

Affordable loss heuristic: scale development and validation

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Abstract

Purpose – The study aims to develop a distinct and parsimonious scale of affordable loss. The affordable loss heuristic explains a way of reasoning in entrepreneurial investment decision-making in uncertainty.

Design/methodology/approach – The scale development process spans several phases including conceptualization, qualitative interviews and expert item review in the item development phase. In the exploratory phase, two studies are used to refine the instrument. In the validation phase, the scale is validated through confirmatory factor analysis and assessment of the invariance thereof.

Findings – The study produces a two-dimensional reflective scale of affordable loss, including dimensions of a loss heuristic in uncertainty and experimental mindset. The scale is validated and invariant across different geographical contexts.

Research limitations/implications – The scale builds on the theory of affordable loss, presenting clearer insights into the nature and dimensions of this heuristic. It offers an empirical contribution by enabling the measurement of affordable loss as a construct in entrepreneurial decision-making.

Practical implications – An understanding of affordable loss gives practitioners the means to assess and develop entrepreneurial reasoning.

Originality/value – The study presents a novel measure of the affordable loss investment heuristic, paving the way for future studies into its antecedents and outcomes.

Keywords Decision making, Cognition, Entrepreneurship

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Introduction

Affordable loss (Sarvasathy, 2001, 2008) is one of the heuristics or decision rules in entrepreneurial decision-making and action (Hunt *et al.*, 2021). Heuristics represent efficient means of assessing information, relying on simple rules to guide decision-making in uncertainty (Tversky and Kahneman, 1974). The affordable loss heuristic is defined as a rule to anticipate and commit to “what one is willing to lose rather than investing in calculations about expected returns” (Sarvasathy, 2008, p. 15). Simply, it is a significant enabler of entrepreneurial decision-making, supporting decisions to invest “no more than you can afford to lose, preferably as close to zero as possible” (Sarvasathy, 2024, p. 3037). Recently, progress has been made in theorizing assumptions about affordable loss. These assumptions describe affordable loss as a distinctive heuristic response to uncertainty. It proposes that the construct encompasses loss aversion and the ability and willingness to invest (Martina, 2020). While the theory is evolving, we need a scale that measures affordable loss as a mindset or heuristic. A robust operationalization of this construct is needed, given its practical importance in enabling entrepreneurs to evaluate opportunities (McMullen and Shepherd, 2006) and make investment decisions that support firm performance (Cai *et al.*, 2017).

This paper addresses the need for an affordable loss investment heuristic scale. Specifically, we ask how affordable loss can be conceptualized and measured as a distinctive investment

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heuristic in entrepreneurial decision-making. Existing measures of affordable loss are subject to theoretical and empirical shortcomings. The most dominant scale of affordable loss (Chandler *et al.*, 2011) empirically embeds affordable loss in the effectuation process, whereas scholars have identified the need to measure it as a distinct tool within the entrepreneurial decision-making toolbox (Alsos *et al.*, 2020). Therefore, we need to shift from a process perspective of entrepreneurial decision-making to one that recognizes independent cognitive mechanisms such as reasoning, logics, or heuristics (McKelvie *et al.*, 2020). This cognitive lens recognizes that affordable loss is not process-bound, or exclusively embedded in a specific sequence in entrepreneurial action, but is employed during any entrepreneurial investment decision. For example, entrepreneurs can use the affordable loss heuristic when deciding which venture to start or how much to invest in a later-stage or ongoing project. Several other theoretical developments discussed later in this paper underscore the theoretical and empirical shortcomings of existing measures of affordable loss (Brettel *et al.*, 2012; Werhahn *et al.*, 2015; Wiltbank *et al.*, 2009). Scholars require a new measure that operationalizes affordable loss as a cognitive decision rule in entrepreneurial investment decision-making. Thus, the purpose of this paper is to describe the development of a new scale that overcomes the constraints of existing scales, allowing testing of antecedents and consequences (Grégoire and Cherchem, 2020) and already postulated relationships (e.g. Reddy, 2023).

We address this challenge by evaluating literature on the nature of affordable loss and by examining the limitations of existing measurement approaches. We then follow a multi-phase scale development process (DeVellis, 2017; Hinkin, 1995), incorporating a qualitative exploration of affordable loss in practice. Drawing on existing descriptions, we then refine the themes identified by practitioners to distil, through multiple quantitative data sets and statistical refinement, a parsimonious reflective scale of affordable loss.

By describing the development of an affordable loss heuristic scale, based on reliability, validity, and invariance assessments, we make an empirical contribution to the measurement of this heuristic. The dimensions derived through the scale refinement process signal theoretical implications of the nature and boundary conditions of affordable loss. This opens avenues for theory testing.

Theoretical background of affordable loss

The first step in scale development involves delineating clear boundaries for a construct (DeVellis, 2017). In our literature review, we first argue that affordable loss is a decision heuristic rather than a step in a process: defining what a heuristic is and how it is useful in uncertainty; debating whether heuristics represent a rational or irrational approach to decision-making, as this has implications for its practical value; and, examining whether affordable loss operates solely within the boundaries of the effectuation process, as this has implications for how to measure it. Second, we show which decision logics or forms of reasoning form the basis of the application of the heuristic. Finally, we investigate the scope and relevance of existing scales.

Definition and nature of affordable loss

Simple decision rules in uncertainty. Our first observation is that affordable loss is a decision heuristic or simple investment rule that entrepreneurs use to make decisions. In this rule, entrepreneurs consider the downside (costs) to venture to fail quickly and at a low cost (Sarvasathy, 2001). This manifests in reasoning about how to commit no more than they can afford to lose while advancing business interests (Sarvasathy, 2008). Accordingly, when entrepreneurs make “plunge” decisions, they use this mental shortcut to swiftly assess what they are able and willing to lose. This helps them to think creatively about minimizing costs rather than maximizing profits (Dew *et al.*, 2009b). Accordingly, we define affordable loss as an investment heuristic that entrepreneurs use under uncertainty to anticipate and carefully

allow losses, rather than to set goals or predict future outcomes. The elements of this definition indicate that the condition is investment decision-making under uncertainty; the mechanism is a cognitive process; the decision rule involves an evaluation of willingness and ability to incur a loss; and the orientation stands in contrast to a focus on predictions and goals.

This decision rule differs conceptually from opportunity cost thinking. Opportunity cost thinking helps entrepreneurs to consider the costs and benefits of decisions, specifically the upside potential of different options (Arora and Nandkumar, 2011; Kalinic *et al.*, 2014). In contrast, affordable loss represents a much simpler decision rule considering the potential losses entrepreneurs are willing to bear to reduce uncertainty (Reymen *et al.*, 2015). The rule encourages incurring acceptable losses in pursuit of eventual gains, rather than weighing the relative value of alternative options. Because affordable loss is fundamentally about bearing reasonable costs, we argue that an estimation of costs will be a salient feature of affordable loss measurement.

