AOSIS

Suitability of risk assessment tools used during the portfolio recommendation process

CrossMark

Authors:
Solani Baloyi[1]
Melany Lotter[1]

Affiliation:
[1]Department of Finance and Investment Management, College of Business and Economics, University of Johannesburg, Johannesburg, South Africa

Corresponding author:
Melany Lotter,
mlotter@uj.ac.za

Orientation: Investors are overwhelmed with Collective Investment Schemes (CIS) portfolio options.

Research purpose: The study set out to assess the emerging themes considered essential and prevalent in establishing a risk profile, establishing a framework for risk assessment tools, and evaluating existing risk assessment tools used in the industry.

Motivation for the study: In 2020, newly amended legislation confirmed the importance of a risk assessment. This legislation made it mandatory and compulsory for financial planners to conduct a risk profile analysis concerning investment products in South Africa. Consequently, CIS have implemented various risk assessment tools to establish the investor risk profile.

Research approach/design and method: Documentary research methodology was employed, where secondary data were analysed qualitatively. Twelve risk assessment tools were collected, and the established framework was used to evaluate existing risk assessment tools.

Main findings: A sound theoretical framework for risk assessment tools, which is comprehensive in nature and include demographic factors, risk categorisation, and regulatory factors, was established. The results indicate that current tools used in the industry are inconsistent and do not address all the factors required to establish an investor risk profile.

Practical/managerial implications: The study is significant in that it guides the financial services industry into the elements of assessment in establishing an investor risk profile.

Contribution/value-add: A risk profile analysis is compulsory for financial planning. Financial planners and policymakers can consider the established framework to implement a standardised, comprehensive, holistic, risk assessment tool.

Keywords: portfolio recommendation; risk assessment tool; risk profile; collective investment scheme; South Africa.

Introduction

The Collective Investment Schemes (CIS) industry has become highly differentiated, with increased investment portfolio choices and options to offer to investors. With more than 140 000 CIS portfolios worldwide and total assets under management of more than $60 trillion, investors are overwhelmed with the choice to select the right CIS portfolio (Association for Savings and Investment South Africa [ASISA] 2022). Collective investment schemes investments are a preferred investment vehicle that allows individuals to invest in various assets that would not be accessible to individuals (Oldert 2018). However, to select a suitable CIS investment, the investor needs to understand many features of these investments, such as the asset class, expected return, volatility, and the asset's relationship with other assets. Unfortunately, investors do not always have the financial knowledge and capability to make investment decisions independently; therefore, they rely on market research and publications of financial institutions and financial planners (Ferreira 2015). Consequently, because of the complexity and number of CIS available, investors use financial planners for financial advice. Professional financial planners are responsible for analysing the equity market and linking investors with suitable investment portfolios and products (Metherell 2011; Swart 2016).

Individuals invest their money for different reasons (Agunsoye et al. 2022). The stated reasons include short-term savings to meet their peak season spending, precautionary investments in the form of emergency funds, provision for retirement and their own comfort, and asset ownership (Bain 1981; Fisher & Anong 2012). Therefore, an investor's objectives must be known and set according to the acceptable risk and return expectations (Bodie, Kane & Marcus 2014).

Financial planners conduct investment risk profile assessments to select the correct CIS portfolio for optimal portfolio recommendation decisions. Morse (1998) asserts that risk assessment is an essential component of the portfolio recommendation process in financial planning. For that reason, establishing a risk profile is central to achieving any investor's financial goals, where their risk profile guides the financial planner with the portfolio and asset allocation decisions.

There are still many instances where financial planners do not perform a risk assessment, or the risk assessment is unsuitable for optimal portfolio recommendation (Richards, Ahmed & Bruce 2022). The Financial Advisory and Intermediary Services (FAIS) Ombud in South Africa listed 18 ombud investment case determinations during a period of 6 months between 2020 and 2021 (FAIS Ombud 2021). All these case determinations were in favour of the investor, where the financial planner failed to demonstrate that they performed a risk assessment or did not use a suitable risk assessment tool (FAIS Ombud 2021). This is not unique to South Africa; in Australia, Richards et al. (2022) analysed ombud determinations over a period of 5 years and found that advice was given without sufficient analysis in many instances.

Collective investment schemes firms have implemented risk assessment tools for financial planners to use during the risk profile analysis; however, as evidenced by the FAIS ombudsman cases, the investor's risk profile depends on these risk assessment tools' accuracy and comprehensive nature. Subsequently, using different tools may translate to different outcomes for the investor. There are various tools currently used in the industry with no checklist or guidelines regarding the completeness and accuracy of the risk assessment tool. As risk assessment tools in the industry are inconsistent, this study aims to investigate the suitability of risk assessment tools. The study is motivated by two questions: firstly, whether the various risk assessment tools address all the factors to establish an investor's risk profile, and secondly, whether policymakers should implement a standardised, comprehensive, holistic risk assessment tool. To address this dilemma, the first objective of this research is to provide a guide for the industry through a standardised and thorough risk assessment framework incorporating elements from the literature.

In the developing context of this study, newly amended legislation confirming the importance of a risk assessment came into effect in June 2020. This legislation made it mandatory and compulsory for financial planners to conduct a risk profile analysis concerning investment products in South Africa (Republic of South Africa 2003). This legislation was a breakthrough for the South African industry, and can be considered and applied in other markets also. Before this, financial planners conducted investment risk profile assessments to aid in optimal portfolio recommendations. However, because of the new legislation, financial planners are required to decline to give advice where there is a failure to conduct a risk profile analysis (Republic of South Africa 2003). South Africa follows rules-based compliance legislation to regulate the financial services environment, shifting towards principles-based compliance (Republic of South Africa 2017). This means that financial services providers (FSPs) and financial planners must change and implement systems, procedures, and policies to meet a principled desired outcome rather than merely ensure that they comply with the law. In line with the new requirement, CIS firms have enforced risk assessment tools for financial planners to use during risk profile analysis. The shortcoming of the new legislation is that it did not prescribe or standardise the risk assessment tool. Therefore, the new legislation did not change the previously used tools but enforced them. Thus, the second objective of this study is to investigate whether the various risk assessment tools address all the factors to establish an investor's risk profile. The outcome of this study may guide policymakers on whether it is essential to implement a standardised, comprehensive, holistic, risk assessment tool.

