughout the year, disclosing information pertinent to operations and finance. Finance theory therefore assumes a free flow of information.

In contrast, the unlisted equity market is different, with no requirement for public disclosure of price sensitive information. A private equity portfolio company or the private equity firm itself may or may not produce financial statements, may choose to be audited or reviewed, and may communicate with investors regularly or intermittently. Consequently, price sensitive information may be available to certain investors and not others, or to the GP and not its LPs. This is referred to as information asymmetry.

Information asymmetry in the private equity industry is associated with infrequent reporting, inaccurate (exaggerated) financial performance by firms making up the portfolio, over-reporting of assets by GPs, and delays in writing off non-performing assets, which smooths reported performance (Johan & Zhang, 2021).

Private equity funds rely on the quality and accuracy of information from their investee companies to be in a position to report accurately to the limited partners. Even with accurate information available, the general partner may choose either not to disclose or to disclose selectively in order to achieve certain goals. This duality of reporting increases the principal/agent costs associated with investing. Figure 2.4 in 1 below illustrates the information flow in capital markets.

2.3.2. IRR

The use of IRR in the private equity industry is widespread and entrenched (Gompers *et al*., 2016). At the fundraising stage, prospective IRR is calculated, and, together with historical IRR of previously closed funds, is used to solicit interest from limited partners. During the investment phase, as part of the evaluation of each target, prospective IRR is calculated and compared to the required rate of return (RRR). During the portfolio management phase and at each valuation point, the IRR is calculated and compared to the original IRR and RRR. Finally, when investments are exited, entity-by-entity IRR and the overall fund IRR are calculated. The reliance on IRR as the primary measure of returns in the private equity sector has remained prevalent in recent years (Harris *et al*., 2023; Jackson *et al*., 2022).

The CFA Institute (2013, p.43) defines the IRR as follows: '*The internal rate of return (IRR) on an investment is the discount rate that equates the present value of the asset's expected future cash flows to the asset's price — in other words, the amount of money needed today to purchase a right to those cash flows.'*

IRR is calculated in an iterative process from the Net Present Value formula where the subject of the equation is the discount rate:

$$NPV = \sum_{n=0}^{N} \frac{C_f}{(1+r)^n} = 0$$

NPV *= Net Present Value of Cash flows*

N *= Total period of project*

$\boldsymbol{C_f}$ *= Net-cash flows for the period n*

r *= Discount rate*

Assumptions of the NPV formula are that the cashflows occur at regular intervals, each period's cashflows are independent of each other, and all cashflows are reinvested at the same rate.

Gompers *et al*. (2016) provide some insight into the reasons why IRR has, above any other measure, come to dominate private equity financial metrics. Because private equity general partners are educated and successful, the observation that few of them use DCF or any other present value discounting method, suggests that the use of IRR and MOIC methods could be associated with successful investing.

Moboussin (2018) state that EV/EBITDA became the main marker used in leveraged buyouts in the 1980s and remains the primary valuation method for private equity transactions. This is not a contradiction of Gompers *et al*. (2016) because in the calculation of IRR, the future value of cash inflows is estimated using EV/EBITDA.

Unlike many of the papers included in this review, the current study does not use IRR because it is neither a valuation approach nor method. It is a composite outcome of the application of valuation techniques, but an important barometer of performance in the private equity industry.

2.4. Reporting / Valuations

2.4.1. Financial reporting and IFRS Standards

It is undoubted that general partners in private equity funds prefer opaqueness in relation to fund performance and other key aspects of their trade such as valuations. Too much disclosure, they feel, compromises their competitive edge (Johan & Zhang, 2021). This is evidenced by the unwillingness of several private equity funds to accept the Californian pension fund CalPERS as an investor (limited partner) after CalPERS was forced through litigation concluded in 2004 by its members to disclose performance information in public (Cumming *et al*., 2009). It is for this reason that financial reporting standards and guidelines have become more detailed and prescriptive about disclosure, and previously divergent standards are being harmonised over time (Whittington, 2008).

In South Africa, most companies that prepare financial statements do so based on IFRS. Preparing financial statements is a statutory requirement if a company meets certain criteria (Barwe, 2022). In the European Union, there are set reporting standards and public disclosure requirements at law, whilst in

the United States, private companies do not have any legal requirement to prepare financial statements; many do so to be credit-worthy and to attain an audit opinion. The possibility of an exit through an IPO is an additional factor considered by unlisted entities in deciding to prepare GAAP-compliant financial statements (Cumming *et al*., 2009).

Cumming *et al*. (2009) assert that private equity firms in the US and EU should have access to quality information from their investee companies. Similarly, in South Africa, depending on the size of the investee company, IFRS compliant annual financial statements should be available to private equity funds.

From the effective date of the revised IFRS9 in 2018, all equity investments are to be reported at fair value. In general, the basis of measurement encouraged by the Conceptual framework adopted in 2010 and revised in 2018 is fair value. IFRS 13 provides preparers of financial statements with guidance about reporting fair value (IFRS 9; 2018 CF; IFRS 13) (Barwe, 2022). The roots of IFRS 13 date back to 2005 as part of the MOU between the IASB and the FASB. It was introduced formally in 2009 as ED/2009/5 and subsequently adopted in 2011, becoming effective for financial years ending or on after 1 January 2013.[8] Barwe (2022) found that IFRS standards lack details, specificity around valuation approaches. The International Valuation Standards Council (IVSC) standards (discussed in 2.4.2) contained better guidance.

Various Accounting standards (IFRS 13, IFRS 9, 2018 CF) define fair value as the amount for which an asset could be exchanged, a liability settled, or an equity instrument granted or exchanged, between knowledgeable, willing parties in an arm's length transaction (Georgiou & Jack, 2011). The concept of fair value is closely related to the capital markets theory of efficient markets and the CAPM. Whilst not the topic of this paper, it is worth noting that the adoption of fair value as the preferred measurement basis in accounting has faced some criticism (Whittington, 2008).

Companies that prepare financial statements based on IFRS are required to comply with all issued standards which are applicable to them. The compliance with IFRS is monitored through the external audit process (including reviews in South Africa). All companies that are required to prepare financial statements must get those audited (Barwe, 2022). This study examines the audit function's relationship with valuation approach choice and valuation revisions. Jenkinson *et al*. (2013) observed a reduction in the level of under-statement of valuations where an audit was conducted. In other words, where an audit took place, the reported value reflected fair market value better.

In determining fair value, IFRS 13 stipulates a fair value hierarchy, made up of three levels. Level 1 inputs are unadjusted quoted prices in an active market for which the entity can access identical assets. Level 2 inputs are observable either directly or indirectly, and include quoted prices for similar assets

[8] https://www.iasplus.com/en/standards/ifrs/ifrs13

or liabilities, quoted prices for identical items in inactive markets, observable inputs which are not quoted prices (e.g., interest rate yield curves and credit spreads), as well as market corroborated inputs. Level 3 inputs are unobservable. An entity should endeavour to use Level 1 inputs and minimise the use of tier 3 (IFRS 13).

2.4.2. IVSC Valuation Standards

The IVSC issued its latest edition of International Valuation Standards (IVS) in 2022. The IVS were adopted in South Africa in 2003, particularly by the South African Institute of Valuers[9]. The IVS are mandatory for members but have no legal standing or verification mechanism similar to audits of financial statements. The IVSC had an initial focus on valuation of real estate, but its activities have broadened to cover equity instruments (CFA Institute, 2013).

The IVSC provides comprehensive guidelines on the valuation of unlisted equities. Such guidelines may be relied upon by preparers of financial statements as well as valuators (Barwe, 2022). Furthermore, by emphasising consistency of method across time and industry, the guidelines improve comparability of valuation results. There remains subjectivity and scope for variation (Cumming *et al*. (2009).

The valuation approaches found in Table 2.2 were established by the IVSC. In addition, the IVSC provides clear guidelines on when to apply each valuation method, and circumstances to consider in doing so.

2.4.3. IPEV Valuation Guidelines

Barwe (2022) ascribes some value to the International Private Equity and Venture Capital (IPEV) valuation guidelines, which, similar to the IVSC standards, are not mandatory or subject to audit.

As the key principle for the selection of a valuation technique, the IPEV guidelines read as follows in paragraph 3.3 p.22, 'The valuer should use one or more of the following Valuation Techniques as of each Measurement Date, taking into account Market Participant assumptions as to how Value would be determined.' Put differently, if exit transactions of the size and nature of the asset being valued use the DCF, as an example, the valuer should strive to use the DCF for the reporting valuation too.

For the current study, the concept of back-testing is important. Back-testing is part of and can enhance the valuation process. The IPEV guidelines state that valuators should seek to understand the causes of substantial variations in value that occur between the reporting date and the exit date (IPEV, 2018). This should be done by comparing the exit price from an actual liquidity event to the most recently determined fair value. This is referred to as back-testing.

[9] https://www.metgovis.co.za/wp-content/uploads/2015/12/SA_VAL_AUG_121_2015_PG39_PG43.pdf

Back-testing as defined by IPEV guidelines provides a conceptual underpinning of a component of the current study. The test designed to assess Valuation Revisions, which compares the exit price to the last reported value, is a form of back-testing.

2.4.4. Purpose of valuation

Valuations are carried out for several purposes, including the purchase or sale of shares in a company, for tax purposes, litigation or other judiciary processes (van Eden, 2005). The CFA Institute (2013) lists more applications of equity valuations including stock-picking, corporate events such as mergers and acquisitions, inferring market expectations, rendering of fair value opinions, and share-based payments.

Due to timing, reporting was not listed by Taylor (2001) nor van Eden (2005) and the CFA Institute (2013). The reason for this omission is because at the time of their publication, IFRS 9 was not yet effective. IFRS 13 and impairment testing were required, however the implications of these were more limited. With IFRS 9, financial statements reporting has become an important purpose of valuing an unlisted equity instrument.

2.4.5. Choice of valuation method

The valuation techniques appropriate for an unlisted entity in South Africa have been grouped into three broad categories by various researchers (van Eden, 2005; Erasmus *et al*., 2013; Barwe, 2022). Table 2.2 outlines the three main categories of valuation approaches and prominent examples of each approach.

Table 2.2: Valuation Approaches and Methods

Approach	*Selected / Prominent Methods*
Cost Approach	Net Asset Value at Historic Cost Own funds at book value Replacement Cost Liquidation Basis
Market Multiples *(encompassing comparable transactions and Guideline Public Company)*	Price Earnings Ratio (PE) EV/EBITDA Price / Book Price / Sales Industry benchmarks
Income Approach	Discounted Cash Flow (DCF) Residual Income Model (RIM) Gordon's Dividend Growth Model Economic Value Added (EVA)

Source: Author's Adaptation of IVSC Guidelines

The valuation approaches used according to empirical studies are many, but fewer than the six methods proposed by the BPM6 (Chakraborty & Hansson, 2013). In the BPM6, the IMF's committee on balance of payment and statistics outlined six methods for the valuation of unlisted equities, including a table with advantages and disadvantages of each. These methods are recent transaction price; net asset value; present value of earnings; price to earnings ratio; market capitalization ratio (P/B); own funds at book value and apportioning global value.

In South Africa, the DCF method was found by Taylor (2001), van Eden (2005), Erasmus (2013) to be preferred. Whilst Barwe (2022) found the DCF to still be preferred, it was by a small margin of four percentage points. To the contrary, studies have shown a preference for Market Multiples approaches in jurisdictions such as the USA, the UK and France (Jiménez-Angueira & Mastracchio, 2020; Mouboussin, 2018).

Cost approach

The cost approach to valuation is generally recommended for non-income generating assets which can be replicated quickly without many regulatory hurdles. Because business enterprises do not meet these criteria, the cost method is seldom used to value such assets (CFA Institute, 2013). The cost approach is assessed in the current study because it remains the easiest method to apply where annual financial

statements are available, and practitioners may find its convenience appealing. For this reason, some of the most common techniques in the cost approach are discussed below.

The BPM6 describes the Own Funds at Book Value as the value of the entity as recorded in its books, as the sum of:

1. paid-up capital including share premium accounts;
2. all reserves identified as equity in the enterprise's balance sheet (or statement of financial position);
3. cumulated reinvestment earnings; and
4. holding gains or losses included in equity in the accounts, whether as revaluation reserves or profit or loss.

If all reporting entities employed the fair value approach for tangible assets and applied valuation techniques consistently, the OFBV approach would be the easiest method to apply (Chakraborty & Hansson, 2013).

The adjusted cost technique values the entity as the assets at current cost less the liabilities at fair value. This approach relies on insiders such as management and auditors to provide the most reliable data on assets and liabilities (Chakraborty & Hansson, 2013).

The IPEV guidelines hold a view that a forced liquidation or distress sale (i.e., a forced transaction) is not an Orderly Transaction and is not determinative of fair value. An entity applies judgement in determining whether a particular transaction is distressed or forced.

Market multiples approach

In calculating the value of an enterprise using the market multiples approach, valuators apply a multiple to an item of earnings (PAT, PBT, EBIT, EBITDA, REVENUE) or assets of the subject entity. The multiple is determined by reference to observable and recent pricing information for similar or comparable assets. The pricing information could be from stock markets (Guideline Company Model) or private transactions which a valuator may have proprietary access to (IVSC, 2022; IPEV, 2022; IASB, 2013; Mouboussin, 2018; Barwe, 2022).

Applying the market multiple involves four steps. Firstly, the Value Drivers relevant to the entity are established, followed by the nomination of a peer/comparator group. Thirdly, aggregated value drivers are calculated for the peer group and finally, the firm value is determined by applying the synthesised multiple to the value driver determined in the first step (Schreiner, 2007).

In mathematical terms, market multiple approaches can be represented by the following expression:

$V_{it} = \beta_t \gamma_{it} + \varepsilon_t$ (Liu *et al*., 2002)

V_{it} = *Value of firm i at time t*

β_t = *The multiple of the Value Driver (generally a value derived from peers)*

γ_{it} = *Value Driver of firm i at time t*

ε_t = *Error term at time t*

The market approach has been used for at least a century with methods such as the Price Earnings Ratio and Price to Book being observed in early stock markets. Two advantages of the market multiple approach are its simplicity in application, and clarity of communication (CFA Institute, 2013). A further inherent advantage of multiples is that they better reflect 'the mood' of the market or an economy as they reflect relative and not intrinsic value. Further advantages of the multiples approach, some of which are more relevant to the listed environment, are the publication of multiples by multiple platforms, regularly quoted by sell-side analysts in their reports, and the ability to facilitate quick comparisons across firms and industry (Schreiner, 2007).

A relatively recent method, one commonly used in private transactions, is EV/EBITDA (Mouboussin, 2018).

Using a market multiples approach requires a careful selection of the peer, considering factors such as industry, size, geography, capital structure and the stage of the entities (Barwe, 2022). The value driver must be selected carefully and the multiple computed methodically (Schreiner, 2007). A higher EV/EBITDA multiple should be used for an entity that has ROIC in excess of cost of capital and earnings growth (Moubousin, 2018).

The most obvious weakness of using the market multiples approach to value a private concern lies in the inherent differences between listed and unlisted entities, particularly information asymmetry. The use of accounting data, which can be manipulated, is also a frequently observed downfall. These weaknesses are in addition to the difficulties of identifying a suitable peer, a difficult task in itself (Demirakos *et al*., 2010). Choosing an appropriate value driver and determining how to calculate single firm multiples present further challenges to using market multiple approaches (Schreiner, 2007).

The lack of depth in some stock markets in the world, such as South Africa, is a major constraint to the use of the market multiples approach (PwC, 2017).

Income approach with DCF at the Focal Point

Income approach valuation methods discount future streams of income, be it dividends, free cash flow (FCF) or residual income, to present value using a predetermined discount rate (most notably weighted average cost of capital or WACC). Accounting standards set by the IASB as well as the valuation guidelines of the IPEV and IVSC give income approach lower priority when compared to market

multiple approaches. IFRS 13, as an example, lists income approach as level 3 of three levels because methods in this category rely on unobservable inputs.

Several studies, both in South Africa (Barwe, 2022; Erasmus *et al*., 2013) and abroad (Vayas-Ortega *et al*., 2020) consider the DCF method to be adequately representative of all other methods available under the income approach. In addition, the IVSC standards consider all income approach models to be variations of the DCF method and that concepts related to DCF apply to all other methods. This study takes a similar view and evaluates only the DCF in greater detail.

A simple definition of the DCF method is found in Vayas-Ortega *et al*. (2020, p.22) which states: '*the actual discount of future FCF, which stands for the company cash flows that are real and effectively free and available to be applied in favour of shareholders*.' The formula below illustrates firm value using the DCF method.

$$f\text{irm value} = \sum_{t=1}^{\infty} \left(\frac{FCF}{(1+WACC)^t} \right)$$

The two main components of the DCF model are therefore FCF and the WACC. There is considerable debate about the way both the FCF and the WACC should be determined, and this is discussed further below. However, the most common approach to determining WACC is outlined by the following formula:

WACC = kd x (d%) + ke x (e%))[10]

kd = *After-tax rate of return on debt capital*

d% = *Debt capital as a percentage of the sum of the debt and ordinary equity capital (total invested capital)*

ke = *Rate of return on ordinary equity capital*

e% = *Ordinary equity cap*

E(Re) = Rf + β x E(Rp)

E(Re) = *Expected rate of return on equity capital*

Rf = *Risk-free rate of return*

β = *Beta or systematic risk*

E(Rp) = *Expected market risk premium: expected return for a broad portfolio of shares less the risk-free rate of return*

In practice, calculating WACC for a multi-division portfolio of investments can take the form in Table 2.3. The entity depicted in Table 2.3 is fictional and the figures random for illustrative purposes only.

[10] Source: PwC (2017)

Table 2.3: Typical multi-division portfolio WACC calculation

	Division MS			*Division OGS*		
	Entity F	***Entity B***	***Entity T***	***Entity O***	***Entity G***	***Entity S***
Cost of Equity						
Risk Free Rate	*10.8%*	*10.8%*	*10.8%*	*10.8%*	*11.3%*	*10.8%*
Beta coefficient	*1.15*	*1.14*	*1.16*	*1.13*	*0.89*	*1.13*
Unlevered Beta coefficient	*1.1*	*1.09*	*1.12*	*0.76*	*0.76*	*0.76*
D/E Ratio	*5.3%*	*5.3%*	*5.3%*	*66.7%*	*17.6%*	*66.8%*
Marginal Tax Rate	*27%*	*27%*	*27%*	*27%*	*0%*	*27%*
Equity Risk Premium	*6.1%*	*6.1%*	*6.1%*	*6.1%*	*7.3%*	*6.6%*
Size Risk Premium	*0.5%*	*1.7%*	*1.7%*	*0.3%*	*0.0%*	*0.0%*
Alpha Adjustment	*2.5%*	*1.5%*	*0.8%*	*0.5%*	*0.5%*	*3.5%*
Cost of Equity	***20.8%***	***21.0%***	***20.3%***	***18.5%***	***18.3%***	***21.8%***
Cost of Debt						
Pre-tax Cost of Debt	*12.3%*	*12.3%*	*12.3%*	*12.3%*	*0.0%*	*12.9%*
Risk-free Rate	*10.8%*	*10.8%*	*10.8%*	*10.8%*	*0.0%*	*10.8%*
Internal Rate Spread	*1.5%*	*1.5%*	*1.5%*	*1.5%*	*0.0%*	*2.1%*
Marginal Tax Rate	*27.0%*	*27.0%*	*27.0%*	*27.0%*	*0.0%*	*27.0%*
Post-Tax Cost of Debt	***9.0%***	***9.0%***	***9.0%***	***9.0%***	***0.0%***	***9.4%***
Capital Structure						
Equity to Invested Capital	*95%*	*95%*	*95%*	*60%*	*100%*	*60%*
Debt to Invested Capital	*5%*	*5%*	*5%*	*40%*	*0%*	*40%*
WACC	***20.2%***	***20.4%***	***19.7%***	***14.7%***	***18.3%***	***16.8%***

Source: Author's Own

As illustrated by Table 2.3, the WACC has numerous inputs, some observable and others subject to management or valuator judgement. The controversy about the WACC and FCF relates primarily to these arbitrary adjustments which a valuator could make. Erasmus *et al*. (2013) refer to these adjustments as accounting for unsystematic risk, but further note that unsystematic risk adjustments could be used by valuators to bring the results of their valuations in line with management's pre-determined results. Coupled with these issues, Fernandez (2013) found that complications and additions to the DCF model, ostensibly to make it more believable, are the sources of errors in DCF calculations.

Errors as well as reporting bias observed in the application of the DCF technique could bring into question the reliability of reported results and consequently, investment decisions made based on such results.

Consequently, academic effort has gone into finding alternative ways to make results from the application of DCF more neutral and less susceptible to manipulation. Vayas-Ortega *et al*. (2020) for example propose that the use of external data along with normalised operational variables of an entity could provide less biased valuations using the DCF method. With similar intent, the implied private company pricing line (IPCPL), discussed further below, has gained academic and practitioner attention in recent years.

The DCF method is suitable for use in a variety of settings because it is a fundamentalist method which is theory bound. Whilst methods such as market multiples are not suitable for start-up entities and entities in loss-making positions, the DCF method can be used successfully for such scenarios (Demirakos *et al*., 2010).

IPCPL

The IPCPL has been described as an exciting development in valuation theory in recent years. Developed by valuation practitioners, it aims to estimate a more reliable and objective cost of capital for private entities (Dawson, 2017).

The functioning of the IPCPL is as follows: Two data points (Data Point 1 and Data Point 2) are independently determined and connected with a curve (line). This curve is the IPCPL. Data Point 1 is the IRR computed for a group of 500 unlisted entities from Pratt's Stats (database of unlisted equity transactions), covering the period from 1988 to 2013. Data Point 2 is the recalculated cost of equity (Ke) using the Fama-French three-factor model for iShares Micro-Cap ETF adjusted for an unlisted portfolio. A curve is then drawn, connecting Data Point 1 and Data Point 2 using the no-arbitrage rule (imputed cost of listing and remaining listed) (Dohmeyer *et al*., 2014).

The proponents of the IPCPL consider its development as significant because its use could eliminate subjective factors such as liquidity discounts, the tax rate to use (effective or statutory), entity-specific risk or unsystematic risks, and un/(re)levering of the Beta co-efficient (Ali & Khalidi, 2020). There are some weaknesses such as selection bias in the IPCPL 500 population, and arbitrary adjustments in the model itself (Conn, 2016; Dawson, 2017). Because of its infancy and lack of adoption in South Africa at the time of the current study, IPCPL is not pursued any further in this paper. However, it is an area worth studying in future research.