Heuristics help decision-makers hone in on the most important information in the presence of informational or contextual uncertainty. Uncertainty is central to entrepreneurial decisions (Wood *et al.*, 2021). Entrepreneurs do not know in advance what outcomes their efforts will yield and need heuristics to prospect through the evaluation of investments (Ahmad *et al.*, 2021). It is the singular focus on acceptable losses that enables entrepreneurs to deal with the uncertainty of limited information (Artinger *et al.*, 2015). Not only do they rely on limited information, but the presence of unknown alternatives makes predicting entrepreneurial outcomes unlikely. Hence, Townsend *et al.* (2018, p. 659) described uncertainty as the “lifeblood of entrepreneurial opportunities” due to its significance in entrepreneurial value creation.

Affordable loss rests specifically on Knightian uncertainty, which holds that the future and its outcomes are unknowable (Knight, 1921). Although some scholars conflate risk and uncertainty (Townsend and Hunt, 2019), the field of economics distinguishes these constructs as conceptually distinct (Knight, 1921). Risk allows the calculation of probabilities, whereas uncertainty assumes unknowable outcomes. In uncertain conditions, entrepreneurs cannot predict the results of their investments or even calculate probabilities; instead, they have to navigate uncertainty by focusing on affordable losses. We therefore adopt the term loss, instead of risks, to emphasize the inability to calculate probabilities of outcomes. Although entrepreneurs primarily face environmental uncertainty in the early stages of their ventures (An *et al.*, 2020), subsequent opportunity evaluations introduce uncertainty about the probabilities of different outcomes and preferred responses (McKelvie *et al.*, 2011). Therefore, our study will define uncertainty as a core condition within the items measuring affordable loss.

Rationality of heuristics. Our second assertion is that the use of a simple decision rule, such as affordable loss, is not irrational. Entrepreneurial thinking is often seen as less rational than economic or planful thinking (Macovei and Hagen, 2021). Hunt *et al.* (2022) described heuristics as “often-biased” and entrepreneurs as “unreasoned”. However, heuristic scholars have shown that simple decision rules often enable better outcomes than analytical approaches under conditions of uncertainty. This is because heuristics focus decisions on essential information in the absence of complete information. This ability is termed ecological rationality, contending that heuristic approaches are not irrational (Cristofaro and Giannetti, 2021; Maghzi *et al.*, 2022). A loss evaluation focus (Luan *et al.*, 2019) eliminates the need to evaluate all options and information, leading to clearer reasoning about opportunities while drawing on entrepreneurial expertise (Makings and Barnard, 2019). It also helps overcome time limitations to evaluate decision cues (Townsend *et al.*, 2018). Heuristics are therefore more effective than analytical methods for handling time limits and uncertainty (Saleh and Hunt, 2020) and are useful when creating new business opportunities (Maghzi *et al.*, 2022).

Considering heuristics as a rational and useful decision approach underlines the practical value of an affordable loss heuristic scale.

Theoretical shortcomings of understanding affordable loss

A process versus heuristic perspective. Having established the heuristic nature of affordable loss, we must determine whether it is embedded within a specific entrepreneurial process or functions as a distinct mode of reasoning. Effectuation theory assumes the integration of affordable loss into a process in which entrepreneurs consider their means, or their personal capabilities, knowledge and connections, instead of their goals; what they are prepared to sacrifice to create future opportunities (affordable loss); who their potential partners are; how emerging contingencies may be exploited; and how they might shape the unknown future (Sarvasathy, 2008).

We assert that it is a theoretical shortcoming to integrate affordable loss exclusively within the framework of effectuation theory. There are several reasons for this assertion. First, the use of affordable loss in the effectuation process assumes an exclusive interdependence among the five process principles. Although these principles are unified by a strategy of forecasting and controlling the future through non-predictive reasoning (Sarvasathy *et al.*, 2014), other related heuristics, such as resourcefulness (Michaelis *et al.*, 2022), are overlooked.

Since its early years, scholars have recognized affordable loss as a distinct decision-making heuristic. For instance, Dew *et al.* (2009b) dedicated a paper to the mechanisms of affordable loss, describing it as a distinctive decision-making heuristic, a notion echoed in Martina's (2020) theory of affordable loss. This does not mean that affordable loss is absent from effectuation processes. It is, admittedly, present in the two parallel processes of effectuation: one focused on expanding resources and the other on constraining and refining goals (Sarvasathy *et al.*, 2014). However, processes by nature involve sequential, interrelated, and time-bound elements, which limit the theoretical application of affordable loss and independent theory testing. Within the process perspective, existing scales entangle affordable loss with other predetermined entrepreneurial concepts. We argue that entrepreneurs rely on a broader set of heuristics and practices when evaluating investments. Therefore, positioning affordable loss in an effectuation process solely may be overly limiting.

By contrast, positioning affordable loss as a standalone heuristic creates an opportunity to study it as one of the "specific heuristics" that guide investment decision-making (Alsos *et al.*, 2020, p. 610). In support of our view, Alsos *et al.* (2020) distinguish between "complete effectuation" and specific heuristics such as affordable loss or control heuristics. The relationship between each of these heuristics and complementary practices and outcomes should be measured. Moreover, granting affordable loss independent status allows measurement of its unique antecedents and outcomes, without conflating these with related practices. Martina's (2020) theory of affordable loss further supports this view of a distinct heuristic. It postulates that entrepreneurs perceive uncertainty and evaluate options by assessing their resourcefulness and ability, their aversion to loss, and their affective willingness to invest as precursors to the investment decision. Although the theory posits that ability, loss aversion, and willingness are core elements of affordable loss rather than external process elements, it remains untested in empirical studies.

We propose that measuring affordable loss as a distinct construct will enhance theory testing both within and beyond effectuation and other entrepreneurial processes.

The logics of the affordable loss heuristic. A third shortcoming in the literature arises when scholars fail to recognize the interplay of effectual and causal reasoning. Sarvasathy and Dew (2005) introduced a differentiation, describing two general ways of reasoning about an uncertain future and what is possible: calculated causal reasoning or effectual reasoning. In causal reasoning, entrepreneurs assume that they can predict the future and the best options by setting goals. However, in effectual reasoning, entrepreneurs consider that the future is not predictable but uncertain; therefore, they try to shape outcomes by anticipating risks, losses, or next actions to take. When evaluating investments, entrepreneurs may predict which investments will pay off best (causal reasoning) or make controlled investments to overcome barriers (effectual reasoning) (Dew *et al.*, 2009a). Effectual reasoning is characterized by "non-teleological, non-predictive, and non-adaptive decision criteria" (p. 388). Affordable

loss is a reflection of an effectual form of reasoning. Causal reasoning, in contrast, enables entrepreneurs to shape their futures through predictive goals and plans. Formulating a business plan based on market research is an example of causal reasoning. Instead, affordable loss is part of a transformative cognitive strategy through which entrepreneurs aim to draw on cognitive controls rather than predictive reasoning to chart their paths (Dew *et al.*, 2009a).

Due to this non-predictive assumption of affordable loss, Sarasvathy (2001) and Dew *et al.* (2009a) theorized that expert entrepreneurs prefer to focus on the time, money, and resources within their control, allowing goals to emerge, rather than relying on upfront planning. Alsos *et al.* (2014) concur that effectuation and causation are “reciprocal and equally complex behavioral strategies involving a number of similar principles” (p. 11). The reciprocity in entrepreneurial reasoning translates into decisions and behaviors that combine predictive and non-predictive approaches. More recent research corroborates that entrepreneurs balance causal and effectual reasoning (Arend *et al.*, 2015) in business venture creation (Reymen *et al.*, 2015) and when facing crises (Rindova and Courtney, 2020). Recently, Sarasvathy (2024) confirmed the earlier understanding that expert entrepreneurs engage in both causal and effectual reasoning, which is difficult to distinguish in practice. Despite observing these logics as co-occurring in practice, she argued that during uncertainty, non-predictive reasoning is preferable.