The South African market as a site for this investigation is pertinent. A risk assessment is mandatory before a financial planner can advise an investor, considering the 1724 CIS portfolios available in the country. Several studies on risk tolerance in this context (Gumede 2009; Metherell 2011; Strydom, Christison & Gokul 2009) have focussed on demographic determinants and the impact of demographic factors on risk tolerance. One study assessed the suitability of tools by considering the financial planner's view (Swanepoel 2016). However, these studies were conducted before the amended legislation.

This article is organised according to the study's objectives – the process followed in developing and evaluating the framework for comprehensive risk assessment tool. The description of the development of the tool was based on theoretical perspectives regarding the importance of a suitable risk assessment tool, followed by the factors required to establish a comprehensive risk assessment tool. Next, these factors were reviewed against the South African requirements of the new legislation, resulting in a finalised framework of factors to be included in a comprehensive risk assessment tool. The last step was evaluating the framework against the existing risk assessment tools used in the CIS industry through a qualitative documentary research approach.

Literature review
Suitability of risk assessment

In the CIS industry, different tools are used to establish a risk profile. These tools are known in the industry as risk profile questionnaires, risk assessment tools, asset calculators, or risk assessment worksheets, among others. Financial planners use different risk assessment tools to assess an investor's risk profile and evaluate the investor's risk appetite to match the risk profile with a suitable investment portfolio (Mazzoli & Fabrizio 2023; Oldert 2018; Thanki & Baser 2021).

Therefore, accurate measurements of investor risk preferences serve as a foundation for financial advisors (Streich 2023). Brayman et al. (2015) observed that questionnaires are primarily used in the retail channel to recommend CIS portfolios. An investment selection questionnaire includes questions to evaluate risk capacity (the risk an investor can take given their circumstances) and risk appetite (the risk an investor can handle psychologically).

Oldert (2018) identified these risk assessment tools that include a questionnaire under the 'risk assessment forms' and 'risk profile worksheets' categories. He observed that some questionnaires focus entirely on risk appetite while others attempt to assess capacity (Oldert 2018). The questionnaires allocate a score for the responses from the investor to match a portfolio with different volatilities (Oldert 2018). The outcomes of the questionnaire are assigned and kept as proof that an investor has consented to the portfolio selection. These tools will be collectively referred to as risk assessment tools, which are systematic tools developed for establishing an investor's risk profile and used by financial planners to ensure the suitability of CIS portfolios during the financial investment planning process where an investor wants to invest in CIS. Risk profile refers to risk classification, a multidimensional approach that reconciles objective and subjective factors to establish a suitable level of risk that an investor should take (Brayman et al. 2015).

To date, there has been limited research on the suitability of the risk assessment tools that financial planners use during the financial planning process in portfolio recommendation. Linciano and Soccorso (2012) found that traditional questionnaire risk profiling did not adequately explain the relationship between risk, return, inflation, discounting, capitalisation, and diversification. They also noted that the risk concepts could not be addressed fully without information such as the purpose of investment and investment timeframe while being conscious of investor biases. South African studies that focus on risk tolerance assess the factors that affect risk tolerance (Gumede 2009; Mabalane 2015; Metherell 2011; Strydom et al. 2009), not the elements that must be evaluated to establish suitability. Another study investigated factors that may influence risk profiling, but did not review the elements required to establish suitability (Jansma & Van Heerden 2010). In a study done in 2016, 85% of the financial planners who participated believed that risk profile questionnaires used in South Africa were insufficient to provide appropriate advice to investors (Swanepoel 2016).

Developing a framework

Reviewing germane literature to guide the establishment of a descriptive framework entailed selecting the keywords, literature inclusion criteria, and data sources. The following keywords were used: investment risk assessment tools, risk profile, risk profile questionnaire, investment portfolio recommendation, and suitability of investment advice. As 'risk' is a concept studied in several disciplines, the search needed to be investment-specific. The keyword selection was derived from the naming of the risk assessment tools collected, the risk profiling, risk profile questionnaire and risk assessment tools. As risk terminology differs between countries, the broader investment terms of 'investment portfolio recommendation' and 'suitability of investment advice' were used.

The study used academic articles, Masters and PhD dissertations, regulatory legislation, industry white papers, and topics identified from financial news reports. Based on the review and critical analysis of the selected literature, three themes were identified in developing a risk assessment tool: the nature of the risk assessment tool, risk categorisation, and demographic factors.

Nature of risk assessment tools

Risk assessment tools can be classified as comprehensive, subjective, objective or asset allocators (Brayman et al. 2015). Subjective risk assessment tools are used to measure the willingness of investors to take a risk during the portfolio recommendation process and focus more on the cognitive component (Linciano & Soccorso 2012). The tools can be entirely subjective, known as psychometric financial risk tolerance questionnaires or as Financial Risk Tolerance (FRT) (Thanki & Baser 2021), or they can have aspects of subjective factors (risk tolerance, risk attitude, market perception, loss aversion, habit formation, investor personality) within a comprehensive risk assessment tool.

Objective risk assessment tools are tools that analyse objective factors that can be measured quantitatively, such as the capacity to suffer a financial loss and time horizon to realise objectives (Brayman et al. 2015). Objective factors are straightforward and require factual disclosures and input from the investor about their investment objectives, financial situation, educational background, risk requirement, and risk capacity.