2.4.6. Valuation approach accuracy

Several studies have evaluated the accuracy of valuation methods in predicting actual enterprise value. Chakraborty *et al*. (2013) as an example, considered all the BPM6 methods and Demirakos *et al*. (2010) evaluated the PE ratio and the DCF. Whilst the outcomes of these studies are interesting, they do not seem to influence valuation model choice, especially in South Africa where the DCF method remains the preferred approach.

In theory, the correct application of any valuation approach, or technique within the approach should yield the same results (PwC, 2017; Demirakos *et al*., 2010). However, Dohmeyer *et al*. (2014) demonstrated that two valuators, given the same information and using the same valuation technique (DCF to be specific) produced vastly divergent results. The current study explores whether the choice of a valuation approach contributes to the Valuation Revision in absolute terms.

Valuation experts play an important role in the valuation process as management often relies on external parties to perform the valuation (Alee *et al*., 2020). In their analysis of valuation specialists involving more than 172 surveys, Allee *et al*. (2020) found that valuation specialists are influenced primarily by professional judgement in choosing a valuation method. Perceived method accuracy played a limited role in such choices. Only 6.6% of the valuations performed by the Allee *et al*. (2020) respondents were for reporting purposes and only 19% were for the purchase or sale of a business. The preference of valuators in valuation method choice was established in this study.

2.4.7. Accounting data in valuations

Allee *et al*. (2020, p.30) established that an 'overwhelming' proportion of respondents rely on historic financial statements in performing valuations, including the setting of forecasts. Palepu *et al*. (2021) see financial statements and the accounting information they contain as important elements in efficient capital markets.

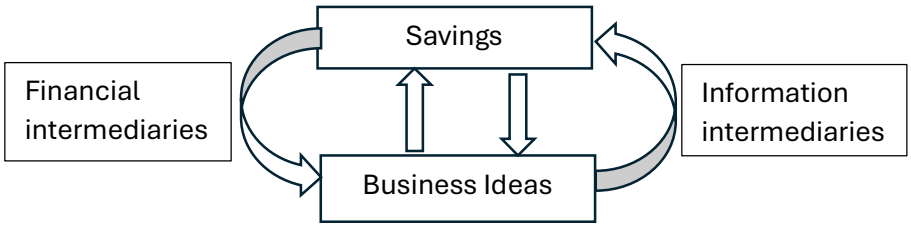


Figure 2.4: Capital markets

Source: Palepu *et al*. (2021)

Efficient capital markets connect investors with entrepreneurs and other consumers of finance, forming a self-sustaining loop. In Figure 2.4, the two central arrows demonstrate the flow of financial capital, with initial investments flowing from investors to entrepreneurs and returns flowing in the opposite direction. Private equity firms fall within the left-hand rectangle as financial intermediaries and portfolio firms in the bottom rectangle. Limited partners in private equity partnerships are in the top rectangle. Financial statements form the core of the information flow from portfolio firms to investors. Unlike traditional corporate finance, in a private equity set-up, the private equity firm serves also as the information intermediary, occupying the right-hand rectangle overseeing and regulating the flow of information from the portfolio firm to the ultimate investors. Financial statements of portfolio

companies, will for example, be distributed to the GP first and the GP may, at their own discretion, share those with the LPs.

Analysing financial statements involves understanding the business (strategy analysis), reviewing the accounting data, financial analysis (ratios and cash-flows) and prospective (forecasting) analysis (Palepu *et al.,* 2021).

The views of Palepu *et al*. (2021), while shared by many, are not universal. There has been debate, particularly in traditional corporate finance as defined by Wright & Robbie (1998), about the true decision relevance of accounting information for investors. Several studies, dating as far back as 1968, expressed doubt about the value relevance of financial statement releases. As an example, Francis & Schipper (1999) noted that earnings information was not relevant to investors whilst balance sheet measures retained some relevance. Reasons quoted for the loss of relevance include the historic nature of financial statements (including late release of AFS), accrual basis of accounting, and manipulation of financial statements.

The manipulation of earnings, referred to as Earnings Management, can take the real form or the accrual form. Accrual earnings management firms use discretionary and abnormal accruals to lower earnings during good periods and release the accruals to improve earnings during difficult periods (Lemma *et al*., 2013).

Typical real earnings management methods include accelerating sales, cutting discretionary spending (including R&D expenses, maintenance costs, and investment), and overproduction to reduce production costs.

In the current study, accounting information is at the centre of the research question. The three valuation approaches under investigation all employ accounting data to differing degrees. The DCF method relies on free cash flow. Free cash flow is in turn derived from earnings, stripping it of any accounting accruals and incorporating balance sheet cash movements such as capital expenditure and working capital. Market multiples utilise an element of financial statements as a Value Driver, such as EBITDA, profit after tax, revenue and others. Scheiner warns against the unquestioned use of these Value Drivers in a valuation and urges for a careful evaluation, even revision where necessary, of a chosen element.

The current study probes whether perceptions of earnings manipulation can influence valuation model preference and choice.

2.5. Relevant research informing key aspects of the current study

Three research papers which are deemed relevant to the current study are reviewed in detail in this section. These papers informed pertinent aspects of the current study.

2.5.1. Valuation Revision (Cooney et al., 2009)

The 2008 paper by Cooney *et al*. investigated the observed positive relationship between acquirer announcement returns and valuation revisions. In a quantitative study employing secondary data analysis, Cooney *et al*. (2009) established that acquirer announcement returns were positive for those private targets whose valuations were revised upwards. Such a relationship was associated with target pricing uncertainty theory, or put simply, the inherent uncertainty associated with valuing private targets.

Cooney *et al*. (2009) established that between any two points in time, an investment may fluctuate in value because of fundamental changes in its cashflows and discount rates as well as the inherent uncertainty of valuing privately held firms. This observation is made without breaking down factors which contribute to the inherent uncertainty in valuing private firms, but urges for theoretical models which could explain the link in future studies. This study contributes, even if indirectly, to the question of uncertainty in valuing private companies.

The data analysed by Cooney *et al*. (2009) is made up of two parts; firstly, a group of withdrawn IPOs from Thomson SDC New Issues, and secondly, the universe of acquisitions in the Thomson SDC Mergers & Acquisitions (SDC M&A) database from 1996 to 2005. Based on matching entities in these groups, Cooney *et al*. calculated the difference between the initial IPO price (a proxy for valuation) and the eventual price at which that same entity was acquired by the publicly listed entity (acquisition price). This difference is referred to by Cooney *et al*. (2009) as Valuation Revision.

This study takes a similar approach in calculating Valuation Revision. The subsequent acquisition price paid by the listed entity in Cooney *et al*. (2009) is considered equivalent to the exit price, and the valuation in the withdrawn IPO in Cooney *et al*. (2009) compares to the last reported valuation. Instead of a difference as calculated in Cooney *et al*. (2009), the current study employs a ratio of exit price / last reported value. A variety of factors, individually and in combination, are tested in an effort to contribute to the theory as stated by Cooney *et al*. (2009).

Cooney *et al*. use secondary data from two databases which appear to be related. Whilst this form of data source generates a considerable number of testable transactions, Jenkinson *et al*. (2013) and other studies have found significant discrepancies in NAV figures provided by some data sources. The use of such data sources is further restricted by limited availability. Preqin for example, does not have a presence on the African continent. In the current study, the author employed a survey of the Private Equity market as a whole to gather the relevant data.

2.5.2. Motivation for choice of valuation method (Barwe, 2022)

The 2022 dissertation by T. Barwe is reviewed next for its recency, and being a study of South African entities, its relevance from a financial reporting perspective. It is a qualitative study that evaluated

selected JSE listed entities with regards to valuation methods and the disclosure of appropriate fair value information. Disclosure is relevant to the current study as it compares exit prices to the last reported value of an investment.

Barwe (2022) conducted a qualitative analysis, first of the rules and principles outlined in IFRS 13 and the IPEV and IVSC guidelines. This analysis established that the earnings multiples approach was the most preferred by the IASB and the international valuation institutions. The DCF approach was also preferred, particularly by the IPEV and IVSC. What distinguished the IASB guidelines from the two valuation institutions was the lack of detailed valuation guidelines in IFRS.

From the perspective of the current study, the choice of valuation method is important, as are the reasons for such a choice.

The second component of Barwe's (2022) study was a content analysis to investigate the adequacy of disclosure of the selected entities. The analysis established that 81% of the selected companies disclosed the valuation technique used. To this end, the DCF method was used in 38% of the cases, and earnings multiples in 33%. This finding is somewhat unsurprising in the South African context. PWC (2017) found a higher preference for the DCF method and their 2022 survey found 90% preference for the DCF.

Barwe (2022) agitates for further research into this phenomenon wherein South African portfolio managers of unlisted equity profess a preference for the DCF method whilst developed markets prefer a market multiples approach (referred to above). The plausible, but not irrefutable, explanation provided by PWC (2017) is the relatively small size of the JSE. The one weakness of the PWC (2017) explanation of preference for DCF over market multiples is that WACC itself is derived from listed entities and so should suffer from the same lack-of-depth argument. This study explores such factors, particularly in the quantitative portion of the current study.

2.5.3. Biased reporting (Jenkinson et al., 2013)

In a research paper aptly titled, 'How fair are valuation of private equity funds?' (sic) Jenkinson *et al*. (2013) investigated whether the interim performance measures reported by private equity funds are useful to investors in assessing the exit performance of the funds. Before a fund is wound down and all funds fully exited and investors paid out, any interim performance measure depends on the valuation of the investments remaining in the portfolio. Jenkinson *et al*. (2013) thus tested changes in fund NAV (a proxy for valuation) against factors such as cash call to LPs and fund returns to LPs after realisation of an investment.

There are several relevant findings in Jenkinson *et al*. (2013). Firstly, reported valuations do not reflect the fair value of investments, with under-reporting of assets observed. Under-reporting is more pronounced (35%) in buy-out firms and less so in early-stage ventures (17%). This finding is

inconsistent with Cumming & Walz (2010) who found over-reporting of investments, particularly in jurisdictions with poor legislative and financial reporting requirements.

Similarly, Harris *et al*. (2023) found wide-spread manipulation of reported returns as well as over-statement of IRR by an average of 470 basis points in private equity funds invested in the real estate sector in the US. The manipulation was accomplished by a variety of timing strategies (selling good-performing investments just ahead of fundraising and retaining poor performers are examples of such manipulation).

Secondly, during periods of fund-raising, fund NAV was inflated, with such inflated value being unwound gradually over the remaining life of the fund. This finding is significant and corroborates the observation of Cumming *et al*. (2009).

Jenkinson *et al*. (2013) used a quantitative analysis with data supplied by California's Public Employees Retirement System (Colpers). Colpers invested in over 800 private equity funds over an extended period of time. This enabled Jenkinson *et al*. (2013) to observe the establishment of funds, cash calls related to the funds, return of cash to investors and several quarters of NAV reflecting the valuation of the private equity fund managers.

Although the findings of the study are valid, there is one notable weakness with the approach. The findings of over-valuation in general, which is disputed by Cumming & Walz (2010) and Harris *et al*. (2022) can therefore be ascribed to factors unrelated to private equity fund choice.

As an example, Jenkinson *et al*. (2013) used a single source of data from one portfolio manager. Stock selection at the Copers level may be a better explanation of over-performance at Calpers specifically, and not of the private equity market as a whole. Secondly, the ability of private equity firms to report equity investment at their cost or fair value in the past could be a further explanation of the under-reporting observed by Jenkinson *et al*. (2013). When the revised IFRS 9 became effective, the cost option for accounting for equity instruments fell away. To this end, Harris *et al*. (2023) state that valuations post the implementation of ASC-820, the US-equivalent of IFRS 13, have become more accurate.

The current study seeks to corroborate or refute the findings of Jenkinson *et al*. (2013) in the South African context. In particular, the finding of under-estimation of investments is of interest. The source of data for the current study is different from the Jenkinson *et al.* (2013) study to control for single source bias. Members of SAVCA as a whole were approached in a general survey covering valuation at reporting and exit in general and observed transactions. The length of the period covered by the Jenkinson *et al*. (2013) study allows for a fuller examination of a private equity fund's cycle of over ten years. This study aimed for an examination of exit as a true measure of value, covering a period of three years (2021 to 2023).

Chapter 3 - Research methodology

3.1. Research Approach

Mphaphuli (2020) defines research approach as the theoretical and philosophical foundation of a research method, serving as the framework within which the research effort is conducted. Leedy & Ormond (2021) describe research methodology as the general approach taken by an investigator to address a research problem. Simplistically, if research methods can be seen as the tools, techniques and procedures to be used, research methodology is the toolbox.

Leedy & Ormond (2021) identify the research problem as the axis upon which the entire research effort revolves. Dewasiri *et al*. (2018) supports this view, further adding that the research problem and the context within which it is solved should inform the methodology choice.

The research problem outlined in Chapter 1, rephrased here for ease of reference, forms the basis for the methodology adopted in the current study. The research problem is that portfolio managers of unlisted equity may employ different techniques to value the same investment at reporting date and at the exit of the investment. This choice could contribute to valuation revisions which are not caused by fundamental factors. This phenomenon (use of divergent valuation methods) has, to the best of the author's knowledge, not been researched in South Africa and the reasons behind it remain unknown.

In addition to the research problem, Creswell (2013) refers to the importance of the research questions in formulating the appropriate approach. In the current study, the research questions asked in order to address the research problem are: RQ1: What valuation methods do portfolio managers of unlisted equities use during reporting and what methods do they use at the exit? RQ2: Does valuation method choice contribute to Valuation Revision? RQ3: Why choose for reporting purposes a method that will not be used at the exit (IPEV, 2018)? The first two research questions address the 'what' aspect. The second question enquires about the existence of a potential relationship between two measurable items, valuation method and Valuation Revision. The final question addresses the 'why'.

Historically, there are two distinct approaches to research in finance, accounting and business, namely: the quantitative approach and the qualitative approach (Dewasiri *et al*., 2018; Grafton *et al*., 2011).

Fisher & Stenner (2011) argue that what distinguishes qualitative and quantitative approaches is the epistemological question of what counts as valid observations. Quantitative approaches have been used for positivist studies, wherein reality can be determined, or such reality is perceived to be determinable. The qualitative approach has been used for constructivist or interpretivist research projects. The interpretivist approach considers reality to be a construct of the society at the time. The posture of the current study is largely, but not entirely, positivist wherein methods used by portfolio managers of unlisted equities will be determined. The third research question requires hypothesising the reasons for

valuation method choice and the motivations and deterrents encountered by portfolio managers at valuation time. For these reasons, a qualitative approach is appropriate for the third research question. Hence the study adopts an overall mixed method approach with a pragmatic outlook.

Leedy & Ormond (2021) argue in turn that the qualitative and quantitative approaches are best distinguished by the fact that qualitative studies rarely reduce phenomena to numbers so as to draw generalisations; instead, they describe such phenomena and all its aspects in full. The research findings of the current study confirm this assertion.

The third research approach, referred to as the mixed method approach, has gained acceptance in finance, accounting, and business in recent years. Mixed method approaches have been used more frequently in recent decades across accounting, finance, business as well as various social sciences and medicine, and their use is increasing with time (Creswell, (2013; Grafton *et al*.; 2011). These approaches combine elements of quantitative and qualitative methodologies (Grafton *et al*., 2011). Dewasiri *et al*. (2018), Humerinta-Peltomaki & Nummela (2006) and Grafton *et al.,* (2011) call for greater use of mixed methodologies in accounting, finance, and business. The current study adopted this research approach.

Distinguishing features of the quantitative, the qualitative and mixed method research approaches are discussed below.

3.1.1. Quantitative approach

Quantitative studies collect a large number of observations and use statistical tools to either describe the phenomenon under investigation (descriptive studies), to compare and contrast (comparative studies), or to reveal relationships that may exist between two or more phenomena under investigation (relationship studies) (Leedy & Ormond, 2021; Dewasari *et al*., 2018). A quantitative approach is best suited to investigating research questions such as ‘what’, ‘how many’, ‘why’ and ‘how much’. Relationship type approaches at times use historical data to predict the future, based on dependent and independent variables.

According to Dewasari *et al*. (2018), researchers in finance, business and accounting have utilised quantitative approaches 68% of the time in the past seven decades. Many of the papers reviewed in Chapter 2 of this report, such as Folus & Boutron (2015), Jenkinson *et al*. (2013) and Harris *et al*. (2022) are quantitative. The data collection methods of these studies, discussed in **Error! Reference source not found.** below, are consistent across most of the studies reviewed, with secondary data analysis at the core.

The first two research questions of the current study require a quantitative approach, as they focus on the ‘what’, and further investigate the potential existence of a relationship between measurable variables.

3.1.2. Qualitative approach

Fisher and Stenner (2011, p.92) best describe the qualitative approach to research.

'To obtain richly detailed, thick descriptions, qualitative researchers may apply cumbersome and inefficient methods to small numbers of cases. They may then be rewarded with laboriously extracted generalisable themes, narratives and further questions from interviews, journals, diaries, rituals and oral histories, with each carefully cultivated as an authentic representation of meaningful phenomena.'

Qualitative research approaches are suitable for addressing research questions such as 'how' and 'why'. In conducting a research project using the qualitative approach, a researcher can generate data that enables a deeper understanding of a problem in a 'real-life' setting (Kuper *et al*., 2008) and from the perspective of those experiencing it (Vaismoradi *et al*., 2013). Qualitative approaches are appropriate where the phenomenon under investigation is relatively unknown and the theory governing it is still under development.

This study utilised several qualitatively oriented research papers. Examples include Barwe (2022), Wright & Robbie (1998), Echanis (2009) and De Villiers *et al*. (2021). Barwe (2022) examined the valuation methods used by entities listed on the JSE to value unlisted entities within their portfolio, and whether the financial statements provided sufficient fair value information. Barwe (2022) used content analysis as the primary analysis tool because the primary data were annual financial statements of selected listed entities. Similarly, the current study uses qualitative content analysis to evaluate the transcripts of the semi-structured interviews conducted to address the third research question. Wright & Robbie (1998) and Echanis (2009) also employed content analysis in their literature reviews. De Villiers *et at.* (2021) reviewed interview transcripts, audio and video interviews in an effort to identify the advantages of video interviews. The findings of De Villers *et al.* (2021) were incorporated into the current study because of their extensive use of video and audio interviews in the semi-structured interview process.

The most direct response to the third research question of the current study calls for a qualitative approach. Whilst proxy variables have been employed in quantitative studies to address the research question, 'why', such responses tend to be indirect.

3.1.3. Mixed method approach

A mixed method study is *'one that combines qualitative data collection and/or analysis with quantitative data collection and/or analysis. The data may be collected concurrently or separately and combined at one or more stages in the research process'* (Humerinta-Peltomaki & Nummela, 2006 p.441).

At a more abstract level, Grafton *et al*. (2011) construe mixed methods research as an approach in which a researcher collects and analyses data, integrates findings and draws conclusions using both qualitative and quantitative approaches and/or methods.

Studies are considered mixed for a variety of reasons, including the type of research questions posed; how those research questions are developed; the data collection methods employed; the type of data to be collected; the sampling procedures used, and the number of conclusions drawn (Grafton *et al*., 2011).

The benefits of using mixed method studies include enhanced sample formation and method selection (facilitation), improved validity of findings, and the creation of unexpected new knowledge (Humerinta-Peltomaki & Nummela, 2006). Grafton *et al*. (2011) state that the mixing of methods is useful as part of the validation strategy to ensure that variances are explained by the phenomenon under study rather than being artifacts of the method adopted.

Despite these benefits, much criticism has been levelled at mixed method approaches for both theoretical and practical failings. Critics argue that the philosophical foundations of quantitative and qualitative methods make concurrent use in a single study incongruent. Opponents of mixed methodologies concede, however, that mixed methods (as opposed to mixed methodologies) can be used for complementary purposes (Grafton *et al*., 2011).

The combination of the research problem and questions guided the adoption of a mixed method approach in the current study.

Van Eden (2005) is an example of a prominent mixed method study referenced in the current study. Van Eden investigated valuation practices, firstly using a survey followed by interviews. The main difference between van Eden's approach and the current study lies in the analysis of interview data; van Eden used a Linkert scale, whereas the current study uses coding techniques.

Erasmus *et al*. (2013), Petersen *et al*. (2006) as well as Mouboussin (2018) are further examples of mixed method studies reviewed in preparation for the current study. Hamman *et al.* (2021) also used a mixed method approach to establish criteria used by private equity investors in South Africa when making investment decisions. Hamman *et al* used a qualitative approach first to develop a questionnaire, which was then applied in the quantitative portion of the study.

The methodologies and designs adopted in Erasmus et al. (2013) and Petersen *et al.* (2006) align with the current study, as both used qualitative approaches to clarify quantitative outcomes. Erasmus *et al.* (2013) focused their efforts on the Big 4 audit firms in South Africa while Petersen *et al.* (2006) studied 39 subjects comprising private equity funds and firm advisors.

Figure 3.1 shows the connection between the research questions, the chosen approach and the analysis tools.