This discussion reveals that heuristics are specific decision rules built on different reasoning patterns. We have shown that affordable loss is primarily supported by reasoning that focuses on emerging goals, rather than predetermined goals. However, in practice, entrepreneurs display a dual decision-making orientation, integrating both goal-driven (predictive) and means-driven (non-predictive) approaches. Therefore, our scale items need to capture the non-predictive logic that underscores the heuristic, understanding that it may operate alongside a goal-oriented approach. Furthermore, reflecting on the notion that affordable loss encompasses losses of resources beyond money, our item pool should include potential losses of time and reputation.

Experimental nature of affordable loss. Our final assertion is that experimental thinking is a central component of affordable loss, which manifests as a control and preemptive way of reasoning. A control logic focuses on what can currently be controlled rather than predicting the future. Experimentation is a preemptive logic because entrepreneurs test their assumptions with early information and an effectual control logic because they try to influence the future by learning through experimental actions (Kerr *et al.*, 2014). Sarasvathy (2024) distinguishes between two types of experimental approaches: hypothesis-testing, which reflects a predictive logic and involves asking which investment would likely be most profitable; and trial-and-error actions, which reflect a separate adaptive logic and emphasize resourcefulness.

We observe, however, that experimentation embodies both a preemptive and control logic, serving as a way for entrepreneurs to anticipate and manage uncertainty. Evidence of the experimental nature of affordable loss is often reflected in literature. Entrepreneurs control what they want to lose by experimentally “attempt[ing] a particular course of action” (Dew *et al.*, 2008, p. 49). Chandler *et al.* (2011) recognized the theoretical integration of affordable loss and experimentation, stating, “When entrepreneurs use effectuation processes they experiment with alternatives in which potential losses in the worst-case scenario are affordable (p. 379). Affordable loss includes an experimental mindset through which entrepreneurs anticipate losses instead of focusing on what they may gain (Harms and Schiele, 2012). Fisher (2012) also stated that all the components of effectuation “are enactments of experimental and iterative learning techniques that enable entrepreneurs to discover information about the future as time passes” (p. 1025). Because entrepreneurs can estimate the potential loss during uncertain times more clearly than potential gains (Li *et al.*, 2021), they may also investigate multiple potential paths, which denotes experimental reasoning (Agogué *et al.*, 2015). Furthermore, entrepreneurs hypothesize how to turn small gains into larger pursuits or use small losses as lessons to quickly withdraw from a venture without much loss (Read *et al.*,

2009). Saravathy and Botha (2022) concurred that it is through experimentation that entrepreneurs consider how to invest only what they are willing to lose.

Based on the literature, it is therefore clear that affordable loss involves experimental cognitive processes. These include hypothesis-testing, evaluation of alternatives, learning and discovery of paths, and controlling actions by focusing on what can be affordably sacrificed. We argue that experimental reasoning is an essential part of affordable loss investment evaluations, but trial-and-error practices, or the practical testing of alternative actions, fall outside the boundaries of affordable loss. This is a new differentiation, and we infer that the scale items of affordable loss should reflect experimental reasoning.

We conclude from the review that there are advantages to measuring affordable loss as a standalone heuristic, particularly supporting investment decision-making under uncertainty. Affordable loss is an effectual way of reasoning, but practiced alongside planned approaches, and it incorporates elements of experimental reasoning. Accordingly, we need to determine whether existing scales capture these insights about affordable loss.

Shortcomings of existing scales. Table 1 presents a comparison of existing scales, examining whether they meet conceptual and empirical requirements. For our purposes, a

Table 1. Comparing existing scales

Scale requirements	Chandler <i>et al.</i> (2011) 3 items	Wiltbank <i>et al.</i> (2009) 1 potential item	Werhahn <i>et al.</i> (2015) 3 items	Brettel <i>et al.</i> (2012) 5 items	Blauth <i>et al.</i> (2015) 4 items
<i>Conceptual requirements</i>					
Entrepreneurial decision-making focus	Yes, past behaviors	Yes, but combines with the means principle	No, includes managers' perceptions of employees' thinking	No, project actions	No, a project selection heuristic
Broad investment focus	No, new ventures	No, strategy	Yes	No, R&D	No, project management
Recognize experimental reasoning	No, a distinct construct	No	Yes, implied in items	No	No
Mentions the condition of uncertainty	No, risk	Yes	No	No, risk and costs	No
Assumes correct logistics	Yes	Yes, differentiates between predictive and control logics	Yes	No, forced choice between effectual and causal logics	Yes, an effectual logic
<i>Empirical requirements</i>					
Separately developed scale	No, includes all effectuation principles	No, one merged item	No, it measures effectual orientation	No, a dimension of competing behaviors	No, includes other effectuation and causation scales
Avoiding unrealistic items	No	Yes	No	Yes	Yes
Reflective scale (suitable for heuristics)	Formative	Not applicable	Control orientation reflects affordable loss	Reflective	Reflective
Internally consistent	$\alpha = 0.85$	Not applicable	Not reported	$\alpha = 0.86$	$\alpha = 0.81$

suitable scale should measure a heuristic, mention uncertainty, recognize experimental reasoning, and apply broadly to entrepreneurial investment decisions.

We observe that each scale has a different and specific focus area. For instance, [Chandler et al.'s \(2011\)](#) scale asks respondents to reflect on their new venture creation decisions. [Wiltbank et al.'s \(2009\)](#) prediction and control scale measures strategic practices of market shaping versus forecasting behaviors. It includes a single item that could denote affordable loss in combination with the “starting with means” principle (“What you are capable of, given the means available to you”). Its items are based on a fictitious scenario. [Werhahn et al.'s \(2015\)](#) scale measures the extent to which managers believe that both they and their employees display affordable loss, implicitly assuming a common logic within the organization. Finally, the scale developed by [Brettel et al. \(2012\)](#) and [Blauth et al. \(2015\)](#) focuses specifically on the project management environment, for example, “Project budgets were approved on the basis of considerations about acceptable losses” ([Brettel et al., 2012](#), p. 18).

Apart from [Wiltbank et al.'s \(2009\)](#) scale that measures logics, none of the scales mentions uncertainty. For instance, [Chandler et al.'s \(2011\)](#) scale mentions risk-taking during new venture creation: “We were careful not to risk more money than we were willing to lose with our initial idea”. According to the literature, risk and uncertainty are conceptually distinct, although practitioners may not distinguish between risk and uncertainty.

None of the existing scales recognizes experimental reasoning as integral to affordable loss. For example, [Chandler et al.'s \(2011\)](#) experimentation subscale constitutes a separate factor from affordable loss, measuring experimentation with different products, services, and approaches by asking whether these have changed (e.g. “The product/service that we now provide is substantially different than we first imagined”). It therefore does not include our conceptualization of experimental investment reasoning.