Economists use comprehensive risk assessment tools to avoid asking direct questions; they combine objective and subjective elements to form questionnaires (MacCrimmon & Wehrung 1985). Therefore, subjective and objective factors should be assessed holistically (Song et al. 2021), as favoured in traditional economic theory (Botha et al. 2020; Cooper, Kingyens & Paradi 2014). Risk assessment is a multidimensional concept encompassing the assessment of propensity, attitude, capacity, knowledge, and time horizon (Cooper et al. 2014). Therefore, an individual's risk profile combines subjective and objective factors and the other guidelines that financial planners follow in evaluating risky financial choices (Brayman et al. 2015). An investor's ability to take on risks involves factors such as age, time, liquidity, inflation, interest rates, goals, unexpected events, asset classes and investor personality that must be assessed to establish a risk profile (Botha et al. 2020). Consequently, the assessment of subjective and objective factors is required in the same risk assessment tool for suitable portfolio recommendation, which means that a suitable tool can be deemed comprehensive.

There is consensus among authors about using a comprehensive risk assessment tool compared to subjective tools and asset calculators (Botha et al. 2020; Brayman et al. 2015; Davey & Resnik 2012; Oldert 2018; Rice 2015; Swart 2016). Between 1992 and 2005, researchers have developed scientific multidimensional comprehensive risk assessment tools such as the Survey of Financial Risk Tolerance (Roszkowski & Grable 2005), the Grable and Lynton Risk Assessment Instrument (Grable & Lynton 1999), the Lampenius and Zikar Risk Aversion Tool (Lampenius & Zickar 2005), and the FinaMetrica Risk Assessment Tool (Davey & Resnik 2012). All these assessment tools support using a questionnaire to establish a risk profile with elements of objective and subjective factors. The FinaMetrica Risk Assessment tool combines subjective and objective factor assessment and risk classification into three elements: risk requirement, risk capacity, and risk tolerance. This tool was developed by an Australian company that has a footprint in many countries. FinaMetrica states that the risk categorising of the three risk elements must be assessed separately to establish a risk profile (Davey & Resnik 2012).

Risk categorisation

Risk categorisation is the process of classifying risk into three risk elements: risk requirement, risk capacity, and risk tolerance (Davey & Resnik 2012). These elements were adopted by Davey and Resnik (2012), who are the developers of the scientific risk assessment tool with the highest coefficient alpha, the FinaMetrica tool. Davey and Resnik (2012) stated that categorisation is essential in risk assessment because of the complexity of the risk definition. These risk categories have also been adopted by the risk profiling workgroup in South Africa (Stokes 2021). When the elements are compared and mismatches are identified, an optimal risk profile result that resolves an investor's conflicting needs is achieved. Financial planners must ensure that investors clearly understand the categories and that subjective and objective factors are assessed through each element:

1. Risk required[1] – the risk associated with the return required to achieve an investor's goals (a financial characteristic – objective factor).
2. Risk capacity[2] – the extent to which the future can be less favourable than anticipated without derailing the investor's plans (a financial characteristic – objective factor).

3. Risk tolerance[3] – the level of risk the investor prefers to take (a psychological characteristic – subject factor).

The separate assessment of each element is compellingly argued by Davey and Resnik (2012). They argue that the three types of risks are different in characteristics and need to be understood and compared in the portfolio recommendation process to help financial planners identify and resolve mismatches. Davey and Resnik (2012) stated that mismatches are common. These authors indicate that about 60% of the risk profile questionnaires are an undershoot, whereby risk capacity is more significant than risk tolerance. In about 30% of the risk profile questionnaires, the risk capacity, requirement, and tolerance are in line, and the remaining 10% are an overshoot whereby risk capacity is less than risk tolerance. Suppose the risk capacity is greater than risk tolerance. In that case, the financial planner needs to educate an investor about risk and the opportunities that are present when taking on risk for optimal portfolio recommendation. When risk capacity is less than risk tolerance, the financial planner must educate an investor about the negative implications of taking on more risk for optimal portfolio recommendation.

Demographic factors

The analysis of demographic factors is necessary for risk assessment to help the financial planner with optimal portfolio allocation. Reconciliation of the different objective, subjective and demographic risk assessment factors assists the financial planner in testing investor biases and confirming the investor's understanding and education (Sweet 2013; Yao 2003). Demographics also facilitate discussions about the interlink between the investor's financial situation, educational background, and prior investment experience (Oldert 2018; Sung & Hanna 1996; Yao 2003). There is no consensus on which demographic factors are connected to risk profile. However, age, gender and marital status, education, employment status, and household income have all been linked as factors influencing investor decision-making. Therefore, demographic factors are critical in establishing an investor's risk profile. However, they are not meant to be used solely to conclude, as they should be used in conjunction with some specific objective factors during the portfolio recommendation process (Hanna, William & Finke 2011).

The literature analysis leads to identifying the most important demographic factors that interact dominantly with risk profiles. Thus, the factors to be included in the risk assessment tool include age (Botha et al. 2020; Gibson, Michayluk & Van de Venter 2013; Lemaster 2014; Wang & Hanna 1997; Yao 2003), education (Sung & Hanna 1996; Yao 2003), employment

---

1. Risk requirement ties back to the investor objectives. This objective factor of risk assessment seeks to reconcile the investor objectives to investment return possibilities. The risk requirement is what risk the investor would have to take to achieve their financial investment objective and the amount of risk an investor should accept in their portfolio to meet their specified investment objective (Brayman et al. 2017; Davey & Resnik 2012).

2. Financial capacity to take risk is dependent on income, net worth, age, time horizon and number of dependents (Cooper et al. 2014). Risk capacity is the extent to which an investor can experience unfavourable outcomes and continue with the investment without derailing the financial investment objective (Davey & Resnik 2012). Furthermore, it is the financial ability of an investor to endure potential loss; it also refers to the investor's ability to afford risk (Brayman et al. 2017). Risk capacity is the objective factor that reconciles the investor's financial situation and investment time horizon to facilitate the risk assessment discussion.