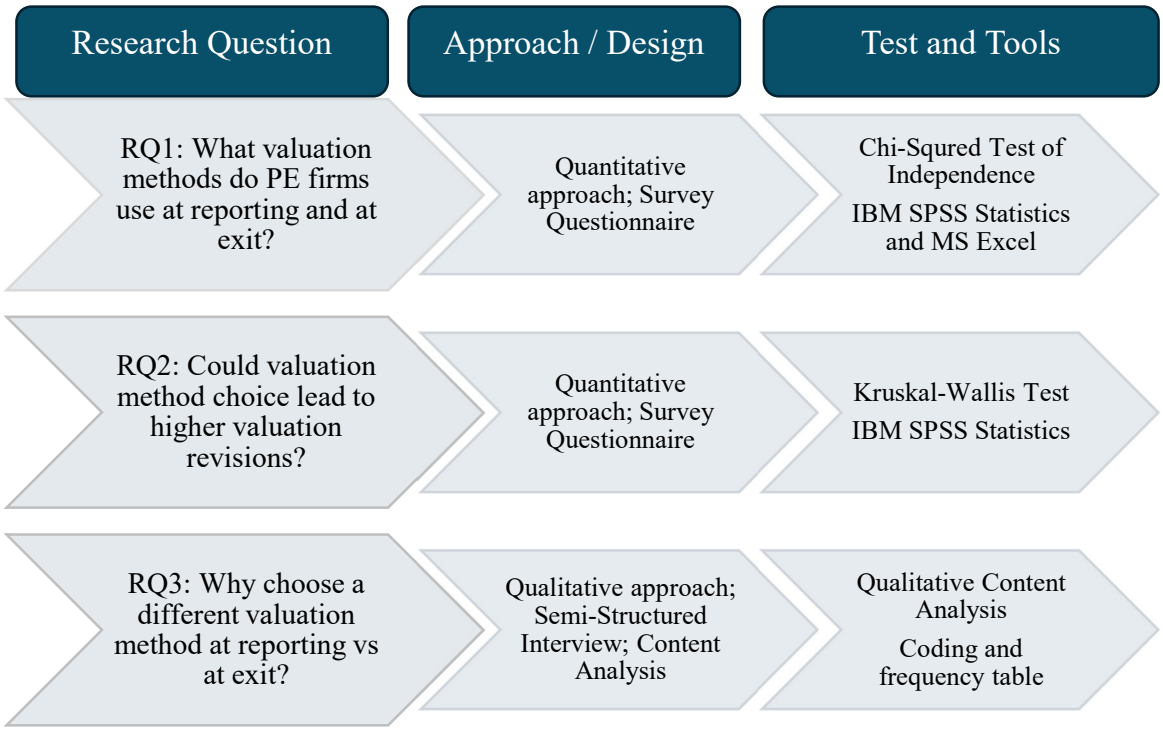


Figure 3.1: Research Questions, Approach and Analysis Tools

Source: Author's own

3.2. Design

3.2.1. Description of research design

The current study adopted a mixed method approach taking the form of an explanatory sequential study (Leedy & Ormond, 2021). The research began with a quantitative phase aimed at gathering data on methods of valuation, their application, and valuation revisions as measured by exit multiples. This was followed by a qualitative phase that investigated factors contributing to the phenomena observed from the quantitative analysis. Leedy & Ormond refer to this type of study as a QUAN⟶ Qual.

Creswell (2014) refers to such enquiries as quantitative-phenomenology design studies, which integrate the understanding of phenomena from a first-person perspective with the statistical generalisation of multiple observations. Specifically, the chosen design is referred to as an explanatory sequential design. Figure 3.2 illustrates the chronological steps to follow in conducting such a study.

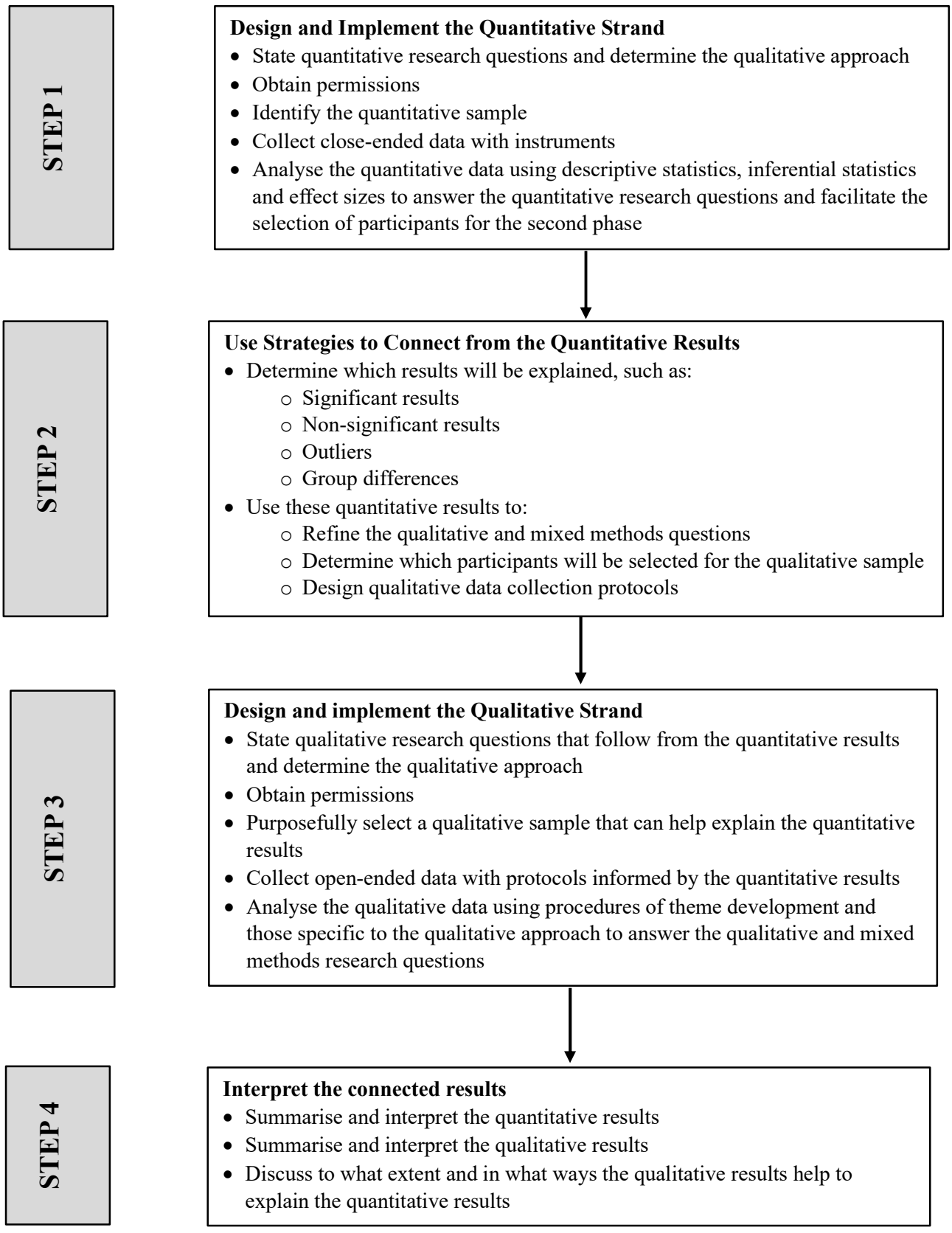


Figure 3.2: Flowchart for the basic procedures in implementing an explanatory study

Source: Creswell, 2014

In the current study, qualitative and quantitative methods were integrated at the implementation phase through two data collection methods, and during the interpretation and knowledge creation phases through interpretive data analytics. Based on the outcomes of the quantitative leg of the study, factors leading to significant group differences observed were further explored through qualitative methods.

Greater weight was placed on the quantitative approach, addressing two of the three research questions quantitatively, due to its prevalence in precedent studies and the majority of the subject-matter papers referred to in the current study. Research Question 1 (a normative question) and Research Question 2 (a relational question) were addressed through quantitative data. The final research question, which explores the 'why,' was addressed through qualitative data analysis. Table 3.1 illustrates the research approach of the current study.

Table 3.1: Steps of an Explanatory Sequential Mixed Method Design

Research Phase	***Procedure***	***Implementation***
Quantitative Phase	Research Questions	What valuation methods are used? What is the relationship between valuation method and valuation revision?
	Identify the Sample	Members of SAVCA and Google Search
	Obtain Permissions	Wits School of Accountancy Ethics Committee SAVCA Consent JSE Consent
	Collect Data	Survey Questionnaire (Appendix 2) Microsoft Forms
	Analyse Results	Microsoft Excel IBM SPSS Statistic
Connection	Determine results to be explained	Method used for reporting purposes is not the same as the method used for exit.

Qualitative	Research Question	Why use a method for reporting purposes which is not likely to be used for exit?
	Obtain permissions	Wits School of Accountancy Ethics Committee
	Determine Participants	Professionals in the accountancy and consultancy sectors who advise multiple clients in transactions and perform valuations
	Data Collection	Semi-Structure Interview Guide (Appendix 3)
	Data Analysis	Textual Data Analysis (Coding Frequency Table Appendix 5) Microsoft Word Microsoft Excel
Interpretation	Quantitative Results Qualitative Results Mixing of Findings	

Source: Adapted from Creswell (2014)

3.2.2. Justification of research design

The chosen design best fits an enquiry of this type. As an example, van Eden (2005) adopted a similar design, although it was not explicitly stated as such in the report. Similarly, Erasmus *et al*. (2013) employed a mixed method approach structured as a QUAN ⟶ Qual.

Chapter 4 - Research methods

Mphaphuli (2020) describes research methods as the activities and procedures followed in conducting a study. This study employs a combination of a survey method and semi-structured interviews as the primary data-gathering tools. For the quantitative part of the study, survey participants were selected from firms involved in the private equity sector in its broadest sense, and an online questionnaire was deployed. Valuation professionals at consulting and auditing firms were interviewed in the qualitative portion of the current study.

4.1. Population and participation

4.1.1. Quantitative Portion - the Survey

The objects of the current study, outlined in 1.4, are private equity, venture capital and investment holding companies in South Africa.

The subject population for the survey was drawn from two sources. First, an internet search on Google.com for the largest private equity firms in South Africa yielded a list of 10 companies, presented in Table 4.1. In addition, the researcher, being in the investment management sector, identified a further four entities, which are also included in Table 4.1. Due to the prominence of the top ten private equity firms as obtained from the Google search, this group was designated as Tier 1 Survey targets.

The second source of potential survey participants was derived from the literature review, especially from members of the South African Venture Capital and Private Equity Association (SAVCA). The SAVCA website: https://www.savcamembers.co.za/search.html outlines that the organisation is a non-profit entity that promotes the interests of southern African private equity, private debt and venture capital. The researcher downloaded the Excel sheet of members available on the site and stored it directly on laptop hard drive. The downloaded file initially contained 304 records, including duplicates (companies with more than one fund name listed). After removing the duplicates using an excel function, 216 individual records remained.

Using the filtering function in Excel, companies that fall under the following descriptions in the 'Firm Type' Column were eliminated: ▪ *Consulting / Advising Firm:* ▪ *Law Firm;* ▪ *Compliance firm;* ▪ *Accounting / Auditing Firm;* ▪ *Consulting / Advising Firm*▪ *ESG, Impact and Responsible Investing Advisors;* ▪ *Accounting / Auditing Firm*▪ *Consulting / Advising Firm;* ▪ *Fund Accounting and Administration Services;* ▪ *Fund Accounting and Administration Services;* ▪ *ESG, Impact and Responsible Investing Advisors;* ▪ *Compliance firm;* ▪ *Consulting / Advising Firm*▪ *Compliance firm;* ▪ *Consulting / Advising Firm*▪ *ESG, Impact and Responsible Investing Advisors.* Members with these descriptions do not hold or manage any assets but are rather service providers to the asset managers.

After this elimination, 180 individual records remained that were not classified as accounting, auditing, consulting, legal or advisory firms. A further review of these records indicated that one entity earmarked for the qualitative part of the study (i.e. a bespoke advisory firm as explained in 4.2.1) and the Johannesburg Stock Exchange which was also listed as a SAVCA member, were included in the 180. Excluding these two entities retained a group of 178.

Of the fourteen (14) Tier 1 entities sourced as described above, nine (9) were found to be members of SAVCA. These nine were therefore excluded from the Tier 1 stream to avoid duplication of interaction, although they were retained in the SAVCA stream. After this exclusion, five (5) firms remained from the Tier 1 stream.

To summarise the components of the sample (N): it is made up of 178 firms drawn directly from the SAVCA website and five Tier 1 entities, totalling 183.

Table 4.1: Tier 1 Survey Targets

Name of Firm	***Type of Entity***	***Name of Firm***	***Type of Entity***
African Rainbow Capital	*IHC*	*Sphere*	*IHC*
Medu Capital	*PE*	*AIIM*	*PE*
Royal Bafokeng Holdings	*IHC*	*Agile Capital*	*PE*
Mogs	*IHC*	*RMB Corvest*	*PE*
Ethos	*PE*	*Metier Private Equity*	*PE*
Kapela	*PE*	*PSG*	*IHC*
Infinite Capital	*PE*	*African Rainbow Energy and Power*	*PE*

Source: Author's Own

Sampling

Leedy & Ormond (2021) provide a practical guideline for sample selection, referred therein and in the current study as N. For ease of reference, the guideline is tabulated and presented in Table 4.2.

Table 4.2: Proportion of population to Use as Sample Size (N)

Sample Size = N	
Population	***Sample Size***
For sample population of 100 or fewer	*Survey the entire population*
If the population size is around 500 (give or take 100)	*50% should be sampled*
If the population size is around 1,500	*20% should be sampled*
If the population size is 5000 or more	*Fixed sample size of 400*

Source: Author's adaptation of Leedy & Ormond (2021)

The true population size of the object of the study in South Africa has not been determined previously. Whilst SAVCA provides a platform for all private equity and venture capital participants to join, it is not possible to confirm how representative it is of the entirety of the population which it represents. Investment holding companies may also participate voluntarily in SAVCA and some do; however, it remains difficult to determine the true number of active investment holding companies in order to determine an appropriate sample size. For this reason, the entire SAVCA membership as described in detail below, were engaged in the survey, in addition to the Tier 1 survey targets.

*Recruitment of participa*nts

Out of the 178 entities from the SAVCA pool of the population, only 141 were surveyed via email. However, 16 of these emails were rejected, with notification messages sent back by the email servers. The remaining entities (34 with generic email addresses and three without emails) could not be contacted. Efforts to reach these entities by telephone to obtain alternative email addresses were unsuccessful.

From the fourteen (14) entities listed in Table 4.1 as Tier 1 survey targets, five (5) were engaged as part of the pilot study. Two of the five in the pilot study were members of SAVCA. Of the remaining nine (9), five (5) were engaged separately, based on prior established relationships with officials at those entities. Three of the remaining four were members of SAVCA and were approached as part of the SAVCA outreach as detailed above. For the fourteenth entity in this group, telephonic contact was made using the details listed on their website, and the official designated for investment management was identified and their email address obtained.

Figure 4.1 illustrates the make-up of the quantitative sample. Details of the responses to the survey are provided in Chapter 5 – Results and Discussion.

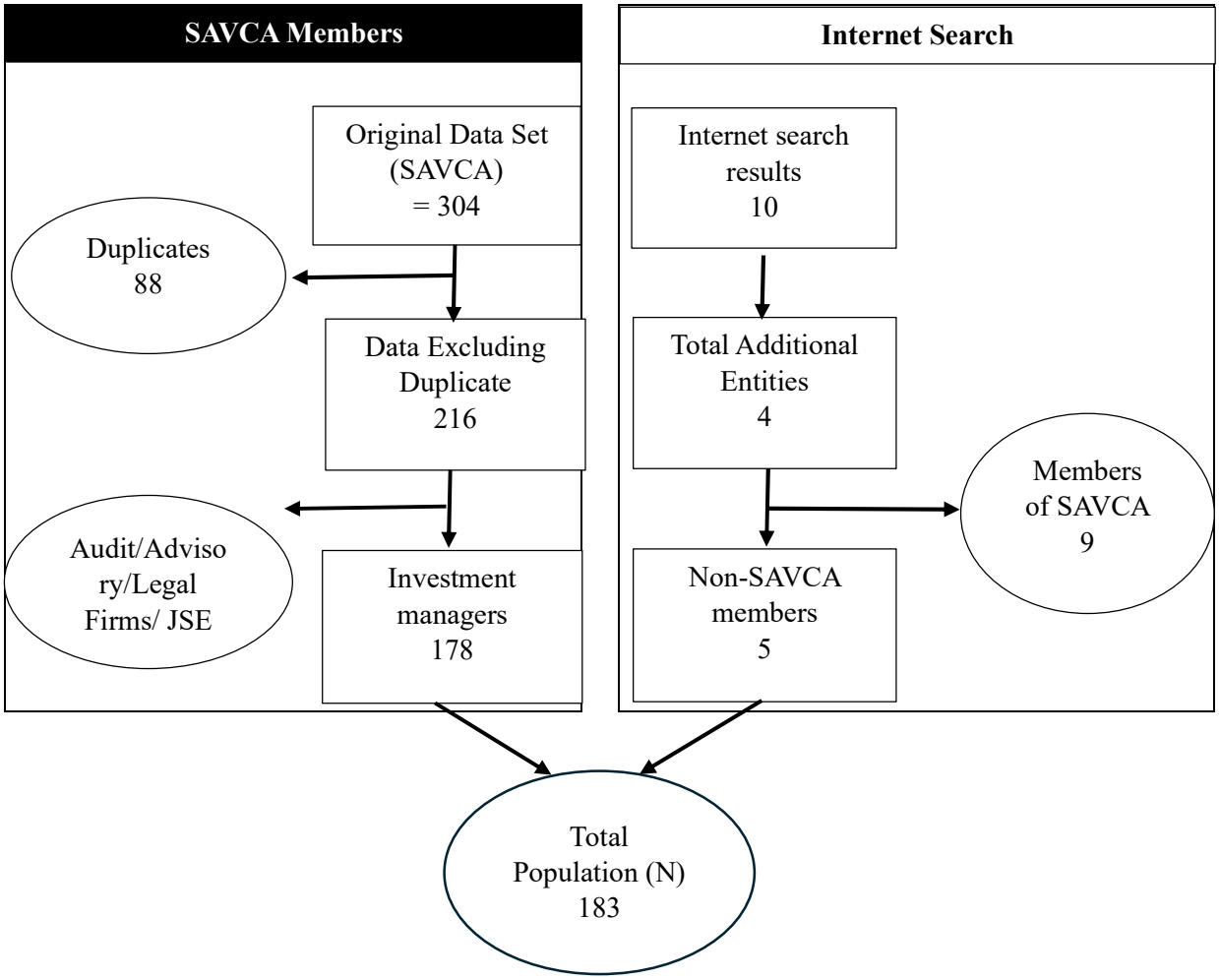


Figure 4.1: Composition of Sample - N

Source: Author's Own

4.1.2. Qualitative Portion – Semi-structured Interviews

The semi-structured interviews were conducted with professionals involved in valuation on behalf of clients. Three of the Big 4 accounting firms (Deloitte, KPMG and PWC) participated, along with two mid-tier firms (BDO and SNG-Grant Thornton). Additionally, two bespoke consultancy firms, which have asked not to be directly named in the report, also took part.

Erasmus *et al*. (2013) interviewed only the Big 4 whilst this study expands the interview participants to include mid-tier firms and focused consultancy firms, netting a higher number of participants.

Of the seven individuals who participated in the interviews, four were at the partner/director level, two were senior managers and one was an associate director. All participants had experience exceeding eight years. All participants were recruited either through direct calling by the researcher or via referrals from colleagues who were familiar with the researcher.

4.2. Data Collection Tools

4.2.1. Quantitative Portion - The Survey Questionnaire

The survey questionnaire, which is appended to this report as Appendix 2, contains two sections of seven (7) and four (4) questions respectively. One of the seven questions in the first part is a binary question, three (3) questions are nominal, and the remaining questions are ordinal questions. All participants were required to complete the first part of the questionnaire. Depending on the response to the final question of the first part, participants were directed to the second part of the questionnaire. The second part is made up of one binary question, two nominal questions and a single ordinal question. A participant could complete the second part up to three times if they had exited three or more transactions.

Table 4.3: Characteristics of Survey Questions

Question	Data Type	Form of Data	RQ Addressed
Q1. Total assets under management / NAV	Ordinal	Monetary (ZAR)	1 and 2
Q2. Proportion of Unlisted equity assets under management at last reporting date	Ordinal	Proportion (%)	1 and 2
Q3. Method of valuation typically used for unlisted equity assets at reporting	Nominal	Valuation Technique	1.a
Q4. Is valuation externally audited?	Binary	Yes / No	3
Q5. Typical method of exit of investments	Nominal	Exit Strategy	2
Q6. Valuation method used for exit of investments	Nominal	Valuation Technique	1.b
Q7. Number of exits in the last three years	Ordinal	Numeric	2
If more than three exits occurred, identify three of the largest. If three or less, consider all of the exits. Respond to the questions below for each relevant exit.			
Q8. Exit valuation method	Nominal	Valuation Technique	1.b
Q9. Last reported valuation method	Nominal	Valuation Technique	1.a
Q10. Exit Multiple Exit price as a proportion of the last reported value (If exit was through a sale)	Ordinal	Proportion (%)	2
Q11. Was the exit due to an unsolicited offer?	Binary	Yes / No	3

The Role of each Survey Question

The survey was comprised of the questions listed in Table 4.3 above. Each question was designed to extract specific information that contributes to answering the research question.

Survey Q1: Total assets under management / NAV: To grant Validity to the research outcomes. The private equity market was estimated at ZAR300Bn. An estimate of the total NAV of the survey participants can demonstrate the validity of the study.

Survey Q2: Proportion of Unlisted equity assets under management at last reporting date: because private equity entities often hold unlisted investments in a vehicle which also holds listed assets, delineating the relevant market is necessary to ensure that the findings drawn are from actual holders of unlisted equities.

Survey Q3: Method of valuation typically used for unlisted equity assets at reporting. Test whether the valuation technique generally used for reporting purposes is similar to the method used for exit. Purpose of valuation: to be contrasted with Q6 below. Further, to be contrasted with the method actually used to value exited investments just before the exit transaction was executed in Q8 below.

Survey Q4: Is valuation externally audited? To be used as an independent variable. Some literature suggests a preference for DCF by auditors because of believability.

Survey Q5: Typical method of exit of investments: to test the relevance of typical exit methods (Sale Strategic Partner or, Sale to another private equity firm/s; MBO and Other, incl. IPO) used by private equity managers in the South African context. Association of exit method and valuation method can also be explored.

Survey Q6: Valuation method used for exit of investments: Test whether the valuation technique generally used for reporting purposes is similar to the method used for exit purpose of valuation. To be contrasted with Q3 above. Further comparison with the actual method used for executed transactions in the past three years in Q8.

Survey Q7: Number of exits in the last three years: This question serves as a lead into the second part of the questionnaire. In the second part, the focus shifts to exited investments rather than the entirety of a portfolio.

Survey Q8: For each relevant transaction, what was the exit valuation method?

Survey Q9: For each relevant transaction, what was the last reported valuation method? Q8 and Q9 test the extent to which dichotomous valuation techniques are used for an identical asset, at reporting and when eventually exited.