Most of the scales rely on suitable logics. However, the initial [Brettel et al. \(2012\)](#) scale presented a problem of juxtaposing causal and effectual logics in their response options. The authors described this initial positioning of causation and effectuation as opposite ends of a continuum as a limitation. Later, [Blauth et al. \(2015\)](#) separated the measurement of effectual and causal logics, allowing a response to both options.

In response, our scale items should mention uncertainty, include experimental reasoning, and focus on the individual entrepreneur’s reasoning about investment as the unit of analysis, without defining a narrow context.

There are also empirical shortcomings of existing scales. Scales should avoid unrealistic items. [Chandler et al.'s \(2011, p. 382\)](#) three items, used by several other studies (e.g. [Cai et al., 2017](#)), include one such item: “We were careful not to risk so much money that the company would be in real trouble financially if things didn’t work out”. The authors acknowledged the need to revise the affordable loss subscale due to social desirability bias. Similarly, [Werhahn et al.'s \(2015, p. 311\)](#) three items include: “Only invest if the loss of the investment would not ruin the company.” This item denotes high risk or irrational decision-making. [Blauth et al.'s \(2015\)](#) scale includes items that lack face validity, e.g. “The risk of the idea was in focus.”

We also require the scale to be a reflective measure, as we are measuring a psychological attribute as a distinctive heuristic. An empirical benefit of a reflective scale is that it allows the latent variable to cause the observed items. This enables testing whether the items consistently reflect the underlying construct. It also facilitates tests of convergent validity while reducing measurement error ([Hair et al., 2022](#)). Although three of the scales meet this requirement, they capture project or managerial decision-making instead. [Chandler et al. \(2011\)](#) scale measures a “multidimensional formative construct”. This means that the five principles of effectuation form the building blocks of an overarching construct.

Most of the scales appear internally consistent, but the papers presenting them do not consistently describe the average variance extracted, discriminant validity indices, or invariance tests. Therefore, we need to take care to ensure the validity and reliability of our scale to minimize similar shortcomings.

Scale development methodology

We report on eight steps of scale development. The item development phase consists of clarification of the construct, item pool development, expert item review, and pilot review of items. The exploration phase includes two separate samples. The third and final phase tests the validity of the scale through confirmatory factor analysis and invariance testing (see Figure 1).

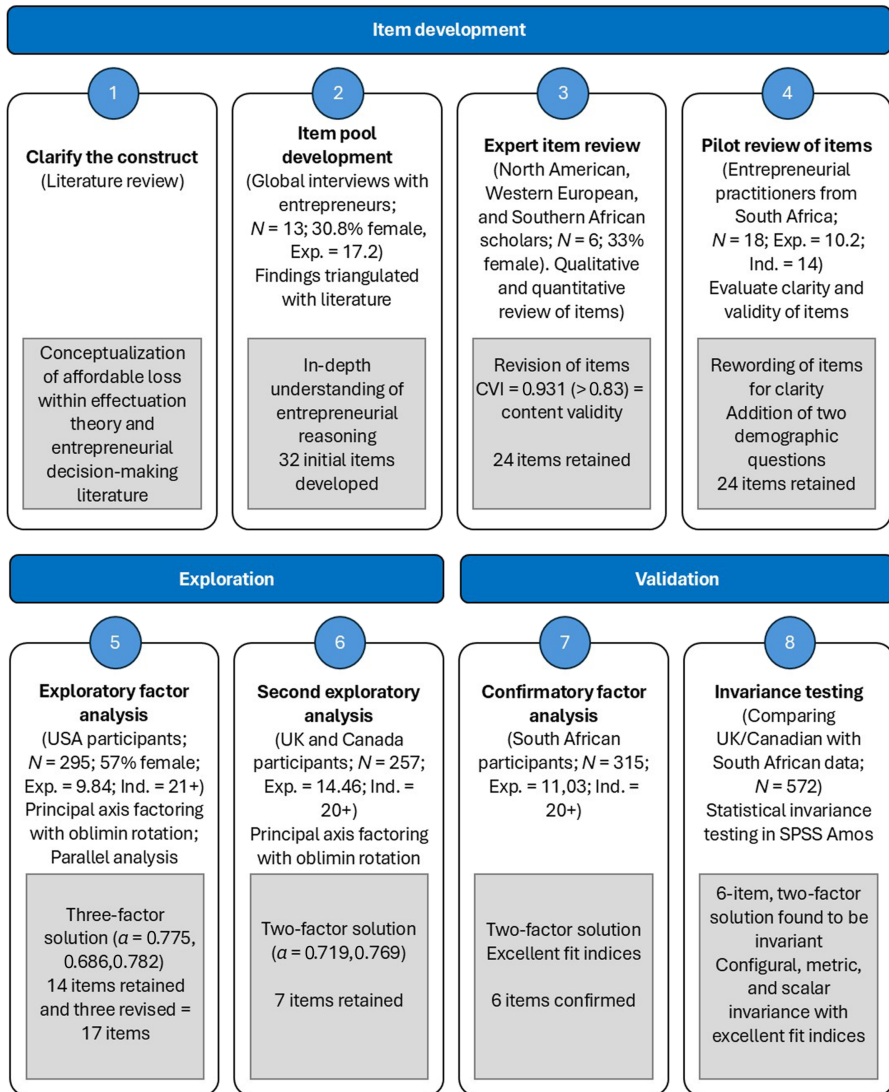


Figure 1. Scale development process and outcomes. Note(s): The process combines DeVellis’s (2017) eight steps (construct clarification, item generation, format selection, expert review, validation items, pilot testing, item evaluation, and scale length optimization) and Hinkin’s (1998) six steps (item generation, questionnaire administration, item reduction, confirmatory factor analysis, validity testing, and replication). Exp. = average years of experience; Ind. = industries represented

Phase 1: item development method and sample

Constructs are primarily understood through qualitative interpretations (Grégoire and Cherchem, 2020). Therefore, the literature review led to the development of an interview guide to explore the nature of affordable loss among expert entrepreneurs.

We attribute expertise in entrepreneurship to individuals who have successfully sustained the firm they founded for over a decade (Read *et al.*, 2009). We chose expert entrepreneurs because they possess the required experience to consider their entrepreneurial decision-making heuristics.

The first qualitative purposeful convenience sample included 13 business owners who were key decision-makers in entrepreneurial ventures (see Table 2). All the entrepreneurs, representing a wide range of focus areas, had more than ten years of experience running a firm or firms they have established (mean of 18 years), showing sample relevance. We also ensured sample diversity through a range of entrepreneurial focus areas, qualifications, and gender diversity. The thirteen interviews offered sufficient data for the purpose of item formulation.

We used open-ended questions to allow participants to share their perceptions without being constrained by our knowledge of the literature. We asked participants to describe a time when they faced uncertainty and their approach to decision-making. The prompts included questions about the processes they followed, their thoughts on loss, planning, and experimentation, how they have changed their approaches over time, and whether they prioritized short-term over long-term decisions. These prompts were derived from the seminal literature on the nature of affordable loss. The data was analyzed through thematic analysis with open coding. We developed the initial item pool based on theoretical definitions and descriptions coupled with the interview themes (see Table 3).