3. Risk tolerance as the risk that an investor prefers to take: it is a psychological characteristic unlike risk requirement and risk capacity which are financial characteristics (Brayman et al. 2017; Davey & Resnik 2012; Hallahan, Faff & Mckenzie 2004; Hanna, Gutter & Fan 2001; Thanki & Baser 2021). Furthermore, risk tolerance is measured as the ratio of risky assets to total wealth (Wang & Hanna 1997), where habit formation, loss perversion and investor sentiment drive risk tolerance (Guillemette & Nanigian 2014). Time and horizon give relevant insightful information for advice, and how that advice impacts risk; however, it does not influence risk tolerance (Davey & Resnik 2012). The measurement of an investor's risk tolerance is vital for suitable portfolio allocation (Hanna et al. 2011).

status (Quattlebaum 1998; Sung & Hanna 1996; Yao 2003), and household disposable income (Gibson et al. 2013; Oldert 2018; Sung & Hanna 1996; Yao 2003).

The framework

A review was conducted to assess the emerging themes considered essential and prevalent in assessing risk and establishing a risk profile. Thus, the case is made for the use of comprehensive risk assessment by providing an overview of the multidimensional comprehensive risk assessment tools developed by researchers between 1992 and 2005. Comprehensive risk assessment tools (with questionnaires as the focus) are the tools that use both subjective and objective factor assessment. Furthermore, risk assessment as an element of the portfolio recommendation process was broken down into three categories of risk: risk requirement, risk capacity, and risk tolerance. Lastly, the demographic factors that interact dominantly with risk profiles were identified. Subsequently, the three themes include: (1) the nature of the risk assessment, (2) risk categorisation, and (3) demographic factors.

In addition to the above three themes and in the context of South Africa, the requirements for suitability in terms of the *FAIS Act 37 of 2002*, General Code of Conduct section 8(1) (b) are added as a fourth theme (Republic of South Africa 2003). This act states that a financial planner must gain information regarding the investor's needs and objectives, financial situation, risk profile and financial product knowledge, taking into account the investor's risk tolerance, before giving advice or recommending a financial product. Although the above-mentioned elements are regulatory elements, they are also supported as elements of risk assessment by other international authors (Damodaran 2012; Greene & Dinge 1983; Linciano & Soccorso 2012; Sung & Hanna 1996). These elements from the legislation are all included under objective factors and risk categorisation. Therefore, a financial planner in South Africa who adopts the developed framework primarily meets the legislative requirement for suitability.

Lastly, it is concluded that the risk profiling method should always be a starting point when highlighting issues in the portfolio recommendation process. This risk profiling necessitated the need to include reconciliation in the framework to ensure that if there are conflicting answers provided, the financial planner can prove reconciliation and get the investor's agreement, for instance, where an investor has a risk capacity higher than their risk tolerance, or vice versa.

The framework is developed by listing the objective and subjective factors, demographic factors, and legislative requirements against the three risk elements, as indicated in Table 1.

The elements of the framework for risk assessment tools presented in Table 1 have been mapped to the specific risk category of risk assessment as confirmation that they are all addressed. If all the elements of risk assessment identified in this framework are assessed by a tool, that tool will be suitable for portfolio recommendation. However, as the

TABLE 1: The elements of the framework for risk assessment tools.

Elements of a risk assessment tool	Used to measure risk capacity	Used to measure risk required	Used to measure risk tolerance
Theme 1: Nature of the risk assessment tool			
Comprehensive in nature	✓	✓	✓
Theme 2: Risk categorisation			
Risk requirement and need	-	✓	-
Risk capacity	✓	-	-
Risk tolerance	-	-	✓
Theme 3: Demographic factors			
Age	✓	✓	✓
Education	✓	-	✓
Employment status	✓	-	✓
Household disposable Income	✓	-	-
Theme 4: Legislative requirements (embedded in objective factors)			
Objectives and time horizon	✓	✓	-
Financial situation	✓	✓	✓
The investors' knowledge and experience	✓	✓	✓

framework's purpose is to present the elements for assessment, the framework maps the required elements, not the number of questions or the quality.

Research design

Research approach

The documentary research methodology was employed, where secondary data were assessed qualitatively. The documentary research methodology was used to address the study's second objective to evaluate individual risk assessment tools in the South African CIS environment. For documentary research, there are various types of documents that a researcher may be interested in studying (Bailey 1994), and it is as effective as other methods (Ahmed 2010). The documentary research is undertaken by categorising and assessing written documents (Payne & Payne 2004). Through documentary research, different risk assessment tools in the market are studied to be measured against the risk assessment framework established in literature review. In the process of evaluating the framework, the content of risk assessment tools is assessed by systematically allocating their contents to the themes identified during the development of the framework.

Ethical considerations

The study did not include human or animal research and only included secondary public data. Ethical clearance was granted by the College of Business and Economics (CBE), Department of Finance and Investment Management (DFIM) Research Ethics Committee, code 21SOM01. The data were made anonymous by removing all company identification. All the questions within the 12 risk assessment tools were randomly presented into a question bank of 124 questions. The 12 risk assessment tools were coded and named A to L in no particular order. This was done so the researcher could test the questions objectively against the established framework's identified themes.

Data collection

Secondary empirical data, which were available in the public domain, were collected using the non-probability sampling method of purposive sampling (Godambe 1982). Using South Africa as a site for this investigation and evaluation, the first stage of sample selection dealt with determining the target population size of CIS firms. There were 47 registered CIS Fund Managers with between 1 and 328 portfolios and assets under management, ranging from R37.35 million to R281384.72m on 31 March 2018 (ASISA 2019). The second stage dealt with eliminating firms with an insignificant market share of less than 1% (19 firms). These 19 eliminated firms have a collective market share of 0.02%, thus reducing the target population to 28 from the original 47 registered CIS Fund Managers. During the third stage, firms that did not have financial planners as part of their distribution channel were eliminated, resulting in 12 final firms being included in the sample for the study. These 12 firms represent the total population of CIS firms that employ full-time financial planners as part of their retail distribution channel. They also represent 48% of the market share of the CIS industry.