Survey Q10: Exit Multiple being exit price as a proportion of the last reported value (If exit was through a sale). To test whether any valuation technique could be associated with higher valuation revisions as measured by Exit Multiple.

Survey Q11: Was the exit due to an unsolicited offer? Will be used for cross-sectional tests of correlation and may be a factor where divergent methods are used. As an example, the offeror will generally include the valuation method in their indicative offer.

Administering the Survey

The survey questionnaire was conducted using an online platform called Microsoft Forms®. Microsoft Forms, a part of Office 365, was released by Microsoft in June 2016. It allows users to create surveys and quizzes with automatic marking capabilities. The data can be exported to Microsoft Excel and viewed in real-time using the Present feature. The data is stored securely by one of the leading information technology companies in the world[11].

4.2.2. Qualitative Portion - The interview guide

Interviews were conducted with seven of the eight firms initially identified in the research proposal and referenced earlier. The interviews were informed by a review of prevailing literature on factors influencing valuation technique choices, and the outcomes of the quantitative portion of the study. EY, which was initially anticipated to take part, did not participate in the study. The interviews were conducted electronically (De Villiers *et al.,* 2021) using Microsoft Teams™ as the primary online platform. The auto-transcribe setting was enabled, and interviews were recorded in line with the ethics provisions of the University. Each recording and transcript were in turn sent to a professional transcription company for secondary transcription, resulting in 14 transcripts. The two versions of each transcription were compared using MS Word to identify discrepancies. Where inconsistencies arose, the researcher listened to the original recording and then transcribed the highlighted sections as a third and final check.

Furthermore, the coding was reviewed for consistency by one of the supervisors of the current study, on a sample basis to ensure that coding was representative of the participants' intended messages.

The interview guide is appended to this report as Appendix 3. The interview guide was shared with participants at least four days before each interview. The introductory remarks served to connect the quantitative study outcomes with the next phase of the research project, being the semi-structured interview. Whilst six questions were asked, the core of the interview lies in the following four questions (with the purpose of each question appended):

[11] https://en.wikipedia.org/wiki/Microsoft_Forms

Q2. Why do clients need investments valued? Purpose: To obtain a general idea of purpose of valuation in a context where transactions are few and far between.

Q3: What Valuation Methods have you used (either performed, reviewed) in your role before? Purpose: Distinguish between commonly used valuation methods and other methods recommended in BPM6.

Q4. Have you discerned a preference of methods, by either your clients, their auditors or even your firm as an expert? Purpose: Isolate the influence of external valuators and auditors on the valuation method choices made by private equity firms.

Q5. What is behind the preference? Purpose: To address RQ3 directly through the voices of the interview participants.

As is the nature of semi-structured interviews, the questions were not asked in verbatim format or in the order outlined in the interview guide.

4.3. Data Analysis

This part of the report discusses the various ways in which the data was interrogated in order to address the research questions. Data analysis is primarily determined by the type of data collected, which is guided by the research design and approach. This section begins by discussing the analysis of the quantitative portion of the study, addressing research questions 1 and 2, followed by an examination of the semi-structured interviews which address research question 3.

4.3.1. Quantitative data

Descriptive statistics

Descriptive statistics are performed for three purposes in studies of this type: firstly, to obtain a thorough understanding of the data in relation to previous studies and known characteristics of the phenomenon; secondly, to corroborate findings reached by means of inferential statistics and qualitative tools; and finally, to identify potential relationships that may warrant further scrutiny (Marshall & Jonker, 2010).

The survey obtained binary data (external audit and unsolicited offer), nominal data (purpose of valuation, valuation methods) and ordinal data (size of firm, proportion of unlisted equities in the total portfolio and Valuation Revision) through the questionnaire. The semi-structured interviews gathered textual data which was categorised using qualitative content analysis. Both datasets present rich opportunities for applying descriptive statistics for the three purposes outlined above.

Proportions were used to measure the requirement of external audit in relation to valuation results and the extent to which investments were disposed of as a result of unsolicited offers from eventual acquirers. The mode was then used to evaluate the typical method of exit and the valuation techniques

employed. In relation to the typical method of exit, results were compared to previous studies by Folus & Boutron (2015), Deloitte (2021) and Uddin & Chowdhury (2021). These central tendency tests were used to complement the test of association conducted using the Chi-Squared test as described in 0 below.

Finally, the logarithmic mean was used to evaluate the size of the entities that responded to the survey, with the results compared to SAVCA (2022) data to corroborate the validity of the study. The logarithmic mean has been used in finance research in the past as evidenced by studies such as Demirakos *et al.* (2009) and Kumlachew (2018). Additionally, the mode was used to test Valuation Revision and the tendency of private equity managers to either over-report, under-report or accurately report the intrinsic value of their portfolios. These findings were compared with those reported in Gompers *et al*. (2016), Cooney *et al*. (2009) and Jenkinson *et al*. (2013). Statistics describing Valuation Revision were also used to corroborate the Kruskal-Wallis Test described further in 0 below.

Association between Purpose of Valuation and Valuation Technique

The Chi-Squared test of independence[12] is used to determine whether two or more nominal variables are independent of each other or are related. In the current study, the two categorical variables analysed were valuation approaches, (with four options: DCF, Earnings Multiples, Asset Based and Other) and the purpose of valuation (exit or reporting). It is important to note that the Chi-Square Test of Independence cannot determine causation and is not useful for continuous variables.

The following equation illustrates the Chi-Squared Test of Independence:

$$\chi^2 = \Sigma \frac{(O_i - E_i)^2}{E_i}$$

Where:

χ^2 = chi squared

O_i = observed value

E_i = expected value

Association between valuation method and Valuation Revision

The test of biased reporting was based on the Valuation Revision as reported by the survey participants. Valuation Revisions were reported on an ordinal scale, ranging from 0.7 to 1.2 with four intervals (therefore 5 categories). The accuracy of valuations and balances reported by private equity managers is a key component of efficient capital markets, therefore there is a need to test the accuracy of valuation results. Several studies reviewed above tested the accuracy of valuation methods including Chakraborty & Hansson (2013), Das *et al.* (2003) and Demirakos (2010). All the above-mentioned research was

[12] https://libguides.library.kent.edu/spss/chisquare

conducted outside South Africa and no paper, to the best knowledge of the researcher, has investigated valuation accuracy in South Africa.

To determine valuation method accuracy in this study, a test of association between Valuation Revision (ordinal scale) and Valuation Method (nominal with four categories) was performed. To test for association in data of this form, where one category is nominal and the second category is ordinal, the Kruskal-Wallis Test was used.

By assigning a rank to each observation in a sample, the Kruskal-Wallis Test establishes if there is an association between the independent variable and the dependent variable by comparing the mean of the ranks of each category. The Kruskal-Wallis Test is similar to the Mann-Whitney U-Test, except for the fact that the latter can only be used in situations where there are two or less categories. It can also be considered as the non-parametric equivalent of the ANOVA Test (Cleophas & Zwinderman, 2016) and is often employed when dealing with three or more levels of an independent variable.

For two levels, the Mann Whitney U Test is recommended. The Kruskal-Wallis test is appropriate for datasets where the dependent variable is measured on an ordinal scale, ratio scale or interval scale, and the independent variables is nominal.

The observations should be independent. In other words, there should be no pre-established relationship between the members in each group or between groups. All groups should have the same shape distributions. Other characteristics of data suitable for evaluation through the Kruskal-Wallis Test are:

- **Ordinal Variables** - the variables in question should be ordinal or continuous, i.e., have some kind of hierarchy to them.
- **Independence** - each group should be independent from the others.
- **Sample size** - each group must have a sample size of five or more. With a sample size in this range, the Chi-square distribution well-approximates the H statistic.

In the current study, all the three conditions stipulated above were met.

Use of SPSS Statistics

To conduct the tests outlined in the study, IBM SPSS Statistics for Windows, Version 29.0.2.0 was used.

The data collected from the survey was downloaded into Excel using the feature available on MS Forms. As is often the case with SPSS Statistics, certain steps were taken to code the data into a format appropriate for statistical analysis. The syntax of the recoding is shown in Appendix 4.

Further, because the Kruskal-Wallis test in SPSS uses numeric data only, the exit multiple range which was recorded as a textual field in SPSS, had to be converted to numeric format. Therefore, an exit

multiple was generated using a random number generator in SPSS Statistics, specifically, the RV-Uniform formula for each exit. This formula generates random numbers within a minimum and maximum value. The minimum and maximum value for each category of exit multiple was used in each case, and the number of cases used to generate the random numbers.

4.3.2. Qualitative data - content analysis of interview data

Qualitative content analysis, descriptive phenomenology and thematic analysis in general can be described as research techniques that enable researchers to make valid and repeatable inferences from texts, within the context of the phenomenon under study. These techniques, referred to as qualitative descriptive approaches, are suitable for research where a relatively low level of interpretation of the data is done, with the focus being on describing what is contained in the text (manifest content) (Vaismoradi *et al*., 2013). Descriptive techniques bear some resemblance to quantitative techniques in that they assume that there is a fact or true state of affairs that can be established through the analysis of textual information.

Qualitative data analysis technique

For the qualitative portion of the current study, the qualitative content analysis technique was chosen. The choice was informed by the following factors, as identified by Vaismoradi *et al*. (2013):

i) Content analysis uses both a quantitative count of codes and a qualitative understanding of text passages, as opposed to a thematic analysis, which uses a purely qualitative and hermeneutical approach to data. The assignment of categories to text is a qualitative step, while the analysis of frequencies of categories is a quantitative step.

ii) Where there is insufficient knowledge about a topic, an inductive approach which lends itself to a thematic analysis is used (Saldaña, 2021). However, in this report, a deductive approach was followed because some reasons have previously been postulated for the preference of valuation methods. To test these theories, content analysis is more suitable.

The basic form of interpretation followed is summary, wherein the textual data is reduced in a way that retains its core meaning, which is then transformed through abstraction to a comprehensive overview (Mayring, 2014). The recording unit is the interview participants, some representing a firm, others in their personal capacity. For simplicity, the coding unit is by proposition, which is the smallest passage of text which contains meaning by itself (Mayring, 2014). The corpus consists of interview transcripts with seven professionals involved in equity valuation at consulting firms (including three of the Big 4 accounting firms: KPMG, Deloitte and PWC). The source of the material was semi-structured interviews conducted specifically for the study.

Themes and theme development

The interview questions are in Appendix 3. The interviews were conducted in electronic format via Microsoft Teams without video. The interviews were recorded with the consent of the participants, and auto-transcribed. The transcriptions were reviewed by a professional transcriber and a second corroborative transcription performed by the professional transcriber.

The direction of inquiry can be categorised as Cognitive Background. The semi-structured interviews were conducted to establish the following: Horizon of Meaning, Knowledge Background, and Expectations, Interests and Attitudes (Mayring, 2014).

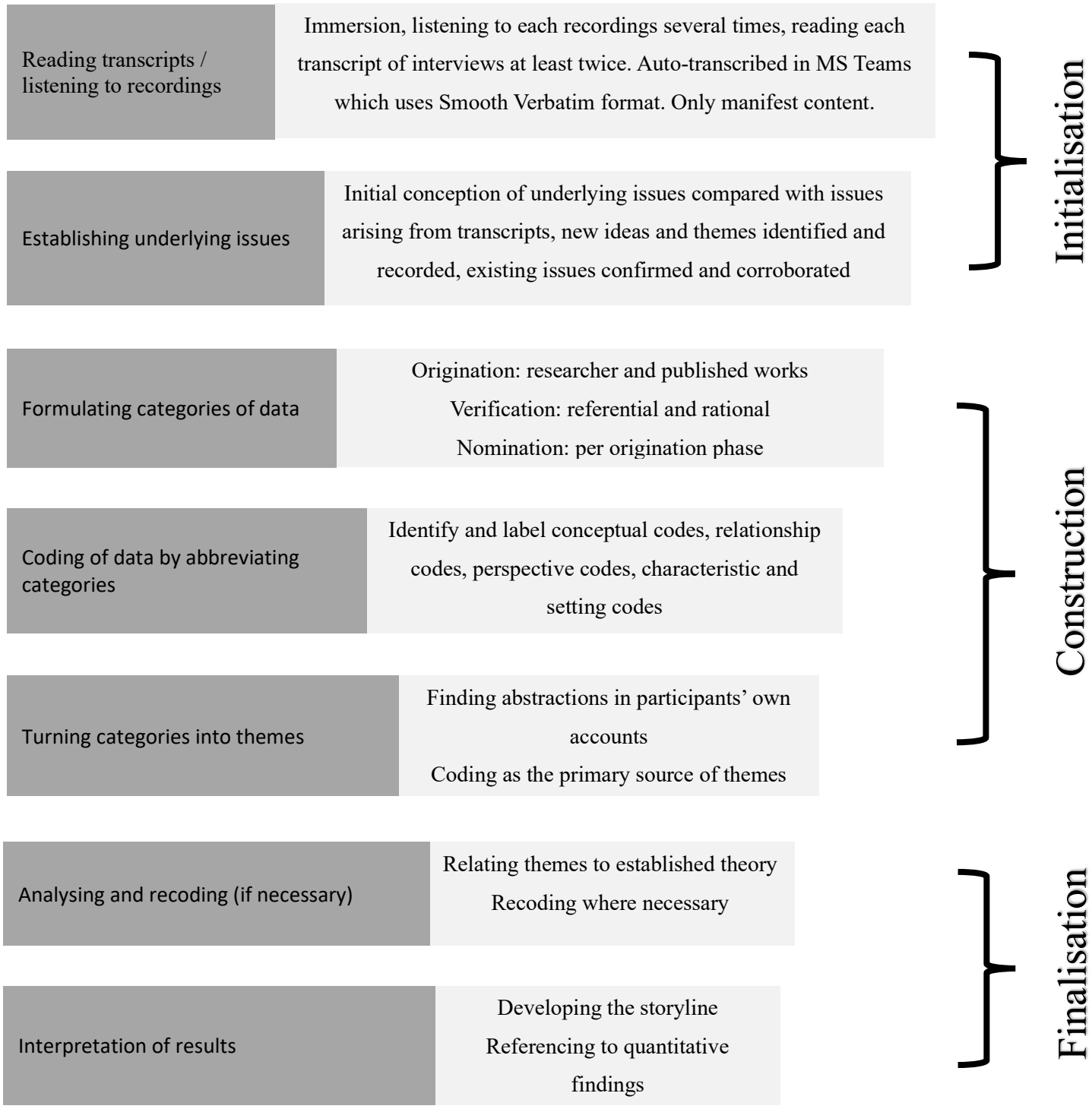


Figure 4.2: Phases and stages of Theme Development in Content Analysis

Source: Author's adaptation of Vaismoradi *et al*. (2016)

Category formulation

Differentiating between theme and category is necessary for understanding content analysis in a qualitative context. Whilst both concepts are used as descriptors of textual data, a category is reflected

in the text or data itself (participant's account) whilst a theme is a conceptual abstraction of ideas repeated in the text (Vaismoradi *et al*., 2016).

As illustrated in Figure 4.2 above, theme development includes reading through each transcript to obtain an overview of the data, establishing underlying topics; formulating categories of the data, coding of data by abbreviating topics; turning topics into themes; ordering themes alphabetically; conducting an analysis and recoding (if necessary). Figure 4.2 further illustrates these sequential procedures and their narrowing effect on the text.

In qualitative content analysis, category formation is at the centre of the data analysis effort (Marying, 2014). In the current deductive study, categories were formulated from reviewing prior literature and other public works and the researcher's understanding of the topic. Table 4.4 below illustrates the category formulation of the current study.

Table 4.4: Category Formulation for Coding Purposes

Sub-Category	Generic Category	Main Category
DCF is relevant to ongoing business operations	Theoretic soundness	DCF is defendable
More robust and scientific		
Loss-making entities and start-ups		
Easy to access input data for insiders	Convenient access to data	
Takes management's perspective into account		
External review of valuation workings	Valuations are audited / reviewed externally	
Familiarity with the model		
JSE IPOs and de-listings	Lack of depth in stock markets makes use of Market Multiples Approach inappropriate	Difficulty / inconvenience / cost of using Market Multiples Approach
Some indexes have very few stocks		
Changing economic structures		
Transactions multiples of recent comparable transactions	Cost and inconvenience of using Proprietary sourced data	
Proprietary and expensive data sources		
IVSC Valuation Standards	DCF does not align with accounting / valuation standards guidelines	DCF Method is not a reliable indicator of exit prices
IPEV Guidelines		
Three Levels of IFRS 13		
DCF sensitivity to input data	DCF can be manipulated	
Arbitrary adjustments of discount rates		
Limited variables	Market Multiples simple to apply	Market Multiples simple to apply and clear to communicate
Single period / forecasting may or may not be used		
Who will use the valuation?	Market Multiples clear to communicate	
What is the purpose of the valuation?		
Comparison with peers and across sectors		
Verification of multiples of the peer group from published sources		

Source: Author's adaptation of Elo & Kynga (2017, p.111)

4.4. The Pilot Study

4.4.1. The purpose of the pilot study

As part of the quantitative portion of the research effort, a pilot study was conducted to test and validate the cohesiveness of the research questionnaire. As indicated in 4.5.1 below, the questionnaire was an adapted version of a tool used by Arnswald (2001). It was therefore necessary to test beforehand whether the intended participants in the study would find the tool understandable and whether the data sought could be collected with the tool. As in Mphaphuli (2020), the purpose was not to test the subject matter in order to inform research results, but rather to assess the feasibility of the primary tool of the data-driven portion of the study before a large-scale effort was embarked upon.

4.4.2. Population and participation

The target population of the pilot study was investment managers of unlisted equities with whom the researcher had worked, either in the past or at the time the study was conducted. The reason for targeting equity managers of unlisted investments is apparent—this is the population intended for the main study. Targeting entities which were familiar to the researcher was necessary for two reasons: firstly, to enhance the response rate and secondly, to enable feedback necessary to improve the questionnaire.

To this end, five entities were approached at the level of the managing director / CEO / CFO. Of the five entities targeted, five responses were received.

4.4.3. Feedback from participants

The outcomes of the pilot study were largely positive. Participants understood the survey questions and were able to respond to them adequately without the need to obtain clarification or assistance from the researcher.

There was a need to refine the options made available for Q10. Whilst the original question had the third option as ‘1.1 to 1.12’, this was in error. The option should have been ‘1.1 to 1.2’. Based on the feedback, the error was corrected with no impact on the response rate. There was no impact on the responses because at the time that the error was corrected, none of the few respondents had chosen the erroneous ‘1.1 to 1.12’ option in relation to Q10.

4.5. Validity

If a research project is investigating a legitimate research problem, the credibility of its findings is based on an appropriate research approach and design, research methods that are appropriate for the design, and data collection and analysis tools that are justifiable (Leedy & Ormond, 2021). Because research

methodology choice was justified in 3.1 and the design in 3.2.2, this part deals with the validity of the data collection methods and analysis tools employed.

The validity of the current study was informed to some extent by the validity approach of precedent preceding studies, including Cooney *et al*. (2009), Jenkinson *et al*. (2013) and Barwe (2022). Other papers which took a mixed method approach were also reviewed closely to obtain a broad consensus of data validation techniques appropriate to the current study. These papers are Petersen *et al*. (2006), Erasmus *et al*. (2013), Mouboussin (2018) and Allee *et al*. (2020). Further additional materials were used to cover specific aspects of the current study, such as Arnswald (2001) – survey tool, Evans (2017) – theme extraction from interview data and De Villiers *et al*. (2021) – online interviews.

Erasmus *et al*. (2013) relied on data from the Big 4 (both survey and interview) in their investigation of unsystematic risk in valuations.

4.5.1. Internal Validity / Reliability

The use of surveys in finance research is a long-established practice. Several of the papers referred to in the current study used a survey, often in combination with interviews, to collect data. Arnswald (2001), Taylor (2001), Van Eden (2005) and Erasmus *et al*. (2013) are prominent examples. The current study used an adapted version of the survey tool used by Arnswald (2001) to collect the data.

Participants in the survey were members of SAVCA as detailed in 4.1.1. Taylor (2001) also used SAVCA members as the population of his study. SAVCA is a leading body of private equity firms in South Africa and has adopted the IPEV guidelines for valuation. To further corroborate the relevance of SAVCA as an appropriate source of participants in the survey, a google search of the Top 10 private equity firms in South Africa was conducted. Of the list that was obtained from Google.com, nine were members of SAVCA.

The researcher has been employed in the private equity industry for the past eight years and currently manages a portfolio, mainly as a limited partner executive. In this role and previous roles, the researcher has performed and reviewed valuations using a variety of valuation techniques, which are the subject of the current study. This proximity to the subject matter enhances, rather than clouds, the critical evaluation of the findings encountered during the research project.

4.5.2. External Validity / Generalisability

In a quantitative analysis where a large population exists from which a sample is drawn, the representativeness of the sample is a key component of external validity. In the two quantitative precedent studies (Cooney *et al*., 2009 and Jenkinson *et al*., 2013), a fraction of the initial populations was tested. In Cooney *et al*. (2009), from an initial population of 1 119, only 68 events were tested. This followed a step-by-step reduction of the members of the population who did not meet certain criteria.

Similarly, Jenkinson *et al*. (2013) did not draw a sample from a dataset of 761 funds which met their criteria. Both studies used existing data to perform their tests. Similar to both relevant precedent papers, the current study did not draw a sample from the population. In alignment with Cooney *et al*. (2009), members of the population who did not meet certain criteria (refer to 0) were eliminated until the 183 subjects were targeted for the survey.

Being a survey, the response rate and the number of responses address the validity question. A response rate of 27% with a test statistic (N) greater than 35 was reached. The number of transactions numbered 65.

Semi-structured interviews are the most common qualitative data collection tool in the social sciences, primarily because they are guided and remain relevant to the topic but allow interviewees to answer in their own terms and expressions, thus allowing for new themes to emerge (Evans, 2017). According to Hennick *et al* (2017), 84% of all possible codes of a research study have been reached by the sixth interview. In studies where the topic is narrow and the participants in the interview homogenous, saturation occurs sooner. By the eighth interview, 91% code saturation is reached and the marginal benefit of further interviews is significantly reduced (Hennick *et al.,* 2017).

For the current study, seven semi-structured interviews were conducted to address research question 3. As illustrated in 2.1, the scope of this paper is narrow, investigating valuation methods for particular use by a particular class of financial intermediaries. The interview subjects were highly homogeneous (Allee *et al*., 2020), being largely accountants working in consultancy and accounting firms. The number of interviews was sufficient to capture themes relevant to the research problem. In the current study, the themes began to repeat as early as the fourth transcript. At the seventh transcript, repetition was observed at the sub-theme level.