Second, six independent members of the entrepreneurship academic community, including leading entrepreneurship scholars, reviewed the content validity of the initial items. These doctorally qualified scholars and professors were from North America, Western Europe, and Southern Africa. They rated the relevance of each item on a four-point rating scale (Streiner *et al.*, 2014). We calculated item validity using a formula that provides a total score of -1 to $+1$ (Kyriazos and Stalikas, 2018) and requires a minimum mean CVI score for the total instrument of 0.83 (Lynn, 1986) to select which items to retain.

Third, a pilot study among 18 entrepreneurs within our professional networks assessed the face validity of the items. These respondents represented 14 industries in South Africa, with the largest proportions from the advertising, agriculture, and manufacturing sectors. The

Table 2. Qualitative sample characteristics

	Entrepreneurial focus area	Years	Gender	Qualification
1	Green economy consulting	14	Male	No tertiary qualification
2	Goods procurement	25	Male	–
3	Short-term loan products	15	Male	Bachelor of Finance
4	Financial advisory	10	Male	–
5	Multinational branding and communication	31	Male	PhD
6	Serial entrepreneur	15	Female	Secondary school
7	Venture capital and private equity	10	Male	MBA (Ivy League)
8	Agricultural sector and manufacturing specialist	22	Male	–
9	Serial entrepreneur (currently independent power provider and medical cannabis)	18	Male	Secondary school
10	Mining industry angel investment	30	Male	PhD
11	Organizational design consulting	10	Female	–
12	Corporate coaching	13	Female	–
13	High-end lingerie and swimwear brand owner	11	Female	–

Note(s): Years = years of experience as an entrepreneur; – represents preference not to disclose

Table 3. Triangulating salient features of affordable loss from qualitative findings with literature

Anticipated features of affordable loss	Related aspects of each feature	A few illustrative quotations	Literature support
A. Downside (cost) and willingness to lose	Entrepreneurs intuitively attempt to gather information wherever possible to overcome uncertainty	“I got to a point where I understood that if I had lost a certain amount that would still be OK to carry on” (P1)	Sarasvathy (2001, 2008), Martina (2020)
	Entrepreneurs invest based on what they can afford to lose Entrepreneurs focus on the downside (cost) Investment decisions are intuitive	“I guess, the more time I spent in business, the more I appreciated uncertainty and the difficulties in predicting things and became more willing to be intuitive and not think it was wrong and enjoy it” (P10)	Dew <i>et al.</i> (2009a), Sarasvathy (2001, 2008), Reymen <i>et al.</i> (2015), Martina (2020)
B. Being experimental	Making small incremental investments to get environmental feedback	“So, you focus more on what you’re trying to learn from the first few steps and that’s where you sort of tie this big picture of like directional forces with tactical options in front of you” (P7)	Harms and Schiele (2012), Fisher (2012), Sarasvathy (2008)
	Making investments as experiments and “hypothesis testing”	“Sometimes, it can be viewed as a punt or a gamble but frequently it is to find some sort of data or to answer some sort of question and if it works that’s great. But if it doesn’t work, then I should have information or I should have answers that I was requiring” (P11)	Read <i>et al.</i> (2009)
C. Loss of time and status	Assessing how much reputation one is willing to lose in a given endeavor	“Looking at resources, the more projects I have on, the less time, the less willingness, the less desire to take risk” (P11)	Martina (2020), Reymen <i>et al.</i> (2015)
	Assessing how much time one is willing to sacrifice in a given endeavor		Dew <i>et al.</i> (2009a, b)
D. Ability and creativity through constraint	Investing creatively with limited resources and the presence of uncertainty	“Working with the new, reinventing yourself, creating, experiencing. It’s all to do with that . . . as times change, we change, global conditions change” (P6) “We’ve actually managed to originate two or three, you know, hugely new exciting opportunities which have come specifically out of COVID” (P3)	Martina (2020)

(continued)

Table 3. Continued

Anticipated features of affordable loss	Related aspects of each feature	A few illustrative quotations	Literature support
E. Moving quickly and cheaply from failure	Failing projects should be terminated as quickly as possible to avoid further losses	“Sometimes, you have to cut your losses and just dump stuff and pick yourself up and start again . . . you cannot get emotionally involved in commodities” (P2)	DeTienne and Chandler (2012)
	Avoiding affective attachment to investments to promote objective and expedient termination		Sarasvathy (2001, 2008)
F. Short-term/long-term view	A reliance on short-term decision-making to get immediate “data” and feedback on an investment’s efficacy	“And that’s where you sort of tie this big picture of like directional forces with tactical options in front of you and you want to take the option that gives you like the quickest, cheapest, yeah, but most impactful validation because I think some of the long-term stuff links back to that strategic direction and then the short-term path” (P7)	Ketolainen <i>et al.</i> (2016), Sarasvathy (2008)
	Holding the short-term as important for feedback, but never removing the long-term vision for the business that is desired from the series of short-term investments	“When it is volatile, it is usually the best time to create value. So, I don’t think it is the time to be sitting on your wallet, I think fortunes are made during times of deep uncertainty” (P7)	
G. Action-orientation and resourcefulness	Emphasizing an action-orientation and resourcefulness through swift but affordable investments when facing uncertainty	“We had taken this leap into freedom, so to speak, into the farming arena, and we decided, ‘well, you know, we’ve come this far so we may as well take the next step’ . . . and I think it’s again an entrepreneurial aspect where you want to get ahead” (P6)	Agogué <i>et al.</i> (2015), Kalinic <i>et al.</i> (2014), Martina (2020)
	Having confidence in one’s decision-making without great reliance on other decision-makers	“What I don’t like is being indecisive and sitting with something and procrastinating. So, my motto is if you’re going to be a bear, be a grizzly, you know, do it” (P12)	Ketolainen <i>et al.</i> (2016)
H. Uncertainty as opportunity	Viewing uncertainty itself as an investment opportunity to create novel projects/products/enterprises	“I definitely think that, when you’re facing uncertainty, that is the time really to innovate and to create as much of a bright future as possible” (P8)	Sarasvathy (2001, 2008)
	Viewing uncertainty as offering investment opportunities to get ahead of competitors		Hunt <i>et al.</i> (2021) (partial support)

(continued)

Table 3. Continued

Anticipated features of affordable loss	Related aspects of each feature	A few illustrative quotations	Literature support
I. Learning affordable loss	Learning to use affordable loss from prior investment failures	“I think as one matures, we get burnt a lot and I think my attitude is that you have to grow. And if you’re going to grow, you have to fail” (P12)	Cai <i>et al.</i> (2017), Martina (2020)
	Increased entrepreneurial self-efficacy leading to greater use of affordable loss		Engel <i>et al.</i> (2014)
	Becoming more sensitized to loss and experiencing higher levels of loss aversion over time	“But yeah, you know I’ve been bitten too many times, I have lost it all at once. I mean, by the age of 30 I lost it all . . . uh, so I’ve also learned what the right questions to ask are and how to get involved and when to get involved” (P1)	Martina (2020)

sample had, on average, 10.2 years of experience as entrepreneurs ($SD = 8.78$; range = 1–30). These pilot respondents commented on the length and clarity of each item.