Blank (uncompleted) online investment risk assessment tools that were openly available in the public domain from these CIS companies identified through the sampling process were located and downloaded. Therefore, the researcher collected a risk assessment tool for each of the 12 firms. There were no obstacles in the collection of the data portfolio recommendation tools.

No recognition or reference to any specific company was made to keep the company identities anonymous. The risk assessment tools are not completed and do not contain personal information or identifiers of the investors or the firms from whose websites it was collected. The study reviewed the questions asked and not the responses since the tools were not completed. The aim is to examine the suitability of the use of the tool. The assessment tools were assessed using Microsoft Excel according to the themes identified for a framework for risk assessment. Although secondary data may be inconsistent and inaccurate as it is subject to the context in which it was collected (Kervin 1999; Saunders, Lewis & Thornhill 2015), the data collected from the public domain on company websites were considered reliable.

Data analysis

Thematic analysis, one of the most common qualitative data analysis techniques, was used to identify the themes while organising and categorising the content (Fereday & Muir-Cochrane 2006; Labuschagne 2009). In the process of developing the framework, themes were identified in the portfolio recommendation process (as discussed in The Framework section). To analyse the data, Microsoft Excel was used to import individual questionnaire data to create questions that were asked within the 12 questionnaire tools. The data analysis of the study was done according to the four themes, where each question was assessed to identify categories and the themes linked to it:

- Theme 1: Nature of risk assessment tools (objective and subjective factors).
- Theme 2: Demographics analysis.
- Theme 3: Risk categorisation.
- Theme 4: Legislative requirements applicable to South Africa.

The data will be presented according to the specific themes.

Results and discussions

In evaluating the framework, risk assessment tools from CIS firms (representing 48% of the market share as discussed in Data collection section) were compared against the framework to assess the framework's reliability and the suitability of the risk assessment tools used in the market. The risk assessment tools were studied against the background of the four themes identified in the literature: the nature of the tool, demographic factors, risk categorisation, and lastly, the requirements in terms of the *FAIS Act*.

The 12 risk assessment tools were coded and named A to L in no particular order and assessed against the framework, as illustrated in Table 2. Of the 12 risk assessment tools, 10 were in questionnaire form, and two were in the form of asset allocation calculators (firms K and L). The questions for each specific firm were reviewed to identify if each question of the risk assessment tool addressed one or more of the elements of the four themes. Table 2 illustrates the representation of each element in the framework in the respective risk assessment tools.

Considering the limitations of asset allocations compared to the framework, it is evident that it does not address the necessary elements in the framework as indicated for firms K and L:

- Theme 1 – *Nature of the risk assessment*: The results indicate that 75% (9 out of 12) of the risk assessments are comprehensive in nature, where both subjective and objective factors are included. Three of the risk assessments only focussed on subjective or objective factors, respectively, limiting the information gathered, which may not provide a holistic view to make a suitable recommendation.
- Theme 2 – *Demographic factors*: None of the risk assessments has questions related to all the relevant demographic factors. Age was the most presented in the majority of the risk assessment tools, where education was not addressed at all. Most risk assessments have not included the remaining factors, or they are not adequately addressed.
- Theme 3 – *Risk categorisation*: The results indicate that 58% (7 out of 12) of all the risk assessments address all three elements of risk categorisation, whereas the rest of the risk assessments lack one or more of the three elements.
- Theme 4 – *Legislative requirements*: Although there is no prescription for the representation of each element of the FAIS suitability requirements in the risk assessment tool,

TABLE 2: Representation of each element in the respective risk assessment tools.

Elements of a risk assessment tool	A	B	C	D	E	F	G	H	I	J	K	L
Theme 1: Nature of the tool												
Comprehensive in nature	✓	✓	-	✓	✓	✓	✓	✓	✓	✓	-	-
Theme 2: Demographic factors												
Age	✓	✓	-	✓	✓	✓	✓	✓	✓	✓	-	-
Education	-	-	-	-	-	-	-	-	-	-	-	-
Employment status	-	✓	-	✓	-	-	-	-	✓	✓	-	-
Household disposable income	✓	-	-	✓	✓	-	✓	✓	-	-	-	-
Theme 3: Risk categorisation												
Risk requirement and need	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-
Risk capacity	✓	✓	-	✓	✓	✓	✓	✓	✓	✓	-	-
Risk tolerance	✓	✓	✓	-	✓	✓	✓	✓	✓	✓	-	-
Theme 4: Legislative requirements												
Objectives and time horizon	✓	✓	-	✓	✓	✓	✓	✓	✓	✓	-	-
Financial situation	✓	✓	✓	✓	-	✓	-	-	-	✓	-	-
Knowledge and experience	✓	✓	✓	✓	✓	-	✓	✓	✓	✓	-	-

it can be deduced that there are risk assessment tools that do not meet the FAIS suitability requirements for assessing objectives, investor's situation, and financial experience. Only 33% (4 out of 12) of the risk assessments covering 48% of the CIS market share comply with all the FAIS requirements. Since gathering the data, companies might have updated their risk assessment tool in line with the FAIS requirements. However, the results clearly illustrate the shortcomings and variances used in the market by evaluating the framework against the different risk assessment tools.

In the process of evaluating the framework by assessing risk assessment tools used in South Africa, the findings show that none of the risk assessments is entirely compliant with the themes identified in the literature. Although some risk assessment tools complied with most of the themes and elements, they lacked two or more elements identified in the framework. Firms B and J are the only firms that included all the other elements in the framework except for two demographic elements. All the other firms lack demographics and other elements in the risk assessment. It is further observed that the questions within each risk assessment tool varied. It was noted that all of the risk assessment tools included a document to aid the financial planner in the portfolio recommendation process.