In summary, the data collection methods were reliable, being based on prior research in the social sciences in general and finance in particular. The findings are generalisable and could be repeated if carried out by a different researcher.

4.6. Ethics

This project takes a positivist ideology of ethics in research, i.e., it takes a view that research subjects are vulnerable, and their identity must be withheld (anonymity) and their information treated confidentially.

The concepts of anonymity and confidentiality are distinct although closely related. To maintain confidentiality, the recipient of shared information, in the strictest possible interpretation, should never disclose or share such information. However, this would defeat the very purpose of research. Therefore, the information is shared without disclosing who it was obtained from. Anonymity is therefore the

means through which confidentiality is achieved in research. Anonymity in practice means that information on the identity of research participants such as names, nationality, ethnic origin, age, occupation, place of residence, etc., is removed from the published work such as the research report or article (Dube *et al*., 2014).

4.6.1. Ethics approval

The University has an established ethics approval process overseen by the Human Research Ethics Committee (non-Medical). After the acceptance of the research proposal, an application was made to the Ethics Committee outlining the data gathering methods, the interfaces used, the participants and methods of identifying them, and the procedures for ensuring information security and retention.

Based on the application, including revisions and new information provided, the ethics approval was granted with reference WSOA-2023-11-52. The additional information requested included written consent by the SAVCA.

4.6.2. Informed consent

Each participant gave specific and written consent before participating in the research. For the survey, the first portion of the electronic questionnaire was an outline of the ethical considerations which had to be accepted before the participant could proceed. This is the most efficient way of managing consent in a multi-participant electronic survey.

As indicated above, written consent was obtained from SAVCA after full disclosure of the research objectives and intended target. All consent was obtained voluntarily with no direct benefit to the participants.

Some of the data used in the literature review was sourced from the JSE. Specific disclosure was sought by the JSE before such information was provided. Additionally, there was further specific informed consent for the use of the information for purposes of the study.

In relation to the semi-structured interview, there were two ways of granting consent: firstly, with the interview invitation email, the introductory email contained a full disclosure of the ethics requirements, and an acceptance to participate confirmed acceptance and consent. In addition, an ethics form was made available for signing and sending back to the researcher. Some participants chose to use this form. Other participants consented by replying to the recruitment emails which contained the same information as the ethics form.

4.6.3. Confidentiality and anonymity

A positivist approach was taken towards the treatment of participants' information and the divulging of their identity. No personal or demographic information was required from the participants for the

purposes of this study. Participants were assured of anonymity in the presentation of results. The identity of firms which participated is not withheld; however, their specific input is not included in the report. In sections 4.1 and 4.3 and Table 4.1, certain private equity and consulting firms are named and listed. However, their contributions to the semi-structured interview are not disclosed. In relation to the survey, the tool was structured in such a way that the researcher is not able to distinguish between submissions from firms that participated.

4.6.4. Management of information

Data was collected in two ways during the research period: firstly, through an online survey using Microsoft Forms. The data is retained in the United States as per MS policy[13]. The responses can be retained for as long as the researcher retains access to Microsoft 365®. In addition, the data cannot be traced back to any single participant.

The second data acquisition technique was voice recordings of interviews and the related transcriptions. In line with the ethics application process, the data is held on the laptop computers of the researcher and supervisors in a password protected folder which only the researcher has access to. Should the laptop be stolen, the folder cannot be accessed by any intruder. The recordings were shared using a memory stick with a professional transcription entity for the sole purpose of transcribing the interviews to text. The memory stick was returned to the researcher once the review of the transcripts was complete.

The recordings and the transcripts will be retained for a maximum period of two years, after which they will be deleted from the researcher and supervisors' computers.

[13] https://support.microsoft.com/en-us/office/data-storage-for-microsoft-forms-97a34e2e-98e1-4dc2-b6b4-7a8444cb1dc3

Chapter 5 – Results and discussion

5.1. Findings from the quantitative part of the study

Thirty-five private equity firms, 31 of which were members of SAVCA, participated in the survey. In comparison, the official SAVCA annual survey conducted in 2022 by EY received 40 participants. The participation rate is equal to 88% of the regulator's responses. In comparison to the survey population, the 35 responses equate to 27% of the entities with functional contact details (email and telephone) and 19% of the entire dataset as illustrated in Figure 4.1.

The average response time to the questionnaire was exactly 10 minutes. There were relatively few follow-up calls made, but preparatory calls were initially necessary before the survey could be sent, to the extent that calls were answered.

Based on empirical data by Wu *et al*. (2022), survey response rates vary greatly and can range from as low as 1% to a high of 100%. Response rates of 5% to 10% provide valid outcomes for online surveys. Furthermore, Szreder & Gwizdała (2018) found that there is no set standard or threshold of acceptable response rates to surveys in finance research. Similar to Wu *et al*. (2022), they found that response rates ranging from 16% provide valid findings in survey-based studies.

5.2. Descriptive analysis

Categories of AUM were used in the questionnaire in line with general practice for protection of participants, and to encourage participation. One natural drawback of categories is that a natural mean cannot be calculated for the data gathered. The logarithmic mean is thus used as a suitable replacement for the natural mean. The use of the logarithmic mean is common in finance and accounting research, although the concept originates from thermal-physics. Studies evaluated in the literature review, including Gompers & Lerner (1999), Arnswald (2001) and Gordon *et al.* (2017) utilised this computation in part of their analysis.

Table 5.1 below illustrates the calculation of the logarithmic mean for each category of AUM. This table, and all other tables used in this Chapter 5, are the author's own.

Table 5.1: Logarithmic Mean Calculation of Firm Size Categories

AUM Category	X	Y	Ln X	Ln Y	Ln Y less Ln X	Y less X	Log Mean
> 1Bn but ≤ 10Bn	1	10	-	2.30	2.30	9.00	3.91
> 10Bn but ≤ 30Bn	10	30	2.30	3.40	1.10	20.00	18.20
> 30Bn but ≤ 50Bn	30	50	3.40	3.91	0.51	20.00	39.15

Table 5.2: Firms Size Computation using Logarithmic Mean

Size in AUM	No. of Firms	Log. Mean of AUM	Estimated AUM
Small	10	1.00	10.00
Medium	21	3.91	82.08
Large 1	3	18.20	54.61
Large 2	0	39.15	-
Very Large	1	50.00	50.00
Aggregate			**196.70**

The size of the private equity market in South Africa in 2022 was ZAR206Bn (SAVCA, 2022). In comparison, the aggregate AUM of the participating entities totals ZAR197Bn (Table 5.2 above). The AUM in the current study is approximately 96% of the SAVCA report. Two factors could contribute to the high proportion, namely the year of valuation (2022 for SAVCA and 2023 for the current study) and the inclusion of some listed assets in the AUM size of certain participants in the current study. Despite these, the coverage further supports the validity and generalisability of the findings of the current study.

The average private equity firm in South Africa has AUM of between ZAR1Bn and ZAR10Bn with a logarithmic mean of ZAR3.91Bn, as per Table 5.2. This is a novel finding of the current study after deploying a relatively innovative approach to estimating the average firm size. The implied average in the SAVCA (2022) report is ZAR5.1Bn. This is derived by taking the reported total AUM of ZAR206Bn and dividing by the number of respondents. This provides a reasonable comparison to the finding of the current study, but from crude derivation.

To obtain an early feel of the data, the mode of each of the seven variables was calculated. As illustrated in Table 5.3, the valuation techniques for reporting and for exit show a degree of dichotomy. Further assessment of this observation was conducted. The examination of consistent use of valuation methods forms one of the three core components of this report.

Table 5.3: Variables and Mode

Variable	Mode
AUM in ZAR Bn	> 1Bn but ≤ 10Bn
Valuation Technique for Reporting	Discounted Cash Flow
Valuation Technique for Exit	Earnings Multiples
Exit Strategy	Sale to strategic investor
Number of Exits in past 3 years	3 or less
Valuation Technique for Exits	Earnings Multiples
Valuation Technique for last reporting period prior to exit	Earnings Multiples

The number of exits in the past three years has a mode of 3 or less. In total, the 35 firms confirmed 65 transactions over this period, averaging 22 transactions per annum in total. The Deloitte (2021) report found on average 40 exits per annum across the African continent. The SAVCA (2022) report in turn found 28 exits in South Africa in 2021 alone. Excluding the two write-offs and the single share buy-back, there were 25 comparable exit transactions in 2021 according to SAVCA (2022). Of note was that one of the exits was an IPO, a rarity in South Africa in recent years. The findings relating to exit in the current study are aligned with the findings of Deloitte (2021) and SAVCA (2022).

The most common exit strategy, based on the mode, is sale to strategic investor. The SAVCA 2021 survey found, in contrast, that of the 28 exit transactions, most (14) were to other private equity firms including financing firms. Further detail on exit strategies follows in the rest of Section 5.2.

As suggested by the mode, the method used to determine the exit price of an investment is similar to the method last used for reporting on the investment. This is further borne out by Table 5.6 which shows that earnings multiples techniques are used for the exit of investments 62% of the time and were the method used to report that particular investment just before disposal in 57% of the exits. This contrasts sharply with the first observation regarding the disconnect between the exit and reporting methods generally used by entities.

Table 5.5 illustrates that 91% of the survey respondents subject their valuations to an external audit and only 9% required no audit. Because of the overwhelming reliance on external audit by participants with only 9% not using the process, the variable was abandoned as a possible driver of valuation method choice. For completeness, a third of the entities that do not perform annual audits professed a preference for earnings multiples techniques for the exit of investments, and two-thirds preferred the DCF method for the same purpose. For reporting purposes, the DCF, earnings multiples and other methods were equally preferred.

Table 5.4: Origination of Transaction

Origination of Deal	Yes / No
Unsolicited	22%
Solicited	78%

Table 5.4 shows that of the 65 transactions reported by participants, 22% were the result of an unsolicited offer from the eventual acquirer. As explained in section 4.2.1.1, an offeror could stipulate a value range and a valuation methodology in their expression of interest. This would reduce the ability of the seller to choose a valuation method for the exit.

Table 5.5: External Audit

External audit	Yes / No
Not Required	9%
Required	91%

In Table 5.6, it can be observed that transactions which originated from an unsolicited offer have a higher proportion (36%) of DCF method usage compared to the overall use of this technique (22%). On the other hand, earnings multiples methods are more commonly used (71%) in instances where the seller has originated the transaction and (presumably) specified the major terms of the transaction, including the valuation technique.

This observation is further explored below.

Table 5.6: Origination of deal and Valuation Technique

	Solicited Offer	Unsolicited Offer	Cross-Total
DCF	18%	36%	22%
EMA	67%	43%	62%
ABA	4%	7%	5%
Other	10%	14%	11%
Total	**78%**	**22%**	**100%**

5.3. Valuation techniques

The DCF, earnings multiples approach (EMA), and asset-based approach (ABA) were tested for preference by portfolio managers of unlisted equities. For techniques that did not fall under any of the three, a free text option was available to identify the method. These responses were grouped together as 'Other'.

The preference of method was tested in two distinct scenarios: firstly, participants were asked to identify methods that they use generally for reporting and for exit purposes in Q3 and Q6 of the survey. The researcher refers to this level as the professed preference – in other words 'what they say they use'. Secondly, for executed transactions, participants were asked to identify the method/s that was/were *actually used* for each transaction, both to value it for the exit transaction and for reporting just before it was exited (Q8 and Q9 of the survey). This level is referred to as the applied techniques.

5.3.1. Professed valuation technique preference

The design of the survey enables this paper to examine if a difference existed between valuation methods that portfolio managers profess to use and those that they actually applied for both reporting and for the exit of investments.

Table 5.7 shows that of the 35 respondents to the survey, 49% stated that they generally use the DCF method for reporting purposes, 40% stated that they used earnings multiples methods and only 3% chose to use the ABA. The remaining 8% used methods such as IRR, cost, LTV and negotiated price. An interpretation of this is that these are the private equity firms' default (natural) valuation techniques.

A turn-around is observed with regard to valuation methods generally used for exit purposes. In this regard, 57% expressed a preference for earnings multiples approaches and only 34% indicated the use of the DCF. Unsurprisingly, there was no stated preference for the ABA method. Because the objective of any investor is to maximise the returns on exit, asset-based approaches are not preferred when exiting investments in ideal conditions. General firm default valuation techniques are shown in Table 5.7.

Table 5.7: Firms' Default Valuation Technique and Purpose of Valuation

Valuation Technique	Reporting	Exit
DCF	49%	34%
EMA	40%	57%
ABA	3%	0%
Other	8%	9%

It is noteworthy that Barwe (2022) established that JSE listed entities which held unlisted investments and disclosed the valuation technique used in their annual reports used the DCF method 38% of the time and EM method 33%.

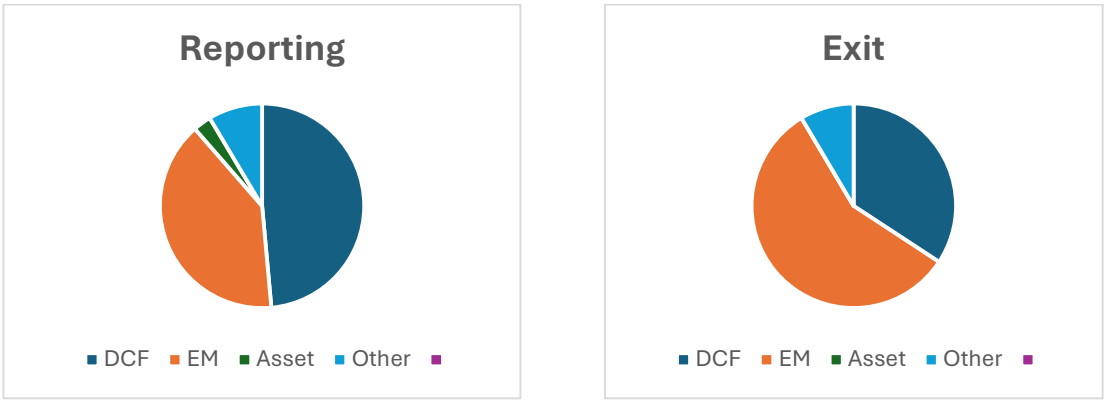


Figure 5.1: Firms' Default Valuation Techniques for Reporting vs for Exit

Source: Author's own

Figure 5.1 illustrates the significant turn-around in the preference of valuation methods for reporting as opposed to the exit of an investment. Whilst this shift seems significant, further testing has to be performed to truly determine whether any particular valuation technique can be associated with a purpose for the performance of the valuation.

To further delineate factors which could contribute to valuation method choice for reporting versus exit, valuation methods were contrasted with the size of the reporting firm. Firstly, Table 5.8 shows the results for reporting method choice. There are no discernible variations from the findings in Table 5.7 with the DCF choice revolving around 50% and the earnings multiples approaches at 40%.

Table 5.8: Firms' Default Valuation Technique and Size of Entity - Reporting

	Small	Medium	Large	All
DCF	40%	52%	50%	49%
EMA	50%	38%	25%	40%
ABA	10%	0%	0%	3%
Other	0%	10%	25%	9%

However, Table 5.9 shows significant divergence by large firms. Whilst 34% of respondents indicated a preference for (or default to) the DCF method for exit transactions, none of the large firms preferred this method. Three quarters of the large firms chose the earnings multiples method as their default method of pricing an investment at the exit point; in general, 57% of respondents chose this method for the same purpose.

Table 5.9: Firms' Default Valuation Technique and Size of Entity - Exit

	Small	Medium	Large	All
DCF	40%	38%	0%	34%
EMA	40%	62%	75%	57%
Asset	0%	0%	0%	0%
Other	20%	0%	25%	9%

5.3.2. Applied valuation techniques

The survey questionnaire was designed in two parts. The first part focused on general practices whilst the second part addressed the exit of investments. Therefore, the second portion of the questionnaire was available only to those respondents who indicated in Q7 that their firms entered into investment exit transactions within the previous three years (2021, 2022 and 2023). Of the 35 participants in the

survey, seven reported no transactions during the relevant period, and 28 entered into transactions. Survey Q8 and Q9 related to these exited investments.

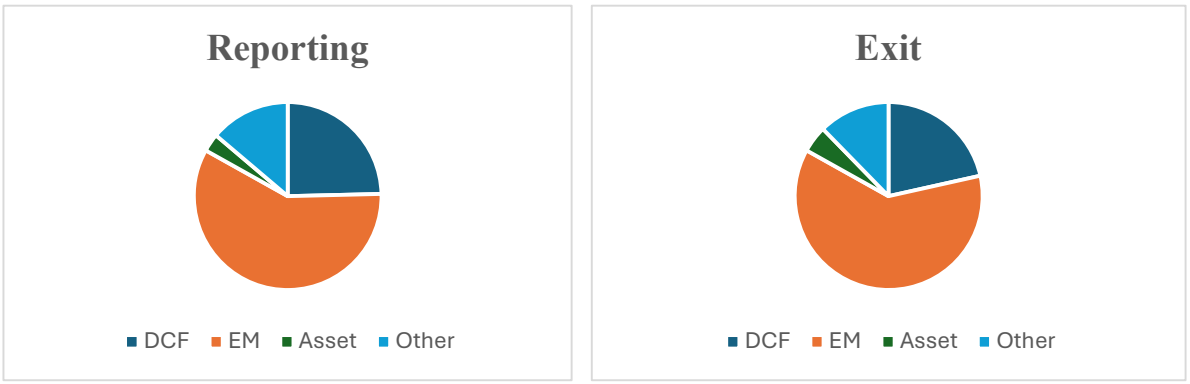


Figure 5.2: Applied Valuation Techniques for Reporting vs for Exit

Source: Author's own

Table 5.10: Applied Valuation Technique and Purpose of Valuation

Valuation Technique	Reporting	Exit
DCF	25%	22%
EMA	58%	62%
Asset	3%	5%
Other	14%	11%

Of the 65 exits that occurred over the previous three years, 24 (37%) were completed by firms with a preference for the DCF method for reporting purposes. As illustrated in Table 5.10, the DCF method was used to value only 25% of the exited investments when they were last reported upon. Of these 24 exits, 38% were valued using the earnings multiples method for the exit transaction. In contrast, of the 25 transactions exited by firms with a general firm preference for earnings multiples techniques, only 8% were valued using the DCF method for the exit transaction.

The adoption of valuation techniques during exit transactions is explored further in Table 5.11, with the size of the firm as a variable.

Table 5.11: Applied Valuation Technique and Entity Size – Exit

	Small	Medium	Large	All
DCF	39%	16%	10%	22%
EMA	22%	78%	80%	62%
ABA	11%	0%	0%	3%
Other	28%	5%	10%	12%
Total	28%	57%	15%	100%

An enquiry about a relationship between firm size and valuation method choice was further necessitated by a query raised during the semi-structured interviews, emanating from a Big 4 audit firm, suggesting that the size of the entities surveyed may have influenced the valuation method choice, with smaller firms potentially preferring the earnings multiples approach to reduce costs. The first observation in Table 5.11 is that small firms make the least use of earnings multiples approach; only 22% do so as opposed to an aggregate of 62%. Large firms make the most use of earnings multiples techniques at 80%. A second observation is that small firms make considerable use (28%) of other methods to determine exit prices of investments. Medium firms make the least use of these methods with only 5%.

The Table 5.11 findings are contrasted with Table 5.12 below, which demonstrates the valuation method used to value an investment in the final period before it was disposed of.

Table 5.12: Applied Valuation Technique and Entity Size – Reporting

	Small	Medium	Large	All
DCF	44%	19%	10%	25%
EMA	17%	73%	80%	58%
ABA	11%	0%	0%	3%
Other	28%	8%	10%	14%
Total	**28%**	**57%**	**15%**	**100%**

For large firms, the method used to value an investment just before its disposal is exactly the same as the method used to determine the exit price. This is the only class where such an observation was made. For medium sized firms, there was a minor migration from the DCF method (19% for reporting vs 16% for the exit) to the earnings multiples technique (73% for reporting vs 78% for exit). Other methods also decreased marginally in use between the last reporting date and the exit (14% to 12%). Overall, there seems to be an association between firm size and valuation method application both for reporting and for exit.

The next enquiry is whether any particular exit strategy could be linked with a valuation method. Table 5.13 below provides the proportions of valuation methods used for different exit strategies. The exit strategies are the most common forms of exit in South Africa as outlined by Deloitte (2021).

Table 5.13: Applied Valuation Technique and Exit Strategy

	Strategic investor	MBO	PE firm	Combination	Total
DCF	6%	57%	0%	33%	22%
EMA	78%	29%	100%	42%	62%
ABA	6%	7%	0%	0%	5%
Other	11%	7%	0%	25%	12%
Total	**55%**	**22%**	**5%**	**18%**	**100%**

Table 5.13 demonstrates a strong preference for the DCF for management buy-out exit strategy, with 57% of exits using this valuation method. Similarly, disposals to private equity firms were concluded exclusively using earnings multiples techniques. Sale to strategic investor also has a higher (than aggregate) use of earnings multiples approach. The association between exit strategy and valuation method was therefore investigated further with the use of the Chi-Squared test of independence.

A secondary observation from Table 5.13 relates to the exit strategy employed by private equity firms in South Africa. Fifty-five percent of exits were to a strategic investor, including finance firms. SAVCA (2022) established that 32% of exits in 2021 were through the strategic investor approach. Most exits in that report (56%) were to other private equity firms (including finance institutions). The apparent divergence between the current study and the SAVCA (2022) findings could be attributable to the different manner in which finance firms have been treated in the two studies.

5.3.3. Quadrants to illustrate dichotomous use of valuation methods

A common method of demonstrating contrasts typically used in communication sciences is the quadrant model with an x and a y axis. The x-axis in the current study represents the purpose of the valuation and the y-axis represents the context within which the participants responded. The exit of an investment has cash-flow consequences, hence it is assigned greater weighting. Applied methods are also assigned a greater weighting on the y-axis for the same reason.