Phase 2: exploration method and samples

To ensure the representativeness of a wide range of entrepreneurs, all the samples from the quantitative studies were obtained through a CINT panel, which represents a suitable sampling method for scale development (Porter *et al.*, 2019). Using criterion sampling, the authors ensured that the study only included active entrepreneurs who were business owners with primary decision-making power. The researchers established sample adequacy using the 10:1 respondent-to-item ratio rule (Nunally, 1978), which exceeds the recommended ratios of 3:1 for stable factors (Arrindell and van der Ende, 1985) and sample sizes of 150–200 (Worthington and Whittaker, 2006) for the quantitative data collection phases.

The first exploration sample comprised 295 respondents from the United States. The sample consisted of 169 females and 95 males (31 undisclosed) from over 20 industries. On average, the respondents had 9.84 years of experience ($SD = 8.97$; range = 6 months (0.5)–40; mode = 3; median = 6) running their current business and employed an average of 27.7 people ($SD = 92.3$; range = 1–889). Most commonly, the respondents operated alone (mode = 1; median = 2), and the largest business employed 889 staff members.

The data from their responses to the 24-item instrument were subjected to EFA, specifically principal axial factoring (PAF) with oblimin (oblique) rotation, to increase the parsimony of the variables and ensure the simplest structure of the latent factors. Principal axis factoring is more suitable for scale purification than principal components analysis (Carpenter, 2018). Oblique rotation is used when measuring psychological constructs, such as heuristics, as latent constructs often correlate. It allows more accurate loadings for both correlated and uncorrelated factors, yielding interpretable pattern and structure matrices. A Bartlett’s test of sphericity ($\chi^2(276) = 2306.26, p < 0.001$) was conducted, and the results obtained a Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (0.901).

Because of the scale of revision of the initial item set, we conducted a second EFA using a fresh sample from the United States and Canada. The sample ($N = 257$) consisted of 128 females and 127 males (two undisclosed), with a mean of 14.5 years of business management

($SD = 11.84$; range = 0.5–54; median = 10; mode = 15), and employing on average 11.5 people ($SD = 41.53$; range = 1–480; median = 2; mode = 1).

Phase 3: scale validation methods and results

To validate the scale, the third sample consisted of 315 active entrepreneurs from more than 20 industries in South Africa. The sample consisted of slightly more men (165) than women (148), (two undisclosed). On average, the respondents had 11.03 years of experience ($SD = 9.79$; range = 0.5–51; median = 7; mode = 5) and employed an average of 46.12 people ($SD = 188.39$; range = 1–2,500; median = 7; mode = 2).

Before conducting confirmatory factor analysis, we subjected the data to EFA and removed a poorly loading item (Table 4, item 2). We conducted the CFA under a specified maximum likelihood path model, utilizing Bollen-Stine bootstrapping (2000 samples, $p = 0.79$) due to multivariate non-normality. Subsequently, we conducted an invariance test based on the six-item instrument. The invariance test compared the combined UK and Canadian sample ($n = 257$) from major global economies with established entrepreneurial ecosystems with the South African sample ($n = 315$) from a significantly smaller economy. This allowed comparing the validity between contexts with higher versus lower resource constraints. Cross-national comparisons are a significant discriminator for invariance testing (Putnick and Bornstein, 2016) [1].

Results

Phase 1: item development

Table 3 summarizes how salient features of entrepreneurial reasoning emerged from both the integrated literature and the interview findings. The triangulation of interview findings and literature resulted in the formulation of an initial item pool for the quantitative data analysis phases. These 32 items specified the context of uncertainty and represented nine initial proposed themes of affordable loss, namely downside (cost) calculations; being experimental; loss of time and status; creativity through constraint; moving quickly from failure; short-term versus long-term perspectives; action orientation; seeing uncertainty as opportunity; and learning from affordable loss.

The expert review of items further refined the item pool. The items attained an overall positive content validity score of 0.93. Qualitative feedback gave further insights into the adequacy of the items' wording and construct validity. Consequently, we deleted nine items and reworded 15 items. For instance, a reviewer pointed out that the words "analyze" and "acting" in one of the draft items ("If times are uncertain for my business, I analyze what I can afford to lose before acting to invest money in new projects") were confusing. This feedback led to the revision of the item. Any items deemed inadequate were removed, and two repetitive items were combined. Whereas one reviewer questioned five of the items, these were retained based on the feedback from the other reviewers and the overall validity score. The review process resulted in the retention of 24 items.

During the pilot study, one item was reworded to increase understandability. The entrepreneurs' commentary revealed that the size of the venture may affect the importance of time and reputational loss. Therefore, two demographic questions were added to capture the number of people employed and the salience of personal reputation and brand in their business success.

Phase 2: exploration

In the first exploratory study, the 24 items loaded on five factors at first. We observed that some factors included only a few items or contained items that did not make conceptual sense together; the within-factor internal consistencies (Cronbach's Alpha) resided below the 0.7 threshold for certain factors. Guided by a parallel analysis, we specified a three-factor model. While it is common practice to retain items with factor loadings of 0.35 and above (Hair et al., 2022), the study adopted a more rigorous approach by eliminating items with loadings below

Table 4. Exploratory factor loadings and item reductions

Item	First EFA N = 295			Second EFA N = 257		
	F1	F2	F3	F1	F2	
<i>Loss heuristic</i>						
1	<i>If times are considerably uncertain for my business, I think about what I can afford to lose before investing money in new projects.^a (A)</i>	0.698	–	–	0.627	0.073
2	<i>When facing considerable business uncertainty, I discern between how much time I could afford to lose and how much time I am actually willing to lose before engaging with a new project. (C)</i>	0.674	–	–	0.666	0.086
3	<i>When making business investments under conditions of uncertainty, it is important to keep the worst-case scenario in mind to avoid losing too much money on a project.^a (A)</i>	0.669	–	–	0.802	0.192
4	<i>During times of uncertainty in my business, I consider how much of my time I may lose before committing to a business investment. (C)</i>	0.669	–	–	–	–
5	<i>When facing considerable uncertainty in my business, I would terminate a failing project as quickly as possible to avoid further losses. (E)</i>	0.627	–	–	–	–
6	<i>When investing during uncertain times for my business, it is best to avoid an emotional attachment to the investment. (E)</i>	0.520	–	–	–	–
<i>Experimental investment</i>						
7	<i>When things are uncertain for my business, I tend to invest small amounts of money in new ideas or projects to see how they work out.^b (B, D)</i>	–	0.676	–	–0.206	0.881
8	<i>When facing uncertainty in my business, I tend to experiment by making small investments and waiting to see what the response is from the market before spending more money.^b (B, D, H)</i>	–	0.586	–	–0.154	0.875
9	<i>When things are uncertain for my business, I can overcome this by spending affordably to test out new ideas.^b (B, D)</i>	–	–	–	0.021	0.639
<i>Identifying new opportunities</i>						
10	<i>Uncertain times for my business actually offer opportunities to make affordable investments in new products and ventures. (H)</i>	–	–	0.729	–	–
11	<i>The more time I spend as a business owner, the better I am at understanding what an affordable expenditure is. (F)</i>	–	–	0.707	–	–
12	<i>As time goes by, I become more confident in my investment decisions under conditions of uncertainty for my business. (F)</i>	–	–	0.632	–	–
13	<i>Previous losses during times of uncertainty have made me more aware of what I can afford to lose before investing in new ventures. †^a (I)</i>	–	–	0.556	0.623	–0.028
14	<i>Decisive but affordable investments can be a way to overcome business uncertainty. (G)</i>	–	–	0.556	–	–