Demographic factors were the least representative of the four themes. The questionnaire tools represented by the firms C, K, and L did not include any demographical factors. Although the majority of the risk assessment tools establish the age of the investor, none of them establish the educational level of the investor. Education should not be used in isolation; however, there is a positive relationship between risk tolerance and education, which may complement the data gathered by the financial planner. The employment status was included for only 33% (4 out of 12) of the risk assessment tools, which guides the financial planner whether the investor is currently employed, unemployed or retired. The level of household disposable income was also not well represented, as only 42% (5 out of 12) of risk assessments included it. This factor indicates the disposable income, which states the amount in Rands that a household receives on a monthly basis. The demographic elements are underrepresented within the risk assessment tools. Demographic factor analysis is not a regulatory requirement. Still, they give the financial planner a foundation for the areas where they need to educate the investor when reconciling the objective and subjective factors for establishing a risk profile. They also serve as proof of the effort taken in the assessment process.

The number of questions allocated to each element in the framework was reviewed, as seen in Table 3. The third row indicates the number of questions in each risk assessment tool. The percentages in Table 3 (rows four to six) indicate the percentage of questions allocated to each element: for example, four questions from risk assessment tool A are allocated to Risk Tolerance (4/10*100 = 40%), represented by 40% in row six for risk assessment tool A.

The analysis shows that the three elements of risk categorisation do not have equal importance. Although the Financial Sector Conduct Authority (FSCA) requires that the investor's risk profile and financial needs be identified, it does not specify the specific actions the financial planner needs to take to identify and use the information for portfolio recommendation. The risk assessment segment of the questionnaires varies considerably, with some risk assessment tools focussing on the risk requirement, others on risk capacity, others on risk tolerance and a few others on the combination of the three. Risk requirement, capacity and tolerance are not distinguished. This assessment shows that the 'Risk Profile' definition in the suitability requirement is interpreted differently, highlighting the need for policymakers to provide a uniform framework. The FSCA has not defined a risk profile and has no reasonable scoring system or uniform method for the risk profiling of an investor. It was also noted that the majority of the risk assessment tools measured risk requirement, risk capacity and risk tolerance separately to varying degrees, whereas

TABLE 3: Percentage of questions addressing each risk categorisation.

Elements of a risk assessment tool	A	B	C	D	E	F	G	H	I	J	K	L
Risk categorisation												
Number of questions	10	10	21	7	20	9	12	10	7	18	-	-
Risk requirement and need (%)	-	60	19	14	25	33	8	20	42	33	-	-
Risk capacity (%)	30	30	-	14	15	66	16	30	57	22	-	-
Risk tolerance (%)	40	10	76	-	40	22	33	10	14	16	-	-

25% (3 out of 12) had no measurement of the risk requirement, risk capacity and risk tolerance, respectively. One of the asset allocation calculators did not refer to risk, and neither distinguished between the different risk factors of requirement, capacity, and tolerance. Instead, they were benchmark-focussed, wherein the investor would choose the level of return required, which in turn determined the risk that they had to take. The benchmark used in the allocation calculators was inflation plus 1%.

Considering the FAIS suitability requirements, 75% (9 out of 12) of risk assessment tools were compliant in terms of the investor's objectives and financial product experience, compared to 50% (6 out of 12), which included the investor's financial situation as shown in Table 2. It is essential to include the investor's objectives, as it provides the financial planner with the reason for investing, the choice of investment vehicle, and the investment timelines. The investor's financial situation gives the financial planner insights into the investor's capacity to take risks without going into debt or financial distress. Assessing financial product experience will also give the financial planner an indication of the knowledge and experience levels with risk and market volatility concepts, areas of knowledge development, and an understanding of how an investor will likely react to volatility. There is no prescription for the percentage representation for each factor, and the current analysis only reviewed the representation of an element and not the extent and depth of each element represented in the risk assessment tool. The researcher noted that the risk questionnaires are over-weighted towards identifying the financial product appropriate to the investor's risk profile compared to the other factors included in the framework.

The findings all indicate the relevance of each of the elements in the framework where all the elements have been represented to some extent in the risk assessment tool. Risk assessment is a valuable tool to guide the financial advisor in selecting a suitable CIS portfolio aligned with the investor's risk profile. However, a financial planner who aims to give suitable advice and rely on a tool to identify the risk profile would require a comprehensive tool that addresses all the framework elements. Although a risk profile is mandatory in the South African market, risk assessment tools are only valuable when they are accurate and suitable, regardless of whether they are mandatory. It is recommended that CIS firms adopt the framework in developing a risk assessment tool to ensure that all elements are addressed, enhancing the quality of the recommendations.

Conclusion

Using suitable risk assessment tools is vital to establish an investor risk profile, given the growth, complexity, and diversity in the number of portfolios in the CIS industry. The increase in CIS portfolios has offered investors many options; however, it has also presented a choice and suitability problem, making portfolio choices more challenging to navigate. The use of financial planners to make a suitable choice of portfolios is recommended as investors can benefit from their financial knowledge and expertise. However, the findings indicate that risk assessment tools in the industry are inconsistent and do not address all the factors to establish an investor risk profile. The findings suggest that policy makers should implement a standardised, comprehensive, holistic risk assessment tool. Furthermore, in the South African context, establishing a framework to serve as a guideline is critical as legislation requires financial planners to establish the risk profile, where research emphasises the importance of an accurate assessment tool. A framework was created through literature to be considered by policyholders, and further research is suggested to establish the quality and quantity of each element in the framework. Although the framework includes elements of South African legislation, these elements are supported by other international studies and can be applied to all emerging markets. A standardised framework will ensure consistency in the market and limit instances of poor advice that lead to inappropriate portfolio identification.

Acknowledgements

Competing interests

The authors declare that they have no financial or personal relationships that may have inappropriately influenced them in writing this article.