	Reporting	Exit
Applied in a specific transaction	25%	22%
Firms' Default	49%	34%

Figure 5.3: Quadrant A - DCF

Source: Author's own

	Reporting	Exit
Applied in a specific transaction	58%	62%
Firms' Default	40%	57%

Figure 5.4: Quadrant B - Earnings Multiples approach

Source: Author's own

The two quadrants above illustrate significant shifts in valuation technique choices. The first quadrant in Figure 5.3 shows the DCF method beginning with a 49% preference for reporting purposes, but with only 22% actual application for the exit of investments. The churn suffered by the DCF method contrasts sharply with earnings multiples techniques which start off with a preference of 40% but end up being applied in 62% of the concluded transactions. The churn of the DCF method and accretion of the earnings multiples method may be indicative of length of time transactions take to conclude. If a transaction is ongoing but incomplete at the reporting period, a valuator is likely to prefer, for reporting purposes, that method which has been agreed to by the parties as the exit valuation method.

The sentiment of choosing valuation methods based on the purpose of the valuation was echoed by participants in the interview. The following comment by Audit Firm Participant 1 sums up such

sentiment well: '*So, I guess intentions matter. And you can also appreciate the nuances when you're just doing it for reporting purposes and when there is a transaction, where two parties have to agree on a said price*'.

5.3.4. Chi-Squared Test of Independence

In several of the tables above we observed some associations using proportions and the mode. In particular, the following associations were noted: Tables 5.7 and 5.10 (purpose of valuation and valuation technique), Tables 5.11 and 5.12 (firm size and valuation technique), Table 5.13 (exit strategy and valuation method) and Table 5.6 (origination of transaction and valuation method). To confirm the existence of associations between valuation method and any of these variables, a series of Chi-Squared tests of independence were performed. These tests were conducted in relation to the following variables: firstly, purpose of valuation, secondly firms size, thirdly exit strategy and finally origination of transaction. All Chi-Square Tests were performed using IBM Corp. Released 2023. IBM SPSS Statistics for Windows, Version 29.0.2.0 Armonk, NY: IBM Corp (SPSS Statistics).

Association between valuation method and purpose of valuation

An association between purpose of valuation and valuation technique was observed in Tables 13 and 16. Table 5.7 showed a higher (49%) proportion of valuators preferring the DCF technique for reporting purposes and Table 5.10 showed an even higher proportion (62%) used earnings multiples techniques to determine the exit price of investments. The Chi-Square Test of association was used to verify the existence of a relationship between purpose of valuation and method. Tests of association between variables cannot be performed in Excel and therefore SPSS Statistics was used. The relation between purpose of valuation and valuation method was significant, X^2 (6, N = 65) = 18.011, p = .006.

The Chi-Square test result above only shows that there is a disproportionate use of one valuation method for either purpose without identifying which method and for which purpose. To isolate the relationships, post-hoc analysis was conducted to determine the level of association between methods and purpose of valuation in SPSS Statistics. The adjusted standardised residual test demonstrated that the DCF method (with an adjusted residual[14] of 3.7) is more likely to be used for reporting purposes and the earnings multiples techniques (with an adjusted residual of 2.9) more likely to be used to determine the exit price of investments.

[14] Adjusted residual is similar to a z-score. Any z-score greater than 1.96 is generally considered to be significant

Association between valuation method and firm size

Following the observations in Tables 5.11 and 5.12 where a level of association between entity size and valuation techniques was detected, a chi-square test of independence was performed to examine this relation further. Two separate tests were performed, one for reporting and the other for exit.

For firm size and valuation methods used to determine the exit price: the relation between these variables was significant, X^2 (9, N = 65) = 21.090, p = .0012.

A post-hoc analysis (adjusted standardised residual) was conducted in SPSS Statistics to isolate the variables leading to the association. The analysis revealed that large firms (with an adjusted residual of 3.6) are more likely than their medium sized and smaller counterparts to use earnings multiples techniques when exiting an investment.

Firm size and valuation methods adopted for reporting purposes: the relation between these variables was not significant, X^2 (6, N = 35) = 4.729, p = .579. There is no relationship between firm size and valuation method chosen for reporting purposes.

Association between valuation method and exit strategy

Following the observations in Table 5.13, where some association between exit strategy and valuation method was observed, a chi-square test of independence was performed to examine this relation further. The relation between these variables was significant: X^2 (9, N = 65) = 21.136, p = .012. The post-hoc test conducted in SPSS Statistics indicates that the DCF method is more likely to be used for management buy-out exit strategies and earnings multiples techniques for sale to strategic investors and other private equity firms.

Association between valuation method and origination of transaction

Following the observations in Table 5.6, where some association between origination of transaction (solicited and unsolicited) and valuation method was observed, a chi-square test of independence was performed to examine this relation further. The relationship between these variables was not significant, X^2 (6, N = 69) = 16.658, p = .11. There is no relationship between the origination of an exit transaction and the valuation method used at a confidence level of 0.05.

Table 5.14 below summarises the results of the series of Chi-Squared tests performed.

Table 5.14: Summary of Chi-Squared Test Results

Hypothesised relationship between valuation method and variable	P-score	Association
Purpose of valuation	0.006	Significant
Firm size	0.0012	Significant
Exit strategy	0.012	Significant
Origination of transaction	0.11	Insignificant

5.4. Valuation Revisions

Because valuation revision (VR) is central to this study, it is important to re-iterate this concept at this stage. Any fluctuation in value of an investment between any two points in time, because of either fundamental changes in its cashflows and discount rates as well as the inherent uncertainty of valuing privately held firms, is considered as a valuation revision (Cooney et al., 2009). For the current study, Exit Multiples were used as a proxy for valuation revision. Exit multiples formed part of the survey (Q10) and are calculated as the Exit Price divided by the last value reported for the same investment.

5.4.1. Valuation Revisions

The categories were formulated based on the criteria outlined in Table 5.15. The categories were part of the survey in Q10. Simply put, an investment that was exited at a price that was less than 70% of the reported value is significantly over-reported and an asset exited at a price greater than 120% of the reported value is significantly under-reported. Assets exited at a price between 90% and 110% of the reported value are fairly valued. The categories were developed at the discretion of the author, having considered the principle of hedge effectiveness in IAS 39[15].

Table 5.15: Categorisation of Exit Multiples

Exit Multiple	Reporting Category
< 0.7	Significantly Over-reported
0.7 - 0.9	Over-reported
> 0.9 but <1.1	Fairly Reported
1.1 - 1.2	Under-reported
> 1.2	Significantly Under-reported

As stated in the introduction, valuation revisions in South Africa have not been investigated previously. The current study offers the first view into the reporting posture of private equity firms, over the past

[15] IAS39 replaced by IFRS9 but the numerical test of hedge effectiveness (80-125 rule) abandoned.

three years, at least. Observations here were therefore compared with studies in other jurisdictions where this phenomenon has been studied.

5.4.2. Observations from descriptive statistics

In line with Research Question 3 of the current study, the first enquiry is whether valuation revision can be associated with any valuation method. The findings are outlined in Table 5.16. In Table 5.16, each valuation technique represents consistent methods for each exited investment. As an example, the DCF category includes those investments that were exited using the DCF technique to determine the exit price, but also valued using the DCF at the last reporting period. Similarly, the earnings multiples approach, ABA and other methods were consistent for reporting and exit.

The fifth category relates to those investments that were exited using inconsistent methods. As an example, four of those investments were last valued using the DCF method but the exit price of the four investments was determined using earnings multiples techniques, in all cases.

Table 5.16: Valuation Revision and Valuation Method

	DCF	**EMA**	**ABA**	**Other**	**INC.*1**	**All**
Significantly over-reported	0%	0%	0%	0%	33%	**3%**
Over-reported	25%	8%	50%	13%	33%	**15%**
Fairly reported	25%	41%	0%	63%	33%	**39%**
Under-reported	8%	8%	50%	0%	0%	**8%**
Significantly Under-reported	42%	43%	0%	25%	0%	**35%**
Total	**18%**	**57%**	**3%**	**12%**	**9%**	**100%**

*1: Inconsistent methods used between reporting and exit

The initial observation is that southern African portfolio managers of unlisted equities mostly either report fairly or under-report the values of their portfolio assets just before exiting. Table 5.16 demonstrates that the highest proportion of exits, 39%, were fairly reported at last reporting period, followed by the significantly under-reported category at 35%. Interestingly, this aligns with Jenkinson *et al*. (2013), who also found that 35% of buy-out firms under-reported their investments, as discussed in section 2.5.3. Smaller proportions (15% and 6% respectively) over-reported and under-reported their holdings.

The second observation relates to significantly over-reported investments and the use of inconsistent valuation techniques. Firstly, of the two exits where the exit price was significantly lower than the last reported value, both are associated with inconsistent valuation methods. Secondly, two thirds of investments valued and exited using inconsistent approaches were over-reported. This line of enquiry was pursued further using the Kruskal-Wallis Test.

Table 5.17 examines the association between valuation revision and size of the firm. Medium-sized firms appear to account for most of the significantly under-reported investments, with their profile heavily weighted towards the under-reported categories. The difference between over-reported categories and under-reported categories for medium-sized firms is 27%.

In contrast, the profile of the large firms appears more natural, wherein most of the investments are fairly reported and lower proportions fall on either side of the median point. The difference between the over-reported categories and under-reported categories is only 20%. For small firms, this difference is 23%. These observations made it necessary to investigate the possible relationship between size and valuation revisions further, using the Kruskal-Wallis Test.

Table 5.17: Valuation Revision and Size of Entity

	Small	Medium	Large	All
Significantly over-reported	0%	5%	0%	**3%**
Over-reported	22%	14%	10%	**15%**
Fairly reported	33%	35%	60%	**39%**
Under-reported	17%	3%	10%	**8%**
Significantly under-reported	28%	43%	20%	**35%**
Total	**28%**	**57%**	**15%**	**100%**

Some evidence of a relationship between exit strategy and exit price exists in prior research. For this reason, further analysis was performed to determine the proportions of investments exited using the various strategies which were over or under reported. Table 5.18 illustrates the findings.

Table 5.18: Valuation Revision and Exit Strategy

	Strategic investor	MBO	PE firm	Mixed Strategies	All Exit Strategies
Significantly over-reported	3%	7%	0%	0%	3%
Over-reported	10%	14%	0%	29%	15%
Fairly reported	42%	29%	67%	35%	39%
Under-reported	6%	14%	33%	0%	8%
Significantly under-reported	39%	36%	0%	35%	35%
Total	**48%**	**22%**	**5%**	**26%**	**100%**

From Table 5.18, it is observed that sales to strategic investors resulted in the highest proportion of significantly under-reported investments, at 39%. Folus & Boutron (2015) found that such an exit strategy is favoured by private equity firms because it often attracts better pricing. However, the

difference between sales to strategic investor and MBO (36%) is only three percentage points. These variances were explored further using the Kruskal-Walliss Test.

5.4.3. Kruskal-Wallis Test

Association between valuation revision and valuation methods

The second of three research questions explored whether the use of inconsistent valuation methods for reporting purposes and exit purposes could contribute to valuation revision. Table 5.17 provided an initial indication of such an association. The Kruskal-Wallis Test was therefore performed to examine such an association further

Significant differences (H = 9.494, p = .05, df = 4) were found among the five combinations of valuation methods (DCF, EMA, AVA, Other and Inconsistent. Inconsistent methods resulted in higher valuation revisions.

Association between valuation revision and firm size

Table 5.17 provided an initial indication of an association between valuation revision and firm size. The Kruskal-Wallis Test was therefore performed to examine such an association further. No significant differences (H = 5.948, P = .114, df = 2) were found in the valuation revision of the three firm categories (Small, Medium and Large).

Association between valuation revision and exit strategy

Folus & Boutron (2015) found that transactions exited through a sale to a strategic partner attracted better prices. Additionally, Table 5.18 showed that a higher proportion of significantly under-reported investments were exited through this strategy (namely, sale to strategic buyer). To examine this relationship further, the Kruskal-Wallis Test was performed. No significant differences (H = 3.666, P = .300, df = 3) were found in the valuation revisions of the four exit strategies typically used by private equity firms — sale to strategic player, sale to another private equity firm, Management Buy-Out and Other.

Association between valuation revision and origination of transaction

The final relationship tested using the Kruskal-Wallis Test was the valuation revision and the origination of an exit transaction, i.e., whether the transaction resulted from an unsolicited offer or whether the reporting portfolio manager offered the investment to potential suitors. Whilst there was no significant difference (H = 5.353, P = .063, df = 1) found in the valuation revision between solicited and unsolicited offers, the observation of higher overreporting of unsolicited transactions was surprising. Because the eventual seller was not intent on disposing of the investment immediately, intuition would suggest that such disposals would attract better pricing, yet the opposite seems to be true.

The finding raises the prospect that unsolicited offers are used in a predatory manner by offerors, targeting private equity firms that may be in need of liquidity or seeking to offload under-performing assets.

Table 5.19: Summary of Kruskal-Wallis Test Results

Hypothesised relationship between valuation revision and variable	P-score	Association
Valuation methods	0.050	Significant
Firm size	0.114	Insignificant
Exit strategy	0.300	Insignificant
Origination of transaction	0.063	Insignificant

Table 5.19 shows that the associations observed between the use of inconsistent methods of valuation and valuation revisions cannot be ascribed to any other factor investigated in the current study, such as size of entity or method of exit.

5.5. Findings from the qualitative part of the study

To address the third research question, the semi-structured interview data was analysed. As a reminder, RQ3 asked what factors motivate the choice of one valuation method over another, particularly where different methods are employed.

The corpus consists of seven separate interview transcripts, conducted between 11 March 2024 and 1 July 2024. The period of the interviews overlapped partially with the survey data collection period, which began on 16 January 2024 with the first submission by a participant and ended on 16 April 2024. The interviews lasted a minimum of 27 minutes and a maximum of 46 minutes.

The interviews were conducted in electronic format, six using Microsoft Teams and one using Google Meet. All the interviews were voice recorded with the consent of the participants. As outlined in the methods section, automatic transcribe was enabled for each interview. The recordings were then transcribed by a professional transcriptionist. The transcriptions made by the professional were then used for the data analysis after noticing the cumbersome nature of the auto-transcribed material. Each of the seven transcripts had an average word count of 2 855 words.

5.5.1. The textual data coding process

Initial coding was done using the structured approach, to identify and stratify each transcript. The four codes initially applied based on the literature review and the interview questions were purpose of valuation, valuation methods used, pressure associated with valuation assignments, and reasons for preference/use of valuation methods. A fifth code was added to address what seemed to be a gap on

reading the data and coding at the first stage. All the interview participants immediately referred to response mechanisms employed by their firms and the participants themselves, when confronted by a pressurised situation during valuations. The response mechanisms included firm level ethics guidance, individuals' moral codes, the level of judgement by valuators, and the professional scepticism applied to the valuation assumptions provided by the clients.

At the second level of coding, we identified 40 codes from the literature review. However, at the conclusion of the coding process, 48 codes were used to allocate segments of text on a line-by-line basis. Six of the eight additional codes related to professional scepticism, a line of enquiry adopted only during the initial coding process. Two were added based on participants' own accounts. Of the 48 line-by-line codes, 26 dealt with reasons for preference of valuation methods. This was deliberate because the primary purpose of the semi-structured interviews was to address the third research question - why valuators make certain valuation method choices. The remaining 22 covered purpose and use of valuations, valuation methods and forms in which valuation pressure may manifest. Only text associated with participants was coded; the researcher's remarks were not. Coding was done in MS Word using the Comments feature. The analysis of the codes, including the counting, allocation to participants and summarisation, were done in MS Excel.

There were 153 segments of data which were coded across the seven interview transcripts. One transcript yielded only seven codes, the lowest of the corpus, with the highest being 31. The average codes per transcript was 21 and the median was 24. The themes outlined below are drawn from the coding.

5.5.2. Purpose of valuation

Purpose of valuation was a recurrent theme of the semi-structured interview data. It was frequented 33 times, making it the second most discussed topic, after valuation methods. It was prompted directly by the first research question and indirectly by some of the subsequent questions asking about preference of valuation method.

The most common purpose of valuation is reporting, recurring more than 51% of the time that purpose of valuation was discussed. Valuation for transactions, for dispute resolution and regulatory purposes, jointly accounted for 45% of the frequencies with the remainder being taxation.

Van Eden (2005) outlined three main purposes of valuation, namely transactions, litigation and other judiciary purposes, and taxation. In 2005, fair value accounting was still in its infancy in South Africa and elsewhere, therefore valuations for reporting purposes were not evaluated at all by van Eden (2005). Since then, several steps have been taken by the IASB to improve the relevance of financial reporting by entrenching fair value in reporting. Leading examples of this intervention are IFRS 13 and the 2018

Conceptual Framework for Financial Reporting. In the time since 2005, reporting has become the leading purpose for which valuations are conducted.

In addition to the advent of fair value reporting, the diminishing number of transactions involving the sale of companies drove reporting to the top reason for valuations.

Few Words Audit Firm Participant remarked as follows: *'Initially, it used to be mostly for transactions, but as the transactions dry up, you find that they need independent valuations for financial reporting more than when they actually require it for transactions. So, the majority of the work that we do would probably be for financial reporting purposes'*

Through amalgamation of similar nodes and disaggregation of others, the following broad areas bring together what valuations are performed for:

a) dispute resolution (litigation, arbitration, other judiciary proceedings),
b) regulatory purposes (SARB, Companies' Act scheme of arrangements),
c) taxation (CGT, Estate Duty, Donations Tax),
d) reporting (annual financial statements, fund-raising initiatives, lender covenants and information undertakings), and
e) transactions (buy/sell companies and/or other cash generating assets).

Purpose of valuation bears relevance to the current study in that the DCF method is used exclusively for some assignments such as statutory assignments for the SARB and scheme of arrangements in terms of Section 114 of the Companies' Act in South Africa. Table 5.20 below summarises the frequency of each valuation purpose that was mentioned by interview participants.

Table 5.20: Extract from Frequency Table - Purpose of Valuation

Code Label	*Code / definition*	*Frequency*
POV011	Purpose of valuation - reporting	17
POV012	Purpose of valuation - transaction	6
POV013	Purpose of valuation - regulatory (JSE, Companies' Act, SARB)	5
POV014	Purpose of valuation - taxation	1
POV015	Purpose of valuation - disputes / litigation	4

5.5.3. Valuation methodology choice

The most frequented topic during the interviews was method of valuation, attracting 39 relevant segments. The most mentioned valuation method was earnings multiples (38%) followed by the DCF

(31%). Other approaches, including the 'sum of the parts' method used for aggregation, accounted for the remaining 31% of the coded text.

Contrary to expectations, the DCF was cited by the majority of interview participants (5 out of 7) as the method they most commonly use in their valuation assignments. Very high percentages of DCF usage were reported, with at least one participant stating that they use this method 90% of the time.

Big 6 Participant stated: *'I must say in the mining sector, most clients use Discounted Cash Flows. I haven't seen anyone using Multiples in the mining sector. I would agree with the 90% the other big four consultants gave.'*

Audit Firm Participant 2, in the same vein stated that: '*This is a very high-level estimate, but I would probably say approximately 70% to 80% of valuations done by us are done on a discounted cash flow basis.'*

Participants agreed that earnings multiples approaches were more suitable for use in transactions. Audit Firm Participant 2 stated: *'...but then in the context of transaction valuations, we would almost always do a discounted cash flow and a market multiple.'*

Given this context, the PWC (2017) finding of a 90% preference for the DCF becomes comprehensible. In the prevailing private equity market environment, where transactions are few, Regulation 28[16] is liberalised and economic growth is muted, valuations are mainly conducted for purposes that either require or favour the DCF.

Asset Based Approaches were cited in the context of entities under distress or cases where other approaches yield negative or nil values. The DCF and earnings multiples approaches are the most predominantly applied methods.

Reasons for the preference of each valuation method are discussed in sections 5.5.4 and 5.5.5.

5.5.4. The DCF method is preferred for reporting, tax and statutory purposes

The DCF method is scientific and defendable

This theme is made up of several categories, mostly sourced from relevant literature with some gleaned from the participants' own words. The DCF is robust, it is scientific, it is dynamic. By robustness, participants referred to the amount of data points used in the DCF calculation (often referred to as a model), the varied nature of the data, and where it is sourced. Scientific refers to the formulaic method

[16] chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.treasury.gov.za/publications/other/reg28/Reg%2028%20-%20EM.pdf

of doing a DCF and the origins of that formula from the efficient markets hypothesis (EMH). Relating to both robust and scientific descriptors of the DCF is its ability to perform 'what if' analysis, sometimes called sensitivity analysis.

Dynamism refers to the fact that any asset that generates positive cash flows can be valued using the DCF.

The need to defend a valuation arises out of audit requirements. Because of the first three features of the DCF (robust, scientific and dynamic), valuators have confidence that the valuation model choice cannot be legitimately challenged by any external party. It is a risk mitigation initiative, as summed up by Audit Firm Participant 3 who stated:

'Because even in our proposals, our engagement letters, we almost have to limit ourselves in what we can or can't do, and what we can be held accountable for. So, I think that's why maybe we stick to what is safe, or maybe what is most commonly used, the DCF.'

Considering the statement above, it is somewhat surprising that a DCF method is also considered to be unverifiable and subjective, particularly for use in transactions involving unrelated parties. Of note is that this 'contrarian' view is expressed by the same participants who exalted the scientific and robust nature of the DCF. These shortcomings of the DCF are discussed in section 0.

The DCF method better reflects the prospects of an enterprise

In analysing the quantitative data using descriptive statistics, an observation was made that transactions exited through a management buy-out (MBO) were likely to be valued using the DCF method. For example, Table 5.13 showed that 57% of exits through an MBO were valued using the DCF, much higher than the overall adoption of the DCF at only 22% for exits. This finding is further supported by the semi-structured interview participants' views.

Audit Firm Participant 3 stated that: *'Generally, the preference is where you can, and when information is available, use an Income Approach because an Income Approach intrinsically covers the assumptions that underpin what management thinks would be the best way forward in terms of the company from a cash flow perspective.'*

One participant argued for some distinction between what they referred to as *'intrinsic value'* and *'price.'* The EMH is premised on the foundation that an arm's length price between willing buyer and willing seller is the ultimate measure of value.