Note(s): Factor loadings >0.5 are reported,

† Item becomes part of the loss heuristic factor by Phase 3,

Final scale items are in italics, ^a Refers to Factor 1 items, ^b Refers to Factor 2 items

Letters A–I indicate the theme to which each item corresponds, as outlined in [Table 2](#)

Source(s): Authors' own

0.5 to ensure the development of a purer, more parsimonious scale. Applying this stringent criterion led to the removal of seven items. In retrospect, we concluded that the items that fell away potentially reflected other constructs. Example of eliminated items include, “If times are considerably uncertain for my business, I often rely on my gut feel and instinct to determine how much money I might affordably invest in any new project”, “When times are uncertain for my business, I regard my resources as limited and use them creatively”, or “When times are uncertain for my business, I tend to focus on short-term investments and decisions but I never lose sight of my long-term vision”. Six loss-related items loaded consistently on factors one and three, respectively, while the items of experimental investment loaded on factor two. Upon removal of cross-loading items (factor loading differences <0.32), the factors demonstrated acceptable internal consistency ($\alpha = 0.775, 0.686, 0.782$), and the scree plot, Cronbach alpha value (0.845), and average inter-item correlation (0.311) supported the solution. We retained fourteen items and revised three items based on the former reviews.

For the second EFA sample, the data displayed acceptable sphericity ($\chi^2(136) = 1368.17, p < 0.001$) and KMO sampling adequacy (0.879); the PAF with oblimin rotation yielded a two-factor pattern matrix explaining 44.9% of the variance in the data. Items with factor loadings below 0.5 were removed, resulting in the retention of 10 items. The correlation matrix showed that two items from factor one correlated with two and three other items, respectively, on the same factor ($R^2 > 0.05$), leading to their removal.

A further poorly loading item on Factor 1 was removed. The data of the six items retained displayed suitable sphericity ($\chi^2(21) = 440.99, p < 0.001$) and indicated KMO sampling adequacy (0.782). The pattern matrix for the items appears in Table 4. The resultant two-factor solution explained 61% of the variance in the data, with average inter-item correlations of between 0.27 and 0.34, confirming the homogeneity without undue similarity of the items, and internal consistency for both Factor 1 ($\alpha = 0.719$) and Factor 2 ($\alpha = 0.769$). Thus, the purer two-factor scale explained more of the variance in the data than the first exploratory factor analysis attempt.

All originally anticipated themes were represented in the items during the exploratory factor analysis; however, it became evident that reasoning related to short- and long-term perspectives, creativity, and intuition was less closely aligned with the other elements.

Phase 3: validation

The final items and confirmatory factor loadings of the scale appear in Table 5. Some of the initially anticipated themes diverged from the core dimensions of our affordable loss measure

Table 5. Confirmatory factor loadings of the six-item scale

Item	F1	F2
<i>Loss heuristic</i>		
1	0.694	0.007
2	0.806	-0.156
3	0.878	-0.174
<i>Experimental mindset</i>		
4	-0.244	0.903
5	-0.157	0.750
6	0.008	0.529

as they fell away. These included themes of moving quickly and inexpensively through failure, maintaining both short- and long-term perspectives, demonstrating resourcefulness, and engaging in the learning process.

Validating the scale, the multivariate critical ratio of 22.10 was higher than the cut-off of 5.0, necessitating the use of a maximum likelihood technique with Bollen-Stine bootstrapping ($n = 2000, p = 0.79$). Nine goodness-of-fit tests confirmed the good fit of the two-factor model (Table 6). Furthermore, the first ($AVE = 0.63, >0.5; CR = 0.838, >0.7$) and the second-factor indices ($AVE = 0.533, >0.5; CR = 0.780, <0.5$) showed the discriminant validity of the factors, as the Fornell-Larker criterion required the AVE to be greater than the square correlation ($R^2 = 0.504$). This was confirmed by the HTMT ratio of 0.72. Thus, the study confirmed that the two factors were independent but sufficiently related to comprise a single construct.

The cross-national scale comparison (invariance test) upheld configural, metric, and scalar invariance (Marsh et al., 2018), as seen in Table 7. The CMIN/df statistic was below 5.0 across all invariance tests, and the CFI and TLI scores were above 0.95. Furthermore, excellent RMSEA and SRMR scores confirmed invariance. When factor loadings were constrained to one across the observed variables, all the fit indices improved, and partial invariance was confirmed ($\chi^2/df = 1.339; RMSEA = 0.024; CFI = 0.989; TLI = 0.987; SRMR = 0.030$).

Table 6. Fit statistics of the second and third-phase CFA structures

Fit statistics	Cut-off standards	Seven items ($N = 257$)	Six items ($N = 363$)
Chi-square	$p < 0.05$	$(\chi^2(13) = 20.69, p = 0.079)$	$(\chi^2(8) = 7.24, p = 0.511)$
CMIN/df (χ^2/df)	<5.0 or 2.0	1.592*	0.904*
RMSEA	<0.07	0.048*	0.000*
AGFI	>0.90	0.951*	0.980*
SRMR	<0.08	0.037*	0.019*
TLI	>0.80	0.971*	1.003*
CFI	>0.95	0.982*	1.000*
NFI	>0.95	0.954*	0.985*
IFI	>0.90	0.982*	1.002*
ECVI	$< \text{saturated model}$		0.106 $<$ 0.134*

Note(s): *Indicates good to excellent fit. RMSEA = root mean square error of approximation; AGFI = adjusted goodness-of-fit index; SRMR = standardized root mean squared residual; TLI = Tucker-Lewis index; CFI = comparative fit index; NFI = normed fit index; IFI = incremental fit index; ECVI = expected cross-validation index

Table 7. Fit statistics and invariance

Fit statistics	Configural invariance	Metric invariance	Scalar invariance	Partial invariance	Residual
Chi-square	$\chi^2(16) = 16.82$	$\chi^2(22) = 21.26$	$\chi^2(26) = 48.35$	$\chi^2(25) = 33.48$	$\chi^2(32) = 79.99$
CMIN/df	1.051*	0.966*	1.860*	1.339*	2.500*
Δ Chi-square	–	0.618	0.000*	0.000*	0.000*
CFI	0.999*	1.000*	0.972*	0.989*	0.940
Δ CFI	–	0.001	–0.018	0.017	–0.049
RMSEA	0.009*	0.000*	0.039*	0.024*	0.051*
TLI	0.998*	1.001*	0.968*	0.987*	0.944*
SRMR	0.032*	0.024*	0.023*	0.030*	0.024*

Note(s): $N = 660$; * indicates acceptable to excellent fit

While residual invariance is often unattainable, the study obtained residual invariance for the six-item scale. Thus, we confirmed that the scale is invariant in cross-national samples.

In sum, the findings show that the purified scale of affordable loss comprises two latent factors. First, the loss heuristic factor denotes a focus on loss in uncertainty, where entrepreneurs consider what may be affordably lost and the potential worst-case scenario. Second, the experimental reasoning factor also holds uncertainty as the key condition for experimentation to gain information incrementally in uncertainty. Entrepreneurs use an experimental reasoning approach to understand how to shape an uncertain future.