Authors' contributions

The data were conceptualised, gathered and evaluated by S.B. M.L. supervised, reviewed, and finalised the article manuscript.

Funding information

Data availability

Data were generated at the College of Business and Economics, University of Johannesburg. Derived data supporting the findings of this study are available from the first author, S.B.

Disclaimer

The views and opinions expressed in this article are those of the authors and do not necessarily reflect the official policy or position of any affiliated agency of the authors, and the publisher.

References

Agunsoye, A., Monne, J., Rutterford, J. & Sotiropoulos, D.P., 2022, 'How gender, marital status, and gender norms affect savings goals', *Kyklos* 75(2), 157–183. https://doi.org/10.1111/kykl.12294

Ahmed, J.U., 2010, 'Documentary research methods: New dimensions', *Industry Journal of Management and Social Sciences* 4(1), 1–14.

Association for Savings and Investment South Africa (ASISA), 2019, *Local fund statistics*, viewed 01 June 2019, from https://www.asisa.org.za/statistics/collective-investments-schemes/local-fund-statistics.

Association for Savings and Investment South Africa (ASISA), 2022, *Local CIS industry celebrates R3 trillion in assets under management*, Media releases, viewed 15 June 2022, from https://asisa.org.za/media-releases/local-cis-industry-celebrates-r3-trillion-in-assets-under-management/.

Bailey, K.D., 1994, *Methods of social research*, The Free Press, New York, NY.

Bain, A.D., 1981, *The economics of the financial system*, 2nd edn., Robertson, Oxford.

Bodie, Z., Kane, A. & Marcus, A.J., 2014, *Investments,* McGraw-Hill Education, New York, NY.

Botha, M., Du Preez, L., Geach, W.D., Goodall, B.B., Rossini, L. & Rabenowitz, P., 2020, *South African financial planning handbook*, LexisNexis, Durban.

Brayman, S., Grable, J.E., Griffin, P. & Finke, M., 2017, 'Assessing a client's risk profile: A review of solution providers', *Journal of Financial Service Professionals* 71(1), 71–81.

Brayman, S., Finke, M., Bessner, E., Grable, J., Griffin, P. & Clement, R., 2015, *Current practices for risk profiling in Canada and review of global best practices*, Study prepared for the Investor Advisory Panel of the Ontario Securities Commission, viewed 01 October 2022, from https://www.osc.ca/sites/default/files/2021-02/iap_20151112_risk-profiling-report.pdf.

Cooper, W.W., Kingyens, A.T. & Paradi, J.C., 2014, 'Two-stage financial risk tolerance assessment using data envelopment analysis', *European Journal of Operational Research* 233(1), 273–280. https://doi.org/10.1016/j.ejor.2013.08.030

Damodaran, A., 2012, *Investment philosophies-successful strategies and the investors who made them work*, John Wiley and Sons Inc, New Jersey, NJ.

Davey, G. & Resnik, P., 2012, 'Risk profiling art and science South African version', *FinaMetrica,* June 2012, viewed 01 October 2021, from http://enhanceifa.com/Risk%20Profiling%20Art%20&%20Science.pdf.

FAIS Ombud, 2021, *Determinations 2020/2021*, viewed 01 October 2021, from https://www.faisombud.co.za/determinations/.

Fereday, J. & Muir-Cochrane, E., 2006, 'Demonstrating rigor using thematic analysis: A hybrid approach of inductive and deductive coding and theme development', *International Journal of Qualitative Methods* 5(1), 80–92. https://doi.org/10.1177/160940690600500107

Ferreira, J.S., 2015, 'An analysis of the risk adjusted returns of active versus passive South African General Equity Unit Trusts during varying economic periods: An individual investor's perspective, an analysis of the risk adjusted returns of South African general equity unit trusts during the financial crisis of 2007', Master's thesis, Department of Management Studies, Rhodes University.

Fisher, P. & Anong, S., 2012, 'Relationship of saving motives to saving habits', *Journal of Financial Counseling and Planning* 23(1), 63–79.

Gibson, R., Michayluk, D. & Van de Venter, G., 2013, 'Financial risk tolerance: An analysis of unexplored factors', *Financial Services Review* 22(2013), 23–50.

Godambe, V.P., 1982, 'Estimation in survey sampling: Robustness and optimality', *Journal of the American Statistical Association* 77(378), 393–403. https://doi.org/10.1080/01621459.1982.10477822

Grable, J.E. & Lytton, R.H., 1999, 'Assessing financial risk tolerance: Do demographic, socioeconomic and attitudinal factors work?', *Journal of the FRHD/FERM divisions of AAFCS* 3, 80–88.

Greene, M.R. & Dinge, R.R., 1983, *Personal financial management*, South-Western Publishing Company.

Guillemette, M. & Nanigian, D., 2014, 'What determines risk tolerance', *Financial Services Review* 23(3), 72–81. https://doi.org/10.61190/fsr.v23i3.3146

Gumede, V., 2009, 'Demographic determinants of financial risk tolerance: A South African perspective', Honours thesis, University of KwaZulu-Natal.

Hallahan, T.A., Faff, R.W. & McKenzie, M.D., 2004, 'An empirical investigation of personal financial risk tolerance', *Financial Services Review* 13(1), 57–78.

Hanna, S., William, W. & Finke, M., 2011, 'The concept of risk tolerance in personal financial planning', *Journal of Personal Finance* 7(1), 96–108. https://doi.org/10.2139/ssrn.1923409

Hanna, S.D., Gutter, M.S. & Fan, X.J., 2001, 'A measure of risk tolerance based on economic theory', *Financial Counselling and Planning Education* 12(2), 53–60.

Jansma, L. & Van Heerden, J.D., 2010, 'The influence of the South African Market phases on individual risk profiling', *Corporate Ownership & Control, Granada* 7(4), 453–461. https://doi.org/10.22495/cocv7i4c4p3

Kervin, J.B., 1999, *Methods for business research*, HarperCollins Publishers, New York, NY.