Managers of high growth enterprises, as an example, may prefer the DCF because it captures the growth potential of the investments made. An earnings multiples approach would instead focus on the historical earnings achieved and consider exogenous factors to determine sustainable earnings. The management 'flair' as it is sometimes called, would be ignored in as far as the future earnings are concerned. Y

Bespoke Firm Participant 7 outlined the persistence of some clients on the DCF method as follows: *'And so, clients might be more persistent as they expect the company to grow substantially due to massive expansions, etc., and they would find the DCF more appropriate based on that.*'

DCF is a suitable method for enterprises in niche markets or novel fields

Closely related to the theme of entity prospects, a sub-theme that emerged during the analysis of the interview data is niche enterprises or entities venturing into novel fields such as technology. To use an earnings multiples approach, a valuator would have to contort the entity to fit into a basket of peers which may be in the same general field, but otherwise unrelated application. If the entity is cash-positive, the DCF method would be the most suitable valuation method available.

If an entity is both niche and does not generate free cash-flows, either a conservative approach, such as the ABA or the Own Funds at Book Value would be adopted, or an exploratory method such as Apportioning Global Value. Market analysts often rely on valuations methods of this type to evaluate highly valued listed technology entities globally during their growth years.

There was considerable resistance to methods of this type by the interview participants. Big 6 Participant summed up the attitude of South African valuators to this type of approach as follows:

'When we look at strategy type engagement, then we might look at a global Income Approach, the market share, and things to consider implications or consider opportunities, but never for valuation purposes.'

It is therefore reasonable to conclude that niche entities that do not generate positive cash flows would be valued conservatively in South Africa.

Professionals with an audit background have a strong preference for the DCF method

An unexpected theme which developed during the secondary (line-by-line) phase of the coding was the divergence between bespoke financial advisory firms and audit firms, in relation to the preference of valuation method. Of the seven participants in the semi structured interviews, five were based in audit firms and two in bespoke advisory firms. The category ended in the upper quartile on the frequency table at the conclusion of the coding, surpassing most of the codes established during the literature review. The preference of the DCF method by audit firms was palpable, typified by the following statement from Audit Firm Participant 1:

'Someone engages us to do a job, the first thing we ask: Do you have forecast cash flows? No. And that's when we almost say okay, then we wanna probably value this portfolio as multiples. But we never have discussions outside of that. It's almost like the default is DCF.'

From the content analysis, two plausible reasons for this preference were gleaned. Firstly, the training of professionals: both academic and on-the-job training emphasises the DCF. Using the DCF imbues a level of pride in a valuator, something intangible yet palpable from the data. It evoked some nostalgia and emotive words. As examples, Big 6 Participant stated that, '*I find that, certainly when we studied this at university the Discounted Cash Flow method is more complex than the others.'* Audit Firm Participant 3 in turn stated the following relating to the DCF method: *'So, I think you always sort of start with the normal, first-principle methodology.'*

Secondly, and perhaps more provocative, the DCF method appears to attract higher fees because of its supposed complexity. Because the purpose of the study was not aimed at this question, the assertion cannot be made categorically, however it is a plausible reason mentioned by the participants themselves. Audit Firm Participant 1 described the issue in detail as follows:

'...you eat what you kill. So, these guys are pushing back now post-Covid on fee, where the valuation, just for example, you would charge 100K. These guys are saying do it for 50, otherwise we'll just do it in-house. And then, do it in-house would be moving it from a DCF, which is obviously more work again to multiples.'

Audit Firm Participant 3, in turn, stated the following with regard to the fee: *'So, it is very much linked to the amount of work that you're going to be doing, or you anticipate to do on the engagement. And that's also further informed by the methodology that you will essentially apply. DCF is a bit more involved versus a market approach.'*

These remarks were not in response to a question about fees; indeed, the semi structured interview contained no question about valuator fees.

5.5.5. Earnings multiples techniques are preferred for transactions

Earnings multiples techniques are simple to apply and clear to communicate

The most recurring theme in relation to earnings multiples methods is that they are simple methods to apply and are well understood, making them clear to communicate. The theme recorded a frequency of 12, placing it well within the 90th percentile of codes.

The components of this theme are the limited variables in the calculation, limited reliance on endogenous forecasting data, exogenous multiples comparable across sectors, and entities and use by reputable investors which makes communicating its outcomes easy.

OM Bespoke Firm 6 Participant used the following expressions to sum up the appeal of earnings multiples approaches: '*That's what Warren Buffett does. That's the way he goes about valuing a company.'*

Some of the audit firm participants who had a professed preference for the DCF method expressed concern that the earnings multiples approach is simplistic, or at least, its users apply it superficially. PB Audit Firm 5 Participant stated the following with regard to earnings multiples valuations. *'While with your multiples approach there is sometimes a view that you're not really doing a valuation, you're doing more of a pricing exercise.'*

This assertion has been found in some literature, particularly PWC (2017). In reality, the same level of rigour is required to apply any earnings multiples technique appropriately. Determining sustainable earnings requires not just an understanding of the firm-specific environment, but the industry and other market factors as well. Establishing a peer group involves a thorough analysis of the competitive landscape and market share dynamics. So, rather than being a simplistic approach, the earnings multiples approach is, in fact, simple, on the other side of complexity[17].

An earnings multiples approach valuation can be verified against two primary sources of data

This theme consists of two categories, namely the trading multiples of entities on a recognised stock exchange, and secondly, multiples derived from recent transactions in which entities were bought and sold. The trading multiples are the most common and readily available, with business publications providing daily reporting. The main limitation of trading multiples as outlined in the literature review, centres around the dwindling number of listed companies in South Africa and elsewhere. Surprisingly, this limitation was not ventilated by any of the semi-structured interview participants.

The second source of multiples is what is referred to as transaction multiples, derived from proprietary data sources maintained by highly reputable companies such as Preqin, Thompson Reuters and S&P Global Market Intelligence. As companies are continuously going private, the data contained by these sources expands further. It is also relevant because it is private transactions that are tracked. The greatest shortcoming of these data sources is subscription cost. The cost and inconvenience of accessing this proprietary data was identified as a barrier to the use of multiples, and included as a category in the coding. However, it attracted no mention and had a frequency of zero, implying that valuators who use multiples as a primary valuation technique choose to make this investment and find it worthwhile.

Trading multiples and transaction multiples may differ to the extent that transaction multiples could incorporate negotiations and synergistic opportunities the buyer is willing to pay up-front for.

[17] 'Simplicity on the other side of complexity' is a phrase that refers to the ability to distill a complex idea into a simple, direct, and communicable form.

The earnings multiples approach can be used in a broad range of entity operational contexts

There is a variety of techniques available within the earnings multiples approach covering the length of the income statement. An entity that is, for example, in operation and a going concern but does not generate positive free cash flow, can be valued using a multiple of revenue.

Some industries have a history of using certain multiples. The financial services industry, insurance and banking tend to look at a PB or price-to-book multiple; the fast-moving consumer goods (FMCG) and other industries often use an EV/EBITDA multiple, and start-ups and entities at a loss-making phase, a revenue multiple. The dominance of the EV/EBITDA multiple in valuing unlisted firms was discussed extensively in the literature review, but it is worth restating here. The PE ratio is commonly used as well, and is easily referenced in public equity markets around the world.

Most entities could therefore be valued using the earnings multiples approach with limited endogenous information. Oft-mentioned examples are entities that are loss-making (negative free cash flows) or in a start-up phase where uncertainty is rife. Such entities could not be measured using income approaches such as the DCF, but the revenue multiple could be deployed if the entity had listed peers or recent transactions.

DCF Method is not a reliable indicator of exit prices

Participants opined that the DCF and its outcomes cannot be used in a transaction involving third parties. The reasons for this are two-fold.

Firstly, the primary source data of a DCF valuation being the cash-flow projections are not objective. A due diligence review can be conducted to verify historic data and the existence of drivers of future cash flows such as contracts; however, the execution of the future plans retains some risk. An endogenous forecast has the advantage of originality, as summed up by the comment from Audit Firm 2 Participant:

'While the subjectivity in the future numbers, you still projecting off the key fundamental sort of cash flow cycle of that business.'

However, this advantage can quickly turn into a disadvantage when two unrelated parties are engaging in a transaction. There is no viable way of verifying the forecast, and the seller has the natural urge to believe in their asset. A buyer, on the other hand, requires corroboration for any assumption.

Secondly, the cost of capital contains several areas of subjective adjustments. These adjustments were dealt with in the literature review, but for the sake of brevity include specific risk premiums - alpha, marketability, conglomerate and other discounts - all of which are judgementally applied. Unlevering the beta co-efficient or not, and the terminal value growth rate, are all common areas which result in significant impact on the end result of a valuation, but can be treated in vastly different ways.

These two factors make the DCF an unreliable method for two unrelated parties to conclude, or even begin, a transaction that will involve the exchange of money. The following comment by Audit Firm Participant 2 summarises this theme well.

'*And I think the reason for that is that, you know, obviously DCF can be quite subjective and having a second approach can ground that DCF quite well and just create a bit more certainty around the valuation and obviously in a transaction when real money is changing hands, you wanna be a lot more certain. Whereas financial reporting, yes, it's important, but it doesn't require the same level of certainty.'*

Valuation guidelines place earnings multiples approach ahead of the DCF

Valuators who prefer the earnings multiples approach consider compliance with valuation standards important. Compliance with standards grants validity to the valuation results in addition to the avoidance of risk.

The IPEV and IVSC standards place earnings multiples ahead of the DCF. Similarly, the IFRS13 fair value hierarchy places earnings multiples approaches ahead of the DCF. As outlined in the literature review, the earnings multiples approach reflects the manner in which market participants expect to realise value. Because the earnings multiples techniques rely on observable inputs from active markets (even if not quoted prices), they place on level 2 in the IFRS13 fair value hierarchy. The DCF places at the lower rung of the IFRS13 fair value hierarchy because it relies substantially on unobservable internally generated data.

Having stated the above, it is worth noting that participants at audit firms made minimal reference to valuation standards, including IFRS13. This was a particularly surprising observation because of the centrality of IFRS13 to fair value practice, of which valuations is an important component. Whilst two referred to accounting standards (one of whom mentioned IFRS13), the fair value hierarchy was not discussed.

5.5.6. Factors behind the use of inconsistent valuation methods

Exits resulting from an unsolicited offer

Fifty percent of all exits transactions which employed inconsistent methods between the reporting and exit date originated from an unsolicited offer. In all the 65 transactions tested, unsolicited offers originated only 22%. There is therefore a disproportionate representation of unsolicited offers in the portion of the population that used inconsistent methods.

An offeror is likely to include the valuation method as part of the key terms, thereby taking the ability to determine the exit valuation method out of the hands of the seller. If the method chosen by the offeror

is different from the method previously used to value the same investment at reporting, the two methods will differ.

Universal applicability of ABA and its use during reporting

If a portfolio manager of unlisted investments holds a distressed asset in their portfolio and they are required to value such an entity at reporting date, their valuation method choice is limited to the ABA regardless of its limitations as an indicator of value. If that same asset was to be exited subsequent to the reporting date, the exit method is unlikely to be the ABA. In other words, assets under distress, if exited shortly after their valuation for reporting purposes, will always be at a different valuation method to the reporting method.

Secondly, South African valuators are reluctant to use valuation methods which may be perceived as aggressive or rarely used. Such methods may be required to value high growth entities which are in a start-up phase and have no peers. In those circumstances, valuators default to asset-based approaches for reporting. Should such an investment be exited shortly after reporting, an inconsistent method is likely to be applied.

Valuator is an audit firm, and exit is through a sale to a private equity firm

A strong theme which emerged in the textual data analysis was that audit firms have a strong preference for the DCF technique, for reasons explained above. In some instances, reference was made anecdotally to 90% of valuations being on the DCF method. What was observed in Table 5.13 is that all disposals to another private equity firm were valued on the multiples basis. A portfolio manager who uses an audit firm to value its assets for reporting purposes who happens to dispose to a private equity firm is highly likely to use dichotomous valuation techniques for the two purposes: DCF for reporting (as influenced by the valuator) and earnings multiples approach for the exit.

Valuators may apply more than one valuation technique

Depending on the purpose of the valuation, valuators often apply more than one valuation technique in valuing an entity, one as a primary method and another as a reasonability or validity check of the outcome from the primary method. Valuations for dispute settlement purposes, for example, would stipulate only one method, but valuations for exit purposes will almost always be validated with a second technique, depending on the availability of information.

This theme was strong across the participants and had a frequency in the upper quartile. Figure 5.5 illustrates the use of primary and secondary valuation techniques in light of the purpose of the valuation.

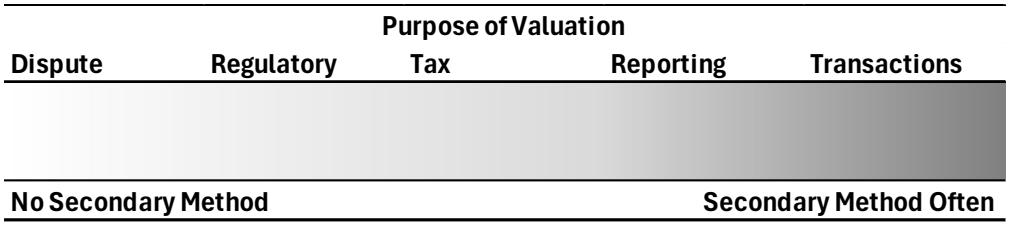


Figure 5.5: The use of a secondary valuation technique

Source: Author's own

5.6. Comparing and contrasting the quantitative and qualitative findings

Although the quantitative and qualitative portions of the study were intended to address different aspects of the research problem, there were some areas where relatable findings were made. Because each of the qualitative and quantitative approaches has inherent shortcomings that can be partially remedied by applying the opposite methodology, confirming findings across methodologies improves the validity of a study. The process of validating findings across research methodologies is referred to as triangulation. In the current study, there were two areas where triangulation was achieved. These areas are, in broad terms, purpose of valuation and choice of valuation methods.

5.6.1. Purpose of valuation

The qualitative study provides richer insight into the reasons valuations are conducted in southern Africa, ranging from dispute resolution to transactions. The quantitative study envisaged, by design, only two purposes of valuation, namely reporting and transactions. This was to enable an unfettered contrast between these two purposes.

From the qualitative analysis, the most common purpose to which valuations are applied is reporting. This finding supports a finding in the quantitative portion about the limited number of transactions in the past three years as economic growth remained below 1% in South Africa. In the past three years covered by the survey, only 65 transactions were entered into by participants in the survey. In an environment where corporate transactions are limited, it is not surprising that valuations would mainly be used for reporting purposes.

5.6.2. Choice of valuation method

Valuation method choice is an area where both the quantitative and qualitative efforts yielded significant comparable findings. There was an opportunity to evaluate the use of the BPM6 methods in the qualitative study, revealing that valuators in South Africa seem to make selective use of the various methods, essentially the earnings multiples and the DCF, to the exclusion of all others. Asset based

approaches were mentioned only in the context of distressed and loss-making entities. Similarly, the quantitative analysis pointed to the use of methods other than the DCF and earnings multiples in only 11% of exit transactions. Asset based approaches were used in only 3% of exits but are not generally recognised at firm level for exits.

The descriptive statistical analysis pointed to the possibility of a dichotomous use of valuation techniques, dependent on the purpose, by portfolio managers of unlisted equities. This observation was established by the Chi-Squared Test of independence. The qualitative study further confirmed this finding, with factors such as the subjectivity of the DCF model as impediments to its use during transactions.

Chapter 6 - Conclusion

Whilst private unlisted entities have always been the backbone of modern market-driven economies, unlisted instruments are becoming more important as investment vehicles available to the public with vehicles such as private equity. Whilst some knowledge of unlisted investments exists, there remain knowledge gaps in relation to the valuation of these instruments in South Africa and its neighbours.

This study has investigated whether the choice of valuation methods by portfolio managers of unlisted equity contributes to Valuation Revision, particularly through the use of one method at the reporting stage and a different method at exit. It has also explored the underlying reasons for portfolio managers' preferences regarding specific valuation techniques.

A mixed methods research approach was used taking the form of a quantitative-phenomenology design. This chosen design is referred to as an explanatory sequential design, first with a quantitative investigation of topic based on first-hand information gathered through a survey. This was followed by qualitative content analysis of semi-structured interview data. The outcomes of the study are detailed below.

6.1. Summary of findings per research question

There are at least 180 managers of unlisted equities in South Africa, the overwhelming majority of which (97%) are registered members of SAVCA. The average active private equity firm in South Africa has ZAR3.91Bn assets under management. In this landscape, the current study addressed the research questions in the manner outlined below:

Do portfolio managers of unlisted investments use consistent methods of valuation at reporting and at exit?

The Chi-Square Test of independence was conducted to establish whether indeed portfolio managers apply a different valuation method for reporting purposes as opposed to the exit. A relationship was established between purpose of reporting and valuation method, wherein the DCF is associated with reporting, and the earnings multiples approach with transactions. The first research question was answered satisfactorily: portfolio managers of unlisted equities in southern Africa do not use consistent methods to value their investee companies for reporting and to determine the exit price.

Does the use of inconsistent valuation methods result in higher valuation revisions?

Research Question 2 asked whether the choice of a valuation method could contribute to valuation revision. Investments which were valued and exited using inconsistent methods were either over-reported or fairly reported. This stands in contrast to the total exits wherein 43% of investments were either under-reported or significantly under-reported. The finding was verified by conducting the

Kruskal-Wallis Test, which confirmed that investments which were valued using one method at the last period before exit, but with the exit price determined using another method, yielded the greatest valuation revisions.

Further noteworthy findings from the test of valuation revisions are that southern African private equity firms either fairly report or understate the value of their investments. Of the 65 exited investments covering a period of three years (2021 to 2023), 39% were fairly reported in the last period before exit, 8% were under-reported and 35% were significantly under-reported. Only 18% of investments were either over-reported or significantly over-reported.

Reasons behind the use of inconsistent valuation methods at reporting and at the exit

There are advantages and disadvantages associated with each of the two methods examined by the current study. Circumstances may arise where a method which was not used for reporting purposes is used for the exit. These include unsolicited offers where the offeror may prescribe a valuation method, where an asset-based approach was used at last reporting (ABA are hardly used for exit), and transactions involving assets sold to another private equity firm which were valued by an audit firm at the last reporting date. As stated above, such inconsistencies result in higher valuation revision.

Table 6.1 summarises the research questions, findings and references to the report wherein the findings are detailed.

Table 6.1: Research questions and reference to findings

Research Question	*Research Findings Reference*	*Remarks*
(RQ1) Do portfolio managers of unlisted equity instruments employ a valuation method at reporting (as required by IFRS 13) similar to the method expected to be used for exit purposes?	5.3	DCF is preferred for reporting and earnings multiples preferred for exit. Previous studies showed an overwhelming preference of the DCF method, the current study as delineated this preference.
RQ1(a) What valuation method does each portfolio manager of unlisted equities employ for reporting purposes?	5.3.1 5.3.2	49% of portfolio managers prefer the DCF for reporting, but only 25% of exited investments were valued using the DCF just before they were exited. 58% of exited investments were last valued using an earnings multiples method.
RQ1(b) What valuation method does each portfolio manager of unlisted equities employ for exit purposes?	5.3.1 5.3.2	62% of all exited investments were valued using an earnings multiples method.
(RQ2) If divergent methods are used, are any of the methods associated with larger absolute valuation revisions?	5.4	No single valuation method can be associated with higher valuation revisions if used consistently at reporting and at exit.
(RQ3) What motivates the choice of one valuation method over another, where different methods are employed?	5.5	Various factors including availability of information, valuator training and background, and valuator fees, influence the valuation method chosen.

6.2. Further findings relevant to private equity valuation practices

Portfolio managers of unlisted equities in southern Africa require valuation of their investee companies for five primary reasons, namely for dispute resolution (litigation, arbitration, other judiciary proceedings), for regulatory purposes (SARB, Companies' Act), taxation (CGT, Estate Duty, Donations

Tax), reporting, and for transactions (buy/sell). This finding is not new; however, it provides a logical categorisation of the findings of van Eden (2005) and recognises the importance of reporting as a reason to conduct valuations. Reporting dominates the purpose of valuations as deals seemed to dry up from around 2017 in South Africa.

The most commonly used valuation approaches are the income approach in the form of the DCF and the earnings multiples approach. The earnings multiples approach has several techniques including the revenue multiple, EV/EBITDA and the price earnings ratio. These findings are in line with previous research, both in South Africa and beyond (Mouboussin, 2018).

An unexpected finding was that there is a difference between the valuation method private equity firms claim to use and what they use in actuality, both at reporting and at exit. Forty-nine percent of survey participants stated that they used the DCF technique for reporting purposes and 34% stated that they used the same method to determine the exit price of investments; 34% stated that they used earnings multiples methods for reporting purposes and 57% for exit purposes.

When exited investments were analysed, the use of valuation methods changed significantly. The DCF method was used to determine the exit price of investments in only 22% of exit instances. Earnings multiples approaches were used to determine the exit price in 62% of the transactions reported. Two observations are noteworthy here: firstly, the DCF seemed to be preferred for reporting purposes, whilst the earnings multiples was preferred for exit purposes. Secondly, the stark contrast between what portfolio managers professed to use and what they actually used is noticeable. Reasons for this over-representation of the DCF in the professed valuation method were not investigated by this paper. However, when considering the contributions of the interview participants, the DCF method appeared to attract some emotional attachments, a line of enquiry worth pursuing in future research.

When all purposes of valuation are considered, the DCF method appears to be dominant. The proportion of usage stated by the semi-structured interview participants ranged between 70% and 90% of the time.

6.3. Knowledge contribution

The study contributes to several aspects of knowledge about the valuation practices of portfolio managers of unlisted equities. In some respects, the study adds to existing knowledge and in others, establishes new findings that were previously unknown.

The uses of valuations by private equity firms have been reaffirmed in this study. Furthermore, the current study categorises the uses of valuations identified by van Eden (2005) into five cogent categories, namely for statutory, tax, dispute resolution, reporting and transactions. Van Eden (2005) is

a study conducted before fair value accounting was fully adopted by the IASB and the advent of IFRS 13. This study adds reporting as a key purpose of valuation.

The current study is the first in South Africa to test the accuracy of valuations as reported by portfolio managers of unlisted equities. As a novel approach, the current study used exit multiples as a proxy for valuation revision. This approach enabled survey participants to contribute without fearing a breach of proprietary information.

Studies investigating valuation revision in foreign jurisdictions have often relied on secondary data analysis which has several drawbacks. Firstly, such data does not have adequate coverage of southern African markets; it is costly and is narrow. Exit multiples provide an alternative, much more accessible form of data for other scholars in all jurisdictions.