Discussion and conclusion

This study makes a methodological contribution to entrepreneurial decision-making literature by developing an affordable loss heuristic scale. The scale refinement process helped define the core nature of affordable loss. Synthesizing qualitative studies and prior affordable loss literature, we postulated the fundamental elements of affordable loss through our initial item pool. A detailed psychometric process, however, revealed two dimensions of affordable loss: loss-focused reasoning and an experimental mindset. These dimensions are distinct but complementary. Statistical purification confirmed that affordable loss involves both dimensions, functioning cohesively. The final items align with the literature suggesting how entrepreneurs address uncertainty. They employ experimental hypothesis-testing reasoning with a loss-based heuristic (Dew *et al.*, 2009b). This marks the first instrument to recognize that entrepreneurs simultaneously maintain an experimental mindset while defining acceptable losses (Fisher, 2012).

Theoretical implications

The first theoretical implication of our research is that we defined affordable loss as a distinctive heuristic. This acknowledges that heuristics represent an advantageous approach to decision-making in uncertainty. We present empirical support for a two-dimensional affordable loss scale. This contributes to theory by showing the reasoning through which entrepreneurs anticipate what they are willing to lose in investment decisions. We concur with Martina (2020) that affordable loss incorporates a preemptive response to prior losses. We add that this encompasses an experimental mindset of being willing to act and see what happens, and test out new ideas.

Our notion of an experimental mindset differentiates between effectual experimental reasoning within affordable loss, which is hypothesis-testing (Sarasvathy, 2024), and goal-oriented experimental action beyond affordable loss (Chandler *et al.*, 2011; Sarasvathy, 2024). Our literature review has shown that scholars recognize that affordable loss requires experimentation, but position experimentation as a causal or adaptive logic. This offers a new example of the difficulty of separating effectual and causal logics in practice.

We emphasize the nature of affordable loss as a cognitive heuristic at the individual level, central to entrepreneurial thinking. This emphasis frees scholars from seeing affordable loss only through the lens of effectuation theory. Instead, it can be applied more widely, separate from other aspects of effectuation, in studies of entrepreneurial cognition or behavior.

Second, our scale purification process helped us to define the boundaries of affordable loss. Interviews with entrepreneurs in the exploratory phase of the study indicated several related heuristics and practices. These included considering the loss of time and status, calculating risk, and adopting an experimental, creative, action-oriented, and resourceful mindset. However, we considered that certain practices identified during interviews, such as recovering quickly and affordably from loss, balancing long- and short-term perspectives, viewing uncertainty as an opportunity, and learning in the process, did not persist through the scale purification process. These practices might form part of the broader theoretical framework of affordable loss. We postulate that these concepts reflect entrepreneurial resilience, temporal

perspectives, resourcefulness, opportunity evaluation, and entrepreneurial adaptability, respectively. These concepts are therefore potential antecedents, consequences, or boundary conditions of affordable loss.

Third, in contrast to Martina's model, we propose that loss aversion is conceptually distinct and an antecedent of affordable loss. The loss heuristic incorporates calculated small losses, whereas loss aversion reflects a desire to avoid losses altogether. Based on affordable loss, entrepreneurs use a decision rule that allows potential gains to emerge from making affordable sacrifices. This includes experimental investment of small amounts of money to control their futures.

Fourth, we mention the theorized condition of uncertainty (Packard and Clark, 2020) in the scale items, including phrases such as, "If times are considerably uncertain" or "times of uncertainty". Existing scales do not explicitly mention uncertainty, but may implicitly measure it.

Finally, our instrument provides the groundwork for empirical investigations into the relationship between affordable loss and a wider array of entrepreneurial reasoning constructs. Our parsimonious scale is valid and reliable. It contributes a valuable tool for examining the role of entrepreneurial heuristics in entrepreneurial outcomes for theory building.

Implications for practice

The affordable loss scale offers practitioners the means to assess their perceptions of entrepreneurial reasoning in contexts of uncertainty. Practitioners may gain awareness of their use of the heuristic. Both dimensions hold practical value for practitioners because using affordable loss heuristics is common practice for high-performing entrepreneurs (An *et al.*, 2020). Without loss heuristics, entrepreneurs would be gamblers in the face of uncertainty. However, without the experimental factor, they would be constrained by the affective pains posed by uncertainty, risk, and potential loss. Using affordable loss enables entrepreneurs to let actions evolve, while preempting and controlling losses (Kalinic *et al.*, 2014). The scale can be a useful resource for entrepreneurial development and coaching. Through insights into the nature of affordable loss, nascent entrepreneurs can consider the role of loss of time, money, and status when investing in new projects, ideas, or ventures. Subsequent learning how to use the affordable loss heuristic can help entrepreneurs overcome inertia in uncertainty. The primary use of the scale, however, is for researchers to develop entrepreneurial theory.

Limitations and future research directions

Scale development studies have limitations, although these present opportunities for future research to strengthen the work. First, the theoretical background presupposed uncertainty as the unknowable future, where entrepreneurs attempt to shape new outcomes. Future studies could examine how ambiguity, informational uncertainty, risk, and isotropy (Saravathy and Botha, 2022) impact the use of affordable loss. The study assumed that uncertainty is always part of heuristic decision-making. The scale measures a mindset useful for conditions of uncertainty. It therefore does not directly measure low- or high-uncertainty contexts. This limitation could be addressed by introducing a separate measure of the degree of uncertainty to examine how affordable loss levels vary across such contexts.

Second, during the scale construction period, assumptions were embedded in the items based on literature, expert opinions of entrepreneurs and scholars who reviewed the items, and decisions made during the refinement process. Future studies should therefore gather qualitative data from diverse geographic regions. These studies should explore in greater depth how entrepreneurs apply affordable loss in practice. Our initial item pool was not a complete representation of all potential applications of affordable loss. New studies should start with a larger initial item pool to integrate evolving theoretical elements of affordable loss. Finally, the study did not assess the influence of demographic variables on the performance of the final scale. While geographical invariance is significant, our study did not examine whether the

scale maintains invariance across different age groups, genders, entrepreneurial business types, or industries.

The scale opens opportunities for further studies of the antecedents and outcomes of affordable loss. For instance, researchers should ask whether entrepreneurial resilience and loss aversion are antecedents of affordable loss. They should also ask if affordable loss predicts bricolage and opportunity evaluation behaviors (Alemayehu *et al.*, 2023). Understanding how this heuristic relates to entrepreneurial orientation, which encompasses autonomy, competitiveness, innovativeness, proactiveness, and risk-taking (Clark *et al.*, 2025), could also deepen our theoretical understanding of entrepreneurial behavior. Moreover, because heuristics are effective under certain conditions (Cristofaro and Giannetti, 2021), researchers need to examine the boundary conditions of affordable loss. For example, researchers may ask whether affordable loss produces positive outcomes for both entrepreneurs and managers. They may also ask whether it manifests similarly during the early and later stages of entrepreneurial ventures. Researchers may also identify situations in which using affordable loss might lead to unfavorable results, and how short- and long-term perspectives affect the application thereof.

We encourage scholars to use our scale to assess the theory of affordable loss and its broader nomological framework.

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Note

1. We selected the UK and Canadian sample that responded to a purer scale instead of the USA sample that responded to the unrefined instrument.

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