Labuschagne, A., 2009, 'Qualitative research: Airy fairy or fundamental?', *Qualitative Report* 8(1), 100–103.

Lampenius, N. & Zickar, M.J., 2005, 'The development and validation of a model and measure of financial risk-taking', *The Journal of Behavioural Finance* 6(3), 129–143. https://doi.org/10.1207/s15427579jpfm0603_3

Lemaster, P., 2014, 'Gender and financial risk tolerance across the life span', PhD thesis, Department of Psychology, West Virginia University.

Linciano, N. & Soccorso, P., 2012, 'Assessing investors risk tolerance through a questionnaire', *SSRN Electronic Journal* D03(G11), 1–45. https://doi.org/10.2139/ssrn.2207958

Mabalane, M.D., 2015, 'Cultural and demographic differences in financial risk tolerance', PhD thesis, Departement of Economics and Management Studies, University of Pretoria.

MacCrimmon, K.R. & Wehrung, D.A., 1985, 'A portfolio of risk measures', *Theory and Decision* 19(1), 1–29. https://doi.org/10.1007/BF00134352

Mazzoli, C. & Palmucci, F., 2023, 'Reconciling self-assessed with psychometric risk tolerance: A new framework for profiling risk among investors', *Journal of Behavioral Finance* 2023, 1–14. https://doi.org/10.1080/15427560.2023.2271108

Metherell, C., 2011, 'The impact of demographic factors on subjective financial risk tolerance: A South African Study', Master's thesis, Department Economics and Finance, University of KwaZulu-Natal.

Morse, W.C., 1998, 'Risk taking in personal investments', *Journal of Business and Psychology* 13(2), 281–288. https://doi.org/10.1023/A:1022915224863

Oldert, N., 2018, *Profiles unit trusts handbook*, Profile Media, Johannesburg.

Payne, G. & Payne, J., 2004, *Key concepts in social research*, Sage, Thousand Oaks, CA.

Quattlebaum, O., 1998, 'Loss aversion: The key to determining individual risk', *Journal of Financial Planning* 1(1), 66–68.

Republic of South Africa, 2003, 'Financial Advisory and Intermediary Services (FAIS), Act, 2002 (Act no. 37 of 2002): general code of conduct, section 8, (Notice 80 of 2003)', *Government Gazette*, 25299:20, 08 August 2003, viewed 15 January 2018 from https://www.gov.za/sites/default/files/gcis_document/201409/25299b.pdf.

Republic of South Africa, 2017, 'Financial Sector Regulation Act, 2017 (Act No. 9 of 2017)', *Government Gazette*, 41060 (626)1, pp. 2-591, 22 August 2027, viewed 01 October 2021 from https://www.gov.za/sites/default/files/gcis_document/201708/4106022-8act9of2017finansectorregulationa.pdf.

Rice, D., 2015, 'Variance in risk tolerance measurement: Toward a uniform solution', PhD thesis, Golden Gare University.

Richards, D.W., Ahmed, A.D. & Bruce, K., 2022, 'Ethics in financial planning: Analysis of ombudsman decisions using codes of ethics and fiduciary duty standards', *Australian Journal of Management* 47(3), 401–422. https://doi.org/10.1177/03128962211022568

Roszkowski, M.J. & Grable, J.E., 2005, 'Estimating risk tolerance: The degree of accuracy and the paramorphic representations of the estimate', *Journal of Financial Counselling and Planning* 16(2), 29–47.

Saunders, M., Lewis, P. & Thornhill, A., 2015, *Research methods for business students,* Pearson, Essex.

Stokes, G., 2021, 'The latest on risk, risk profiling', *FANews*, 19 August, viewed 15 January 2022, from https://www.fanews.co.za/article/intermediaries-brokers/7/general/1227/risky-business-the-latest-on-risk-risk-profiling/32676.

Streich, D.J., 2023, 'Risk preference elicitation and financial advice taking', *Journal of Behavioral Finance* 24(3), 259–275. https://doi.org/10.1080/15427560.2021.1974444

Strydom, B., Christison, A. & Gokul, A., 2009, *Financial risk tolerance: A South African perspective*, School of Economics and Finance, University of KwaZulu-Natal, Working Paper 1, viewed 01 October 2019, from https://saef.ukzn.ac.za/wp-content/uploads/2019/01/01-2009-Risk-Tolerance.pdf.

Song, Y., Li, X.Y., Li, Y. & Hong, X., 2021, 'Risk investment decisions within the deterministic equivalent income model', *Kybernetes* 50(2), 616–632. https://doi.org/10.1108/K-04-2019-0275

Sung, J. & Hanna, S., 1996, 'Factors related to household risk tolerance: An ordered probity analysis', *Journal of Consumer Interest* 42, 227–228.

Swanepoel, A., 2016, *Assessing suitability with regard to investment advice in South Africa*, viewed 15 January 2018, from http://enhanceifa.com/ASSESSING%20SUITABILITY%20WITH%20REGARD%20TO%20INVESTMENT%20ADVICE%20IN%20SOUTH%20AFRICA%20(White%20paper%202016)%20(002).pdf.

Swart, N., 2016, *Personal financial management – The South African guide to personal financial planning,* Juta, Cape Town.

Sweet, M.M., 2013, 'A quantitative study examining the relationship between demographic factors and financial risk tolerance', PhD thesis, Department of Business and Technology Management, Northcentral-University.

Thanki, H. & Baser, N., 2021, 'Determinants of financial risk tolerance (FRT): An empirical investigation', *The Journal of Wealth Management* 24(2), 48–64. https://doi.org/10.3905/jwm.2021.1.144

Wang, H. & Hanna, S., 1997, 'Does risk tolerance decrease with age?', *Financial Counselling and Planning* 8(2), 27–32.

Yao, R., 2003, 'Patterns of financial risk tolerance', PhD thesis, Ohio State University.