In South Africa and its neighbouring countries, there has not been any study investigating the accuracy of reporting of investment values. The current study is the first of its kind to investigate both the accuracy of the reported values and the method of validation.

For some valuation projects such as tax and regulatory reviews, the valuation method choice rests with the valuator, who may at times be imposed on the entity by the regulator themselves.

The DCF method is said to be more complex and involved, requiring more time from a valuator. Although valuator fees are often fixed and agreed upon prior to the commencement of the valuation effort, using a more time-consuming method can garner a higher fixed fee.

6.4. Limitations and areas for future studies

The quantitative portion of the study used a survey as the primary data collection tool. Studies examining valuation accuracy in foreign jurisdictions often rely on secondary data sources such as Preqin. There is limited physical presence of such firms in South Africa, and data relating to southern African transactions are limited. Survey data has known limitations which were adequately controlled for in the research methodology. However, there seems to be an opportunity for the establishment of entities such as Preqin in South Africa. Secondary data sources of this type have limitations of their own which were described in the literature review; however, more relevant data from these can enable studies which would be directly comparable to those conducted in foreign jurisdictions.

Market participants in the private equity space in southern Africa appear to use unsolicited offers in an opportunistic or predatory manner. Unsolicited offers were associated with significant overreporting, suggesting that such transactions are concluded at pricing significantly below the previously reported value. This was a surprising observation which has not been fully tested. There was no data collected to directly examine the phenomenon. This is a potential area of study that can be further explored.

The PWC survey in South Africa remains one of the most frequently cited sources of data in valuations, particularly when applying judgemental factors such as discounts and premiums. Validating the PWC survey findings is clearly not part of the objectives of this report. However, an opportunity for comparing the preference of valuation methodologies presented itself. This report found that the DCF method is used between 22% and 49% of the time, but the PWC (2017) survey found up to 90% preference of the DCF. Part of the explanation is that the PWC survey covers all purposes of valuations, but the current study only covers valuation for reporting and transactions purposes. Understanding the prevalence of the DCF for purposes such as regulatory, tax and disputes could be informative.

A surprising chasm was observed between the valuation methods which portfolio managers claimed to use and the methods they used in actuality. Because the finding was unexpected, there was insufficient data to examine this gap further. Forty-nine percent of the survey participants stated that they used the DCF method for reporting purposes; however, the DCF method was used for reporting in only 34% of the time. The opposite was observed for the EM approach with only 40% of participants claiming that they used this method for reporting, while 58% of the exited transaction were, in fact, valued on this basis for reporting. The study could not isolate the reasons for this discrepancy and considers this area a possible avenue for future research.

The analysis of the semi-structured interview data indicated a connection between valuator, valuation method, and valuator fees. Because the finding was drawn from qualitative data, no statistical data was collected from which the association could be ascertained. This is a potential area for future studies.

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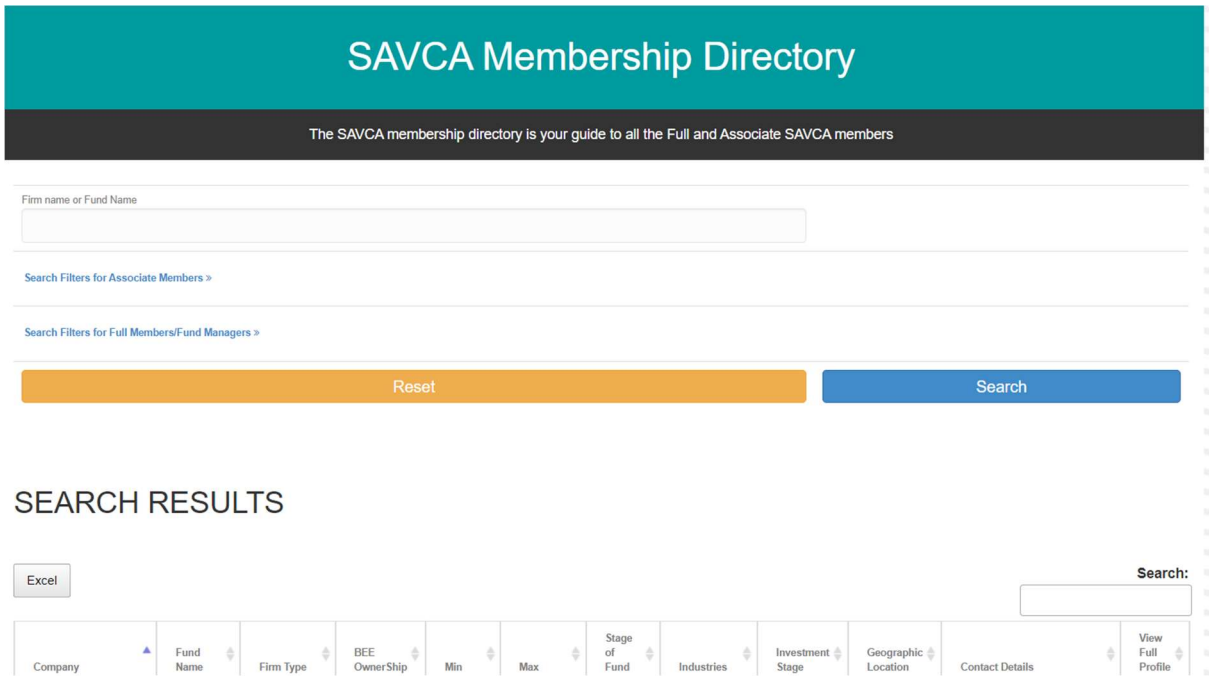
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Appendices

Appendix 1 – SAVCA Membership Directory



Appendix 2 – Survey Questionnaire



Valuation methods used by portfolio managers of unlisted equities for reporting / exit

Which valuation methods do portfolio managers of unlisted equities use for reporting purposes and at the exit of investments

Background

My name is Mamogoto Mokoala and I am a Masters student in Accountancy at the University of the Witwatersrand, Johannesburg. As part of my studies, I am conducting a research project entitled ***Valuation Methods Used by Portfolio Managers of Unlisted Equities for Reporting Versus for Exit Purposes*** with a survey as the primary research tool. I am under the supervision of Prof A. Sebastian and Prof M. Negash. The survey is confidential and anonymous. When I share the results of the research study, I will not include your name or the name of your firm/employer or anything else that could identify you. As the researcher, I will not be able to identify who a response was from. If you have any questions about this research, feel free to email me on 9601033x@students.wits.ac.za. If you have any concerns or complaints regarding the ethical procedures of this study, you are welcome to contact the University Human Research Ethics Committee (Non-Medical), telephone +27(0) 11 717 1408, email hrecnon-medical@wits.ac.za

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Valuation methods used by portfolio managers of unlisted equities for reporting / exit

* Required

Firm characteristics and general approach to management of unlisted equities

1. What was the total assets under management (AUM) / net asset value (NAV) of the firm at last reporting date? (in South African Rands (ZAR)) *

- ≤1Bn
- >1Bn but ≤10Bn
- >10Bn but ≤30Bn
- >30Bn but ≤50Bn
- >50Bn

2. Of the total AUM / NAV, what proportion was unlisted equity assets at last reporting date? *

- ≤10%
- >10% but ≤30%
- >30% but ≤50%
- >50% but ≤70%
- >70%

3. Which method do you (your firm) typically use to value unlisted equity assets for reporting purposes? *

- Discounted Cashflow (DCF)
- Earnings Multiple
- Asset-based approach
- Other

4. Is/are valuation/s externally audited for reporting purposes? *

- Yes
- No

5. How do you (your firm/employer) typically exit unlisted equity investments?

- ◯ Sale to strategic investor
- ◯ Sale to a private equity firm
- ◯ MBO (management buy-out)
- ◯ Other

6. What valuation method do you (your firm/employer) use to determine the exit price of investments? *

- ◯ Discounted Cashflow (DCF)
- ◯ Earnings Multiple
- ◯ Asset-based approach
- ◯ Other

7. In the last three years (2021; 2022; 2023), how many investments did you (your firm/employer) exit in full or partially? *

- ◯ **Zero** *(If there were no investments exited in the past three years, select Zero and proceed to Submit)*
- ◯ **3 or less** *(If three or less investments were exited, consider all of the exits and click Next)*
- ◯ **4 to 10** *(If more than three exits occurred, consider the three largest and click Next)*
- ◯ **More than 10** *(If more than three exits occurred, consider the three largest and click Next)*

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Exited Investment 1

If more than three exits occurred, identify three of the largest. If three or less, consider all of the exits. Respond to the questions below for each relevant exit.

8. What was the valuation method used to determine the exit price of the investment? *

- ◯ Discounted Cashflow (DCF)
- ◯ Earnings Multiples
- ◯ Asset-Based Approach
- ◯ Other

9. What was the valuation method used for this asset at last reporting date? *

- ◯ Discounted Cash Flow (DCF)
- ◯ Earnings Multiples
- ◯ Asset-Based Approach
- ◯ Other

10. **Exit Multiple**
What was the exit price as a proportion of the last reported value (Exit Price divided by Last Reported Value) *

- ◯ <0.7
- ◯ 0.7 to 0.9
- ◯ >0.9 but <1.1
- ◯ 1.1 to 1.2
- ◯ >1.2

11. Was the exit due to an unsolicited offer?

- ◯ Yes
- ◯ No

Appendix 3 – Interview Guide

Valuation Methods Used by Portfolio Managers of Unlisted Equities for Reporting versus for Exit Purposes

Interview Protocol

Salutation and Note of Appreciation

Request for Recording

Introductory Remarks

Over the past five weeks, I conducted a survey among members of South African Venture Capital and Private Equity Association asking several questions relating valuations at their firms. Responses covering more than 40% of SAVCA members were received. 80% of the participants hold more than 70% of the AUM in unlisted equities. Of relevance to this interview are the following initial observations:

1. In response to the following question: '**Which method do you (your firm) typically use to value unlisted equity assets for reporting purposes?'**
   The following responses were received:
   A) 41% selected the Discounted Cash Flow (DCF)
   B) 35% selected the Earnings Multiple Approach
   C) No one selected the Asset Based Approach
   D) 23% selected the Other Approaches



2. In response to the following question: ""**What valuation method do you (your firm/employer) use to determine the exit price of investments?**
   The following responses were received:
   A. 26% selected the Discounted Cash Flow (DCF)
   B. 44% selected the Earnings Multiple Approach

C. No one selected the Asset Based Approach

D. 29% selected the Other Approaches



Survey participants were also asked to list 3 of the largest investments exited over the past three years (2021 to 2023). More than 100 exits were reported and the following observations is pertinent

3. In response to the following question: '**What was the valuation method used to determine the exit price of the investment?'**

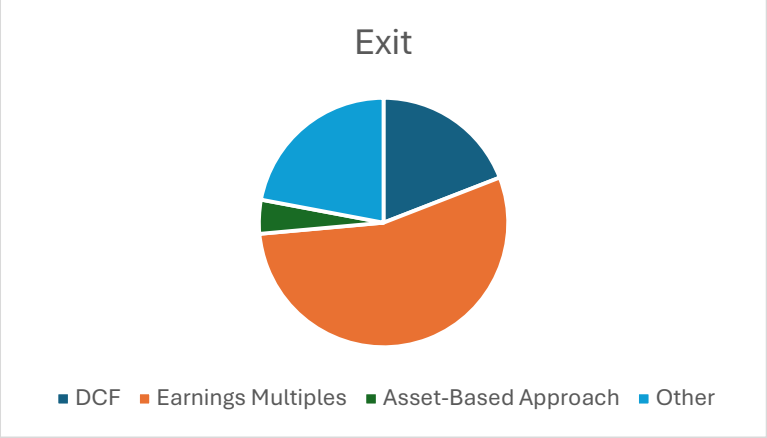
   The following responses were received:

   E) 19% selected the Discounted Cash Flow (DCF)

   F) 54% selected the Earnings Multiple Approach

   G) 4% selected the Asset Based Approach

   H) 22% selected the Other Approaches



4. In response to the following question**: 'What was the valuation method used for this asset at last reporting date?'**

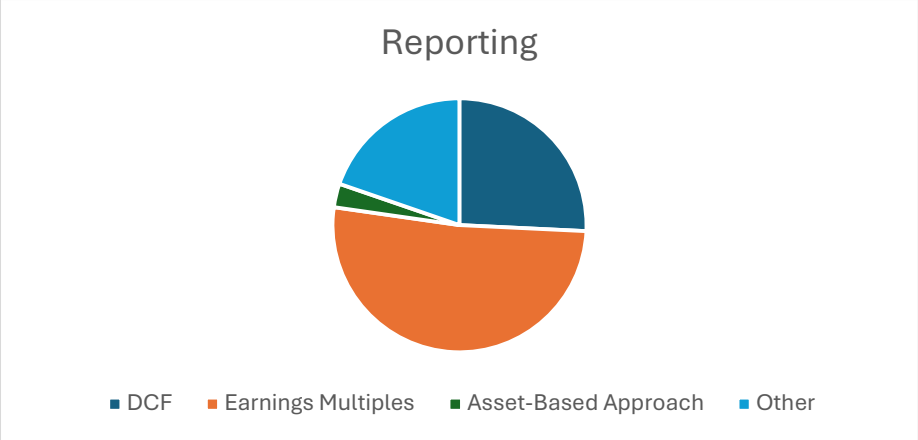
   The following responses were received:

   E. 25% selected the Discounted Cash Flow (DCF)

   F. 50% selected the Earnings Multiple Approach

   G. 3% selected the Asset Based Approach

   H. 19% selected the Other Approaches



In relation to the selection of other (in which case a participant had to specify the method referred to) a selection of comments was made, some of which are below.

i) Negotiated Exit

ii) Cost less impairment

iii) A combination of DCF, earnings multiples and EV/EBITDA

iv) A combination of DCF, asset-based approach and peer multiple comparable from earnings and other numerous financial metrics.

v) Revenue Multiple because of the nature of the investments (early stage tech startups). We use DCF for businesses with a positive EBITDA

vi) We use Earnings multiples, LTV calculations, DCFs, Net Asset Values, Precedent Transactions, EBITDA multiples and potentially a weighted average of the methodologies.

vii) Asset based (IP), revenue traction (multiple of), team experience, market

With this background, I have a few questions. Please be as open and expansive as you can in your response.

Research Questions

Question	Remarks by Interviewee/Interviewer
Q1. Can you describe the market your firm serves, including the deal types, deal size clients and the role of your firm?	
Q2. Why do clients need investments valued? In your particular experiences, what are the most dominant uses of your valuation outcomes?	

Q3. What Valuation Methods have you used (either performed, reviewed) in your role before? Which methods are you aware of that you may not have used? Method of aggregation for Group	
Q4. Have you discerned a Preference of methods, by either your clients, their auditors or even your firm as an expert?	
Q5. What is behind the preference?	
Q6. Have you encountered any pressure to Over or Under report your client's assets, or gained the impression that a client representative was under such pressure?	

Appendix 4 – SPSS Statistics Recoding of Data

AssetUM into AUM (Asset UM)

Old Value	New Value	Value Label
>10Bn but ≤30Bn	1	>10Bn but ≤30Bn
>1Bn but ≤10Bn	2	>1Bn but ≤10Bn
>50Bn	3	>50Bn
≤1Bn	4	≤1Bn

UnlistedPortion into UnlistedPortionofAUM (Unlisted Portion)

Old Value	New Value	Value Label
>10% but ≤30%	1	>10% but ≤30%
>30% but ≤50%	2	>30% but ≤50%
>50% but ≤70%	3	>50% but ≤70%
>70%	4	>70%
≤10%	5	≤10%

TypicalMethodReporting into TypicalValuationMethodReporting (Typical Method

Old Value	New Value	Value Label
Discounted Cashflow (DCF)	1	Discounted Cashflow (DCF)
Other	3	Other

Audit into ExternalAudit

Old Value	New Value	Value Label
No	1	No
Yes	2	Yes

ExitApproach into ExitStrategy (Exit Approach)

Old Value	New Value	Value Label
Combination	1	Combination
MBO (management buy-out)	2	MBO (management buy-out)
Equity firm		
strategic investor		

TypicalMethodExit into TypicalValuationMethodExit (Typical Method Exit)
Label

Discounted Cashflow (DCF)	1	Discounted Cashflow (DCF)
Other	3	Other

TotalNumberofExits into ExitedInvestmentsinLastThreeYears (Total Number of

Old Value	New Value	Value Label
3 or less	1	3 or less
4 to 10	2	4 to 10
More than 10	3	More than 10

Val.Tech.determinetheexitprice into AppliedValuationMethodDuringExit
exit price)

Asset-Based Approach	1	Asset-Based Approach
Discounted Cash Flow (DCF)	2	Discounted Cash Flow (DCF)
Multiples		

Val.Tech.at lastreportingdate into AppliedValuationMethodatLastReporting
reporting date)
Label

Asset-Based Approach	1	Asset-Based Approach
Cost	2	Cost
Discounted Cash Flow (DCF)	3	Discounted Cash Flow (DCF)
Multiples		

ValuationBothExitandReporting into AppliedValuationMethodReportExit
Reporting)

Asset-Based Approach	1	Asset-Based Approach
Discounted Cash Flow (DCF)	2	Discounted Cash Flow (DCF)
Multiples		

Other	5	Other

ExitTimes into ExitMultiplesReported (Exit Times)

Old Value	New Value	Value Label
<0.7	1	<0.7
0.9 but <1.1	2	>0.9 but <1.1
1.2	3	>1.2
0.7 to 0.9	4	0.7 to 0.9
1.1 to 1.12	5	1.1 to 1.12
1.1 to 1.2	6	1.1 to 1.2

UnsolicitedYN into Unsolicited (Unsolicited Y/N)

Old Value	New Value	Value Label
	1	
No	2	No
Yes	3	Yes

Appendix 5 – Textual data coding

Code labels and definitions

← Label → Initial	Line-by-line	Code / definition
POV001		Purpose of valuation and markets served
	POV011	Purpose of valuation - reporting
	POV012	Purpose of valuation - transaction
	POV013	Purpose of valuation - regulatory (JSE, Companies' Act, SARB)
	POV014	Purpose of valuation - taxation
	POV015	Purpose of valuation - disputes / litigation
VALMET001		Valuation methods used in client assignments
	VALMET011	Valuation method is DCF
	VALMET012	Valuation method is Earnings Multiples
	VALMET013	Valuation method is Asset Based Approaches
	VALMET014	Use of IRR in South Africa
	VALMET015	Aggregation method is Sum of the Parts
VALPRE001		Pressure on valuators to under/over report
	VALPRE011	Balance sheet pressure (Solvency and Gearing)
	VALPRE012	Income statement pressure (Gains and Losse)
	VALPRE013	Inflated growth and DCF
	VALPRE014	Valuator fees and client retention pressure
PROSKE001		Professional scepticism and judgement applied
	PROSKE011	Tough questions to the client
	PROSKE012	Robust discussion with the client
	PROSKE013	Track record to justify growth
	PROSKE014	Insist on valuator independence
	PROSKE015	Maintain strong ethical standards
	PROSKE016	Discount management assumptions
PREF001		Reasons for preference/use of valuation methods
	PREF011	DCF method is more relevant to continuing business operations
	PREF012	DCF method is more robust and scientific
	PREF013	Easy to access input data for insiders

	PREF014	Takes management's perspective into account
	PREF015	External review of valuation workings
	PREF016	Familiarity with the DCF model
	PREF017	Low IPOs and many de-listings
	PREF018	Some indexes have very few stocks
	PREF019	Changing economic structures
	PREF020	Transactions multiples of recent comparable transactions
	PREF021	EMA remains suitable for some loss-making entities and start-ups
	PREF022	Proprietary and expensive data sources
	PREF023	Aligns with IVSC Valuation Standards
	PREF024	Aligns with IPEV Guidelines
	PREF025	Aligns with Accounting standards (Three Levels of IFRS 13)
	PREF026	DCF sensitivity to input data
	PREF027	Arbitrary adjustments of discount rates
	PREF028	Earnings Multiples is more understandable (limited variables)
	PREF029	Single period / forecasting may or may not be used
	PREF030	DCF outcomes are subjective
	PREF031	DCF data is not readily available
	PREF032	Comparison with peers and across sectors
	PREF033	DCF is dynamic
	PREF034	EMA verifiable against published sources
	PREF035	ABA suitable for distressed companies
	PREF036	DCF method has many variables
WHO001		Valuation method used by individuals with certain characteristics
	WHO011	Experienced practitioners tend to use Earnings Multiples
	WHO012	Audit firms have a strong preference for DCF

SSI Frequency Table

Code *Label*	Intervie w 1	Intervie w 2	Intervie w 3	Intervie w 4	Intervie w 5	Intervie w 6	Intervie w 7	Tota l Freq .
POV011	III	IIII	II	II	II	II	II	17
POV012	II	II			I	I		6
POV013		IIII			I			5
POV014		I						1
POV015		I		II	I			4
VALMET01 *1*	II	I	II	III			IIII	12
VALMET01 *2*	II	II	IIII	I	IIIIII			15
VALMET01 *3*	I	II	I			I		5
VALMET01 *4*							I	1
VALMET01 *5*	I	II	I		II			6
VALPRE01 *1*		I	I					2
VALPRE01 *2*	I							1
VALPRE01 *3*	I	II	I	I				5
VALPRE01 *4*		I			I			2
PROSKE01 *1*			II		I			3
PROSKE01 *2*	I			I			I	3

PROSKE013	I					I			**2**
PROSKE014						I	I		**2**
PROSKE015	I	I	I	I					**4**
PROSKE016	I		I						**2**
PREF011		I					I	II	**4**
PREF012						I	I		**2**
PREF013	I								**1**
PREF014	I					I			**2**
PREF015								I	**1**
PREF016	I							I	**2**
PREF017									
PREF018	I								**1**
PREF019									
PREF020						I	I	I	**3**
PREF021	I	I	I					II	**5**
PREF022									
PREF023	I								**1**
PREF024	II								**2**
PREF025								I	**1**
PREF026			I						**1**
PREF027			III						**3**
PREF028			II	II					**4**
PREF029				I					**1**
PREF030		I	I	I					**3**
PREF031			I	I	I				**3**
PREF032					I				**1**
PREF033	I							I	**2**
PREF034		I	I		I				**3**
PREF035		I			I				**2**
PREF036			I						**1**

WHO011							I	**1**
WHO012		II		II			I	**5**
Total	**26**	**31**	**27**	**18**	**24**	**7**	**19**	**152**